

Volume 6, Issue 8 – Aug 2018

ISSN: 2054-7404



ARCHIVES OF BUSINESS RESEARCH



SOCIETY FOR SCIENCE AND EDUCATION - UNITED KINGDOM

TABLE OF CONTENTS

EDITORIAL ADVISORY BOARD	I
DISCLAIMER	II
GC.MS Analysis of Pumpkin Seeds (<i>Cucurbita maxima</i>, <i>Cucurbitaceae</i>)	01
M. Abdalla Elhassan	
H. S. Ahmed Hoyam	
H. Abdalrahman Samia	
M. E. Khogali Salwa	
Influence of Celebrity Worship Motives (CWM) on Customer Brand Relationship (CBR) towards Services Brands	10
G. N. R. Perera	
D. M. R. Dissanayake	
W. M. C. B. Wanninayake	
An Analysis of APP for Bonus Point Activity Service Based on Conjoint Model	19
Li-Chuan Chu	
Che-Pin Liang	
The Influence Of Perceived Desirability, Perceived Feasibility, Perceived Accessibility To Decision To Choose Through The Intention To Choose Of Politechnic In East Java	29
Kunto Eko Susilo	
Ujianto	
Sigit Sardjono	
The Influence of Organizational Commitment, Conflict Resolution Skills, Safety Climate for Safety Accidents On Manufacturing Industry in East Java Province.	35
M. Yusuf Arnol	
Ida Aju Brahmasari	
Riyadi Nugroho	
Service Innovation and Firm Performance of SMEs auto service: the mediating role of Pricing Capability	39
Collin Kankam-Kwarteng	
John Gartchie Gatsi	
Jacob Donkor	
Stephen Acheampong	
Effect of Customer Relationship Management, Marketing Mix, Service Quality, Entrepreneurs Orientation to Competitive Advantages and Its Impact on Marketing Performance at Public Market	51
Endah Budiarti	
Ujianto	
Tatik Suryani	

The Indonesia Sustainability Reporting Awards (ISRA) Announcement Influence On Abnormal Return and Stock Trade Volume (Empirical Study on ISRA Award-Winning Companies in 2009-2016 Period) Dewi Anggraini	61
Quantifying Interactions among European Equity Markets with Time-Varying Conditional Skewness Cian E. Twomey	73
Income Diversification of Rural Households in <i>Zoba Maekel</i>, Eritrea Ghirmai Tesfamariam Teame	89
Service Quality, Customer Satisfaction and Behavioural Intentions in the Banking industry: the case of Middle East Jaya Sangeetha	99
Macro-financial linkages between emergent and sustainable economies in a context of the European sovereign debt crisis Nuno B. Ferreira	109
Bank Al-Maghrib communication: A new evaluation of the power of monetary and economic transparency Abderrazak El Hiri Salwa Habiby	122
In-equalities, Regulation, Ethics & Records - reflections from a case in Online Trade Tove Engvall	135
Sustainability And Agriculture Dave Flynn, Ph.D.	148
Stock Price Volatility and Policy Bailout: Evidence from Growth Enterprise Market in China Qishui Chi Songtao Wang	165
Linking of taxpayer awareness to taxpayer compliance: The moderating role of account representative employee's performance Gunawan Syamsul Ridjal Hisnol Jamali	175
Just in time and competitive advantage: understanding their linkages and impact on operational performance Ramlawati	189

The Influence of Organizational Learning and Job Characteristic on Organizational Commitment and Employee Performance of Clinical Laboratory, type B Regional General Hospital in East Java	205
Didik Agus Santoso Ida Aju Brahmasari Ida Aju Brahmaratih	
Rural Tourism: A Grounded Theory on Limited Stakeholder Advocacy	216
Angela G. Sebby Kenneth Jordan	
The modern pillars of Circular Economy	228
Agata Matarazzo- Lorenzo Baglio	
The Seemingly Tripod of Strategic Stability of the Middle East: An Exploratory Political-Economic Review & Analysis	241
Reza G. Hamzaee, Ph.D.	
A Foresight on Perceived Supervisor Support, Job Conditions, Gender Differences and Perceived Organizational Support	273
Ghadeer Mohamed Badr ELdin Aboul-Ela	
What attributes do existing web blog need?	290
Yu-Ling Lin Hong-Wen Lin Yu-Ting Hung	
Environmental Concern and Purchase Intention of Electric Vehicles in the Eastern part of China	297
Ngqabutho Moyo	
Impact Of Dividend Policy On The Value Of Firms	310
Innocent Augustine Nwaorgu (Ph.D) Jennifer Nkeiruka Uzoegbu (Msc)	
Influence of Intrinsic and Extrinsic Characteristics of Detergents on Preferences of Female Employees of Selected Public Universities in Nigeria	326
Niyi Israel Akeke Maureen Obi Mukolu	
Socio-Economic Factors as Determinant of Mobile Number Portability among Mobile Phone Users in Public Universities in Nigeria	336
Niyi Israel Akeke Omobola Monsura Ajayi	
An Analysis of the Effects of Brexit on Korean SMEs	347
Kim Dae Jong	

Removal of chromium (VI) from aqueous solution by natural clay	357
Yousif Algamal N. M. Khalil Qyied Saleem Mohamed J. Almughrabi	
Effect Of Employee Morale On Productivity In The Ghanaian Public Sector. The Mediating Role Of Delegation.	365
Eunice Aidoo Jacob Donkor, Ph.D. Agnes Odoi	
Consolidation, Reforms and Profitability of Deposit Money Banks: Evidence from Nigeria	376
Bunmi A. Bajomo (PhD) Anthony E. Akinlo	
A Primer For Non-Americans On Understanding The Legal System In The United States: Sources, Schools Of Thought, And International Implications	396
Richard J. Hunter, Jr. Hector R. Lozada John H. Shannon	
Risk, Earning and Capital As An Antecedent Variable Of Financial Soundness With Good Corporate Governance As A Contingent Variable On Private Commercial Banks Listed In The Indonesia Stock Exchange	417
Herizon Tri Ratnawati Slamet Riyadi	

EDITORIAL ADVISORY BOARD

Prof. Stephen Pollard
California State University
United States

Dr. Vahidhossein Khiabani
North Dakota State University
United States

Dr. Valentina Della Corte
University of Naples
Italy

Prof. Colin C. Williams
University of Sheffield
United Kingdom

Dr. Stephen Arthur Lemay
Mississippi State University
United State University

Prof. Eddie John Fisher
Univerzitat Palackeho, Olomouc
Universidad de Oriente, Santiago de Cuba
United Kingdom

Dr. Bruna Ecchia
University of Naples
Italy

DISCLAIMER

All the contributions are published in good faith and intentions to promote and encourage research activities around the globe. The contributions are property of their respective authors/owners and Archives of Business Research (ABR) is not responsible for any content that hurts someone's views or feelings etc.

GC.MS Analysis of Pumpkin Seeds (*Cucurbita maxima*, *Cucurbitaceae*)

M. Abdalla Elhassan

The National Ribat University-Faculty of Pharmacy.

H. S. Ahmed Hoyam

The National Ribat University-Faculty of Pharmacy.

H. Abdalrahman Samia

The National Ribat University-Faculty of Pharmacy.

M. E. Khogali Salwa

Central Veterinary Research Laborotary.

ABSTRACT

The present study was conducted to confirm the traditional uses of pumpkin plant in the treatment of many ailments on scientific basis. Pumpkin seeds, also known as pepitas, are small. Flat. whitish green in colour. Most pumpkin seeds are encased in tan or soft white testa. Seeds were purchased from Khartoum local market, then dried in shade and powdered. Active constituents were extracted in Soxhlet's apparatus using petroleum ether, chloroform and ethanol in successive manner. Each extract was dried reserved in refrigerator for further investigations. GC-MS analysis for pumpkin seeds extract, and the structure activity relationship and correlation between the detected active constituents were done. Phytochemical screening was carried out for all extracts which revealed the presence of tannins and glycosides.

Key words: pumpkin seeds, phytochemical groups and GC-MS analytical compound.

INTRODUCTION

The pumpkin is a gourd of the genus *Cucurbita* and the family Cucurbitaceae, it refers to cultivars of any one of the species *Cucurbita pepo* or *Cucurbita maxima* (Cred, 2008).

Pumpkin seeds, also known as pepitas are small, flat, green, edible seeds; Most pumpkin seeds are encased in tan or soft white husk (testa) (Watson, 2012).



Pumpkin seeds

Pumpkin in Quran & Sunnah:-

Pumpkin mentioned in Quran Allah says :((and we caused by a tree of gourd to grow over him)) (Al-saaffat, 146), as the wisdom of the god in the pumpkin to germinate pumpkin plant on the prophet Yunus for food and healing.

The Mufassirin (commentators) said: The gourd (al-Yaqtin) is a kind of pumpkin. Some of them described the benefits of the pumpkin, such as: it grows quickly, it provides shade, it has large, smooth leaves, it keeps flies away and its fruit provides good nourishment: it can be eaten raw or cooked. It is known that the Messenger of Allah (peace and blessings be upon him) liked this kind of pumpkin and used to look for it on the plate of food (Tafsir Ibn Kathir).

Ibin Al-Jawziyyah for pumpkin fruit :(it cuts thirst, relief headache, laxative, and is one of the nicer foods, the seeds of pumpkin expel tape worm from intestine, and good for patients with kidney problems, bowel, arthritis and rheumatism). The prophet Mohamed (ppbuh) said :(it is strengthens the mind and the brain) (Albukhary, 5379).

Current uses of pumpkin seeds:-

Popularity of pumpkin seeds in various systems of traditional medicine for several uses as diuretic, anthelmintic (for tapeworm). Because of their zinc content and anti mitotic effect, seeds are used to arrest enlargement of prostate gland. Also used in cystitis and minor kidney dysfunction. (Khare, 2007; Chonoko&Rufai., 2011).The medicinal uses of pumpkin seeds were adopted by oriental healer in the seventeenth century which includes:

- Pumpkin seeds may promote prostate health (Raver, Anne, Oct 2007).
- Anti` inflammatory benefits to arthritis (Hyun T, Barrette E- sep 2004)
- The pumpkin seeds and fruit increase power of intelligence and mental vitality (Carbin BE-1990).
- Address depression (Jennifer Murray, 2012).
- Prevention of Kidneys stones (Suphakarn VS-1987).
- Anticancer agent and Anti-oxidant activities (Liu et al., 2008).
- Anti-diabetic agent (Quanhong et al., 2005).
- Antihypertensive agent (decrease elevated blood pressure) (Zhang X-1994).
- Antimicrobial agent and for intestinal inflammation (Cowan, 1999).
- A Rich Source of Healthful Minerals and Protein (Credo-2008).
- Lower cholesterol blood level (Phillips KM, 2005).

MATERIALS AND METHODOLOGY

Materials:

Plant:

A pumpkin seeds was purchased from the local market of Khartoum city in February 2012; authenticated, dried at shade and reduced to fine powder using pestle and mortar in the laboratory as described by (Bean, A.R, 2006).The powder was stored dry, and used as the stock sample for further analyses.

INSTRUMENTS AND CHEMICALS

A wide range of instruments and chemical were used during the course of this study.

Method:

In this study all experiments were divided into four main parts:

- 1- Extraction of all active constituents in pumpkin seeds using ethanol as solvent.
- 2- Phytochemical screening test and antimicrobial activity tests.
- 3- GC-MS analysis for pumpkin seeds extract.
- 4- The structure activity relationship and correlation between the detected active constituents and the traditionally reported uses of the pumpkin seeds.

GENERAL, GC ANALYSIS CONDITIONS:

We were likely need to optimize GC conditions depending on their analytical needs, equipment, and sample type. In general, a typical gas chromatography method will include:

- Column: HP-5 MS 30m length, inner diameter 0.25mm, 0.25mm film thickness.
- Temperature program: 110°C to 280°C at a rate of 10°C/min.
- Injector temperature 250°C.
- Injection volume: 2 µl.
- Carrier gas: helium at a constant flow rate of 1 ml/min.

RESULTS:**Phytochemical and antimicrobial result of pumpkin seeds:**

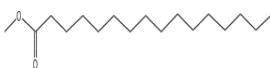
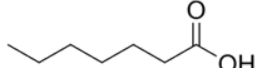
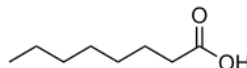
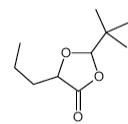
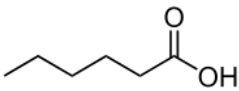
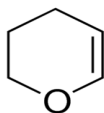
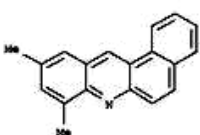
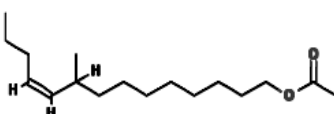

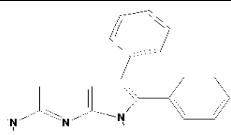
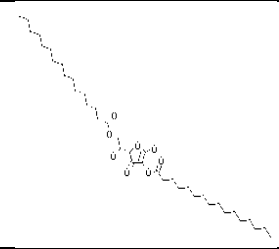

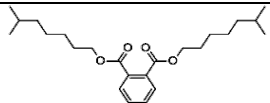
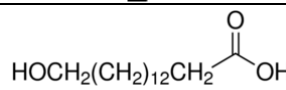
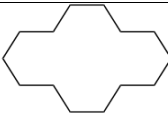
Alkaloids and glycosides, coumarins and flavonoids were found to be present in the ethanolic extract of pumpkin seeds.

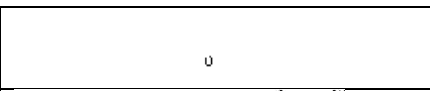
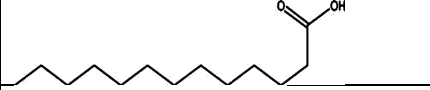

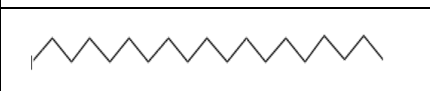
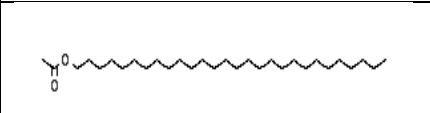
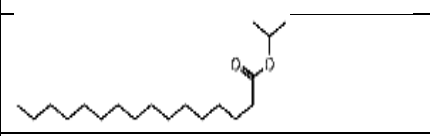
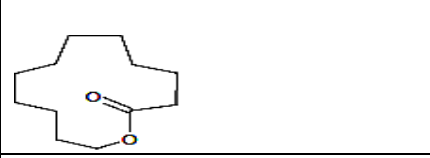
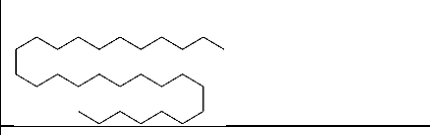
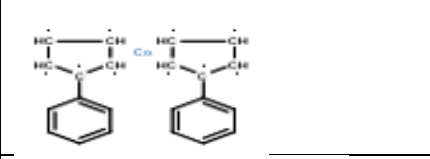
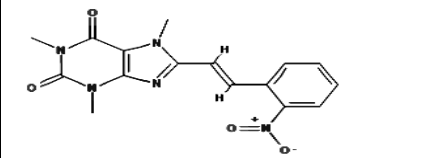
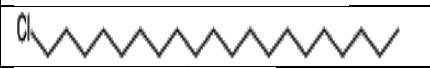
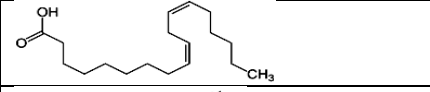
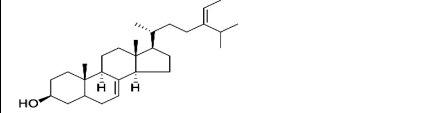
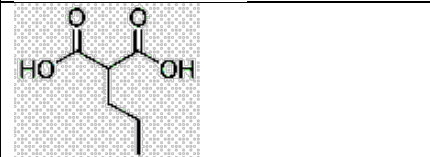
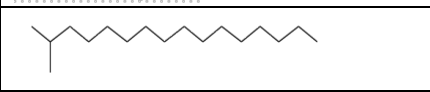
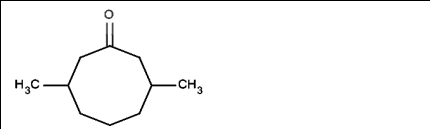
Ethanol extract of pumpkin seeds has a high activity against selected gram positives (*Staphylococcus aureus* and *Bacillus subtilis*) and gram negatives bacteria (*Pseudomonas aeruginosa* and *Escherichia coli*).


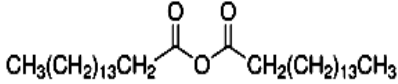
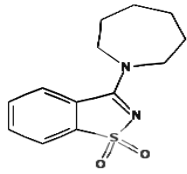
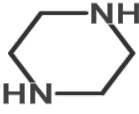
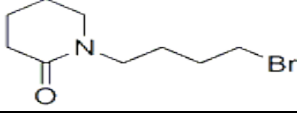
GC-MS Analysis Result of Pumpkin seeds:

This investigation was carried out to determine the possible chemical components from pumpkin seeds by GC-MS. The results pertaining to the GC-MS analysis of pumpkin seeds were given in table and figure bellow:

Table 1: The Name, Formula and Structures of phyto-chemical components detected in Pumpkin seeds by GC-MS:

No	Name	Formula	Structure
1	Hexadecanoic acid, methyl ester	C ₁₇ H ₃₄ O ₂	
2	Heptanoic acid	C ₇ H ₁₄ O ₂	
3	Octanoic acid	C ₈ H ₁₆ O ₂	
4	2-t-Butyl-5-propyl-[1,3]Dioxolan-4-one	C ₁₀ H ₈ O ₃	
5	Hexanoic acid	C ₆ H ₁₂ O ₂	
6	2H-pyran,3,4-dihydro-	C ₅ H ₈ O	
7	Benz[c]acridine,5,10-dimethyl-	C ₁₉ H ₁₅ N	
8	9-methyl-z-10-tetradecen-1-ol acetate	C ₁₇ H ₃₂ O ₂	
9	1-Hexadecanethiol	C ₁₆ H ₃₄ S	
10	6-Amino-2,3diphenyl-1H-pyrrolo[2,3- b] pyridine	C ₁₉ H ₁₅ N ₃	
11	1-(+)-Ascorbic acid-2,6-dihexadecanoate	C ₃₈ H ₆₈ O ₈	
12	Heptadecane	C ₁₇ H ₃₆	
13	1,2-Bezenedicarboxylic acid, diisooctyl ester	C ₂₄ H ₃₈ O ₄	
14	15-Hydroxy pentadecanoic acid	C ₁₅ H ₃₀ O ₃	
15	Cyclotetradecane	C ₁₄ H ₂₈	

16	Dodecane,1,1-oxybis	$C_{24}H_{50}O$	
17	Tridecanoic acid	$C_{13}H_{26}O_2$	
18	9-Tricosene,(z)-	$C_{23}H_{46}$	
19	Octadecane,1-iodo-	$C_{18}H_{37}I$	
20	Octacosyl acetate	$C_{30}H_{60}O_2$	
21	I-propyl hexadecanoate	$C_{19}H_{38}O_2$	
22	Oxacyclotridecan-2-one	$C_{12}H_{22}O_2$	
23	Octacosane	$C_{28}H_{58}$	
24	Cobaltocene,1,1'-diphenyl-	$C_{22}H_{18}Co^+6$	
25	Purin-2,6-dione,1,3,9-trimethyl-8-[2-nitrophenethenyl]-	$C_{16}H_{15}N_5O_4$	
26	1-Chloroeicosane	$C_{29}H_{41}Cl$	
27	9,12-Octadecadienoic acid	$C_{18}H_{32}O_2$	
28	Delta-7-avenasterol	$C_{29}H_{48}O$	
29	Propanedioic acid, propyl	$C_6H_{10}O_4$	
30	Hexadecane, 2-methyl	$C_{17}H_{36}$	
31	Cyclooctanone,3,7-dimethyl	$C_{10}H_{18}O$	

32	1-Docosanethiol	C ₂₂ H ₄₆ S	
33	Palmitic anhydride	C ₃₂ H ₆₂ O ₃	
34	1,2-Beniso-thiazole, 3-(hexahydro-1H-azepin-1-yl)-,1,1-dioxide	C ₁₃ H ₁₆ N ₂ O ₂ S	
35	Diethylenediamine	C ₄ H ₁₀ N ₂	
36	2-Piperidinone, N-[4-bromo-n-butyl]-	C ₉ H ₁₆ BrN ₁ O	

DISCUSSION

Miracles from Quran represent a real challenge in discovering of chemical ingredients and its relationship with remedies. Selection of pumpkin within billion of plants did not come by chance but it was an indirect message from God to search in-depth in the mysteries and secrets of this great plant and through this work, thirty six natural chemical compounds have been detected in the investigated part of pumpkin (seeds), they need more efforts and deep analysis and interpretation to elucidate them in the plant. Through the presence of thirty six of natural chemical compounds in pumpkin seeds can clearly see the extent of role of pumpkin seeds in the therapy.

ACTIVITY OF THE IDENTIFIED PHYTO-COMPONENTS IN SEEDS PUMPKIN

(1). Hexadecanoic acid, methyl ester:

Is a saturated fatty acid ester which has been reported to show antioxidant, hypocholesterolemic and nematocide activities (Sermalkani M et al, 2012).

(2). Heptanoic acid:

Also called Enanthic acid, it is an oily liquid organic compound used to esterify steroids in the preparation of drugs such as testosterone (Merck index, 11th edition.4581).

(3). Octanoic acid:

This saturated fatty acid, it can even help balance your blood sugar, improve digestion, balance your hormones, and keep your heart healthy, in one early experiment some evidence showed that medium-chain triglycerides (MCT), like caprylic acid, can help to treat children with epilepsy and can control seizures, However, there have been no follow-ups to confirm these findings (Physicians Desk Reference; 2001). There is also some evidence to suggest that caprylic acid can delay the progression of Alzheimer's disease, according to the Alzheimer's Association of America, but larger trials are needed to confirm this. It is also used as disinfectant in health care facilities, schools/colleges, animal care/veterinary facilities (P.J.; Mallard, W.G).

(4). 2-t-Butyl-5-propyl-[1,3]Dioxolan-4-one:

Is a new drug with potent spasmolytic activity (Morsdorf K, et al. Pharmacology, 1970).

(5). Hexanoic acid:

Studies have also shown that hexanoic acid is useful for neurodegenerative disorders like Alzheimer's disease, Parkinson's disease and epilepsy, and it is an important ingredient in parenteral nutritional emulsions for the treatment of a variety of malabsorption condition (Journal of lipid research sept, 1967).

(6). 2H-pyran,3,4-dihydro-:

Also known as dihydropyran, it is a heterocyclic compound. Has especially high cytotoxicity against tumour cells with less toxic effect on human normal non cancer cells, also it is antioxidant in vitro (Journal of bioactive and compatible compounds Oct, 1990). It is also antiviral agent and useful in the treatment of influenza (Abbott Lab, 1999).

(9 -32). 1- Hexadecanethiol & 1- Docosanethiol:

Is an organosulfur compounds. There is evidence that plant containing organosulfur compounds has a protective against cancer in humans (Fukushima S, et al. J, 1997).

(10). 6-Amino-2,3diphenyl-1H-pyrrolo[2,3- b] pyridine:

Is an indole compound, it exhibit anti-inflammatory, analgesic and antipyretic activities (Weiss E, Winey M, 1996).

(12). Heptadecane:

It exhibit potent anti-oxidative effect (ameliorate several oxidative stress related diseases) and anti-inflammatory agent (Kim DH, Park MH, 2013).

(13). 1,2-Bezenedicarboxylic acid, diisooctyl ester:

Show potent antifungal activity against six pathogenic fungi (Asian Journal of microbiology, 2006). Also it has antibacterial effect (Rao P, PS, Karmarkan, s.m, 1986). This compound was identified as inhibiting melanogenesis, compound with a hypo pigmenting capability used in cosmetics (DT Nguyen, DH Nguyen, HL Lyun, 2007). Diisooctyl phthalate also showed significant activity against Salmonella (Gibbons JA, Alexander M, 1989).

(15). Cyclotetradecane:

Is a new potential copper chelating agent for neuroprotective in Alzheimer's disease which is associated with copper metabolism in adrenal cortex (Mort V, et al, 2006).

(17). Tridecanoic acid:

Has the highest antioxidant and anti-inflammatory activities (J. Agric, 2002).

(21). I-propyl hexadecanoate:

It is an emollient, moisturizer and thickening agent (JE Ramirez, M, 2015). Also has antimicrobial activity (Cardoso, V.M, 2006).

(22). Oxacyclotridecan-2-one:

Is cyclolactone compound; 30 years ago, research revealed that cyclic lactones' compounds have anthelmintics (especially control nematodes), antileishmaniasis and antibacterial activity (Brown DD, et al. Vet, 2012).

(23). Octacosane:

This saturated hydrocarbon with branched chain structure has mosquitocidal activity (J. Ethnopharmacol, 2004).

(24). Cobaltoecne,1,1'-diphenyl-:

Known as phenylcyclopentadienyl-cobalt, is an organometallic compounds used as a radiopharmaceutical to treat small cancers also in vitro it has protozoocidal activity (Loiseau PM, et al, 1988).

(25). Purin-2,6-dione,1,3,9-trimethyl-8-[2-nitrophenethenyl]-:

Known as antidepressant and anxiolytic agent (Chlon-Rzepa G, t al. Pol J, 2001).

(27). 9, 12-Octadecadienoic acid:

It reduces skin scaling, prevents hair loss and stimulates wounds healing (Ruthing DJ, Meckling KA, 1999). Also has antibacterial (especially gram positive) and antioxidant activities (F Dilika, P. D Bremner, 2000).

(28). Delta-7-avenasterol:

Is unsaturated plant sterol, chemically similar to animal cholesterol then it has hypocholesterolemic effect. Research has indicated that delta -7-sterol competes with dihydrotestosterone DHT at the receptor sites in prostate, DHT is strongly responsible for enlarging the prostate and causing benign prostatic hyperplasia BPH but when this compound is present in diet it seems to help minimize the harmful effects of DHT on prostate i.e prevent BPH and prostate cancer (Health & Energy Food.com, 2015).

(31). Cyclooctanone,3,7-dimthyl:

Cycloalkanone like Cyclooctanone,3,7-dimthyl significantly lower cholesterol, triglycerides levels (G.S. Abermethyl, C, Piantados, 1974).

(34). 1,2-Benisothiazole, 3-(hexahydro-1H-azepin-1-yl)-,1,1-dioxide:

In vitro, all benzisothiazole derivatives proved to have antipyretic and analgesic activities (Wang Z-Y, 2015), also it is known to have fungicidal and bactericidal effects (JP, 1973).

Benzisothiazole derivatives are cholinesterase inhibitors and are useful in enhancing memory in patients suffering from dementia and Alzheimer's disease (conditions of degenerative cholinergic neurons) (Becker et al, 1988).

(35). Diethylenediamine:

Known as **Piperazine**, is a cheap and readily available anthelmintic agent with very wide therapeutic index. It is used in the therapy of ascariasis (round worm) and oxyuriasis (thread worm) infestations. Also it was recently approved as an oral anticancer drug for clinical use in Japan and it has shown potent antiproliferative activity against colon, prostate, breast, lung and leukaemia tumours(Yarim et al., 2012).

(36). 2-Piperidinone, N-[4-bromo-n-butyl]-:

N- Substituted lactam ring compounds as 2-Piperidinone, N-[4-bromo-n-butyl] - have anticonvulsant and neuro-protective activity (Wayne J. Brouillette and Garyl. Grunewald, 1983).

CONCLUSION

As a consequence of all these bioactive twenty two compounds and their important biological activities, Allah Almighty had chosen the pumpkin tree for the prophet Yunus (pbuh) because of its benefits and usefulness in the large scale in recovering health and strength, and because of the presence of several beneficial active ingredients. However, isolation of individual phytochemicals and subjecting it to biological activity will definitely give fruitful results. The

study revealed that pumpkin fruit studied was a potential food and has a multiple components medicine of benefits to the weak patients.

الملخص العربي:

هذه الدراسة اجريت لتأكيد او دحض الاستعمال التقليدي وليبيان المعجزة الربانية من انبات نبات القرع علي سيدنا يونس عليه السلام من خلال: .
 - اجراء المسح الكيميائي النباتي للمستخلص الكحولي العام لثمار القرع , حيث اثبتت الدراسة وجود مواد اساسيه مثل الاستيرويد, الفلافونيات, الصابونيات والقلايكوسيدات.
 - اخضع المستخلص الايثانولي العام للثمار للتحليل الالى الغاز كروماتوغرافي لمعرفة المركبات الموجوده فيها , حيث تم التعرف علي اثنان وعشرون مركب.
 - تم البحث عن الآثار العلاجية والحيوية لكل المركبات الاثنان وعشرون التي تم التعرف عليها في ثمار القرع , حيث اثبتت الدراسه فوائد الثمار من الناحية العلاجية، ، وفي موضوعنا هذا تبين لنا أن اليقطين يتميز بصفات وخصائص تجعله من أولويات النباتات التي تصلح لأن تكون مجاورةً ليونس عليه السلام .
 التوصيات : نوصى باجراء دراسات متقدمه وضرورة عمل الرنين المغنطيسي وتحليل بالاشعه تحت الحمراء وكذلك لابد من دراسه اكلينيكيه لتوضيح العلاقه بين المكونات الكيميائيه وخواصها الدوائية

References:

- Abbott Lab, 1999 (Inhibitors of neuroaminidases Dihydropyran).
- Abermethyl G S, C, Piantados, J. Med.chem, 1974. 17(2) pp154-157.
- Cardoso,V.M. Solano, A.G, 2006. JP, 1973 - Journal of pharmaceutical and biomedical analysis, unitd states patient specification 7,230-137.
- Chlon-Rzepa G, t al. Pol J. Pharmacol Rep, 2001.
- Chonoko G., Rufai B. (2011). Phytochemical screening and antibacterial activity of *Cucurbita pepo* (Pumpkin) against *staphylococcus aueus* and *salmonella typhi*. Bajopas. ;4(1): 145 – 147.
- F Dilika, P. D Bremner, J. J .M Meyer, 2000. Fitoterapia vol.71(4):450-452
- Health & Energy Food.com, 2015.
- Jennifer Murray, Suite 101. Heath benefits of pumpkin seeds. Retrieved on Oct 2012. <http://suite101.com/article/health-benefits-of-pumpkin-a1531140>.
- J.Ethnopharmacol Jan,90(1):89-9.
- J.E Ramiraz, M Vishnupad. Anhydrous foaming compositions of detergents and high levels of glycerine and emollients such as oils and esters US 5,254,334.
- Quanhong L, Caili F, Yukui R, Guanghui H, Tongyi C.(2005). Effects of protein-bound polysaccharide isolated from pumpkin on insulin in diabetic rats. Plant Foods Hum Nutr.;60(1):13-16
- Watson, L., and Dallwitz, M.J. 1992 onwards. The families of flowering plants: descriptions, illustrations, identification, and information retrieval. Version: 18th May 2012. (<http://delta-intkey.com>.)
- Wayne J. Brouillette and Garyl. Grunewald, 1983. Synthesis and anticonvulsant activity of N-substituted lactam ring compounds (2-Piperidinone, N-[4-bromo-n-butyl] -).
- Zhang X, Ouyang JZ, Zhang YS, et al. Effect of the extracts of pumpkin seeds on the urodynamics of rabbits: an experimental study. *J Tongji Med Univ* 1994;14:2358.

Influence of Celebrity Worship Motives (CWM) on Customer Brand Relationship (CBR) towards Services Brands

G. N. R. Perera

Senior Lecturer, Department of Marketing Management,
University of Kelaniya, Sri Lanka

D. M. R. Dissanayake

Senior Lecturer, Department of Marketing Management,
University of Kelaniya, Sri Lanka

W. M. C. B. Wanninayake

Senior Lecturer, Department of Marketing Management,
University of Kelaniya, Sri Lanka

ABSTRACT

Celebrity Worship Motives (CWM) determines how celebrities and consumers engage through a psychological bond. CWM intensifies the effectiveness of celebrity endorsement when resulting brand evaluations. CBR has been empirically tested as one of the brand-related behaviors resulted by different brand stimulus including celebrity endorsements. Moreover, CWM and CBR found to be significant research notions within celebrity endorsements-related studies whilst services sector is denoted as a specific research gap within. Inline, this study examines how CWM relates with CBR considering Sri Lanka as a specific context to of services sector. A deductive approach was followed to hypothesize the research questions. A questionnaire was employed as the research instrument. Sample was determined followed a multistage cluster sampling method, and finally 240 respondents were considered for the final analysis. Study used quantitative methods including inferential and descriptive statistical tools to analyze the data. Study found CWM impacts on CBR whilst aspirational motives was noted as a most significant influencer towards CBR. Paper concludes practical implications to industry and future research priorities were proposed accordingly.

Key Words: Celebrity Worship Motives, Customer Brand Relationship (CBR), Services Brands, Sri Lanka

INTRODUCTION

The celebrity endorsement comes through the character called celebrity. Celebrities make fame and public attention in the media covering both electronic, print and online channels (Shimp, 2010). Usually, celebrities attribute community attraction, expertise, trust and respect that eventually hold an influential power on public or customers (Dissanayake, 2015; Hung, 2014; Seno & Lukas, 2007). Celebrity endorsement is a widely practiced communication and branding tool found across the markets and different product contexts (Dissanayake, 2015; Hung, 2014; Seno & Lukas, 2007). There are empirical arguments found claiming effectiveness of celebrity endorsement depends on source-based and management-based factors (Seno & Lukas, 2007, Shimp, 2010). There are theoretical and empirically tested models explaining contents related to effectiveness of celebrity endorsements including recently found TEARS model of Shimp (2010). TEARS model can be admired to employ in determining overall effectiveness of source-based factors in differently profiled consumer markets. Some studies argue the combined effect of both source-based and management-based factors determine holistic effectiveness of endorsed-message (Dissanayake, Ismail & Pahlevan Sharif, 2017; Seno

& Lukas, 2007; Zahaf & Anderson, 2008). Meanwhile, celebrity worship motives had been considered as another mechanism that shapes the consumer-celebrity psychological bond (Dissanayake, 2015). According to "Absorption-Addiction Model of McCutcheon, Lynn, Lange, & Houran (2002), it denotes celebrities result a cognitive bridge with consumers via para-social relationship. Such cognitive factors are named as celebrity worship motives (Hung, 2014). Conclusively, aspirational motives, entertainment motives and intense attachments are widely accepted as the celebrity worship motives (Dissanayake, et.al.2017; Hung, 2014; Hung, Tse & Cheng, 2011).

Meanwhile, relationship between celebrity worship motives with brand evaluation perspectives and brand relationship behaviors had been extendedly considered in recently held studies (Dissanayake & Ismail, 2015; Dissanayake & Weerasir, 2017; Hung, 2014; Kumara, 2016). Studies discuss the role of celebrity worship motives towards such brand evaluations and brand-related behaviors that includes customer brand relationship (CBR) and brand evangelism behaviors across different product categories (Dissanayake, et.al.2017; Hung, 2014; Keller, 2013). There are empirical studies specifically highlight services sector as a notable context to examine such relationships to unveil how celebrity worship motives act within brand-related behaviors and brand evaluation perspectives (Dissanayake & Weerasiri, 2017; Ibok & Ibok, 2013; Kumara, 2016).

Context of the Study

Celebrity endorsements practices within the service sector brands are found as significant in Sri Lanka (Dissanayake, 2015; Kumara, 2016). The economy is transforming towards a more urbanized economy whilst services sector dominates in overall. In brief, service sector contributes nearly 60% to gross domestic production (GDP) in Sri Lankan economy whereas telecommunication, insurance, finance sector and hospitality provide a significant portion within (Central Bank Report, 2017). Celebrity endorsements practices are also found as significant within those services sectors (Dissanayake, et.al.2017; Kumara, 2016). Sri Lanka is a uniquely profiled market within the south Asian market context and its behavioral dynamics seem identical against other neighboring countries. The involvement of celebrities in Sri Lanka is dominated by Cricketers (Dissanayake, 2015). However, claims are found referring scant of empirical investigations to evaluate the effectiveness of celebrity endorsements attributed by worship motives within Sri Lankan context (Dissanayake, 2015; Dissanayake, et.al.2017; Kumara, 2016). Alongside, this paper attempts to investigate how celebrity worship motives influence effective brand-related behaviors within the services sector of Sri Lanka. Alongside, customer brand relationship (CBR) is studied under the context of brand-related behaviors influenced by celebrity endorsements (Becerra & Badrinarayanan, 2013; Dissanayake, et.al.2017; Doss & Carstens 2014; Kumara, 2016). Celebrity worship motives were found with the theoretical contribution of Absorption Addition Model and empirical explanations are found in recently held studies to rationalize the research gap (Dissanayake, et.al.2017; Hung, 2014; Kumara, 2016; McCutcheon et. al. 2002). The relationship between celebrity worship motives and customer brand relationship (CBR) is empirically justified to build the initial research questions and related objectives (Becerra & Badrinarayanan, 2013; Dissanayake, et.al.2017; Doss, 2014; Kumara, 2016; McCutcheon et. al. 2002). Having said, this paper addresses undermentioned research questions and objectives.

Research Questions

This paper identifies four research questions addressing to empirical gaps and contextual importance as reviewed.

- a). What is the impact of celebrity worship motives towards CBR?
- b). How does aspirational motives relate with CBR?

- c). what is the impact of playful motives toward in CBR?
- d). How does intense attachment relate with CBR?

Research Objectives

According to the research questions, paper contributes to knowledge and practice via four main objectives as mentioned below.

- a). To evaluate overall impact of celebrity worship motives toward in CBR.
- b). To examine the relationship between celebrity playful motives and CBR.
- c). To evaluate the relationship between celebrity intense attachment and CBR.
- d). To examines the relationship between aspirational motives and CBR

LITERATURE REVIEW

Paper presents a brief on main concepts and empirical relationships with reference to CBR and Celebrity Worship Motives (CWM) as unmentioned.

Customer Brand Relationship (CBR)

Celebrities play a very important role in the market where the people are interested to buy the product based on the celebrity's life style and good personality (Keller, 2013). Thus, celebrity is able to repair tarnished brand images as well giving the proper message to the target market to use the product through source –based and management-based attributes (Seno & Lukas, 2007). Celebrity endorsement involves in advertising campaign and promotes a product or service from person to person (Keller, 2013). A celebrity results favorable buying decision of the customers and attracts more attention of consumers in cluttered conditions (Shimp, 2010). The effectiveness of celebrity endorsements is increased or shaped when it holds a strong emotional bond with consumer-celebrity bond (Dissanayake, 2015). The brand can be felt as a mechanism that connects consumers and sellers with the intention of creating a long-term customer brand relationship, which is called the relationship builder (Becerra & Badrinarayanan, 2013; Klaus & Maklan, 2007). Accordingly, customer brand relationship is evolved from the brand experience, brand knowledge and/or brand meaning that the customer associates with the brand. The relationship largely overhangs on the success of establishing a brand meaning, which is a crucial negotiator between brand experience and customer brand relationship (Şahin et al., 2011). CBR is reflected as a brand-related concepts that explains how customers relate with informational bond with brands (Veloutsou & Tsiotsou 2010). CBR has been claimed as a notable brand relationship context to be investigated within services sector endorsed brands (Dissanayake, 2015).

Brand relationship is a highlighted element as it is perceived in resulting competitive advantage by establishing a strong bond between the customer and the brand (Bowden, 2009). To create a customer brand relationship, a business needs to provide their customers a unique brand experience which is created in the mind of the customer (Klaus & Maklan, 2007). The brand satisfaction effects on brand loyalty and customers are highly expected to get more satisfaction from their favorite brand (Keller, 2013). Brand relationship behaviors can be motivated with brand experience; and brand experience is stimulated with different marketing elements including sensations, feeling, cognition's and behavioral responses that are evoked by brand-related stimulus including brands design, identity, packaging, communication and brand environment (Brakus, Schmitt & Zarantonello, 2009). Celebrity endorsements are also a stimulus result brand related behaviors by providing communication and evaluation experiences (Dissanayake & Ismail, 2015; Keller, 2013). The influence of celebrity related attributes on CBR as a facet of such brand relationship behaviors has been widely discussed in recently held studies whilst proposing further investigations within different markets and

product contexts (Becerra & Badrinarayanan, 2013; Dissanayake, et.al.2017; Doss,2014;Kumara,2016).

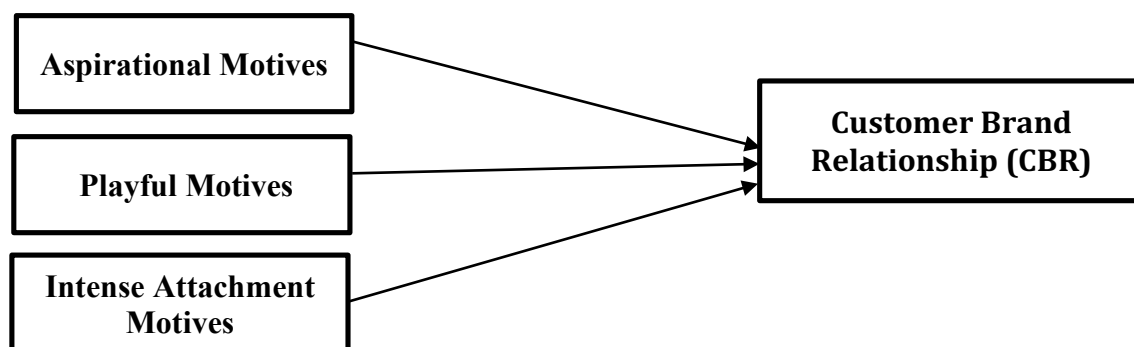
Celebrities Worship Motives (CWM)

The celebrity worship motives can be referred as a most influential icon that people admire since it influences brand evaluations and related behaviors (Hung, 2014). Thus, a bond between celebrity and consumer could result intensified brand related performances (Dissanayake, 2015). It connects customer into celebrity's life style and increases the selling potential of any product endorsed. The celebrity and consumer are psychologically engaged (Dissanayake, 2015; Kumara, 2016). According to McCutcheon et. al. (2002), "Absorption-Addiction Model" explains how celebrities stimulate a cognitive bridge with consumers via facilitating psychological absorption referring to what is endorsed, stated as para-social relationship that reshapes the consumers' behavior. Alongside, people are very much interested to follow the celebrity's life style. Celebrity worship motives can be defined as compulsive addictive syndrome in which a person becomes overtly involved with details of a celebrity personal age (Dissanayake, et.al.2017; Kumara, 2016; McCutcheon et. al.2002). Celebrity is able to increase the sales figure as far as it holds strong emotional bond. There are three components found as frequently referred celebrity worship motives namely playful motives aspiration, motives intense and attachment motives (Dissanayake, 2015; Hung, et.al.2011; Hung, 2014; McCutcheon et. al.2002). Alongside, this papers conceptualizes its variable relationship by considering those three facets as celebrity worship motives.

METHODOLOGY

This study follows deductive approach to construct the model and variable relationships are supported by existing theatrical models and empirical justifications. Study was limited to western province of Sri Lanka as it represents a highly penetrated population towards media exposure and service sector market (Central Bank Report, 2017). Alongside, 225 sample units were surveyed followed by multi stage cluster sampling method. Clusters were determined representing divisional secretariat zones of the western province of Sri Lanka. The variables were operationalized with the scales found in empirical studies. CBR was tested by employing six elements proposed by Veloutsou & Tsiotsou (2010). CWMs were measured by applying items used to explain playful, intense and aspirational motives (Hung,et.al.2011; Hung, 2014; McCutcheon et. al., 2002). Study was executed as a quantitative survey, and questionnaire was employed as the research tool with 7 point Likert scale to collect primary data to achieve research goal (Ho, 2013). This study deals with celebrity worship motives (CWM) and customer brand relationship (CBR) as main independent and dependent variables. Respectively playful motives, aspirational motives and intense attachment motives were separately figured out as sub components of CWM (Dissanayake, 2015; Hung, 2014; Kumara, 2016). Accordingly, conceptual framework and hypotheses were developed as undermentioned.

Figure 1: Conceptual Framework



Hypotheses of the Study

As per the conceptual framework and research questions figured out, following hypotheses were formulated (Becerra & Badrinarayanan, 2013; Dissanayake, 2015; Hung, 2014; Hung, et.al.2011; Kumara, 2016; McCutcheon et. al., 2002; Veloutsou & Tsiatso, 2011).

H1: There is a significant relationship between Aspirational motives and CBR

H2: Playful motives and CBR are significantly correlated.

H3: There is a significant relationship between intense attachment motives and CBR

DATA ANALYSIS AND RESULT DISCUSSION

Sample Profile

The sample profile was analyzed considering demographic data. Accordingly, 64% of the sample was represented by male segment as the majority. Age clusters were analyzed and it reports 56% within 30-40 years aged category whilst 29% and 15% were found within 40 above and 20-30 categories respectively. It indicates 61% of sample having professional of high education qualifications. Meanwhile, it reports telecommunication and finance services as the mostly exposed brand categories endorsed by celebrities reporting 48% and 37% compared other services categories.

Results of Reliability and Validity

Reliability of the items related to each construct has been calculated by employing Cronbach’s Alpha values. Reliability indicates the internal consistency of the items that measures respective construct or variable (Ho,2013). Additionally, Average Variance Extraction (AVE) and Construct Reliability (CR) were executed to confirm the convergent validity (Ho, 2013;Urbach & Ahlemann, 2010). The summarized statistics have been presented in the following table.

Table 1: Results of Average Variance Extraction (AVE) and Construct Reliability (CR)

Factor	Cronbach’s Alpha	AVE	CR
Aspirational Motives (3 items)	0.765	.631	.753
Playful Motives (3 items)	0.712	.642	.783
Intense Attachment (4 items)	0.702	.677	.806
CBR	0.831	.662	.812

All the variables indicate a significant reliability confirming items measure what is intended to measure as it reports more than 0.7 of coefficients values in all the cases (Ho, 2013;Urbach & Ahlemann, 2010). Moreover, AVE values report higher than 0.5 justifying convergent validity.

Additionally, CR values were found higher than 0.7 verifying the convergent validity indicating a sound foundation to interpret the results ahead (Ho, 2013).

Discussions on Regression Models: Aspirational Motives

The results found in the regression model on aspirational motives had been summarized in the Table 2. Accordingly, results had been explained in terms of correlations with CBR whilst justifying the model explanation.

Table 2: Regression Model: Aspirational Motives

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			
					F Change	df1	df2	Sig. F Change
1	.794 ^a	.482	.472	6.13787	17.632	1	198	.000

Statistical analysis indicates that aspirational motives and CBR are highly correlated as R value reports 0.794 whereas P value is less than 0.05. Additionally, adjusted R square indicates 47% of the model is explained by aspirational motives. This is an acceptable logic to confirm the relationship between two variables and significant level of model explanation.

Discussions on Regression Models: Aspirational Motives

The results in relation to the regression model on playful motives had been presented in the in the Table 3. Accordingly, it has explained correlations with CBR whilst justifying the model explanation.

Table 3: Regression Model: Playful Motives

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			
					F Change	df1	df2	Sig. F Change
1	.604 ^a	.482	.372	4.15783	12.602	1	168	.000

The results indicate playful motives and CBR are highly correlated as per the R value reported as 0.604. This is reported with a P value less than 0.05. Thus, it denotes consumers connect with CBR when the endorsement is done by a celebrity who holds strong playful bond with the consumers. Conclusively, playful motives explain 37% of the total model denoting an acceptable level of significant P value (P value is lesser than 0.05).

Discussions on Regression Models: Aspirational Motives

The undermentioned Table 4 presents the regression model on aspirational motives that explains the model with CBR. Alongside, explanation has been presented by verifying the correlation and model explanation.

Table 4: Regression Model: Intense Attachment Motives

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			
					F Change	df1	df2	Sig. F Change
1	.702 ^a	.372	.362	7.41329	15.756	1	187	.000

As per the model summary, intense attachment and CBR exhibit a significant correlation reporting 0.702 of coefficient value whilst P value is significant. Thus, it concludes consumers feel CBR when it satisfies intense attachment or bond with the celebrity who endorses the respective brand. In overall, 36% of variation is explained by this model as per the adjusted R square value indicates. Thus, model reports a better explanation to justify the influence of intense attachment towards CBR.

Summary of Hypotheses Testing

According to the statistical analysis on regressions, undermentioned table concludes the results related to hypotheses testing.

Table 5: Summary of Hypotheses Testing Results

Hypotheses	Correlation	P value	Results
H1: There is a significant relationship between Aspirational motives and CBR	0.794	0.000	Supported
H2: Playful motives and CBR are significantly correlated.	0.604	0.000	Supported
H3: There is a significant relationship between intense attachment motives and CBR	0.702	0.000	Supported

As per the summary presented in the Table 5, this paper verified almost all the three different celebrity worship motives influence customer brand relationship (CBR) behavior. Thus, it denotes emotional bond established between celebrity and consumer acts as a motivational force to develop informational relationship with the endorsed brand.

CONCLUSION

This paper attempted to test how celebrity worship motives (CWM) influence brand related behaviors. Accordingly, CBR was examined as one of the claimed contexts within the brand-related behaviors. CWMs were examined with three different facets namely aspirational, playful and intense attachment. Some authors argue these three facets to be considered as holistic or single construct (Kumara, 2016). However, this study separately examined those three dimensions in relation to CBR. We specifically referred services sector of Sri Lanka as a notable context to test the hypotheses in line with empirical justifications. Results show almost all the three different celebrity worship motives positively and significantly influence CBR. In today's context, celebrity endorsements attributed by source-based and management-based factors (Seno & Lukas, 2007), influence brand related outcomes rather advertising impact. This paper also suggests CWM and effectiveness of those source-based and management-based factors should be examined in extended studies to evaluate how it influences brand evaluations leading to brand-related behaviors (Dissanayake & Ismail, 2015; Kumara, 2016). Thus, it concludes strong emotional bond established with the celebrity influences intensified results on brand related behaviors like CBR. However, we suggest to further examine how CWMs work when celebrities engage with multiple endorsements or over-endorsement scenarios. This may provide interesting finding on how consumers respond or reshape their emotional bond with

celerity who commits over endorsements. Additionally, further research works are encouraged to examine the role of CWM as a mechanism that reshapes or moderates the brand evaluation and brand-related responses. Finally, we admire future studies to focus how intensive celebrity applications result long term brand related results rather limiting to behavioral outcomes within marketing communication perspectives.

Reference

- Becerra, E. P., & Badrinarayanan, V. (2013). The Influence of Brand Trust and Brand Identification on Brand Evangelism, *Journal of Product & Brand Management*, 22(5/6), 371–383.
- Bowden, J. (2009). The process of customer engagement: A conceptual framework, *Journal of Marketing Theory and Practice*, 17(1), 63–74.
- Brakus, J.J., Schmitt, B.H., Zarantonello, L. (2009). Brand Experience: What Is It? How Is It Measured? Does It Affect Loyalty? *Journal of Marketing Research*. 73 (3), pp. 52–68.
- Carroll, B. A., & Ahuvia, A. (2006). Some Antecedents and Outcomes of Brand Love. *Marketing Letters*, 17(2), 79–89.
- Central Bank Report (2017). *Central Bank of Sri Lanka*
- Dissanayake D. M. R, Ismail N. & Pahlevan Sharif, S (2017). Influence of Celebrity Worship Motives on Perceived Brand Evaluation of Endorsed-Brand, *Proceeding of the International Conference on Advanced Marketing*, Vol. 1, 1-9, DOI: <https://doi.org/10.17501/icam.2017.1101>
- Dissanayake D.M.R & Weerasiri R.A.S. (2017). The Impact of Perceived Effectiveness of Celebrity Endorsement on Perceived Brand Personality, *Journal of Accounting & Marketing*, Vol6, 3, 2-9 doi: 10.4172/2168-9601.1000244
- Dissanayake, D.M.R. (2015). Factors Determine the Customer-Celebrity Relationship towards Perceived Celebrity Endorsements: Propositions to Hypothesize Future Studies in Sri Lankan Services Sector, *Sri Lanka Journal of Marketing (SLJM)*, Vol 1, Issue 2, 1-19.
- Dissanayake, D.M.R. & Ismail. (2015). Relationship between Celebrity Endorsement and Brand Attitude: With Reference to Financial Services Sector Brands in Sri Lanka, *Conference Proceedings*, International Conference on Business & Information (ICBI), 1-22.
- Doss,S.K & Carstens,D.S. (2014). Big Five Personality Traits and Brand Evangelism, *International Journal of Marketing Studies*, Vol. 6, No. 3, 13-22.
- Fornell, C. & Larcker D.F.(1981). Structural Equation Models with Unobservable Variables and Measurement Error: Algebra and Statistics, *Journal of Marketing Research*, Vol. 18, No. 3, 382-388
- Ho, R. (2013). *Handbook of univariate and multivariate data analysis with IBM SPSS*. CRC press.
- Hung, K. (2014). Why Celebrity Sells: A Dual Entertainment Path Model of Brand Endorsement, *Journal of Advertising*, Vol. 43, No. 2, 155–166.
- Hung, K., Tse,C.H. & Cheng, S. (2011). “Advertising Research in the Post-WTO Decade in China: Meeting the Internationalization Challenge,” *Journal of Advertising*, 41 (fall), 121-146.
- Ibok, & Ibok,N. (2013). Factors Determining the Effectiveness of Celebrity Endorsed Advertisements: The Case of Nigerian Telecommunication Industry, *American Journal of Business and Management*, Vol. 2, No. 3, 233-238
- Keller, K.L. (2013). *Strategic Brand Management: Building, Measuring and Managing Brand Equity*. Essex: Pearson Education Limited.
- Klaus, P. & Maklan, S. (2007). The role of brands in a service dominated world, *Journal of Brand Management*, 15, 2, pp. 115–122.
- Kumara,W.D. (2016). The Role of Fantasy on the Influence of Effectiveness of Celebrity Endorsements in Evaluating Endorsed-Brands, *Sri Lanka Journal of Marketing*, , Vol 2, No 2, 1-16.
- McCutcheon, Lynn E., Lange,R. & Houran,J. (2002). “Conceptualization and Measurement of Celebrity Worship,” *British Journal of Psychology*, 93 (February), 67-87.
- Seno, D., Lukas, B.A. (2007). The Equity Effect of Product Endorsement by Celebrities: A Conceptual Framework from a Co-branding Perspective, *European Journal of Marketing*, V ol,41 (1/2), 121-134.

Shimp, T.A. (2010). *Advertising Promotion and other Aspects of Integrated Marketing Communications*, 8th Edition, Mason, OH: South Western Cengage Learning.

Urbach, N., & Ahlemann, F. (2010). Structural Equation Modeling in Information Systems Research Using Partial Least Squares, *Journal of Information Technology: Theory and Application*, 11(2), 5-40.

Veloutsou, C. & R. Tsiotsou (2011). Examining the Link between Brand Relationships and Tribal Behavior: a structural model', *Proceedings of the 2011 7th Thought Leaders International Conference in Brand Management*, Lugano, 1-7

Zahaf, M. & Anderson, J. (2008). Causality Effects between Celebrity Endorsement and the Intentions to Buy, *Innovative Marketing*, 4(4), 57-65.

An Analysis of APP for Bonus Point Activity Service Based on Conjoint Model

Li-Chuan Chu

Department of Business Administration,
Nanhua University, Taiwan (R.O.C.)

Che-Pin Liang

Department of Business Administration,
Nanhua University, Taiwan (R.O.C.)

ABSTRACT

Information data application has given rise to significant changes in many industries, and convenience stores have also started to use APP software for the bonus point activity in replacement of the original bonus point operation mode. The issue of how to attract more consumers to use APP for the bonus point activity is a very important research theme for managers of convenience stores. This paper first describes the development background and current situation of the bonus point activity. Next, the various factors and their attributes affecting consumers' behavioral intention to choose to use APP for bonus point service are discussed by adopting conjoint analysis. Finally, management implications are proposed based on the research findings as references for convenience stores.

Keywords: Bonus point activity, FamilyMart, APP, conjoint model

BACKGROUND

The density of convenience stores in Taiwan had surpassed Japan, thus making Taiwan the nation with the highest density in convenience stores in the world. This means that the competition between the convenience stores in Taiwan will be more intense than in other countries (such as Japan, Hong Kong or Shanghai, China). The brands of convenience stores in Taiwan currently include 7-Eleven, FamilyMart, Hi-Life and Circle K. Under fierce competition, many convenience stores are competing with not only other brands of convenience stores but also with their own brand. For example, in the case that a FamilyMart is located across from another FamilyMart (such situation is usually because the commercial zone allows for two convenience stores, so if FamilyMart does not open another shop across the street, it might attract other competitions like 7-Eleven to open one), as convenience store is a franchise business, such competing scenario indicates that the competition between convenience stores in Taiwan is much more intense than other industries.

In an industry with fierce competition, the perfect customer satisfying service quality provided by an enterprise can only count as the ticket for the enterprise to stay in the competition. Customer satisfaction is not enough for an enterprise to truly survive in an intensely competitive environment. Client loyalty is the only correct marketing strategy and management thinking. Brand loyalty refers to consumers' psychological reaction toward a brand they favor. This variable reflects the degree of trust and dependence of consumers toward the brand, and is used to describe the behavioral reaction of favoritism (instead of casualty) consumers express toward a certain brand when making purchase decisions. Loyalty not only describes the behavioral process of consumers but also focuses on their psychological decision-making and evaluation processes. The formation of brand loyalty does not rely

completely on the quality, brand awareness, brand association and spread of products. As it is closely related to the characteristics of the consumers themselves, it also depends on their product using experience. Increment of brand loyalty is extremely important to the survival and development of an enterprise as it is the key to expansion of market shares.

The appearance of Internet technology changed people's life styles dramatically. Applications for online shopping, online auctions, online learning, e-book reading and even interpersonal communications (e.g. LINE and Facebook) have gave rise to brand new transformations in people's living, shopping and communication methods. The popularization of smartphones brought another wave of change, further leading to another wave of appearances of social communication technology and platforms. For example, LINE and Facebook are platforms provided for people to carry out instant, dynamic and diversified interaction and communication with friends by using different communicating methods, such as texts, graphics and voice transmissions, and they have become the most important social communication tools nowadays.

Although bonus point promotion is already the most important marketing strategy of convenience stores, the execution of the activity could still use some improvements. For example, in traditional bonus point promotions, consumers must spend a certain amount of money to receive a sticker and then make exchanges at a convenience store when they have collected enough stickers. Such process may create the following problems:

- Production of stickers requires expenses, which would increase an enterprise's cost.
- Consumers might lose stickers, which would cause inconvenience.
- Employees at convenience stores might forget to give stickers, causing management troubles.

In order to mend the above defects in the method of bonus point promotion, FamilyMart began to use information and communications technology, e.g. the Internet, for optimizing their bonus point activity, hence the launch of APP bonus point activity. This innovative bonus point collecting method has the following features:

- APP for members: display the membership barcode on the APP to be scanned by the clerk when you pay for your purchase and the bonus points will be added to your account.
- Cellphone number of members: if you are a member of FamilyMart, give the clerk your cellphone number when you pay for your purchase and the bonus points will be added to your account.
- FamilyMart Point Card: physical FamilyMart Point Cards are available for non-members; bonus points can be accumulated using the barcode on a Point Card.

As FamilyMart launched the APP bonus point activity¹ in the hope of creating a whole new method for bonus point collection through new technology, thus further analysis on the factors

¹ Regarding the APP bonus point activity launched by FamilyMart, the form of accumulation of its points includes:
(1) Redeem points on member APP: Choose the gift and points that you want to redeem on the APP to yield a redemption code and take the code to the counter of a FamilyMart to exchange for the gift. (Operate on APP)
(2) Redeem points on point card: Consumers who have not completed the point card account entry can only redeem the points from a single point card through FamiPort. (Operate on FamiPort under Point Redemption)
(3) If you have multiple code cards with points that you wish to combine for redemption, you have to become a member of FamilyMart to complete the point card account entry. We strongly suggest card entry for convenient redemption. (Operate on APP or FamiPort under Account Entry)

affecting consumers' use of APP for bonus point collection and the structural relations between these factor is an important issue for managers of FamilyMart convenience stores.

This study will be using the Technology Acceptance Model (TAM) as basis, coupled with the variable of the subjective norm in the Theory of Planned Behavior (TPB), for constructing a behavioral intention model on the factors influencing consumers' use of FamilyMart APP bonus point collection service. The objectives of this study are as follows:

- Discuss the development of FamilyMart's bonus point activity and the methods and current situation of APP bonus point activity
- Through conjoint analysis, discuss the factors influencing consumers' behavioral intention toward using APP bonus point service, and further make suggestions for related marketing strategies

CASE STUDY ON CURRENT SITUATION OF BONUS POINT COLLECTION ACTIVITIES

Convenience stores started development in Taiwan in 1978, and because there were numerous retail stores of different types (such as wholesale stores, supermarkets, discount stores, department stores, etc.) and mutual competition existed between them, convenience stores needed continuously innovative ideas for customer attraction to stand out in the competitive market. 7-Eleven took the leading imitating Japan's concept of bonus point marketing in April of 2005 and launched the first bonus point promotion in Taiwan – receive a Hello Kitty 3D magnet for purchase of NTD 77, thus began the bonus point collection trend in Taiwan. The following are a few commodities exchange method seen commonly in FamilyMart's bonus point activities:

- Gift with purchase: receive a free gift with purchase of a designated amount or designated commodity. In the initial period of a bonus point promotion, most convenience stores adopt the method of "gift with purchase". For example, FamilyMart followed the steps of 7-Eleven in October of 2005 and launched the "MSN Emotions" activity, through which consumers received an MSN Emotion Magnet with purchase of NTD 75.
- Gift with bonus points: including free redemption and bonus points with additional purchase price. Promotions in the latter period mostly fall under this category, in which there are usually two redemption methods for the same commodity. Take the "Gudetama Delightful Delicacies" activity launched by FamilyMart in June of 2006 for instance, 1 point is given for every NTD 69 of a single purchase (tobacco product not included) and you can receive a free Gudetama squishy toy by redeeming 50 points or by redeeming 4 points plus NTD 69. This not only offers consumers more diversified ways for acquiring points and gifts, but also decreases the difficulty in bonus point collection.
- Additional purchase price: reach the threshold of the activity to purchase with a designated special price. Take the additional purchase price of FamilyMart's "Let's Café Aranzi" activity on August 19, 2015 for example, buy two or more cups of coffee and you can take the Aranzi's Cute Memo Notepaper home for an additional purchase price of NTD 29. This type of activity is usually shorter than the "gift with bonus points" activity and lasts for about one month.

Statistics are gathered, according to the promotions launched by FamilyMart from June of 2005 to August of 2015, on the redemption methods commonly seen in FamilyMart's bonus point collection activities, as shown in the analysis: (1) When FamilyMart launches a bonus point promotion, the "gift with purchase" method is mainly adopted for the early period, the "gift with bonus points" method takes the lead in the latter period, and the "additional purchase price" method is available throughout the promotion. Consumption limitations are mostly

applied for activities of certain series of products. For example: FamilyMart's Let's Café series are mostly this type of activity. (2) The number of FamilyMart's bonus point activities is increasing year by year with shorter interval periods and more concentrated activities, thus it can be deduced that bonus point promotions nowadays have become a

The threshold of FamilyMart's bonus point activity has changed constantly ever since bonus point collection was introduced in Taiwan in 2005. The amount of the "gift with purchase" method in the early period was mostly set at NTD 66 and NTD 75. The reason for establishing such thresholds was because the acceptance of consumers was not very definite when bonus point promotion was first launched, so an amount was added to the average consumption amount that consumers spend in convenience stores as the threshold of activities. Therefore, consumers only had to buy one more small item to earn one point, which was within the range of acceptance. Besides, bonus point promotion was a newly launched activity and consumers tend to go with new flows. In other words, the decision of the amount of consumption threshold is made in the hope of increasing the average transaction value of the store through the activity, and when the activity takes effect, it will enhance the overall operation of the store.

It was mentioned in the above analysis, the "gift with bonus points" method was the major redemption method in the latter period of a bonus point promotion. The threshold of the bonus point collection activity dropped from NTD 50 to NTD 40 and then gradually settled at NTD 69. The reason for such a great difference was deduced to be because, while FamilyMart was pushing bonus point promotions, firms were simultaneously testing consumers' acceptance toward the thresholds of the activities. Sometimes FamilyMart would launch more interesting projects for holidays and festivals. For instance, FamilyMart released the New Year Limited Edition of Crystal Ball in February of 2013 and consumers could acquire one product with every purchase of NTD 88 plus an additional purchase price of NTD 102. The pronunciation 88 is similar to "fa fa (become rich)" in Chinese, so it meant that "the entire family (the name of FamilyMart in Chinese)" would become rich that year, i.e. 2013. The promotion was launched based on the New Year's atmosphere, cleverly combining the holiday with marketing.

Regarding the "additional purchase price", as bonus point promotion gradually reaches climax in the latter period, the competition between firms become more intense and there are more types of gifts, which not only lowers risks but also provide consumers with more exquisite and diversified choices. The gifts are no longer limited to magnetic toy collectibles but have extended to include bolsters, pitchers, etc. The products are more refined, so the price eventually rises, and this is also a reason for the expansion in price changes. The products available for the "additional purchase price" activity are usually particular commodities. For example, in the activity held in January of 2015, if you spent NTD 50 on fresh foods, you could buy a set of Gudetama tableware for an additional purchase price of NTD 149.

The product types of FamilyMart's bonus point collection activity are analyzed at six-year intervals in the following: the gifts in the early period of bonus point promotion are mostly toys, which might be because the commodities sold at convenience stores in the past were mainly candies and cookies for customers were mostly children. It was easy to deduce what children favored, so magnets, charms and action figures of popular cartoon characters were highly accepted. FamilyMart was unfamiliar with children's likes and habits when bonus point promotion was first launched, so it decided to test the waters by focusing on children and the results apparently caused a trend. Gifts in the latter period of were mainly based on household items, such as bolsters, tea sets, tote bags, etc. As the consumer orientation gradually shifted

from children to young females, the practicality and quality of gifts were valued more. Regardless the period, stationery has always ranked second.

Bonus point promotion has been implemented for over a decade and all convenience stores use stickers as media for redeeming points. Traditional sticker points were easily lost in the past so about 30-35% of them were not redeemed every year. In addition, there were unscrupulous vendors buying in bulks and forcing up prices on the Internet, resulting in unfair collection of bonus points. Furthermore, the management of sticker issuance consumed a massive amount of labor power. Thus, FamilyMart started finding and planning alternative solutions years ago. Since smartphones have popularized these years, FamilyMart invested a budget of NTD 10 million in the promotion of APP bonus point collection in 2015, which was officially launched on April 16, 2016.

RESEARCH METHOD

A question often encountered in market research is: Among the products or services under study, products with which properties are most welcomed by consumers? A product usually possesses multiple features, such as price, color, style, specific function, etc. What is the degree of significance of each characteristic to consumers? Under the same opportunity cost, products with which features tend to earn more consumer satisfaction? In order to solve this kind of questions, traditional market study methods can only carry out qualitative research as it is difficult to give quantitative answers. Conjoint analysis is a market research method created for these needs (Green and Srinivasan, 1978).

Conjoint analysis, also referred to as multi-attribute compositional model or stated preference analysis, is a diversified method of statistical analysis created in 1964. Though conjoint analysis was not originally designed for marketing research, it was introduced into the field soon after its proposal for analyzing the influence of products' multiple attributes on consumers' purchase decision. Conjoint analysis is a statistical analysis approach used for assessing the relative importance of different traits to consumers and the effectiveness of different attribute levels (Green and Srinivasan, 1990). The information required by this method is acquired from the overall preference determination (the scale of measurement for desire, purchase intention, preferences, ranking, etc.) of consumers toward products or services and consumers' overall evaluation of different attributes and their levels. Conjoint analysis (also referred to as interactive analysis or multi-attribute compositional model) is a theory of multi-variant analysis developed by psychologist Luce and statistician Tukey in 1964 (Hauser & Rao, 2002). It is a statistical analysis approach used for assessing the relative importance of different traits to consumers and the effectiveness of different attribute levels. Though conjoint analysis was not originally designed for marketing research, it was introduced into the field soon after its proposal for analyzing the influence of products' multiple attributes on consumers' purchase decision. A question often encountered in market research is: Among the products or services under study, products with which properties are most welcomed by consumers? A product usually possesses multiple features, such as price, color, style, specific function, etc. What is the degree of significance of each characteristic to consumers? Under the same cost, products with which features tend to earn more consumer satisfaction? In order to solve this kind of questions, traditional market study methods can only carry out qualitative research as it is difficult to give quantitative answers. Conjoint analysis can develop related combinations of service features and solutions for these needs to investigate the overall preference determination (the scale of measurement for desire, purchase intention, preferences, ranking, etc.) of consumers toward products or services and consumers' overall evaluation of different attributes and their levels to obtain the information required (Smith and Fennessy, 2011).

DATA COLLECTION AND ANALYSIS RESULTS

Data is gathered through online survey, of which the term was from September to October of 2017. A total of 847 valid surveys were collected, among which 30.5% was male and 69.5% was female. In the aspect of year, sophomores had the highest ratio (44.5%), followed by seniors (21.7%), and those of freshmen and juniors are 17.1% and 16.6%, respectively. As for the location of residence, the north had the highest ratio (64.3%), followed by the south (14.0%), and those of the middle and the east are 10.5% and 11.1%, respectively. In the aspect of blood type, type O had the highest ratio (37.8%), followed by type B (29.2%), and those of types A and AB are 23.8% and 9.2%, respectively. The College of Liberal Arts accounts for 49.1%, the College of Science and Engineering accounts for 9.7%, the College of Management accounts for 29.2%, and the other colleges account for 12%. In regard to experience in bonus point activities of convenience stores, the ratio of two years of experience is 12.8%, above four years is 27.6%, three years is 6.3%, and one year or under is 49.1%. Respondents who believe they are early users of new technology or new products or services account for 9%, those who believe they are early majorities account for 49.4%, and the ratios of laggards and late majorities are 28.7% and 13%, respectively.

Regarding the reasons for collecting bonus points, 71.9% of the respondents replied it was because they liked the gift, 16.4% of them were because they were collecting the bonus point for others. As for the frequency of participation in bonus point activities, 24.9% of the respondents participated occasionally, and 30.8% of them were uncertain (depending on gifts). In the aspect of APP bonus point collection, 19% of the respondents are already using the APP, and 35.7% of them have a high chance of using it in the future; as for the reasons for not using the APP for collecting bonus points, 29.5% of the respondents were not aware of the matter, and 35.7% of them thought it was troublesome. With regard to preferred gifts of bonus point activities, the most popular gifts are action figures (26.2%), followed by 3C items (22%) and cups and plates (21.7%), and the ratios of stationery and drinks are 16.4% and 12.8%, respectively.

Based on FamilyMart's bonus point APP service and the strategic portfolios established in the research, this study adopts the method of conjoint analysis to discuss the structure of preferences of consumers toward the marketing strategies of APP bonus point service provided by FamilyMart. This study generalized seven levels based on three strategies, i.e. gifts, bonus points and lucky draws, adopted the full-concept approach to acquire information on respondents' overall preferences, and applies the orthogonal arrangement design to reduce the number of test subjects. Conjoint analysis is carried out with the data gathered from a questionnaire which was filled out by 847 respondents. The results indicate that Pearson's R is 0.997 and Kendall's Tau is 1, which are both greater than 0.5, meaning that the goodness of fit between the conjoint analysis model and information is very high (Hair et al., 1998) so the results of the analysis are reliable. The attributes' degree of significance and part-worth utilities determined according to the results of conjoint analysis are shown in Table 1.

Table 1: Results of conjoint analysis of integral respondents

Strategic Attributes	Significance	Level	Part-worth Utility
Gift strategy X	43.76%	X1: One small latte	0.306
		X2: One small Coca-Cola	-0.102
		X3: Two tea eggs	-0.204
Bonus point strategy Y	26.85%	Y1: Earn 300 points for first time accumulation on APP	0.45
		Y2: Earn 50 Line sticker points for first time accumulation on APP	-0.45
Lucky draw strategy Z	29.39%	Z1: Accumulate on APP five times to draw for 30 small lattes (a limit of 200 customers)	0.711
		Z2: Accumulate on APP five times to draw for iPhone SE (a limit of 10 customers)	-0.711

In the aspect of degree of significance, the rank of the three strategies ordered by the integral respondents is as follows: gift strategy (43.76%), lucky draw strategy (29.39%) and bonus points (36.84%). Generally speaking, the difference between lucky draw and bonus points is slight, while the gift strategy is the marketing tactics valued most by consumers. Besides importance, the attributes' part-worth utilities of levels are also substantial results of conjoint analysis. The part-worth utilities in Table 6 refer to the degree of preference of consumers toward the levels of the marketing strategies provided by convenience stores (the constant term is 4.424). Regarding the gift strategy, consumers prefer the strategy of "One small latte", and the gift least favored gift is "Two tea eggs"; as for the bonus point strategy, consumers preferred "Earn 300 points for first-time accumulation on APP" and least favored "Earn 50 Line sticker points for first-time accumulation on APP"; the most preferred lucky draw strategy is "Accumulate bonus points five times to draw for 30 small lattes (a limit of 200 customers)".

This study constructed five different marketing strategies according to varying strategic attributes (as shown in Table 2), and calculated the scores, max utilities and BTL (Bradley-Terry-Luce)² of individual strategies separately (Green and Srinivasan, 1990; Auty, 1995) for analysis. It can be determined from the results of analysis that the APP bonus point promotion most favored by integral respondents is Strategy A, which consists of "gift strategy: one small latte; bonus point: earn 300 points for first time accumulation on APP; lucky draw: accumulate on APP five times to draw for 30 small lattes (a limit of 200 customers)", and the total part-worth utility is 5.89. In addition, we also carried out conjoint analysis on different groups. The classification criteria of these groups are gender and acceptability of new technology or service. The former is divided into male and female, while the latter into early user, early majority, late majority and laggard. The results of conjoint analysis parameters of the different groups are shown in Table 3 and Table 4.

The results of cluster analyzing according to gender revealed that both genders cared more about the attribute of gift, but it was more significant to females. Furthermore, males had higher scores in the significance of the lucky draw feature. Regardless the gender, the scores for the significance of strategic attributes ordered from highest to lowest were: gifts, luck draws and bonus points. Based on the acceptability of new technology, we divided consumers

² Max utility: if it is assumed that consumers only buy products with max utilities, then the probability of decision making is the number of respondents predicted to choose the portfolio divided by the total number of respondents. BTL model: under the assumption that the probability of a product being selected is the linear function of utility, then the rate of utility brought by the product and the probability of consumers buying various products are directly proportional, and the probability of decision making is the ratio of the portfolio utility to all simulation observations. Logit model: similar to BTL model but the utility program is replaced by its natural algorithm.

into four groups: early user, early majority, late majority and laggard. We discovered from the results of cluster analysis that early users' rank of significance of strategic attributes was: gifts, bonus points and lucky draws. Such order is slightly different from the other clusters (of which the order is gifts, lucky draws and bonus points), which is a finding worth to be referred to by marketing executives.

Regarding the cluster analysis of gift feature, both genders preferred "one small latte"; females clearly did not reject "one small Coca-Cola" while males favored it least but were acceptable with "two tea eggs". As for the early user group, they preferred "two tea eggs" the most, followed by "one small latte", which is the same as the laggard group. The early majority group preferred "one small latte" the most, followed by "one small Coca-Cola" and then "two tea eggs". All clustered had the same preferences for the attributes of gifts and lucky draws: "earn 300 points for first time accumulation on APP" and "accumulate five times to draw for 30 small lattes (limited to 200 customers)".

Table 2: Preference probability of simulated strategies

Marketing Strategy		Utility	Max Utility	BTL	Logit
Strategy A	X1: One small latte	5.89	46.4%	22.5%	25.6%
	Y1: Earn 300 points for first time accumulation on APP				
	Z1: Accumulate on APP five times to draw for 30 small lattes (a limit of 200 customers)				
Strategy B	X2: One small Coca-Cola	5.48	28.5%	20.9%	22.4%
	Y2: Earn 50 Line sticker points for first time accumulation on APP				
	Z2: Accumulate on APP five times to draw for iPhone SE (a limit of 10 customers)				
Strategy C	X3: Two tea eggs	5.38	24.1%	20.5%	21.2%
	Y1: Earn 300 points for first time accumulation on APP				
	Z1: Accumulate on APP five times to draw for 30 small lattes (a limit of 200 customers)				
Strategy D	X1: One small latte	4.99	22.2%	19.0%	20.7%
	Y2: Earn 50 Line sticker points for first time accumulation on APP				
	Z1: Accumulate on APP five times to draw for 30 small lattes (a limit of 200 customers)				
Strategy E	X3: Two tea eggs	4.47	4.1%	17.0%	10.1%
	Y1: Earn 300 points for first time accumulation on APP				
	Z2: Accumulate on APP five times to draw for iPhone SE (a limit of 10 customers)				

Table 3: Results of conjoint analysis (cluster analysis)

Strategic Attribute	Gender		Clustering by new technology or new service			
	Male	Female	Early User	Early Majority	Late Majority	Laggard
X	39.68%	45.12%	45.32%	45.43%	39.07%	44.38%
Y	26.79%	25.78%	30.91%	25.08%	27.59%	23.78%
Z	33.53%	29.00%	23.77%	29.49%	33.34%	32.34%
Pearson's R	.987	.998	.972	.997	.996	.973
Kendall's tau	.929	.929	.909	1.000	.909	.857

Table 4: Part-worth utility of the groups in conjoint analysis

	X1	X2	X3	Y1	Y2	Z1	Z1	constant
Male	0.226	-0.387	0.161	0.462	-0.462	0.670	-0.670	4.443
Female	0.338	-0.065	-0.273	0.313	-0.313	0.693	-0.693	4.416
Early User	0.193	-0.478	0.285	0.704	-0.704	0.382	-0.382	4.452
Early Majority	0.531	-0.161	-0.370	0.505	-0.505	0.666	-0.666	4.367
Late Majority	0.058	-0.051	-0.006	0.065	-0.065	0.736	-0.736	4.486
Laggard	0.061	-0.198	0.138	0.211	-0.211	0.859	-0.859	4.485

CONCLUSION AND SUGGESTIONS

The competition between convenience stores in Taiwan is intense, so how to ensure market share through loyalty programs has become an important managerial task for convenience store operators, and increasing consumers' repurchase rate by holding bonus point collection activities has become the most important marketing event for convenience stores in Taiwan. FamilyMart is the first to offer bonus point collecting on APP. In addition to diversifying bonus point activities, the method of APP also allows convenience stores to gather consumption information on members for further mass data analysis in the future. This study describes the types and current situation of the APP bonus point collection service of FamilyMart, and constructs the factors influencing consumers' in their choice of APP marketing activities by using the method of conjoint analysis.

In the aspect of strategic attributes, the results of analysis conducted after the degrees of significance were ranked indicated that "gift" was the feature most favored by consumers, followed by "lucky draw" and "bonus point". As for gifts, the order of consumer preferences was "one small latte", "one small Coca-Cola" and "two tea eggs". For the attributes of "bonus point" and "lucky draw", the types favored the most by consumers were "earn 300 points for first time accumulation on APP" and "accumulate on APP five times to draw for 30 small lattes (a limit of 200 customers)". We discovered from the analysis on different strategic portfolios that the marketing portfolio with the highest score was: "gift strategy: one small latte; bonus point: earn 300 points for first time accumulation on APP; lucky draw: accumulate on APP five times to draw for 30 small lattes (a limit of 200 customers)". The analyses of max utility, BTL and Logit all indicated that this was the most popular strategic portfolio among consumers. In addition, this study found through cluster analysis that people of different genders or market segmentations vary in their preferences for different attributes and approaches of the activity. Thus, we suggest, when establishing marketing tactics, the marketing executives of convenience stores should consider the traits of the targets (e.g. male or female, early user or late majority) of each marketing activity to make plans for APP bonus point collecting events.

References

Auty, S. (1995). Using Conjoint Analysis in Industrial Marketing. *Industrial Marketing Management*, 24(3), 191-206.

Green, P. E., Krieger, A. M., & Wind, Y. J. (2001). Thirty Years of Conjoint Analysis: Reflections and Prospects. *Interfaces*, 31(3), 56-73.

Green, P. E., & Srinivasan, V. (1978). Conjoint Analysis in Consumer Research: Issues and Outlook. *Journal of Consumer Research*, 5(9), 103-123.

Green, P. E. & Srinivasan, V. (1990). Conjoint Analysis in Marketing: New Developments with Implications for Research and Practice. *Journal of Marketing*, 54(4), 3-19.

John R. H. & Rao R. (2002). Conjoint Analysis, Related Modeling, and Applications. *Marketing Research and Modeling: Progress and Prospects*, 4, 141-168.

Smith, K. F., & Fennessy, P. F. (2011). The use of conjoint analysis to determine the relative importance of specific traits as selection criteria for the improvement of perennial pasture species in Australia. *Crop and Pasture Science*, 62 (4), 355-65.



The Influence Of Perceived Desirability, Perceived Feasibility, Perceived Accessibility To Decision To Choose Through The Intention To Choose Of Politechnic In East Java

Kunto Eko Susilo

Doctoral Student of Economics
University of 17 August 1945 Surabaya

Ujjianto

University of 17 August 1945 Surabaya

Sigit Sardjono

University of 17 August 1945 Surabaya

ABSTRACT

The government of Indonesia have attempted to encourage the growth of Polytechnic in Indonesia both public and private politechnic to anticipate the implementation of AFTA, but the phenomenon that occurs is various public perception of Polytechnics influence the decision to choose Polytechnic, especially in East Java. The study was conducted to examine the effect of Perceived Desirability, Perceived Feasibility, Perceived Accessibility to Decision To Choose Through Intention To Choose Polytechnic In East Java. There are 34,981 students of Polytechnic, with Slovin's formula among 395 students were taken with proportional random sampling method from Students of Polytechnic in 10 cities in East Java. This explanatory research using Structural Equation Modeling (SEM) method to analyze data with AMOS Software, version 22. The data analysis with SEM resulted that Perceived Desirability has significant influence to intention to choose, Perceived feasibility has significant influence to intention to choose, Perceived accessibility hasn't significant influence to intention to choose, and the last one is intention to choose a significant influence to the decision to choose. The hypothesis proved through data analysis with SEM, there are findings that Perceived accessibility hasn't significant influence to intention to choose Polytechnic in East Java which isn't in accordance with Hypothesis, and it can be interpreted that the tendency of Polytechnic Students in choosing Polytechnic isn't supported by enabling environment factor of politechnic, the ability to access facilities and places, utilization of adequate facilities, and the development of politechnic infrastructure by the government.

Keywords: Polytechnic, Perceived Desirability, Perceived feasibility, Perceived Feasibility, Perceived accessibility, intention to choose, decision to choose..

INTRODUCTION

There are public and private Polytechnic as many as 27 Polytechnics in East Java, Indonesia, there're 14 public Polytechnic and 13 Private Polytechnic with the number of Students in 2016 as many as 34,981 Students and there is a decrease in 2017 that is as many as 33,446 Students. The number of public and Private Polytechnics is only about 7.6 per cent of the Higher Education in East Java, and proves that the targets expected by the Indonesian government that will increase the number of Polytechnic as much as 70 percent compared to 30 percent of other forms of Higher Education are still far from expectations.

Encouragement of people intention to proceed to the Polytechnic will be a challenge for government in order to improve the educational quality and the facilities. The internal factor that influences to the intention is understanding to polytechnics and vocational programs that are manifestations of individual attitudes, and the influence of the family environment that includes parents, relatives, and close friends.

The Internal factors that influence the intention is their confidence that the same position between Polytechnic and University. The internal factors be supported by the theory that the personal behavior affected by behavior intention. And the intentions behave influenced by three components: (1) attitude, (2) subjective norm and (3) perceived behavior control, Ajzen (1991 : 35). It is important from the empirical facts and the theory of TPB (Theory of Planned Behavior) it shows that the influence of internal factor are attitude, subjective norm and perceived behavior control influence to the behavior intention.

The external factor that influences is as so far as personal able to access the location or object, so this concept then says as perceived accessibility. The influence of perceived accessibility to the intentions to choose Polytechnics are the same idea that Perceived accessibility is a measure of convenience to get the location or object, that's idea in line with previous research, Black (2001:23).

Theory of Planned Behavior (TPB) discussing the behavior of many individuals who emphasized that each individual's behavior certainly begins with the intention, where intentions more influenced by internal factors that are psychological factors such as attitude and subjective behaviors that are the proxy of Perceived Desirability, and self efficacy which is a proxy of Perceived Feasibility. This research is supported by research of Baharu Kemat AlHaj (2011) . The external factors that also influence to the intention behavior is not much to discuss in particular and this is the uniqueness and novelty presented at the research undertaken. That external factors is the level of accessability (perceived accessibility).

From the empirical facts and the previous researchers, that there has been no research that discusses intention to choose is influenced by factors of perception directly (perception of desire and perception of reliability) and indirect (perceived accessibility), so the issues discussed are the novelty of this research.

LITERATURE REVIEW AND HYPOTHESIS

The Relationship Between Perceived Desirability to Intention to Choose

Perceived Desirability is a variable that directly and actively influences individual beliefs to encourage intention to behave, then called as internal influences. Krueger and Brazeal (2005 :22), Perceived desirability includes two Theory of Planned Behavior those are attitude toward the act and social norms, which are factors that affect the intention of individual behavior. So that from the opinion mentioned above can be said that behavior intention influenced by Perceived Desirability. When Perceived Desirability stronger influence of behavior to choose the more powerful influence on behavior intention to choose.

The relationship between perceived Feasibility to intention to choose

The most critical actor of individual behavior is that behavior is influenced by the behavioral intention of that particular behavior. behavior intention influenced by three components namely attitude, norm norm and norm perceived behavior control. Ajzen (1991 : 46), states that one can have various beliefs about a behavior, but when confronted with a particular event, few of these beliefs arise to influence behavior , it is this belief that stands out

in influencing the behavior of the individual, individual beliefs that arise are often called self efficacy. Vroom (2006), explains the theory of hope that is how someone actually chooses the results that best suits his wishes or expectations. Hope is analogous to efficacy themselves commonly used as a measure or indicator to predict individual motivation. The model developed by Ajzen and Shapero (2005), that self efficacy as proxy to perceived feasibility which is an important predictor of intention to behave. So from the theory presented by the above experts it can be seen that perceived feasibility influence on intention to choose, the higher influence of perceived feasibility factor then intention to choose will be stronger.

Relationship between Perceived Usefulness to intention to choose

Perceived Usefulness is a variable that is formed as the effect of environmental factors that indirectly and passively can affect individual beliefs that encourage intention to behave, which then can be called with external factors. Perceived Usefulness describes the extent to which a person believes that utilizing the means or technology will improve performance. Thompson et. al (1991) concluded the benefits of information technology is a benefit expected by users of information technology in carrying out the task. Thompson (1991) also mentioned that individuals will use information technology if the person knows the benefits or usefulness (positiveness) positive for its use. World e-commerce that Perceived Usefulness adding consumer confidence about the extent to which it will get better if doing onlinetransactions with a particular website (Kim et al, 2007). Individuals who find it easier to use the internet, will find it easier to benefit from the technology. So it can be said that Perceived Usefulness encourage the behavior of one's intention, the more useful a means to the individual it will have a big effect on intention buying behavior. So from the opinion mentioned above can be said that behavior intention influenced by variable of Perceived Usefulness. The stronger Perceived Usefulness ber of behavior to choose the more powerful influence on behavior intention to choose.

Relationship between perceived Accessibility to intention to choose

Factors that indirectly affect perceived accessibility drives are the ability of individuals to access an object or means. Ni at behave, of course, individuals are based on some consideration of certain considerations based on information and experience gained including access to reach certain locations, as proposed by Private and Irawan (2003). Location affects strategic dimensions, such as flexibility, competitive positioning, demand management, and focus strategic (Tjiptono and Chandra, 2005). So from perceived accessibility as the product of information and experience gathered by the individual encourages behavioral intention to decide to buy. So from the opinion mentioned above can be said that behavior intention influenced by variable perceived accessibility. The stronger perceived accessibility ber of behavior to choose the more powerful influence on behavior intention to choose.

The Relations between intention to Decision

Howard and Sheth (2008: 54), that buying intention as a possibility of a consumer planning to buy a certain product at a certain time period and it happens after the consumer keeps relevant information to determine the buying decision. Before the occurrence of a behavior, there are things that become the main predictor in determining the buying decision, namely intention as suggested by ajzen (2005). Intention (intention) is the antecedent of the behavior of individuals to decide to buy, it is explicitly disclosed in the Theory of Planned Behavior that decisions taken by individual purchase is preceded by intention impulse to buy. Then the individual in making the decision is influenced by the intention, the stronger the impulse to buy intention then the stronger the individual confidence to take a buying decision.

Hypothesis

1. Perceived Desirability has significant influence on intention to choose Polytechnic in East Java (H1).
2. Perceived feasibility has a significant effect on intention to choose Polytechnic in East Java (H2).
3. Perceived accessibility has a significant influence on intention to choose Polytechnic in East Java (H3).
4. Intention to choose has a significant influence on the decision to choose Polytechnic in East Java (H4).

Research Model (see Figure 1).

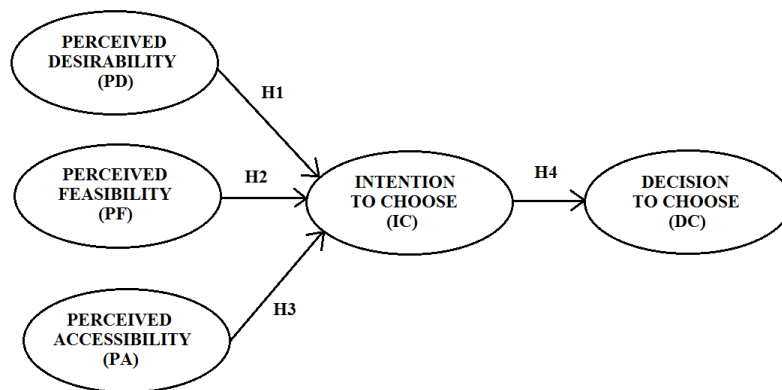


Figure 1. Research Model

RESEARCH METHODE

This research is conducted by proving and analyzing the influence of perceived desirability, perceived feasibility, perceived usefulness, perceived accessibility to decision to choose through intention to choose, Polytechnic in East Java, against 34,981 Polytechnic Students of the Class of 2016 in East Java. With Slovin formula, samples were taken as many as 395 Students with Proportional Random sampling method from Polytechnic Students in 10 Cities / districts in East Java. This explanatory research using Structural Equation Modeling (SEM) method to analyze the data.

ANALYSIS AND DISCUSSION

The result of good-fit analysis shows that all suitability of model gives index according to the recommended (fit), see table 1.

Table 1: Conformity Index Model on Structural Model

<i>Goodness of fit measure</i>	<i>Index</i>	<i>Cuf off</i>	Description
Chi-Square of estimate model	1080,656		
Probability level	0,057	> 0,050	Good
DF	2,255	≥ 2,000	Good
Goodness of Index (GFI)	0,947	≥ 0,900	Good
Adjusted goodness of index (AGFI)	0,953	≥ 0,900	Good
RMSEA	0,076	≤ 0,080	Good
Tucker-Lewis Index (TLI)	0,981	≥ 0,900	Good
Comparative fit Index (CFI)	0,958	≥ 0,900	Good

Using structural equation modeling, then data is analyzed and the result as below, see table 2:

Table 2: The result of Analysis using SEM

Effect		CR	Sig	Information
Perceived Desirability	→ Intention to Choose	2,970	0,003	Significant
Perceived Feasibility	→ Intention to Choose	3,078	0,002	Significant
Perceived Accesability	→ Intention to Choose	-1,932	0,053	Not Significant
Intention to Choose	→ Decision to Choose	9,240	0,000	Significant

1. Perceived Desirability has significant effect on Intention to Choose. The result of parameter estimation of Perceived Desirability to Intention to Choose based on indicators shows significant result with value CR = 2,970. This value is greater than 1.96 with a significant value of 0.003 smaller than 0.05 ($p < 0.05$). This means that there is influence between Perceived Desirability to Intention to Choose.
2. Perceived Feasibility significantly impacts Intention to Choose. The result of parameter estimation of Perceived Feasibility to Intention to Choose based on indicators shows significant result with value of CR = 3,078. This value is greater than 1.96 with a significant value of 0.002 smaller than 0.05 ($p < 0.05$). This means that there is influence between Perceived Feasibility to Intention to Choose..
3. Perceived Accesability significantly affects Intention to Choose. The result of parameter estimation of Perceived Accesability to Intention to Choose based on indicators shows insignificant result with CR value = 1,932. This value is smaller than 1.96 with a significant value of 0.053 greater than 0.05 ($p < 0.05$). This means there is no effect of Perceived Access to the Intention to Choose.
4. Intention to Choose has significant effect on Decision to Choose. The result of parameter estimation of Intention to Choose to Decision to Choose based on indicators shows significant result with CR = 9,240. This value is greater than 1.96 with a significant value of 0.000 smaller than 0.05 ($p < 0.05$). This means that there is influence between Intention to Choose against Decision to Choose.

SUMMARY

1. The influence of Perceived Desirability on Intention to Choose. Based on the results of hypothesis testing, proving that Perceived Desirability has a significant influence on intention to choose of polytechnic in East Java. The conclusion that can be drawn is in general is the intention to choose polytechnic in East Java can be influenced by Perceived Desirability to Polytechnic Students in East Java.
2. The influence of Perceived Feasibility on Intention to Choose. Based on the results of hypothesis testing, proves that Perceived Feasibility has a significant influence on intention to choose of polytechnic in East Java. The conclusion that can be drawn is in general is the intention to choose polytechnic in East Java can be influenced by Perceived Feasibility to Polytechnic Students in East Java.
3. The effect of Perceived Access to Intention to Choose. The conclusion that can be drawn is that in general is the intention to choose polytechnic in East Java is not influenced by Perceived Accesability to Polytechnic Students in East Java.
4. The Intention to Choose Effect on Decision to Choose. Based on the results of hypothesis testing, proves that the intention to choose polytechnic in East Java has a significant influence on Decision to choose polytechnic in East Java. The conclusion that can be drawn is that in general the Decision to choose polytechnic in East Java is influenced by intention to choose in Polytechnic Students in East Java.

LIMITATION

The results of this study there are some limitations, namely:

1. On the scale of data measurement used is interval data, still possible using ordinal data to produce accurate data, the population used is still the coverage of East Java area so that the coverage area of research can be developed with broader coverage of the National scale because the data in web ministry of higher education needs data that support research can be accessed, but with a very large population hence constrained by sampling, because the questionnaire should be submitted directly to the respondents whose numbers would be quite a lot.
2. Research conducted refers to the theory of experts in the form of textbooks and empirical facts of research results in the form of journals, both national journals and international journals. For perceived desirability and perceived feasibility is quite a lot of textbooks and supporting journals, but for the theory of perceived accessibility the references are very limited.

BIBLIOGRAPHY

- Ajzen, I., 2005, *Attitudes, Personality and Behavior*. New York. USA: Open University Press.
- Assael, H., 2008, *Consumer Behavior and Marketing Action 6th edition*. New York: International Thomson Publishing.
- Corsini, Ray. 2002. *The Dictionary of Psychology*. London: Brunner/Rout Ledge.
- Dann, Stephen., 2005, "The Marketing Mix Matrix. Australian National University." *Global Journal of Manajement and Business Research*,: 109-102.
- Davis, F. D. 1989. *Perceived Feasibility, perceived ease of use, and user acceptance of information technology*. *MIS Quarterly*. Vol. 13 No. 3. h. 319-40.
- Hisrich, R.D, Peters, M.P ., & Shepherd, D.A 2008. *Entrepreneurship: Mc Graw hill International edition*
- Icek Ajzen, 1991, *The Theory Of Planned Behavior, Organizational Behavior And Human Decision Processes* 50, 179-211, University Of Massachusetts At Amherst, USA.
- Ivy, Jonathan. "A New Higher Education Marketing Mix: The 7Ps for MBA Marketing." *The International Journal Of Education Management*, 2008: 288-299.
- Kim, D. J., Ferrin, D. L., dan Rao, H. R., 2007. *A trust-based consumer decision Making model in electronic commerce: The role of trust, perceived risk, and their antecedents, Proceedings of Ninth Americas Conference on Information Systems*, pp157-167. L. Margherio, *The Emerging Digital Economy*, U.S. Department of Commerce, Washington, D.C., 1998.
- Shin, Sohyoun. "Decomposed Approach of Market Orientation and Marketing Mix Capability: Research on Their Relationships with Firm Performance in the Korean Context." *Journal International Business Research*, 2012.
- Stanton, William J., 2009. *Marketing principles, 7rd edition*, NY
- T. Ramayah, Joshua Ignatius, 2016, *Impact of Perceived Feasibility, Perceived ease of use and Perceived Enjoyment on Intention to shop online*, *International Journal*, Malaysia.
- Taoufik Yatribi, 2016, *Application of Krueger's Model in Explaining Entrepreneurial Intentions among Employees in Morocco*, *International Journal of Human Resource Studies*, ISSN 2162-3058, Vol. 6, No.2.
- Thompson, Ronald L, Haggings, Christoper A., dan Howell, Jane M., 1991 "Personal Computing: Toward a Conceptual Model of Utilization", *Mis Quarterly*, pp.125-143.
- Tjiptono, Fandy & Chandra, Gregorius., 2005, *Service Quality & Statisfaction*. Edisi II. Yogyakarta: Penerbit Andi.



The Influence of Organizational Commitment, Conflict Resolution Skills, Safety Climate for Safety Accidents On Manufacturing Industry in East Java Province.

M. Yusuf Arnol

Faculty of Economic and Business,
17 Agustus 1945 Surabaya University, Surabaya, Indonesia

Ida Aju Brahmāsari

Faculty of Economic and Business,
17 Agustus 1945 Surabaya University, Surabaya, Indonesia

Riyadi Nugroho

Faculty of Economic and Business,
17 Agustus 1945 Surabaya University, Surabaya, Indonesia

ABSTRACT

This research aims to analyze the influence of organizational commitment, conflict resolution skills, safety climate for safety accidents in manufacturing industry in East Java Province. This research uses survey method conducted on all employees of production division from steel factory companies amounting to 162 employees. The number of samples used as much as 115 respondents obtained from the formula Slovin. Data analysis and hypothesis in this research using Structural Equation Modeling (SEM) with AMOS 20.0 software. The results of this study indicate that three hypotheses are accepted. The significance of this hypothesis suggests indirectly but through safety climate mediation, so the skills of production division workers in preventing accidents will increase

Keywords: Organizational commitment; conflict resolution skills; safety climate; safety accidents.

INTRODUCTION

Based on data of BPJS Employment in East Java Province, in 2016 to July, there was 1390 accident. Every day there are 11 accidents and 21 deaths, this is equivalent to every workday happened 1 worker died while doing work in the various sector, including manufacturing industry. Therefore, employees in a company and things that may be affected directly or indirectly by activities in the workplace are urgently needed to involve health and safety protection (Umeokafor, et al., 2014).

The biggest cause of any accident occurring in the steel industry in East Java province is human error, the researcher still holds the view of the lack of organizational commitment on each individual or group and the structure in the company in carrying out the efforts to prevent the occurrence of accidents.

It takes skill in resolving conflicts so that all OHS programs can be accepted by all parties and achievements can be achieved successfully. Mc Collum (2009) explains that conflict is a fact of life, then there's no way we can avoid it. Conflict can be avoided if the same perception of a group has formed in a working climate, in particular, to build and strengthen the safety climate.

LITERATURE REVIEW

Organizational Commitment

Commitment is a relative strength of the individual in identifying his involvement into a part, It is characterized by 3 things, namely: (1) Acceptance of values and objectives, (2) readiness and willingness to earnestly, and (3) The desire to maintain membership within the organization (Porter, Mowday, et al., 1982). Sopiah (2008) develops a scale called Self Report Scales to measure employee commitment to the organization, which is an elaboration of 3 aspects; (a) Acceptance of organizational goals, (b) The desire to work hard, and (c) The desire to survive belongs to the organization.

Conflict Resolution Skills

Conflict can be explained as a process of interaction that occurs due to the difference between two opinions or point of view of the parties involved either having a positive influence or negative influence (Robbins, 2004). Conflicts can appear because there are conditions underlying or preceding. The condition also called the source of the conflict, consists of three factors, namely: (1) Communication factors, (2) Structural factors, (3) Personal factors. Conflict resolution skills play a constructive role in the development of new ideas and practices that finally create new opportunities for organizations to grow (Damanpour, 1991)

Safety Climate

Safety climate is an adherence and individual participation in safety maintenance activities in the workplace (Griffin and Neal, 2000). In measuring the safety climate factors consists of five systems, including (1) Management Value, (2) Safety Communication, (3) Safety Practices, (4) Safety Training, and (5) Safety Equipment (Neal & Griffin, 2004).

Safety Accidents

Accidents are unexpected and undesirable incidents that disrupt the process of an organized activity (Santoso, 2004). Accidents do not happen accidentally, but there is a reason. Accidents can be prevented and similar accidents do not recur again, it is worth investigating and finding the cause of the accident, in order to further take corrective action aimed at the cause and further preventive efforts (Suma'ur, 2009). Occupational accident prevention is aimed at: (1) Work environment, (2) Machinery and work equipment, (3) Work equipment tools, (4) Human factor (Suma'mur, 2009).

METHODOLOGY

This research is survey research method. According to Kerlinger (2004) explains that survey research is a research conducted on large and small populations, but the data studied is data from the samples taken from the population, so that found the relative incident, distributions, and relationships between sociological and psychological variables.

Population in this research is all employees of production division from steel factory company which amounted to 162 employees. The number of samples used as much as 115 respondents obtained from the formula Slovin. This research use proportional random sampling method and sampling from steel factory company in East Java province.

Data analysis techniques in this research using analytical methods that can provide a simultaneous analysis process associated with multi-variant research model, namely Structural Equation Modeling (SEM) using AMOS 20.0 software. According to Ferdinand (2006:6), SEM is a set of statistical techniques that enable the testing of a relatively

complicated set of relationships simultaneously. While the conceptual framework of research can be seen in Figure 1.

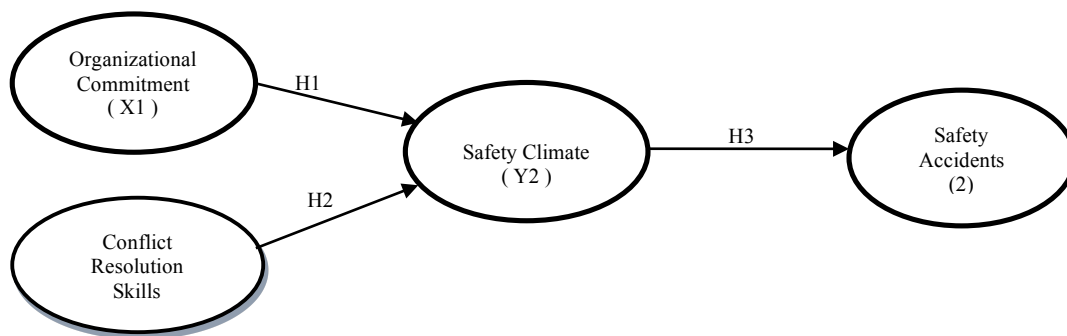


Figure 1. Conceptual Framework of Research

RESULTS AND DISCUSSIONS

In SEM, model reliability is checked using construct reliability. A model is said to be reliable when the construct reliability value of each variable/construct is greater than 0.70 (Solimun, 2002). The results of the construct reliability test on the research variables can be seen in Table 1 below.

Table 1. Construct Reliability Research Variables

Variables	Indicator	Factor Loading (FL)	(FL) ²	Error (1-FL ²)	Construct Reliability
Organizational Commitment (X1)	X1.1	0,751	0,564	0,436	0,828
	X1.2	0,860	0,740	0,260	
	X1.3	0,741	0,549	0,451	
Conflict Resolution Skills (X2)	X2.1	0,722	0,521	0,479	0,795
	X2.2	0,653	0,426	0,574	
	X2.3	0,697	0,486	0,514	
	X2.4	0,734	0,539	0,461	
Safety Climate (Y1)	Y1.1	0,639	0,408	0,592	0,820
	Y1.2	0,823	0,677	0,323	
	Y1.3	0,745	0,555	0,445	
	Y1.4	0,707	0,500	0,500	
Safety Accidents (Y2)	Y3.1	0,827	0,684	0,316	0,882
	Y3.2	0,842	0,709	0,291	
	Y3.3	0,796	0,634	0,366	
	Y3.4	0,764	0,584	0,416	

Source: data processed

Table 1 shows that the research variables have to construct reliability values all greater than 0.70, so it is concluded that these variables are reliable in formulating the models developed in this research.

Based on table 2, it can be explained that the result of regression weight test has CR value greater than 1,96 and p-value less than 5%, so H₁, H₂, H₃, is acceptable, unless the conflict resolution skills variable to trust in management shows insignificant results with CR value of 0.373 (smaller than 1.96) and the level of significance (p-value) of 0.709 (greater than 5%).

Table 2. Hypothesis Testing Through Regression Weight Test

Relation of causality	Koef.	C.R.	<i>P</i> <i>value</i>	Notes
Organizational Commitment (X ₁) → Safety Climate (Y ₁)	0,320	3,364	0,000	Significant
Conflict Resolution Skills (X ₂) → Safety Climate (Y ₁)	0,373	3,710	0,000	Significant
Safety Climate (Y ₁) → Safety Accidents (Y ₂)	0,260	3,614	0,000	Significant

Source: data processed

CONCLUSION

The results of this research can be concluded: (1) Organizational commitment influence the work safety climate in the Manufacturing Industry in East Java Province; (2) Conflict resolution skills influence the safety climate in the Manufacturing Industry in East Java Province; (3) The safety climate influence safety accidents in the Manufacturing Industry in East Java Province.

References

- Damanpour, F., Organizational innovation: A meta-analysis of effects of determinants and moderators. *Academy of management journal*, 1991. 34(3): p. 555-590.
- Griffin, M. A., & Neal, A., Perceptions of safety at work: a framework for linking safety climate to safety performance, knowledge, and motivation. *Journal of occupational health psychology*, 2000. 5(3): p. 347-358.
- Solimun, Structural Equation Modeling LISREL dan Amos, Fakultas MIPA Universitas Brawijaya, Malang. Sopiah, 2008. Perilaku Organisasi. Yogyakarta: Andi
- Suma'mur, P.K, Hygiene Perusahaan dan Kesehatan Kerja (Hiperkes), 2009. Jakarta: CV. Sagung Seto.
- Kerlinger, Fred N., Asas-asas Penelitian Behavioral, 2004. Yogyakarta: Universitas Gadjahmada
- McAllister, D.J., Affect- and Cognition-Based Trust as Foundations for Interpersonal Cooperation in Organizations. *Academy of Management Journal*, 1995. 38: p. 24-59
- McCullum, S., Managing Resolution Conflict, 2009. New York: Infobase Publishing.
- Mowday, R. T., Porter, L. W., and Steers, R. M., Employee Organization Linkage: The Psychology of Commitment, Absenteeism and Reparation, 1982. New York: Academic
- Neal, A. & Griffin, M. A., Safety climate and safety at work. in the psychology of workplace safety. In J. Barling & R.F. Michael (Eds.), 2004. Washington: American Psychological Association.
- Robbins, S.P., Organization Theory: Structure, Design and Applications, Terjemah Jusuf Udaya, Teori Organisasi: Struktur, Desain dan Aplikasi, 2004. Jakarta, Arcan.
- Santoso, G., Manajemen keselamatan dan kesehatan kerja, 2004. Prestasi Pustaka Publisher
- Schneider, B., Wheeler, J. K., and Cox, J. F. (1992). A passion for service: Using content analysis to explicate service climate themes. *Journal of applied psychology*, 1992. 77(5): p.705
- Umeokafor, N., Isaac, D., Jones, K., and Umeadi, B. (2014). Enforcement of occupational safety and health regulations in Nigeria: An exploration. *European Scientific Journal*, 2014. 3: p. 93-104



Service Innovation and Firm Performance of SMEs auto service: the mediating role of Pricing Capability

Collins Kankam-Kwarteng

School of Business, Kumasi Technical University, Ghana

John Gartchie Gatsi

School of Business, University of Cape Coast, Ghana

Jacob Donkor

School of Business, Ghana Baptist University College, Ghana

Stephen Acheampong

School of Business, Ghana Baptist University College, Ghana

ABSTRACT

The purpose of this paper is to examine service innovation, pricing capability and firm performance of SMEs auto services, with service innovation (Independent Variables), pricing capability (mediating variable) and firm performance (Department Variable). Quantitative research principles were adopted where each of the path between the three variables were measured with co-efficient value (β) after controlling firm age, firm size and firm form. A total number of 200 service operators participated using convenience sampling technique. The results showed that firm performance is influenced by both service innovation and pricing capability and that pricing capability mediates the relationship. The authors highlight the convenience nature of gathering data and the fact that the study was conducted in in a single city. This study contributes to the existing and growing literature on pricing capability and how it can moderate the relationship between service innovation and firm performance. The study opens up a research in an interesting area of the SMEs auto services industry in the context of a developing country.

Keywords: service innovation, pricing capability, firm performance, SMEs

INTRODUCTION

Previous studies on firm performance have identified different predictors within the framework of internal capabilities of the firm. Laursen and Salter (2006); Craig and Dibrell, (2006); Artz *et al.* (2010); Li and Atuahene-Gima (2011) have all studied innovation and firm performance in different dimensions. In most of such studies, innovation capabilities have been found to strongly predict the outcome of firm performance. Existing literature on firm performance indicators has been the ultimate outcome variable of what many researchers in management is concerned with (Erhardt *et al.*, 2003). Competitive markets for customers, capital and input make firm performance significant to the long term success and survival of contemporary business operations (Hitt *et al.*, 1998). As a result, firm performance has assumed a central focus as the ultimate goal of contemporary industrial operations (Aulakh *et al.*, 2000). Business operations, marketing and strategies are all ultimately recognized for their contribution to performance of firms (Srivastava *et al.*, 1999). Measuring and estimating firm performance is significant in allowing management professionals and researchers to analyse the particular actions of organizations (Allen and Helms, 2002). Management researchers Elbashir *et al.* (2008) have found that such measurement ensures where organizations stand in relation to their rivals and how organizations develop and perform in the future. Its

significance as the core outcome criterion is exhibited in its continuing use as the dependent variable in management research (Terziovski, 2010; Donkor *et al.*, 2018).

An analysis of the operationalization of the performance of firms demonstrates the lack of effectiveness of widely accepted practices for measuring the multidimensionality concept of firm performance (Hansen and Wernerfelt, 1989; Hult *et al.*, 2008).

Providing solutions to these findings according to Dalton *et al.* (2003), demand management researchers to (1) possess a strongly theoretical rationale on the operationalization of firm performance. It means a theoretical proposition establishing specific measures appropriate in the context of the research (2) depend on the strongly theories as to the characteristic nature of the measurement. This means a theory indicating the type of measures should be linked and the approaches for doing so. The question therefore is what evidence is that even with a limited domain, business performance is not a theoretical construct that can be considered one-dimensional nor is it possibly to be characterized with a single operationalized measure. Callen (1991) explain that although the multidimensionality of the performance of firms is well noted in accounting and finance (Henri, 2004) and has been described in management literature (Venkatraman and Ramanujam, 1986), empirically, the inconsistency in measuring performance of firms in management has resulted in surprising multi-dimensional variables as measuring tools. Issues of organizational capability have been mentioned regarding the ability of the firm to reach its highest performance levels. The value generated by the organization through innovation and organizational capability in pricing have also been found in literature (Knight and Cavusgil, 2004).

Few studies have been conducted to measure service innovation and firm performance and pricing capability and firm performance. Still searching for appropriate internal capabilities predictors for firm performance, this paper uses service innovation as a predictor variable and pricing capability as a mediating variable to determine the performance of SMEs auto service providers.

SERVICE INNOVATION AND FIRM PERFORMANCE

The issues regarding innovations have long been considered a multidimensional variable which measures the transformation cause by the innovativeness in the organization, in the market and knowledge base and the entire business environment. Creation of value systems and in the industry concern (Avlonitis *et al.*, 2001; Danneels & Kleinschmidt, 2001; Garcia & Calantone, 2002; Salomo *et al.*, 2007; Schultz *et al.*, 2007). Changes that are significant in the industry dimensions relate to areas including generating new consumer benefit, changes in how services are handled (Schultz, 2009) and attending to new consumer groups; the advancement and knowledge dimensions, in contrast measured to the applications of new technology and competences.

Service innovation can gather strategic, process of structural changes in the organization which put together in the organizational dimensions (Armbruster *et al.*, 2008). The aggregation of new value additions and the establishment of additional external procedures are also significant in such a context (Stern, 2000)

Establishing new technologies and changing regulatory restrictions according to Stern, (2000) are within the environment dimensions. Schmickl and Kieser (2008) explain that the larger the transformations are for the organization in each framework, larger the innovations within the continuum from incremental innovation to radical based innovations. The difference between

incremental innovations and radical based innovation is complemented by descriptions of architectural and modular innovations (Laursen and Salter, 2006). While modular innovation consists of changing personal service or product elements, architectural based innovation considers on transformation in how elements are put together (Henderson & Clark, 1990; Gatignon *et al.*, 2002). Innovation frameworks demonstrate particular characteristics of innovations in services and explained by different dimensions; (a) the type of procedures which is describe by research and development, adhoc, and practical driven (b) innovativeness, which demonstrate the extent of transformations in the innovation creates externally and internally (Oke, 2007). Based on innovativeness framework and the services sector, (Drejer, 2004) explain that innovations in service signify distinct and personal features, which help to realize contextual constraints.

A number of studies on innovation and performance have indicated financial and non-financial performance as significant dependents of innovation (Otero-Neira *et al.*, 2009; Grawe *et al.*, 2009). Thus, this study focused on non-financial and financial performance indicators as core outcome variables. Measurements of non-financial and financial performance are gathered from scales used in previous studies (e.g Akimova, 2000; Mahmoud, Kastner and Yeboah, 2010). The financial performance employed into the service firms providers estimation of their organization's earnings, sales volume, market share, ROI and cash flow in relation to the competitors (Chen, Cheng and Hwang, 2005). The non-financial performance employed into employee satisfaction, service quality and customer satisfaction relative to their competitors (Prieto and Revilla, 2006).

Mone, McKinley, Barker (1998) found that innovation capabilities are the most significant determinant of business performance, a result corroborated by many empirical findings (see, Cooper, 2000; Cooper and Kleinschmidt, 2007). Literature on diffusion of innovation also validates this view (Rogers, 1995) and suggests that businesses must implement innovations to achieve a competitive advantage for survival (Li and Calantone, 2002). Nevertheless, the relationship between business innovativeness and performance has been a continuous subject for management research (Hughes and Morgan, 2007). It can be hypothesized;

PRICING CAPABILITIES AND FIRM PERFORMANCE

Available study on the concept of pricing capability is very limited, not only in terms of the number of published academic papers but also in terms of the research methods used to explore the concept. Dutta *et al.* (2003) explained the significance of pricing capability in the context of organizational capabilities, described it as a set of complex frameworks, systems, skills, coordinated mechanisms, complementary resources and know-how, in improving performance of companies. Pricing capability has been referred to on one side, the pricing formation capability within an organization (Stuart, 2000) which includes monitoring competitors pricing, determining pricing strategy, transferring from pricing strategy to price and on the other hand, to the pricing formation capabilities vis-à-vis consumers, thus convincing customers on pricing-change logic, negotiating pricing changes with major consumers. In this and future research frameworks, pricing capability were considered to be significantly related to performance of companies (Dutta *et al.*, 2002; Dutta, 2003; Berggren and Eek, 2007)

The marketing capabilities literature, by contrast, includes price as one of the market-related dimension used to determine and quantify marketing capabilities (Hallberg, 2008). In this instance, scholars use surveys based quantitative principles to document a significant link between pricing capability which is a subset of marketing capability and performance of firms (Vorhies and Morgan, 2005; Morgan *et al.*, 2009). Kemper *et al.* (2011) applied the following

measuring instrument and scale to define pricing capability: (1) applying systems and skills on pricing to respond rapidly to changes in the market place; (2) studying competitors' tactics on pricing; (3) pricing services effectively and monitoring competitors pricing and price changes. Further research (Zou Fang and Zhao, 2003) on performance indicators of Chinese exporters used similar scales which confirmed that there is relationship between pricing capability and performance of firms. All these empirical findings explored and measured pricing capability a bigger subset of marketing capability instruments such as market communication, selling, channel management, market information management, product development, marketing implementation and marketing planning (Vorhies and Morgan, 2005) and also other capabilities. It is therefore not surprising that the construct "pricing capabilities" in this stream of research has limited number of items for measurements. In other words, the use of three or four item scale of pricing capability may risk underestimating the complex nature of pricing capability in organizations (Liozu, and Hinterhuber, 2014). Hallberg (2008) explored the concepts of pricing capability by researching their strategic dimension in companies. Hallberg (2008) continued the suggestions by Dutta *et al.* (2003) by claiming that some economic outcomes are connected to some components of an organization's pricing capability. The conclusion was that an organization's pricing capability influence its value appropriations through three economic principles; price discrimination, price elasticity and operating leverage. Still in search of the concepts and the dimensionality of pricing capability, Murray *et al.* (2011) uncover critical frameworks of pricing capability and frame a dimension for estimating and improving the pricing capability of firms. The growth of distinctive strategic price capabilities and the implementation of strategic resource to improve the capability can result in better decisions in pricing, larger capital for the organization and greater advantage of competition in the business environment (Dutta *et al.*, 2002). Organization well establish pricing orientations applying advanced methods in pricing have a bigger capacity to formulate and implement standard pricing programmes and frame pricing approaches to help in the processes towards decision making (Liozu and Hinterhuber, 2013). The existence and implementation of these capabilities in pricing, whether informal or formal (Dutta *et al.*, 2003), brings greater confidence in organizational pricing operations, rationality in decision making and firm performance when linked with other marketing capability (Vorhies and Morgan, 2005). While pricing literature has demonstrated a particular association between capabilities in pricing and performance of firms, we conjecture this relationship is strong and positive in the SMEs auto service industry.

HYPOTHESIS

Previous studies suggest that SMEs that innovate and effectively demonstrate pricing capabilities are able to achieve higher levels of performance. Based on the review and discussion of extant literature, the study hypothesis that:

H1: Firm performance will significantly be influenced by the service innovation

H2: Service innovation significantly influences the level of pricing capability.

H3: There is a positive relationship between the firm performance and pricing capability

H4: Pricing capability mediates the relationship between the service innovation and firm performance

METHODOLOGY

Study Population and sampling

The population for this study comprised of all SMEs auto service providers in Ghana including auto mechanics and auto electricians who provide a wide range of vehicle services to their clients. In selecting a sample, two main techniques have been recommended in literature including probability sampling methods and non-probability sampling methods. In the

probability sampling method, all the members within the population have an equal chance of being selected through the use of a sampling frame. In this work, a non-probability sampling method was used due to the difficulty of obtaining an official list of SMEs auto services providers both in a single point location and cluster location. In particular, convenience sampling approach was used to select 200 hundred SMEs auto service providers to participate in the study. A convenience sampling approach allows the researcher to select members who were willing to participate in the study.

Questionnaire and scale development

The study employed questionnaires as the main instrument to gather the relevant data from the SMEs auto services providers. The questionnaires were designed and employed with regards to measures adopted by authors in measuring similar construct in their studies, and also structured to reflect significant direct of the study. The questionnaire was measured scales for all the variables; independent variable (service innovation), mediating variable (pricing capability), dependent variable (firm performance) and control variables (firm size, firm age, firm form). Verbal consents were sought from respondents before questionnaires were administered.

Service innovation. Items scale on service innovation constructs found in existing literature (Roger *et al.*, 2002; Bettencourt, 2010) was used as a measuring instrument. Suggestion by previous studies were all considered in arriving at the items for measuring service innovation. Technical innovations involve the transformation of knowledge and skills in the auto services. Operational innovations involve the ability of the firm to improve in their relationship with customers and the appreciation of customer orientation principles. The items were scaled from "1" less improved to "7" very much improved. In all the study used eight (8) items to represent service innovation with a Cronbach's alpha 0.894.

Pricing capabilities. A multi-item scale was developed by the researcher based on the operational definitions as recommended by Kerlinger and Lee (2000) and also by depending on available literature (Dutta, 2003; Hellberg, 2008). The items used in the study ranges from much worse than competitors '1' to much better than competitors '7' to define the scale. The scale provided high reliability ($\alpha = .0801$) for the 8 items used for measuring pricing capability.

Firm performance. Based on previous studies subjective assessment of the company performances were used (Simsek, 2007; Ingenbleek, 2007; Morgan *et al.*, 2009) following the widely adopted means of asking service providers to describe their firms' performance to that of competitors based on 8-items for a specific period. Firm performance construct was therefore measured on items such as return on sales (ROS) growth in sales (GIS), return on investment (ROI). The scale ranged from much worse '1' to much better 7 than competing firms. Internal consistency test was conducted to screen the items for measuring firm performance. A Cronbah's Alpha value $\alpha = 0.798$ was recorded for measuring firm performance.

Control variables. For the purposes of effectively measuring the performance of SMEs auto services industry the study identified organizational based factors that have the capacity to influence the outcome of performance indicators. The study therefore controlled for firm characteristics such as size of firms which was measured as the total number of employees (Amburgey and Rao, 1996). The period of years participants have been operating their business (firm age) and the nature of ownership of the respondents business (firm form) was also added as control variables in the study model.

RESULTS

The results show that most of the respondents were sole proprietors representing 53.7% of the active participants. This is followed by family business operators 42%. Reports show that the respondents express a high performance indicators (mean = 5.791, SD = 0.7931); however, with the standard deviation of 0.7934 demonstrate a variation in the views concerning the firm performance. Focusing on service innovation, again, results show that there is high variation in service providers' views concerning acquiring new customers, providing customer satisfaction, growth in total revenues, increased profitability and improve time it takes to serve customers. The standard deviation for service innovation (SD = 0.939) confirm the variation in service innovation in terms of these issues. Table 4.1 also gives a report that the level of pricing capability among the sample auto service provider quite high (mean = 5.258, SD = 0.0354). Interestingly the standard deviation of 0.0354 shows little variation among service providers concerning perception about pricing capability. Given this report, it will be very instructive to find out the relationships between firm performance, pricing capability and service innovation.

Regression Analysis and Hypothesis Testing

The second part of the analysis focuses on examining the relationship between willingness to pay, perceived risk and customer characteristics whiles testing the study hypotheses. However, before such regression analyses are conducted it is important to find out first, if there is any correlation between the variables. Table I reports the results of the correlation statistics. It is showed that there is positive correlation between firm performance and service innovation ($r = 0.294$, $p < 1\%$). According to the correlation results, firm age has a positive correlation with firm performance ($r = 0.546$; $p < 1\%$). Similarly, a positive correlation was identified between firm size and firm performance ($r = 0.612$; $p < 1\%$). However, firm form was negatively related to firm performance ($r = -.102$; $p < 1\%$).

Furthermore, the correlation outcome indicates that there is positive relationship between firm performance and pricing capability ($r = 0.369$; $p < 1\%$). This suggests that when the level of pricing capability increases the performance firms. This also implies that when service develops capability in their pricing; they are likely to benefit from improved performance of their business operations.

Table I: Correlational analysis

	1	2	3	4	5	6	7
1 Firm age	1.00						
3 Firm size	.368**	.325**	1.00				
4 Firm form	.126	-.301**	-.554**	1.00			
5 Service Innovation	.258*	.015	.256*	-.222*	1.00		
6 Pricing capability	.136	.451**	.201*	-.562**	.236**	1.00	
7 Firm performance	.546**	.612**	-.102	.188	.294*	.369**	1.00

Note: * $p < .05$ (2-tailed test); ** $p < .01$ (2-tailed test)

In what follows, the study attempts to estimate the path relationships and provide answers to the key questions of the research work. This is done through the use of multiple linear regression analysis. The results of this multiple regression analysis are presented on Table II whereas the proceeding discussions of results are conducted in accordance to the research objectives for simplicity and easy understanding.

Table II: Multiple Regression Results

	Variable	Coefficient (β)	Standard Error	t-Value
Model 1 Pricing capability (R-sq. = 0.153)	Firm age	.023	.014	1.643
	Firm size	.066	.044	1.500
	Firm form	-.426	.236	-1.805
	Service innovation	.512	.145	3.531
	Constant	1.325	.654	2.026
Model 2 Firm Performance (R-sq. = 0.097)	Firm age	.109	.112	0.973
	Firm size	-.031	.025	-1.240
	Firm Form	-.365	.225	-1.622
	Service Innovation	.423	.206	2.053
	Constant	1.745	.312	5.593
Model 3 Firm Performance (R-sq. = 0.108)	Firm age	.099	.068	1.456
	Firm size	-.016	.256	-0.063
	Firm Form	-.215	.325	-0.662
	Pricing Capability	.698	.126	5.540
	Constant	2.365	.965	2.451
Model 4 Firm Performance (R-sq. = 0.157)	Firm age	.029	.027	1.074
	Firm size	-.111	.105	-1.057
	Firm form	-.716	.556	-1.288
	Service Innovation	.388	.108	3.130
	Pricing Capability	.333	.126	2.180
	Constant	2.365	.965	2.451

This investigation into *service innovation and pricing capability* was performed with the estimation of model 1 which also controls for operational attributes of the service providers including the firm size, firm age and firm form. The results as shown on Table II above show that service innovation has a strong positive effect on pricing capability ($\beta = .512$; T-ratio = 3.531; $p < 1\%$). Meanwhile, the results show that firm form has a strong negative effect on pricing capability ($\beta = -.426$; T-ratio = -1.805; $p < 10\%$). Based on these results **hypothesis 2** which states that service innovation significantly influence the level of pricing capability is supported. The R-squared which represents the percentage of variations in pricing capability explained also demonstrates that 15.3% of the difference in pricing capability is explained by the independent variables.

Furthermore, the study attempted to find out the *relationship between service innovation and firm performance*. This investigation was performed with the estimation of model 2 whilst controlling for firm size, firm age, and firm form. The results as shown on Table 4.3 above show that service innovation has a strong positive effect on firm performance ($\beta = .423$; T-ratio = 2.053; $p < 5\%$). The result of the study did not find any strong relationship between firm age ($\beta = .109$; T-ratio = 0.973; $p > 10\%$), firm form ($\beta = -.365$; T-ratio = -1.622; $p > 10\%$), and firm size ($\beta = -.031$; T-ratio = -1.240; $p > 10\%$) on firm performance. The report is however, adequate to warrant the acceptance of **hypothesis 1** which indicates that firm performance will significantly be influenced by the service innovation. The R-squared which represents the percentage of variations in pricing capability explained also demonstrates that 9.7% of the difference in pricing capability is explained by the independent variables.

Following the report of the previous analysis, it was found prudent to find out *the relationship between pricing capability and firm performance*. This investigation was performed with the estimation of model 3. The results as shown on Table II above show that there is a strong positive relationship between pricing capability and firm performance ($\beta = .698$; T-ratio = -

5.540; $p < 1\%$). This confirms the general notion that when pricing capability is high, firm are to improve their performance. **Hypothesis 4** which suggests that there is a positive relationship between the firm performance and pricing capability consequently supported by the findings of this study. Meanwhile, the results did not reveal any strong influence of firm age of service providers ($\beta = .099$; T-ratio = 1.456; $p > 10\%$), firm form ($\beta = -.215$; T-ratio = -0.662; $p > 10\%$), and firm size ($\beta = -.016$; T-ratio = -0.063; $p > 10\%$) firm performance. The R-squared obtained for model 3 shows that 10.8% of the differences in pricing capability is explained by the independent variables.

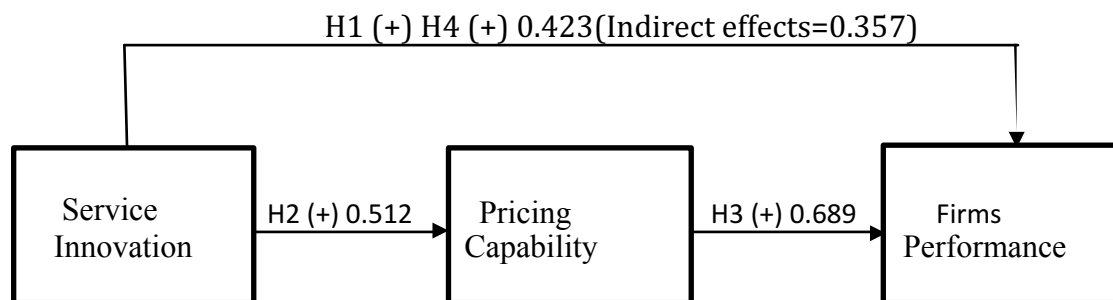
The final line of analysis focused on *the mediating role of pricing capability in the relationship between service innovation and firm performance*. This inquiry is pursued with model 4 which explores the effect of service innovation on firm performance controlling for the mediating variable pricing capability. The report show that pricing capability still has a strong positive relationship with firm performance ($\beta = .333$; T-ratio = 2.180; $p < 5\%$); further supporting **hypothesis 3**. In terms of the effect of service innovation, it is revealed service innovation has a positive influence on firm performance ($\beta = .388$; T-ratio = 3.130; $p < 5\%$); also, confirming hypothesis 1. Meanwhile, according to Baron and Kenny (1986) to confirm mediation, three principles must be met. First, the independent variable (service innovation) must have a significant relationship with the mediator variable (pricing capability). Secondly, the mediator variable (pricing capability) should be related to the dependent variable (firm performance) and thirdly the inclusion of mediator variable should cause a significant change in the effect of the independent variable (service innovation) on the dependent variable (firm performance) such that the effect of service innovation on firm performance will be insignificant; for full mediation or alternatively the inclusion of the mediator variable should cause a slight but insignificant change in the effect of the service innovation on firm performance; for partial mediation.

Based on these criteria, it is concluded that pricing capability partially mediates the relationship between the service innovation and firm performance. This is because service innovation was revealed to have a positive and significant relationship with pricing capability as revealed by the results of model 1 ($\beta = .512$; T-ratio = 3.531; $p < 1\%$). Thus, the first criterion is met. Secondly, there is adequate evidence to suggest that pricing capability has a significant positive effect on firm performance ($\beta = .698$; T-ratio = 5.540; $p < 1\%$). This also gives indication that the second criterion has been met. Meanwhile, service innovation have a significant relationship with firm performance ($\beta = .423$; T-ratio = 2.053; $p < 5\%$); however, controlling for the effect of the mediator variable, pricing capability, as shown by model 4; the positive effect of service innovation on firm performance is slightly reduced ($\beta = .388$; T-ratio = 3.130; $p < 5\%$). The implication is that the inclusion of the pricing capability has caused a change in the effect of service innovation; although insignificant. Hence pricing capability partially mediated the relationship between service innovations and firm performance. The indirect effect of service innovations through pricing capability can be calculated as 0.357 (0.512×0.698). Given this, hypothesis 4 is also supported.

Table III tabulates the results of the hypothesis tests. It is revealed that all the four study hypotheses were supported.

Table III: Summary of Hypotheses Test Results

Code	Statement	Result	Remarks
H1	Service innovation → Firm performance	($\beta = .423$; $p < 5\%$);	Accept
H2	Service innovation → Pricing capability	($\beta = .512$; $p < 1\%$)	Accept
H3	Pricing capability → Firm performance	($\beta = .698$; $p < 1\%$).	Accept
H4	Service innovation → Pricing capability → firm performance	($\beta = .357$; $p < 5\%$)	Accept

Figure 1: Plot of Mediation Results

DISCUSSION OF RESULTS AND IMPLICATION

This research was motivated by the fact that firm performance in the SMEs service sector has been a widely-misunderstood concept in academia given the difficulty practitioners and academicians face in explaining how performance is measured among service practitioners. Again, there is a general lack of understanding of SMEs auto services performance indicators and how service innovation and pricing capability influence such performance indicators in the literature. Although there have been a number of researchers who have attempted to present empirical evidence to broaden understanding; such a survey has been restricted to only regulated markets where there are standards and regulatory mechanisms to determine innovation drivers, pricing capability dimensions and firm performance. The research on unregulated markets is relatively limited and even more in dearth is research on the SMEs auto service industry. The current study therefore focused on SMEs auto services industry in Ghana in order to contribute to the growing understanding on service innovation, pricing capabilities and firm performance in unregulated markets. The multiple linear regression technique was used to analyse the data and hypothesis tested. The results of the study have confirmed that innovations (Otero-Neira *et al.*, 2009; Grawe *et al.*, 2009), pricing capability (Liozu and Hinterhuber, 2013) and performance indicators are important in the service industry and must be thoroughly investigated and understood; if service practitioners intend to be successful in the industry. The findings of the study have also confirmed results by Dutta *et al.* (2003) that pricing capability is also critical to understanding the performance indicators of service providers even in the SMEs auto services industry. Practitioners have therefore focus on these issues in order to determine performance in the industry. The results of this study have shown that firm performance is really dependent on drivers of service innovations and pricing capability dimensions of the SMEs auto service providers. This is interesting given the fact that most researchers, Laursen and Salter (2006); Craig and Dibrell, (2006); Artz *et al.* (2010); Li and Atuahene-Gima (2011) and practitioners have found and use a wide range of predictors to define firm performance.

The implication of this result is very vital for SMEs auto service delivery; as it suggests that the need for improved innovations in service delivery and pricing capability for purposes of

increasing performance indicators and reduced uncertainties in the industry. This is important as the evidence shows that service innovation and pricing capability have a positive influence on firm performance. There is also theoretical implication as grounds have been set for continuous development of research interest in the field of SMEs auto services.

SUGGESTION FOR FUTURE STUDIES

In order to demonstrate the significance contribution of service innovation, pricing capabilities to performance of SMEs auto service sector, the current study provides some interesting findings as discussed in previous sections. Further studies are still required to address limitations and areas of importance this study could not investigate. This will further the understanding of service innovations and pricing capabilities in the context of the SMEs service sector.

First, it is suggested that future research investigates the balances required and the value likely to realize from a detail and thorough study of each of the variables. This means that a detail study can be conducted into the various service innovation components (technical service innovation and operational service innovation) and firm performance. Also because much has not been found in the SMEs auto service sector, a future research should focus on a comprehensive appraisal of pricing capabilities and firm performance.

Second, while the current study focus on service innovations and pricing capability to determine firm performance, future studies should concentrate on the service innovations and other forms of capabilities such as managerial capability and strategic planning with the SMEs auto service industry. Since services are unique in terms of its characteristics (intangibility, perishability, inseparability, lack of ownership), studies on other forms of internal capabilities can generate a more rigorous means of appreciating the performance level of the industry. Studies on the characteristics of SMEs auto services and firm performance can also add to the search for firm specific factors that define internal capabilities and firm performance.

Another area of great concern in the service innovation literature is how it complements the effort of service quality and servicescape in defining internal capabilities. It is important to note that service innovations is still fairly broad concept and cover different dimensions and occupy different areas of involvement. This may include moderating other concepts such as service quality and servicescape in determining the direction of firm performance of the SMEs service sector.

References

- Akimova, I. (2000), "Development of market orientation and competitiveness of Ukrainian firms. *European Journal of Marketing*, 34(9/10), pp.1128-1148
- Allen, R.S. and Helms, M.M. (2002), "Employee perceptions of the relationship between strategy, rewards and organizational performance", *Journal of Business Strategies*, Vol. 19 No. 2, p.115.
- Aulakh, P.S., Rotate, M. and Teegen, H. (2000), "Export strategies and performance of firms from emerging economies: Evidence from Brazil, Chile, and Mexico", *Academy of Management Journal*, Vol. 43 No. 3, pp.342-361.
- Artz, K.W., Norman, P.M., Hatfield, D.E. and Cardinal, L.B. (2010), "A longitudinal study of the impact of R&D, patents, and product innovation on firm performance", *Journal of Product Innovation Management*, Vol. 27 No. 5, pp.725-740.
- Armbruster, H., Bikfalvi, A., Kinkel, S. and Lay, G. (2008), "Organizational innovation: The challenge of measuring non-technical innovation in large-scale surveys", *Technovation*, Vol. 28 No.10, pp.644-657.

- Avlonitis, G. J., Papastathopoulou, P. G. and Gounaris, S. P. (2001), "An empirically-based typology of product innovativeness for new financial services: Success and failure scenarios", *The Journal of Product Innovation Management*, Vol. 18 No. 5, pp. 324-342.
- Callen, J. L. (1991), "Data envelope analysis: Partial survey and applications for management accounting", *Journal of Accounting Management Research*, Vol. 3, pp.35-56.
- Capon, H., Farley, J.U., Lehmann D.R., and Hulbert, J.M. (1992), "Profiles of product innovators among large U.S. manufacturers. *Manage Sci*, Vol. 38 No.2, pp. 157- 69.
- Chen, M.C., Cheng, S.J. and Hwang, Y. (2005), "An empirical investigation of the relationship between intellectual capital and firms' market value and financial performance", *Journal of Intellectual Capital*, Vol. 6 No. 2, pp.159-176.
- Cooper, R.G. (2000), "New product performance: what distinguishes the star products", *Australia Journal of Management*, Vol. 25, pp.17 - 45.
- Cooper, R.G. and Kleinschmidt, E.J. (2007), "New products: what separates winners from losers?", *Journal of Product Innovation Management*, Vol. 4, pp.169-84.
- Craig, J. and Dibrell, C. (2006), "The natural environment, innovation, and firm performance: A comparative study", *Family Business Review*, Vol. 19 No. 4, pp.275-288.
- Danneels, E. and Kleinschmidt, E. J. (2001), "Product Innovativeness from the Firm's Perspective: Its Dimensions and Their Relation with Project Selection and Performance", *Journal of Product Innovation Management*, Vol.18 No.6, pp. 357-373.
- Dalton, D.R., Daily, C.M., Certo, S.T. and Roengpitya, R. (2003), "Meta-analyses of financial performance and equity: fusion or confusion?", *Academy of Management Journal*, Vol. 46 No. 1, pp.13-26.
- Donkor, J., Donkor, G.N.A. and Kankam-Kwarteng, C. (2018), "Strategic planning and performance of SMEs in Ghana: The moderating effect of market dynamism", *Asia Pacific Journal of Innovation and Entrepreneurship*, Vol. 12 No. 1, pp.62-76.
- Drejer, I. (2004), "Identifying innovation in surveys of services: a Schumpeterian perspective", *Research Policy*, Vol. 33 No. 3, pp.551-562.
- Elbashir, M.Z., Collier, P.A. and Davern, M.J. (2008), "Measuring the effects of business intelligence systems: The relationship between business process and organizational performance", *International Journal of Accounting Information Systems*, Vol. 9 No.3, pp.135-153.
- Erhardt, N.L., Werbel, J.D. and Shrader, C.B. (2003), "Board of director diversity and firm financial performance", *Corporate Governance: An international review*, Vol. 11 No. 2, pp.102-111.
- Garcia, R. and Calantone, R. (2002), "A Critical Look at Technological Innovation Typology and Innovativeness Terminology: A Literature Review", *Journal of Product Innovation Management*, Vol. 19 No. 2, pp. 110-132.
- Gatignon, H., Tushman, M. L., Smith, W. und Anderson, P. (2002), "A Structural Approach to Assessing Innovation: Construct Development of Innovation Locus, Type, and Characteristics", *Management Science*, Vol. 48 No. 9, pp. 1103-1122.
- Grawe, S.J., Chen, H. and Daugherty, P.J. (2009), "The relationship between strategic orientation, service innovation, and performance. *International Journal of Physical Distribution & Logistics Management*, 39(4), pp.282-300.
- Hansen, G.S. and Wernerfelt, B. (1989), "Determinants of firm performance: The relative importance of economic and organizational factors", *Strategic management journal*, Vol. 10 No. 5, pp.399-411.
- Henri, J. F. (2004), "Performance measurement and organizational effectiveness: Bridging the gap". *Managerial Finance*, 30: 93-123.
- Henderson, R.M and Clark, K. B. (1990), "Architectural Innovation: The Reconfiguration of Existing Product Technologies and the Failure of Established Firms", *Science Quarterly*, Vol. 35 No.1, pp. 9-30.
- Hitt, M.A., Keats, B.W. and DeMarie, S.M. (1998), "Navigating in the new competitive landscape: Building strategic flexibility and competitive advantage in the 21st century", *The academy of Management Executive*, Vol. 12 No. 4, pp.22-42
- Hughes, M. and Morgan, R.E. (2007), "Deconstructing the relationship between entrepreneurial orientation and business performance at the embryonic stage of firm growth. *Industrial marketing management*, Vol. 36 No. 5, pp.651-661.

- Hult, G.T.M., Griffith, D.A. and Cavusgil, S.T. (2008), "An assessment of the measurement of performance in international business research", *Journal of International Business Studies*, Vol. 39 No. 6, pp.1064-1
- Knight, G.A. and Cavusgil, S.T. (2004), "Innovation, organizational capabilities, and the born-global firm", *Journal of International Business Studies*, Vol. 35 No.2, pp.124-141.
- Laursen, K. and Salter, A. (2006), "Open for innovation: the role of openness in explaining innovation performance among UK manufacturing firms", *Strategic Management Journal*, Vol. 27 No. 2, pp.131-150.
- Li, T. and Calantone, R.J. (2002), "The impact of market knowledge competence on new product advantage: conceptualization and empirical examination", *Industrial Marketing Management*, Vol. 31, pp. 515-524
- Liozu, S.M. and Hinterhuber, A. (2013), "Pricing orientation, pricing capabilities, and firm Performance", *Management Decision*, Vol. 51 No. 3, pp.594-614.
- Liozu, S. and Hinterhuber, A. (2014), "Pricing capabilities: the design, development, and validation of a scale", *Management Decision*, Vol. 52 No.1, pp.144-158.
- Mahmoud, M.A., Kastner, A. and Yeboah, J., (2010). "Antecedents, environmental moderators and consequences of market orientation: A study of pharmaceutical firms in Ghana. *Journal of Medical Marketing*, 10(3), pp.231-244.
- Mone, M.A., McKinley, W. and Barker, V.L. (1998), "Organizational decline and innovation: a contingency framework", *Academy of Management Review*, Vol. 23 No. 1, pp. 115-32.
- Murray, J.Y., Gao, G.Y. and Kotabe, M. (2011), "Market orientation and performance of export ventures: the process through marketing capabilities and competitive advantages", *Journal of the Academy of Marketing Science*, Vol. 39 No. 2, pp.252-269.
- Schmickl, C. and Kieser, A. (2008), "How much do specialists have to learn from each other when they jointly develop radical product innovations?", *Research Policy*, Vol. 37 No. 3, pp.473-491.
- Oke, A. (2007), "Innovation types and innovation management practices in service companies", *International Journal of Operations & Production Management*, Vol. 27 No.6, pp.564-587.
- Otero-Neira, C., Tapio Lindman, M. and Fernández, M.J. (2009), "Innovation and performance in SME furniture industries: An international comparative case study. *Marketing Intelligence & Planning*, 27(2), pp.216-232.
- Prieto, I.M. and Revilla, E. (2006), "Learning capability and business performance: a non-financial and financial assessment", *The Learning Organization*, Vol. 13 No. 2, pp.166-185.
- Rogers, E.M. (1995), *Diffusion of Innovations*. 4th ed. New York: Free Press.
- Roger J., Calantone, R.J., Cavusgil, S.T. and Zhao, Y. (2002), "Learning orientation, firm innovation capability, and firm performance", *Industrial Marketing Management*, Vol. 31 No. 6, pp.515-524.
- Salomo, S.; Weise, J. and Gemünden, H. G. (2007), "NPD Planning Activities and Innovation Performance: The Mediating Role of Process Management and the Moderating Effect of Product Innovativeness", *Journal of Product Innovation Management*, Vol. 24, pp. 285-302.
- Stuart, T.E. (2000), "Interorganizational alliances and the performance of firms: A study of growth and innovation rates in a high-technology industry", *Strategic Management Journal*, pp.791-811.
- Schultz, C. (2009), "Collaboration with users of innovative health care services – the role of service familiarity. *International Journal of Services Technology and Management*, Vol. 12 No.3, pp. 338-355
- Srivastava, R.K., Shervani, T.A. and Fahey, L. (1999), "Marketing, business processes, and shareholder value: An organizationally embedded view of marketing activities and the discipline of marketing", *The Journal of Marketing*, pp.168-179.
- Stern, P.C.(2000), "New environmental theories: toward a coherent theory of environmentally significant behaviour", *Journal of Social Issues*, Vol. 56 No.3, pp.407-424.
- Terziovski, M. (2010), "Innovation practice and its performance implications in small and medium enterprises (SMEs) in the manufacturing sector: a resource-based view", *Strategic Management Journal*, Vol. 31 No. 8, pp.892-902.
- Venkatraman, N., and Ramanujam, V. (1986), "Measurement of business performance in strategy research: A comparison of approaches", *Academy of Management Review*, Vol.11: 801-814.
- Vorhies, D.W. and Morgan, N.A. (2005), "Benchmarking marketing capabilities for sustainable competitive advantage". *Journal of marketing*, 69(1), pp.80-94.



Effect of Customer Relationship Management, Marketing Mix, Service Quality, Entrepreneurs Orientation to Competitive Advantages and Its Impact on Marketing Performance at Public Market

Endah Budiarti

Economy Faculty,
University of 17 Agustus 1945 Surabaya, Indonesia

Ujjianto

Economy Faculty,
University of 17 Agustus 1945 Surabaya, Indonesia

Tatik Suryani

STIE Perbanas, Surabaya, Indonesia

ABSTRACT

The purpose of this research is to analyze and prove the influence of customer relationship management (CRM), marketing mix, service quality and entrepreneurship orientation to competitive advantage and marketing performance and to analyze and prove the influence of competitive advantage to market performance of public market in Surabaya. The population in this study is the market traders of the people at present more than 17.000. In this study, researchers measured the performance of PD Pasar Surya Surabaya marketing based on customer perception or tenants of the booth. So in this case the size of marketing performance is perceptual. The sample used is 135 traders. The amount is spread in 67 units of market managed by PD Pasar Surya Surabaya. The model to be used in this research is the model of causality or relationship. To test the proposed hypothesis, the analysis technique used is SEM (Structural Equation Modeling), with AMOS statistic software. The results of hypothesis testing: Customer relationship management significant effect on the competitive advantage of the public market in the city of Surabaya. Marketing mix significantly influence the competitive advantage of public market in Surabaya City. Service quality significantly influence the competitive advantage of public market in Surabaya City. The entrepreneurship orientation has a significant effect on the competitive advantage of public market in Surabaya City. Customer relationship management has a significant effect on marketing performance of public market in Surabaya City. Marketing mix significantly influence the marketing performance of public market in Surabaya City. Service quality has a significant effect on marketing performance of public market in Surabaya City. The entrepreneurship orientation has a significant effect on marketing performance of public market in Surabaya City. Competitive advantage significantly influence the marketing performance of public market in Surabaya

Keywords: customer relationship management (CRM), marketing mix, service quality, entrepreneurship orientation, competitive advantage, marketing performance, public market.

INTRODUCTION

The policy of the government and local government in revitalizing the people's market is still more emphasis on the physical improvement of market buildings. It is rarely accompanied by institutional development such as developing the organization, managers and market builders of the people, including the development of market management systems and human

resources involved as well as market traders. Avoiding the failure of the public market revitalization program, at the time of development planning it is necessary to think about the market capacity to be built in accordance with the number of existing traders, the possibility of increasing the number of existing traders, and the number and segment of consumers who will shop in those markets. Often there are many complaints from traders who have been trading since in the old market, when moving to a market that has been renovated stand sizes and stalls obtained to be reduced or smaller on the grounds that many new traders to be accommodated. This condition is the reason for traders to arrange their merchandise to soar outside the stalls or kiosks soaring from the permitted limits. As a result, the gang / hallway in the market stalls becomes narrow and uncomfortable for buyers passing by in the market. The revitalization policy is also not so helpful for small economic factors because the implementation only emphasizes physical changes, such as the market must be clean, neat, comfortable, and not slums (Buletin Ilmiah, Litbang Perdagangan)

The limitation of the managerial capability of the public's market manager affects the market condition in question, even this is one of the main causes of the attachment of the negative stigma that is now inherent in public's markets. Public's market development requires integrated effort, starting at the policy level up to the operational level. Development at the operational level is manifested in the form of foster management of public market and market traders as well as development of street vendors and their environment. Further problems that also need to be coaching is the order of parking, pedestrian place arrangement, and culinary tourism area. Linkage with other areas is often overlooked, so the problem handling is partial, the result is less than the maximum because it can not touch the root of the real problem (Suprihanto, 2016).

The rapid growth of malls, supermarkets and minimarkets in Indonesia should be feasible to imitate and motivate the market of people to improve the quality of physical and service management. The change is expected to be attractive if the market is well managed, kept clean and trafficked by traders, renovated without depriving its historical value, so that people remain or even more interested in shopping in the people's market. Until finally the traders in these folk markets still get a chance to improve their lives through economic activities that do, not vice versa, eliminated by the Mall or any other form of modern markets. Ideal conditions expected from the existence of the public market is a bargaining atmosphere and market model that gives a unique feel of shopping at the same time socializing and recreation. These nuances will be an attraction for tourists. The diversity of the people's market becomes an added value in an effort to attract tourists to come and visit the people's market. Development and development of the public market as part of tourism is also expected to open bigger business opportunities so that ultimately can improve the welfare of society. But the fact that there is, the diversity of the public market until now has not been utilized optimally as part and the carrying capacity for tourism.

Public market as a government asset, for it needs to make efforts improve marketing performance. This can be done through increased competitiveness that can be created through improving service quality, appropriate marketing mix strategy, entrepreneurship orientation and customer relationship management right (Suryanita, 2006; Santoso, Sugiarto, 2016; Paramita, 2015; Constantine, et al., 2016; Cynthia, Hendra, 2014; Soegoto, 2011; Indah, Devie, 2013; Halim, 2012; Imma, Ratna, 2014; Usvita, 2014; Syukron, Ngatno, 2016; Pradnya, 2015; Farida, Prabawani, 2015; Mustikowati, Tysari, 2014; Fatonah, 2009; Metekohy, 2013; Suryanita, 2006; Wahyuni, 2014; Aji, 2014). When the marketing performance of the public market increases, it will have a positive impact on the survival of the public's market, so that

the existence of the public's market can be maintained amid intense competition with the modern market.

The purpose of this research is to analyze and prove: 1). the influence of customer relationship management (CRM) on competitive advantage of public market in Surabaya City. 2). the influence of marketing mix to competitive advantage of public market in Surabaya City. 3). the influence of service quality to competitive advantage of public market in Surabaya City. 4). the influence of entrepreneurship orientation on competitive advantage of public market in Surabaya City. 5). the influence of customer relationship management (CRM) on marketing performance of public market in Surabaya City. 6). the influence of marketing mix to marketing performance of public market in Surabaya City. 7). the influence of service quality on marketing performance of public market in Surabaya City. 8). the influence of entrepreneurship orientation on marketing performance of public market in Surabaya City. 8). the influence of competitive advantage against the marketing performance of public markets in Surabaya City.

LITERATURE REVIEW AND HYPOTHESIS

Customer Relationship Management

Customer Relationship Management is the whole process of establishing and maintaining customer relationships conducted by community market unit managers managed by PD Pasar Surya Surabaya. In conducting the measurement of customer relationship management, the researcher uses the indicator according to the opinion of Peppers and Rogers (2004) are as follows: Identify, that is Surya Surabaya market company to identify the customer / trader of stand tenant and study customer characteristics in detail; Differentiate, tenant traders stand on services according to their values and needs; Interact, interacting with customers / tenant stand traders, this means building and maintaining two-way communication with customers ; Customize, that is to customize the company's products and services according to the value and needs of the customer / trader stand tenants.

Marketing Mix

The Marketing mix in this research is a set of tools that can be used by PD public market unit management. Surya Surabaya Market to influence buyers. In conducting the measurement of the marketing mix, the researcher uses an indicator in accordance with that stated by, Fandy Tjiptono (2014): Product, is any what is offered by Surabaya Surya market area company to trader / tenant stand that can fulfill requirement or desire. Price Perception, is the assumption of the customer / tenant stand against the price set by Surya Surabaya market company. Promotion, meaning sales promotion program conducted by Surya Surabaya market area company, location, which exists in every market unit managed by the Surabaya solar market area company. Process, means the way the companies to deliver or market its products to the stand tenant trader. People, is the person involved in the delivery of corporate services to traders in each market unit. Physical Evidence, meaning all facilities which are physically visible, including those supporting facilities.

Quality of Service

Quality of Service reflects the comparison between the level of service delivered by the manager or management of the market unit of PD Pasar Surya Surabaya people compared to customer expectations. For measurement of service quality use indicator according to that proposed by Parasuraman et al in Fandy Tjiptono (2014) that is: Tangibles, meaning appearance of market stand building and other supporting facilities provided by Surya Surabaya market area company. Realibility means the ability of the officer or market manager to provide services to the trader, Responsiveness, meaning the alertness of the officer or market manager in providing services to the merchant or responding to the problems faced by

the trader. Assurance, knowledge, employee propriety and the ability of officers to generate trust and confidence of traders. Empathy, ie the willingness of the officer or market manager to understand the difficulties of traders in each market unit.

Entrepreneurial Orientation

The entrepreneurial orientation refers to the processes, practices and decision-making undertaken by the managers of the market unit of PD Pasar Surya Surabaya people, who have three aspects of entrepreneurship: always innovative, acting proactively and taking risks. In measuring the orientation of entrepreneurship, using indicators proposed by Lumpkin and Dess, (1996) are: Always innovative, meaning innovations made by Surabaya solar market managers in providing services to traders. Acting proactively, meaning willingness and ability of officers or market managers to anticipate problems for traders. Dare to take risks, meaning the ability and courage of market managers to make decisions.

Competitive Advantage

Competitive advantage is the ability of the market unit of PD Pasar Surya Surabaya people to achieve economic benefits above the profit that can be achieved by competitors in the market in the same industry and is the development of the value that can be created public market for its customers. In measuring competitive advantage, the researcher used indicators in accordance with the theory of Treacy and Wiersma (1997), with the consideration that the environmental situation is developing very dynamically and the theory fits in a dynamic situation. The indicators are: Operational Excellence, meaning the cost efficiency and time of service provided by the market manager to the trader. Customer Intimacy, means the willingness and ability to understand the needs of the traders. Product Leadership, meaning the company creates superior and different products compared to competitors through innovation continuously.

Marketing Performance

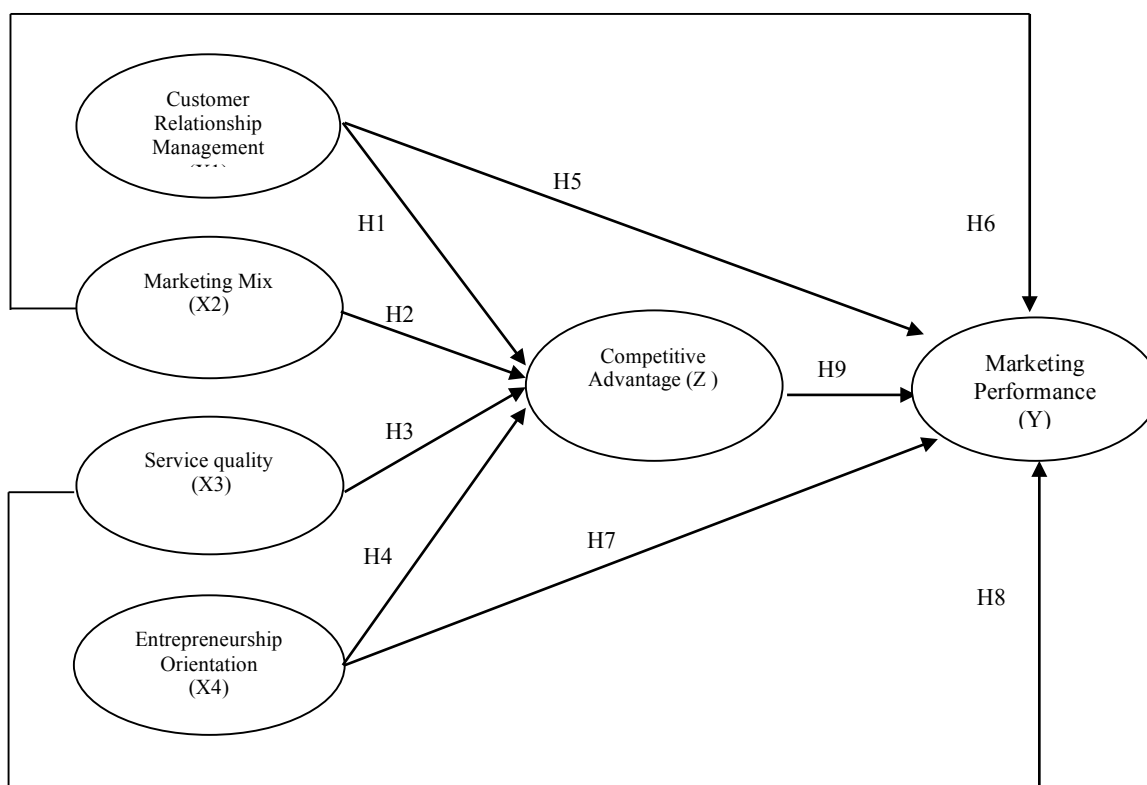
Marketing performance is a measure of achievement obtained by the market unit of PD Pasar Surya Surabaya people from the whole marketing process activities. Measurement of marketing performance in this case perceptually. This means that in the measurement of marketing performance, researchers analyze based on customer perceptions. This researchers do based on new developments in the theory of performance appraisal results in marketing activities. So in the measurement of marketing performance, the researcher uses indicators according to the opinion of Constantine S. Katsikeas, Neil A. Morgan, Leonidas C. Leonidou, & G. Tomas M. Hult (2016) namely: Unit Sales, meaning the number of stands and stalls in each market units sold; Perceived Quality, means the quality of services provided by the Surabaya solar market manager to the stand tenant traders; Satisfaction, meaning the satisfaction of the public market traders for the services provided by the Surabaya solar market manager; Customer Retention, that is identifying the desire of traders to survive trading in markets managed by PD Pasar Surya Surabaya or to measure how long traders tenants market booths trade in the public market.

Hypothesis

1. Customer relationship management (CRM) has a significant effect on competitive advantage of public market in Surabaya City.
2. Marketing mix significantly influence the competitive advantage of public market in Surabaya City.
3. Service quality significantly influence the competitive advantage of public market in Surabaya City.

4. Entrepreneurship orientation has a significant effect on the competitive advantage of public market in Surabaya City.
5. Customer relationship management (CRM) has a significant effect on marketing performance of public market in Surabaya City.
6. Marketing mix significantly influence the marketing performance of public market in Surabaya City.
7. Service quality significantly influence the marketing performance of public market in Surabaya City.
8. Entrepreneurship orientation has a significant effect on marketing performance of public market in Surabaya City.
9. Competitive advantage significantly influence the marketing performance of public market in Surabaya City.

Analysis Model

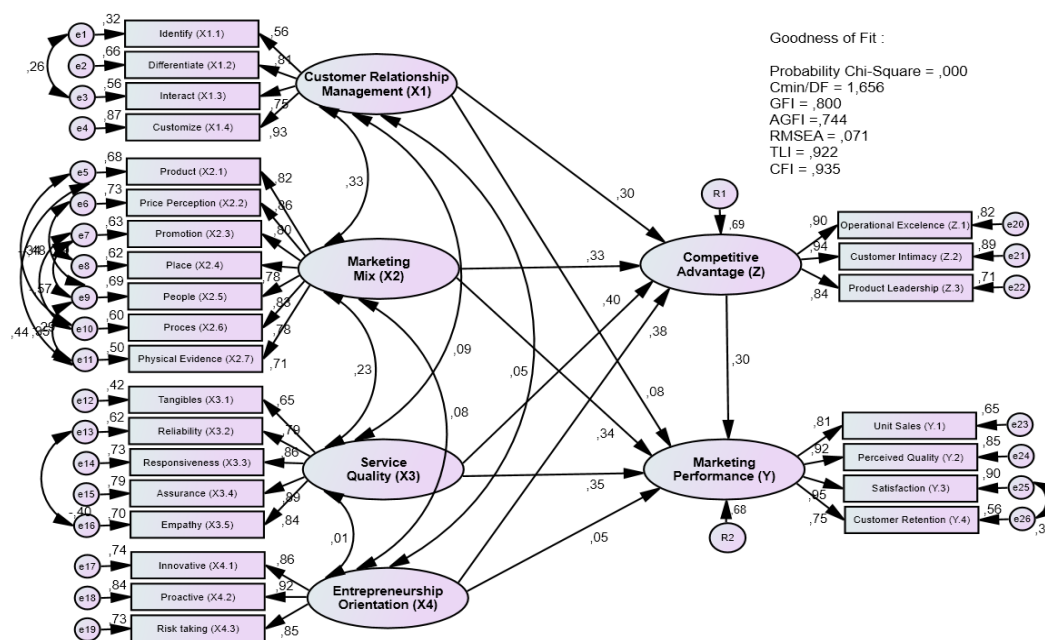


RESEARCH METHODS

The object of this research is the whole market unit of people managed by PD Pasar Surya in Surabaya City and which is still active as much as 67 units of public market. So the unit of analysis in this research is the public market that is still active under the management of PD Pasar Surya Surabaya. While the observation unit is a trader or tenant at PD Pasar Surya Surabaya. The number of public market traders at the moment is over 17,000. In this study, researchers measured the performance of PD Pasar Surya Surabaya marketing based on customer perception or tenants of the booth. So in this case the size of marketing performance is perceptual. The sample used is 135 traders. The amount is spread in 67 units of market managed by PD Pasar Surya Surabaya. The model to be used in this research is the model of causality or relationship. To test the proposed hypothesis, the analysis technique used is SEM (Structural Equation Modeling), with AMOS statistic software (Ferdinand Agusty, 2014).

ANALYSIS AND DISCUSSIONS

The results of the calculations show that most of the goodness of fit criteria have not provided an index in accordance with the recommended. To further customize models built with data (empirical facts), modifications can be made. Modification of the model in SEM can be done through the help of modification index issued by AMOS software and also adapted to support the theory. The modified SEM model results are presented in the following figure:



Modified Images of SEM Models

Tabel
Hypothesis Testing Through Regression Weight Test

Relationship of causality		Std. Estimate	C.R.	P value	Description
Customer Relationship Management (X1)	→ Competitive Advantage (Z)	0,305	3,986	0,000	Significant
Marketing Mix (X2)	→ Competitive Advantage (Z)	0,326	4,854	0,000	Significant
Quality of Service (X3)	→ Competitive Advantage (Z)	0,403	5,355	0,000	Significant
Orientation of Entrepreneurship (X4)	→ Competitive Advantage (Z)	0,378	5,945	0,000	Significant
Customer Relationship Management (X1)	→ Marketing Performance (Y)	0,077	1,033	0,302	Not Significant
Marketing Mix (X2)	→ Marketing Performance (Y)	0,342	4,398	0,000	Significant
Quality of Service (X3)	→ Marketing Performance (Y)	0,350	3,983	0,000	Significant
Orientation of Entrepreneurship (X4)	→ Marketing Performance (Y)	0,050	0,676	0,499	Not Significant
Competitive Advantage (Z)	→ Marketing Performance (Y)	0,303	2,585	0,010	Significant

H1: The result of variable parameter estimation of customer relationship management to competitive advantage showed significant result with CR value 3.986 (greater than 1.96) and p-value equal to 0.000 (less than 5%). The resulting coefficient of influence is 0.305 (positive), meaning that the higher the customer relationship management then the competitive advantage is also higher. Thus, the first hypothesis stating that customer relationship management significant effect on the advantages of competing traders or tenant stand at PD Pasar Surya Surabaya, acceptable (H1 accepted).

H2: The estimation result of marketing mix variable variable to competitive advantage also showed significant result with CR value 4.854 (bigger than 1.96) and p-value equal to 0.000 (less than 5%). The resulting coefficient of effect is 0.326 (positive), meaning that the higher the marketing mix then the competitive advantage is also higher. Thus, the second hypothesis which states that the marketing mix has a significant effect on the advantages of competing traders or tenants at PD Pasar Surya Surabaya, also acceptable (H2 accepted).

H3: The result of parameter estimation of service quality variable to competitive advantage also showed significant result with CR value 5.355 (greater than 1.96) and p-value equal to 0.000 (less than 5%). The resulting coefficient of influence is 0.403 (positive), meaning the higher the quality of service then the competitive advantage is also higher. Thus, the third hypothesis which states that the quality of service has a significant effect on the advantages of competing traders or tenant of booth at PD Surya Market Surabaya City, also acceptable (H3 accepted).

H4: The result of parameter estimation of entrepreneurship orientation variable to competitive advantage also shows significant result with CR value of 5.945 (greater than 1.96) and p-value equal to 0.000 (less than 5%). The resulting coefficient of effect is 0.378 (positive), meaning that the higher the entrepreneurship orientation, the higher the competitive advantage. Thus, the fourth hypothesis which states that entrepreneurship orientation has a significant effect on the advantages of competing traders or tenants at PD Pasar Surya Surabaya, also acceptable (H4 accepted).

H5: The result of parameter estimation of customer relationship management toward marketing performance showed insignificant result with CR value 1.033 (smaller than 1.96) and p-value equal to 0.302 (greater than 5%). The resulting coefficient of effect is only 0.077, meaning that the higher customer relationship management does not have a real impact on the improvement of marketing performance. Thus, the fifth hypothesis stating that customer relationship management has a significant effect on the marketing performance of the merchant or tenant at PD Pasar Surya Surabaya, rejected (H5 rejected).

H6: The result of estimation of marketing mix variable to marketing performance showed significant result with CR value 4,398 (greater than 1.96) and p-value equal to 0.000 (less than 5%). The resulting coefficient of influence is 0.342 (positive), meaning the higher the marketing mix then the marketing performance is also high. Thus, the sixth hypothesis which states that the marketing mix has a significant effect on the marketing performance of the merchant or the tenants at PD Pasar Surya Surabaya, acceptable (H6 accepted).

H7: The result of parameter estimation of service quality variable to marketing performance also shows significant result with CR value 3.983 (bigger than 1.96) and p-value equal to 0.000 (less than 5%). The resulting coefficient of influence is 0.350 (positive), meaning the higher the quality of service then the marketing performance is also high. Thus, the seventh hypothesis which states that the quality of service has a significant effect on the marketing performance of

traders or tenants of the booth at PD Pasar Surya Surabaya, also acceptable (H7 accepted)

H8: The result of parameter estimate of entrepreneurship orientation variable on marketing performance showed insignificant result with CR value 0.676 (smaller than 1.96) and p-value equal to 0.499 (greater than 5%). The resulting coefficient of effect is only 0.050, meaning that the higher the orientation of entrepreneurship does not have a real impact on the improvement of marketing performance. Thus, the eighth hypothesis stating that the entrepreneurial orientation has a significant effect on the marketing performance of the trader or the tenants at PD Pasar Surya Surabaya, rejected (H5 rejected).

H9: The result of parameter estimation of competitiveness variable to marketing performance showed significant result with CR value 2.585 (bigger than 1.96) and p-value equal to 0,010 (less than 5%). The resulting coefficient of influence is 0.303 (positive), meaning that the higher the competitive advantage then the marketing performance is also high. Thus, the ninth hypothesis which states that the competitive advantage significantly influence the marketing performance of the trader or the tenants at PD Pasar Surya Surabaya, acceptable (H9 accepted).

SUMMARY

1. Customer relationship management has a significant effect on the competitive advantage of public market in Surabaya City.
2. Marketing mix significantly influence the competitive advantage of public market in Surabaya City.
3. Service quality of significantly influence the competitive advantage of public market in Surabaya City.
4. Entrepreneurship orientation has a significant effect on the competitive advantage of public market in Surabaya City.
5. Customer relationship management has not significant effect on marketing performance of public market in Surabaya City.
6. Marketing mix has a significant effect on marketing performance of public market in Surabaya City.
7. Service quality of service influence on marketing performance of public market in Surabaya City.
8. Entrepreneurship orientation has not significant effect on the marketing performance of public market in Surabaya City.
9. Competitive advantage of significantly influence the marketing performance of public market in Surabaya City.

LIMITATIONS

The results of this study provide implications for the development of economics, especially in the field of marketing management related to customer relationship management, marketing mix, service quality, entrepreneurship orientation to competitive advantage and its impact on marketing performance of public market in Surabaya City where the variables can be used as a tool to increase competitive advantage and marketing performance of public market in Surabaya City. The results of this study can be used as a reference in order to create marketing strategies in the field of market marketing people related to the implementation of customer relationship management, marketing mix, service quality, entrepreneurship orientation.

This research is conducted to test the model of influence of customer relationship management, marketing mix, service quality, entrepreneurship orientation to competitive

advantage and its impact on marketing performance of public market in Surabaya City, and the result show that model tested in this research acceptable, it means that model in this research can be used as a tool to improve marketing performance of public market in Surabaya City. In addition, the results of this study can also add references in the field of Economics, especially about marketing the public market.

BIBLIOGRAPHY

- Baharudin Yakub Didik Santoso, Yohanes Sugiarto, 2016, Pengaruh Orientasi Pasar dan Customer Relationship Management terhadap Kinerja Pemasaran melalui Keunggulan Bersaing, (Studi Kasus Pada Warung Makan Sekitar Alun-alun di Kota Sragen), *Diponegoro Journal of Management, Volume 5, Nomer 3, hal;1-15*
- Catarina Cori Pradnya Paramita, 2015, Pengaruh Kompetensi Individu, Orientasi Kewirausahaan, dan Pesaing dalam Mencapai Keunggulan Bersaing melalui Kualitas Produk, Studi pada UKM Furnitur di kota Semarang, *DeReMa Jurnal Manajemen, Vol.1, No.1, hal;124-137*
- Constantine S. Katsikeas, Neil A. Morgan, Leonidas C. Leonidou & G.Tomas M.Hult, 2016, Assessing Performance Outcomes in Marketing, *Journal of Marketing, Vol;80 (March), 1-20*
- Cynthia Vanessa Djodjobo dan Hendra N. Tawas, 2014, Pengaruh Orientasi Kewirausahaan, Inovasi Produk Dan Keunggulan Bersaing Terhadap Kinerja Pemasaran Usaha Nasi Kuning di Kota Manado, *Jurnal EMBA, Vol.2, NO.3, hal;1214- 1224*
- Dedi Sulistiyo Soegoto, 2011, Pengaruh Kinerja Bauran Pemasaran jasa dan Keunggulan positions terhadap Kepuasan penumpang dan implikasinya pada kepercayaan penumpang pesawat perusahaan penerbangan rute Jakarta – Surabaya, *Majalah Ilmiah UNIKOM, Vol.8, No.1*
- Dewi Purnama Indah dan Devie, 2013, Analisa Pengaruh Customer Relationship Management terhadap Keunggulan Bersaing dan Kinerja Perusahaan, *Business Accounting Review, Vol. 1, No;2, 2013, hal; 50-60*
- Fandy Tjiptono, 2014, *Pemasaran Jasa-Prinsip, Penerapan dan Penelitian*, Yogyakarta: Penerbit Andi.
- Ferdinand Agusty, 2014, *Structure Equation Modelling Dalam Penelitian Manajemen*, Semarang: Badan Penerbit Undip.
- Halim, 2012, Kapabilitas Pemasaran sebagai Mediasi Pengaruh Orientasi Pasar, Orientasi Pembelajaran dan Orientasi Kewirausahaan terhadap Kinerja Pemasaran (Studi pada Usaha Menengah di Sulawesi Tenggara), *Jurnal Aplikasi Manajemen, Volume 10, Nomer.3, Hal; 472-484*
- Imma Andiningtyas R.S dan Ratna L.Nugroho, 2014, Pengaruh Orientasi Kewirausahaan terhadap Kinerja Perusahaan Kecil, *Jurnal Manajemen Indonesia, vol.14.No.1, April 2014*
- Leonidas C. Leonidou, Dayananda Palihawadana, and Marios Theodosiou, 2011, National Export-Promotion Programs as Drivers of Organizational Resources and Capabilities: Effects on Strategy, Competitive Advantage, and Performance, *Journal of International Marketing, Vol;19, No;2, pp.1-29*
- Lumpkin, G.T. & Dess, G.G., 1996, Clarifying the Entrepreneurial Orientation Construct and Linking it to Performance. *Academy of Management Review 21(3): 135-172.*
- Mega Usvita, 2014, Pengaruh Orientasi Kewirausahaan dan Orientasi Pasar Terhadap kinerja Perusahaan Melalui Keunggulan Bersaing sebagai Variabel Intervening, *e-Jurnal Apresiasi Ekonomi Volume 3, Nomer 1, Januari 2015, hal;31-37*
- Muhamad Zidni Syukron, Ngatno, 2016, Pengaruh Orientasi Pasar dan Orientasi Kewirausahaan Terhadap Inovasi Produk dan Keunggulan Bersaing UMKM Jenang di Kabupaten Kudus, *Jurnal Administrasi Bisnis, Volume 5, No 1. Hal; 24-34*
- Michael Treacy dan Fred Wiersma, 1997, *The Discipline of Market Leaders: Choose Your Customers, Narrow Your Focus, Dominate Your Market*, Massachusetts: Addison-Wesley.
- Paramita, Catarina Cori Pradnya, 2015, Pengaruh Kompetensi Individu, Orientasi Kewirausahaan dan Pesaing dalam Mencapai Keunggulan Bersaing melalui Kualitas Produk, Studi pada UKM Furnitur di Kota Semarang, *DeReMa Jurnal Manajemen, Vol.10, No.1*
- Peppers, D. & Rogers, M., 2004, *Managing Customer Relationship: A Strategic Framework*. Jersey: John Wiley and Sons, Inc.

Renita Helia, Naili Farida, Bulan Prabawani, 2015, Pengaruh Orientasi Pasar dan Orientasi Kewirausahaan Terhadap Keunggulan Bersaing Melalui Inovasi Produk sebagai Variabel Antara (Studi Kasus pada IKM Batik di Kampung Batik Laweyan, Solo), *Diponegoro Journal Of Social And Political Of Science*, hal;1-11

Rita Indah Mustikowati dan Irma Tysari, 2014, Orientasi Kewirausahaan, Inovasi dan Strategi Bisnis Untuk Meningkatkan Kinerja Perusahaan (Studi pada UKM Sentra Kabupaten Malang, *Modernisasi*, Vol.10, No.1,hal; 23-37

Siti Fatonah, 2009, Pengaruh Bauran Pemasaran dan Orientasi Pasar Terhadap Keunggulan Bersaing dalam Meningkatkan Kinerja Pemasaran pada Perusahaan Batik Di Surakarta, *Jurnal Ilmu Ekonomi dan Manajemen*, Volume 6, Nomer 1.hal; 95-171

Stellamaris Metekohy, 2013, Pengaruh Strategi Resource-Based dan Orientasi Kewirausahaan terhadap Keunggulan Bersaing Usaha Kecil dan Usaha Mikro (Studi pada Usaha Jasa Etnis Maluku), *Jurnal Aplikasi Manajemen*, Vol.11, No 1, Maret

Suryanita, Andriani, 2006, Analisis Pengaruh Orientasi Kewirausahaan dan Kompetensi Pengetahuan terhadap Kapabilitas untuk meningkatkan Kinerja Pemasaran. <https://core.ac.uk/download/file/379/11715400.pdf>

Suprihanto, John, Henry Prihanto Nugroho, Agus Amin Syaiffudin,2016, Revitalisasi Pasar Tradisional Sebagai Objek Destinasi Wisata Studi di Kabupaten Sleman Yogyakarta, *dalam artikel seminar*, Yogyakarta.

Wachjuni, 2014, Pengaruh Orientasi Pasar, Inovasi Produk dan Kualitas Layanan Terhadap Kinerja Pemasaran dalam Upaya Mencapai Keunggulan Bersaing, *Jurnal Ekonomi dan Teknik Informatika*, Vol.2, No.1,hal;1-22

Wahyu Purnomo Aji, 2014, Analisis Pengaruh Orientasi Pasar, Orientasi Kewirausahaan, dan Daya saing Terhadap Kinerja Pemasaran Industri Knalpot, eprints.undip.ac.id/43654/1/09_Aji.pdf



The Indonesia Sustainability Reporting Awards (ISRA) Announcement Influence On Abnormal Return and Stock Trade Volume (Empirical Study on ISRA Award-Winning Companies in 2009-2016 Period)

Dewi Anggraini

Accounting Study Program,
Faculty of Economics and Business,
University of Mercu Buana

ABSTRACT

This study aims to analyze the influence of the Indonesia Sustainability Reporting Awards (ISRA) announcement from 2009 to 2016 on stock price, which is seen from the change of abnormal return and stock trading volume prior and after the date of the announcement. The samples for this research are publicly-listed companies that participated in ISRA from 2009 until 2016, both award winners and nonwinners. The data used are secondary data consisting of abnormal return and stock trading volume on a daily basis. The research test utilized the paired t-test method. The results of this research indicate that the ISRA announcement does not affect the abnormal return and stock trading volume, as seen from the absence of differences in abnormal return and stock trading volume before and after the date of the announcement.

Keywords: Indonesia Sustainability Reporting Awards, Abnormal Return, Stock Trading Volume.

PREFACE

Background

For investors and potential investors, a company financial statement is one of the vital information for assessing the performance and serves as a reference in making investment decisions. With information obtained from financial statements, investors and potential investors will know thoroughly about the company's financial condition.

In October 2017, NCSR (National Center for Sustainability Reporting) held the "Indonesia Sustainability Reporting Award (ISRA). The purpose of this event is to assess the suitability of sustainability reports that have been prepared by participating companies in the Global Reporting Initiative Index (GRI) and G4. Global Reporting Initiative (GRI) is a non-profit organization that promotes economic sustainability. GRI produces the world's most commonly used standards for sustainability reporting such as Environmental Social Governance (ESG) Reporting, Triple-Bottom-Line (TBL) Reporting, and Corporate Social Responsibility (CSR) Reporting. GRI strives to continue developing the "framework for sustainability reporting," and the G4 Guidelines were officially released on May 22, 2013 (www.globalreporting.com).

At present, the sustainability report is not yet mandatory in Indonesia, although it has been supported by some rules such as the Law of the Republic of Indonesia No.23 of 1997 on Environmental Management article 5, and Article 66 Paragraph 2 of Law no. 40 Year 2007 on the Limited Liability Company. Unlike the neighboring country, Singapore, which has required the preparation of the Sustainability Report for all companies listed on the SGX starting financial statement ending on December 31, 2017. Thus Singapore has followed the lead of the

EU, US, Japan and Hongkong which have obliged publicly-listed companies to prepare and report on sustainability reports. (www.ncsr-id.org)

The Sustainability Report reports the economic, environmental and social impacts of corporate activities transparently. The openness about these matters will convince stakeholders that the company has been well managed and that the company has paid attention to the interests of the investors, hence will build investor confidence (Guan and John, 2017)

ISRA award-winning companies for the last 9 (nine) years were as follows:

Table 4.15
List of ISRA Award-Winning Companies from 2009 to 2017

Year	Number of Companies
2009	10
2010	8
2011	11
2012	9
2013	11
2014	35
2015	37
2016	55
2017	40

Source: Processed from various sources

The assessment indicators cover the following criteria: completeness (40%), credibility (35%) and communications (25%) of company reports. (Himawan, 2007). Along with global issues such as global warming, ISRA is expected to motivate for companies to pay more attention to environmental and social aspects in addition to economic aspects by implementing sustainability report so that that good corporate governance can be formed. In addition, the award-winning ISRA companies can also convince the public that these companies not only take into account the financial factors but also optimize non-financial factors as the corporate social responsibility to the public, enhance the company's reputation, communicate what it already is and the company does not add value to the social and environment. The existence of ISRA is also expected to facilitate investors in making decisions because it can see the long-term plan of the company. Investors have already changed their investment outlook, they are not only looking for big profits but also looking for companies that are environmentally friendly and carry on social responsibility. Such a concept is known as Socially Responsible Investment (SRI).

Akis (2012) argues that investors are experiencing a change in investment outlook by starting to consider the company's concern for the environment. Based on that opinion, ISRA provides benefits for investors and potential investors in realizing their views. Investors and potential investors can use ISRA as their additional reference in addition to financial statements in investment decision-making or serve as a major reference to replace the role of financial statements. The number of people voicing companies to pay more attention to the environment arises because the environmental problems are getting more apprehensive. It can make the sustainability report a key reference for investors and potential investors. ISRA is expected to improve the reputation of award-winning companies, as these companies are proven to have performed financial reporting that takes the social, ethical, and environmental aspects (SEE) properly.

The disclosure of these aspects into the way companies demonstrate a form of accountability to investors. Companies that win the Indonesia Sustainability Reporting Award (ISRA) will enhance their image in public for promoting harmony between economic, social and environmental aspects. If the company's image increases, investors will decide to invest in the company so and will eventually increase the company's stock prices and trading volume. Stock price changes can be measured with the abnormal return.

Abnormal return is the difference between real return compared to the return expectation (Jogiyanto, 2013). The increase in return is a positive reaction from the market, as indicated by the stock price change. Announcements containing information will provide a consistent abnormal return to the market (Mulyadi, 2012). If the announcement contains information, then the market will show a change in price, the market reaction indicates a price change can be measured by the abnormal stock return (Budiman, 20 09). Stock trading volume is an indicator used to show the investors' interest in a particular stock. The higher the trades volume, the more often the stocks are transacted (Budiman, 20 09) and stock trading volumes are used as a measure to see if investors value the announcement as either positive or negative, in the sense that the information makes decisions trade above regular trade (Budiman, 2009).

Various studies have been conducted to identify the impact of ISRA announcements on market reaction and financial performance. The results of the research by Linuwih and Nugrahanti (2014) on the winners of ISRA 2009-2011 show no significant differences in abnormal returns before and after the ISRA announcement, while trading volume activity experienced substantial differences. While the results from Randina (2016) research on ISRA award-winning companies from 2012 to 2014 stated that the ISRA announcement didn't cause differences in abnormal return, it caused a difference in stock trading volume. Given such inconsistent results, This research reviews the influence of the ISRA announcement on market reaction during the 2009-2016 period.

Problem Identification

Based on the background that has been described, then the problems in this study are formulated as follow:

1. Is there any difference in abnormal return before and after receiving the Indonesia Sustainability Reporting Award (ISRA)?
2. Is there any difference in stock trading volume before and after receiving the Indonesia Sustainability Reporting Award (ISRA)?

Research Objectives and Contributions

Research Objectives

The objectives to be achieved in this research are:

- To obtain empirical evidence that there is an abnormal return difference before and after receiving the Indonesia Sustainability Reporting Award (ISRA)
- To obtain empirical evidence that there is a difference in stock trading volume before and after winning the Indonesia Sustainability Reporting Award (ISRA)

Research Contribution

The results of this research are expected to be used as a reference for policy by company management on SR both in determining the SR disclosure and GCG implementation policies. It is also likely to describe annual financial statements to be used as reference for investment decision-making.

LITERATURE REVIEW

Signaling Theory

The signal is an activity performed by the high type manager which is not rational when followed by low type manager. This action makes a different quality from one company to another (Scott, 2015). According to Scott (2015) the signaling theory was first put forward by Spence (1973) and later developed by various experts, among others, Leland and Pyle (1977), Titman and Trueman (1986), Datar, Feltham and Hughes (1991), Fan (2007). Various signals have been applied to the field of accounting.

Sustainability report disclosure aims to provide additional information about the company's activities as well as means to provide a signal to stakeholders about the company's concern for the social and the environment. The appropriate sustainability report disclosure and proper stakeholder expectations serve as signals given by the management to the public that the company has good prospects in the future and ensures the creation of sustainability development (Sakina, 2014). These signals are expected to be positively received to affect the company's financial performance as reflected in Return on Asset, Return on Equity, and net profit margin.

Stakeholder Theory

The concept of corporate social responsibility has come to prominence since the early 1970s, commonly known as stakeholder theory. The stakeholder theory is a collection of policies and practices related to stakeholders, values, legal compliance, public and environmental awards, and business world commitment to contribute to sustainable development. Stakeholder theory begins with the assumption that the value is, explicitly and undeniably, a part of business activities. (Freeman, et al., 2002 in Waryanti, 2009).

Stakeholder theory states that a company is not an entity that only operates for its own sake but must provide benefits to its stakeholders. Thus, the existence of a company is strongly influenced by the support given by stakeholders to the company (Ghozali and Chariri, 2007).

Corporate social responsibility should go beyond maximizing profits for the benefit of shareholders. The welfare that can be created by a company is not necessarily limited to the interests of shareholders, but also to the interests of stakeholders or all related parties.

Indonesia Sustainability Reporting Awards (ISRA)

Indonesia Sustainability Reporting Awards (ISRA) is an award given to companies that have made reporting on activities related to environmental and social aspects in addition to economic elements to maintain the company's sustainability itself. ISRA is an award to companies that have released sustainability reports, either published separately or integrated into the annual report, with assessment indicators covering Completeness (40%), Credibility (35%) and Communications (25%) of company reports.

The Sustainability Reporting itself is a report that contains economic performance, environment, and corporate social responsibility. The objectives of ISRA are as follows: 1) Provide recognition to organizations reporting and publishing information on environmental, social, and integrated sustainability information 2) support environmental, social and sustainability reporting 3) improve corporate accountability by emphasizing responsibilities to key stakeholders, and 4) increase corporate awareness on transparency and disclosure.

Sustainability Report

The development of a sustainability report is part of the sustainability development concept. Sustainability development means that current development can be fulfilled without necessarily reducing the needs of future generations to meet their needs (Heemskerk, 2002). Sustainability development needs to be implemented because the current economic activity tends to damage the global ecosystem and hamper the needs of the next generation (Randina, 2016).

Sustainability report is used as one of the company's information media to the stakeholders to support sustainable development. According to Elkington (1998), the disclosure of organizational performance in sustainability report focuses on three aspects called the Triple bottom line, which consists of economic, social, and environment. Elkington thinks that this is derived from a management science approach which is intended as a way to run corporate social responsibility (Kuhlman, 2010). Fajarini (2012) argues that economists are the most reluctant group in dealing with sustainability issues because they treat sustainability as a matter of economic resources rather than a public issue. The reason why economists are unwilling to recognize viability as a public issue is that the concept of sustainability is fundamentally incompatible with conventional economic theory (Rogers, 2008) in (Michelon, 2010).

Sustainability reports are also used by government agencies, for example from the environment ministry to assess the company's performance on the environment in any reporting. As in Indonesia, regulations in CSR disclosure can be found in the rules issued by Bapepam and Law No.40/2007 on Limited Liability Companies. The disclosure of sustainability reports in established rules is a stand-alone report, although there are still many CSR implementations disclosed along with the company's annual report (Kusumadilaga, 2010).

Abnormal Return

Abnormal return is the return earned by investors which are not by expectations. Abnormal return is the difference between the expected return and the earned return. The difference of return will be positive if the return earned is greater than the expected return or the calculated return. Meanwhile, the return will be negative if the return earned is lower than the expected return or the calculated return. Abnormal return can occur due to certain events, such as national holidays, early months, early years, uncertain political conditions, extraordinary events, stock splits, stock offerings, and so on. The event study analyzes the abnormal return of securities that may occur around the announcement of an event. Abnormal return or excess return is the excess of the actual return occurs to the normal return. Abnormal return is the difference between the actual return that occurs with the expected return (Jogiyanto, 2013). The following are the formula for calculating abnormal return:

$$CAR = \sum AR_{it}$$

AR_{it}: Rit - R_{mt}

$$R_{it} = \frac{P_{it} - P_{it-1}}{P_{it-1}}$$

$$R_{mt} = \frac{IHSG_t - IHSG_{t-1}}{IHSG_{t-1}}$$

Remarks:

AR_{it} = Abnormal return for company i on day t

R_{it} = Daily return of company on day t

R_{mt} = Return of market index on day t

Pit = Company i stock price at time t
Pit-1 = Company i stock price at time t-1
IHSGt = Jakarta Composite Index at time t
IHSGt-1 = Jakarta Composite Index at time t-1

Stock Trading Volume

Trading Volume Activity (TVA) can be used as an indicator to see investors' reaction to stock trading volume and can be used to see if ISRA announcement is a positive or negative signal to make a rational decision. Trading Volume Activity is a comparison between the number of shares traded with the number of outstanding shares in a certain period. Trading Volume Activity can be formulated as follows:

$$TVA = \frac{\sum \text{Saham perusahaan i yang diperdagangkan pada waktu}}{\sum \text{Saham perusahaan i yang beredar pada waktu t}}$$

After TVA of each share is identified, the average TVA during the observation period is calculated using the following formula:

$$XTVA_t = \frac{\sum XTVA_i}{n}$$

Remarks:

XTVA_t = TVA average at time t

ΣTVA_i = Total TVA at time t

n₂ = Number of samples

Previous Research

Sakina (2014), in the result of the research entitled "The Analysis of Price Differences and Stock Volume Prior and After The Indonesia Sustainability Reporting Award (ISRA) 2005 Announcement" proves that there is no difference between Abnormal Return (AR) and Trading Volume Activity (TVA) before or after the announcement. In addition, Sakina (2014) also proves in his research that investors are still using earnings information as an investment decision-making tool and do not pay much attention to information from social responsibility report.

Arifin (2003) examines the influence of earnings announcements on companies that apply corporate governance to price reactions and stock trading volumes, using corporate governance as a dummy variable. The results of his research found that earnings announcements made by companies with good corporate governance does not significantly increase the relevant value of the earnings announcement but substantially decreases the divergence of investors' expectations, as evidenced by significantly smaller trading volumes compared with less-than-average corporate governance.

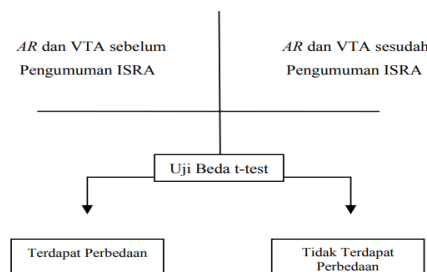
Budiman and Supatmi (2009), who examined the influence of Indonesia Sustainability Reporting Award (ISRA) announcement in 2008 on abnormal return and stock trading volume, conclude that there is a difference between the abnormal return of award-winning company shares around the ISRA announcement date.

Armin (2011) used research sample of public companies participating in ISRA 2009 and 2010, both award-winning and non-award winners. The data used are secondary data consisting of abnormal return daily data and stock trading volume. The research test utilized the paired t-

test method. The results of this research indicate that the ISRA announcement do affect the abnormal return and stock trading volume, as seen from the differences in abnormal return and stock trading volume before and after the date of announcement.

THEORETICAL FRAMEWORK

Based on the periodization chosen in this study and on the previous description, the theoretical framework of this research is described as follows:



Gambar
Rerangkemikiran

Research Hypothesis

H₁: There is an abnormal difference in stock returns before and after the announcement of the Indonesia Sustainability Reporting Award (ISRA).

H₂: There is a difference in stock trading volume before and after the announcement of the Indonesia Sustainability Reporting Award (ISRA).

RESEARCH METHODS

Research Variables and Operationalization

Abnormal Return

The abnormal return measurements for this research used the market adjusted models which assume that the best measurement is the market index return (Pincus, 1993 in Widiastuti, 2002), so it is not necessary to use the estimation period to form the estimation model, since the estimated securities return is the same as the market index return in the same period. In this case, the market return index uses the return of the Jakarta Composite Index (IHSG). Here is the formula for calculating abnormal return:

$$CAR = \sum AR_{it}$$

AR_{it}: Rit - R_{mt}

$$R_{it} = \frac{P_{it} - P_{it-1}}{P_{it-1}}$$

$$R_{mt} = \frac{IHSG_t - IHSG_{t-1}}{IHSG_{t-1}}$$

Remarks:

AR_{it} = Abnormal return for company i on day t

R_{it} = Daily return of company on day f

R_{mt} = Market index return on day t

P_{it} = Company i stock price at time t

P_{it-1} = Company i stock price at time t-1

IHSGt = Jakarta Composite Index at time t
IHSGt-1 = Jakarta Composite Index at time t-1

Stock Trading Volume

Trading Volume Activity is a comparison between the number of shares traded with the number of outstanding shares in a certain period. Trading Volume Activity can be formulated as follows:

$$TVA = \frac{\sum \text{Saham perusahaan } i \text{ yang diperdagangkan pada waktu}}{\sum \text{Saham perusahaan } i \text{ yang beredar pada waktu } t}$$

After TVA of each share is identified, the average TVA during the observation period is calculated using the following formula:

$$XTVA_t = \frac{\sum XTVA_i}{n}$$

Remark:

XTVA_t = TVA average at time t

ΣTVA_i = Total TVA at time t

n₂ = Number of samples

Indonesia Sustainability Reporting Awards (ISRA)

The ISRA announcement from 2009-2016 was non-financial information announced by IAI-KAM to companies that publish sustainability report properly and regularly report it to shareholders.

Research Population and Samples

The population used are companies that publish a sustainability report in annual financial statements. The sample used in this research are listed companies on the Indonesia Stock Exchange which won the Indonesia Sustainability Reporting Awards (ISRA) from 2009-2016 and related companies which also participated in the ISRA 2009-2016 but were not awarded. The sampling technique used is purposive sampling. This technique selects specific target groups to obtain information. The sample is set for certain types of groups that can provide the needed information, because the group is the only party which has information or because the group is by the criteria set by the researcher.

Data Collection Method

The data collection method in this research was done in several ways as follows:

1. Documentation, i.e. data collection available on research objects.
2. Literature studies, i.e., from the literature related to problems in writing this research.

Data Analysis Method

The data analysis method this research used the event study technique. Jogiyanto (2013) states that an event study can be used to test the information content of an announcement and can also be used to test the efficiency of the semi-strong market. If the announcement contains information, it is expected that the market will react at the time the announcement is received by the market. The market reaction is indicated by the price change of the relevant securities. Methods for the event study generally follow the procedures as stated by Elton and Gruber in Munawarah (2009):

1. Collect samples of companies that have an event to investigate.
2. Determine precisely the day or date of the announcement and specify as day 0.

3. Determine the study period or event window, five days after and before the date of the announcement.
4. Find the return earned and trading volume of each sample (company) based in each unit period (day).
5. Calculate the abnormal return from the return earned by each company.
6. Calculate stock trading volume from the data of outstanding shares and the total number of shares traded. The market reaction is indicated by the price change of the relevant securities. This reaction can be measured using abnormal return and stock trading volume.

RESEARCH RESULT AND DISCUSSION

Description of Research Objects

The research objects used in this study are listed companies on the Indonesia Stock Exchange, which earned the Indonesian Sustainability Reporting Awards (ISRA) from 2009 to 2016. Also, as a comparison, companies that also participated in ISRA 2009-2016 but did not get the award are also included. The criteria set out in the sample selection, are shown in Table 1

Table 1
Sample Selection Results

No	Sample Determination Results	Criteria Amount
1.	The company which won ISRA during the 2009-2016 study period.	99
2.	The ISRA winning companies that are not listed on the IDX	(65)
Total sample companies		34

Source: processed data (2018)

Data Analysis Results

In this study, the data used are the average abnormal return and the average trading volume of activity on the shares of ISRA-winning companies from 2009 to 2016 before and after the date of the ISRA announcement. Also, companies that also participated in the ISRA 2009-2016 but were not awarded were also examined as a comparison, in order to make the ISRA influence comparable between award-winning and non-award winning companies.

Abnormal Return and Trading Volume Activity Data

The following is the abnormal return and trading volume activity data of the company that won the ISRA 2009-2016 and those which did not receive the award, along with an explanation on abnormal return position before and after the announcement of ISRA 2009-2016:

Table 2
Table and Graph of Average Abnormal Return and Trading Activity Before and After ISRA Announcement

Hari Ke - Saat Pengumuman ISRA	Rata-Rata Abnormal Return	Rata-Rata Trading Volume Activity
t-5	1.45%	8.71%
t-4	-9.14%	9.18%
t-3	-13.43%	8.44%
t-2	4.27%	9.53%
t-1	-14.17%	11.57%
t-0	-3.75%	50.32%
t+1	-13.76%	8.65%
t+2	17.89%	9.59%
t+3	-24.29%	8.12%
t+4	-2.57%	7.36%
t+5	-1.06%	8.57%

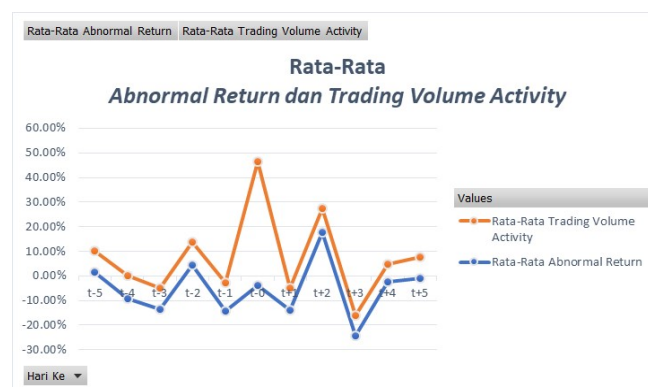


Table 3
Table and Graph of Abnormal Return and Trading Activity Before and After ISRA Announcement

Hari Ke - Saat Pengumuman ISRA	Abnormal Return	Trading Volume Activity
t+1	-68.80%	43.23%
t+2	89.43%	47.94%
t+3	-121.43%	40.60%
t+4	-12.84%	36.82%
t+5	-5.32%	42.87%
t-0	-18.73%	50.32%
t-1	-70.85%	57.83%
t-2	21.35%	47.64%
t-3	-67.14%	42.18%
t-4	-45.72%	45.88%
t-5	7.23%	43.55%

Source: data, processed with SPSS 23



Normality Test

Table 4
One-Sample Kolmogorov-Smirnov Test

		ARSebelum	TVASebelum	ARSesudah	TVASesudah
N		272	272	272	272
Normal	Mean	-0.0057	0.0087	-0.0044	0.0078
Parameters ^{a,b}	Std. Deviation	0.04623	0.01986	0.03935	0.01537
Most Extreme	Absolute	0.077	0.330	0.043	0.306
Differences	Positive	0.077	0.287	0.036	0.274
	Negative	-0.060	-0.330	-0.043	-0.306
Test Statistic		0.077	0.330	0.043	0.306
Asymp. Sig. (2-tailed)		,000 ^c	,000 ^c	,200 ^{c,d}	,000 ^c

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

d. This is a lower bound of the true significance.

The normality test aims to determine whether or not the data are normally distributed. The above output resulted in the value of Asymp. Sig. (2tailed) of 0,200, then under the terms of $0,200 > 0,05$ the residual value is normal. Then the data on the model is normally distributed.

Hypothesis Testing

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
H1	ARSebelum	-0.0057	272	0.04623	0.00280
	ARSesudah	-0.0044	272	0.03935	0.00239
H2	TVASebelum	0.0087	272	0.01986	0.00120
	TVASesudah	0.0078	272	0.01537	0.00093

Paired Samples Test									
		Paired Differences				t	df	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower				Upper
H1	ARSebelum - ARSesudah	-0.00133	0.05972	0.00362	-0.00846	0.00580	-0.367	271	0.714
H2	TVASebelum - TVASesudah	0.00094	0.01367	0.00083	-0.00069	0.00257	1.135	271	0.257

Based on the result of the hypothesis test above, it can be concluded that:

H₁: Rejected because the value of sig $0.714 > 0.05$ which means there is no difference in market reaction (abnormal return) from before and after ISRA announcement during the period of 2009-2016.

H₂: Rejected because the value of sig $0.257 > 0.05$ which means there is no difference market reaction (trading volume activity) between before and after ISRA announcement during the period of 2009-2016

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Based on the results of statistical tests on the abnormal return of ISRA-winning companies, before and after the announcement date, the researcher found that there is no significant difference between abnormal return before and after the date of ISRA announcement from 2009 to 2016. This is shown from the t count $< t$ table with significance above 0.05. In another word, H_{1is} is rejected. Thus, investors do not respond to the ISRA announcement as something that has information content. Investors do not respond to ISRA announcement as information that can be taken into consideration in making a decision.

Based on the results of statistical tests on trading volume activity, there is no difference in the trading volume of shares before and after the date of the ISRA announcement from 2009 to 2016. This is based on statistical data that shows the value of t count $<$ t table with significance above 0,05. In another word, H_2 is rejected. Thus, the ISRA announcement did not attract investors from purchasing shares of the company even though the company has won ISRA award.

Suggestion

The suggestions presented in this research are:

1. It fits for the company to make sustainable reporting because the program is already established in the law. Sustainability reporting program has many advantages and can be used as one of the reference units in making investment decisions by investors.
2. The ISRA Organizer, NSCR, should keep holding such an event because it is advantageous to raise awareness of both companies and government agencies in making sustainable reports.
3. The government should participate intensively in the implementation and development of sustainability reporting in Indonesia, and tighten the rules as stated in Law No. 40 Article 74 paragraph 1.
4. Investors and potential investors should use the sustainability reporting as an alternative in making investment decisions in addition to using financial statements.
5. The next researcher may use another method in calculating expected return using three models at once to identify the difference in market reaction. These three expected return models are market model, the mean adjusted model, and market adjusted model.



Quantifying Interactions among European Equity Markets with Time-Varying Conditional Skewness

Cian E. Twomey

J.E. Cairnes School of Business & Economics,
NUI Galway, Ireland

ABSTRACT

This paper explores the influence of global and regional factors on the conditional distribution of daily stock returns in four European markets – the U.K., Germany, France, and Spain - using factor models in which unexpected returns comprise global, regional and local shocks. Besides conditional heteroscedasticity, the model innovates by allowing shocks to incorporate time-varying conditional skewness, which is found to increase the explanatory power of our modelling. The relative importance of the global and regional factors varies across the four markets, with the largest, most international market (the U.K.) being more dependent on global factors as compared to the regional importance for the Spanish market. Also, the global factor is relatively less important for market volatility in models that permit time-varying conditional skewness.

Keywords: Asymmetries, Skewness, Volatility, Spillovers, Stock returns

INTRODUCTION

A good understanding of the origins and transmission intensity of shocks is necessary for many financial decisions, including optimal asset allocation, the construction of global hedging strategies, as well as the development of various regulatory requirements, like capital requirements or capital controls. This paper examines the fundamental forces driving return volatility in four large European markets. Specifically, we focus on how and to what extent volatility in each of the four markets is influenced by foreign shocks from other national markets. We contribute to this understanding by presenting new measurements of the relative importance of global, regional and local components of risk in European equity markets.

This paper has two innovations: first, we re-estimate volatility spillovers using a factor model that, unlike previous models used for this purpose, allows for time-varying conditional skewness in a manner first proposed by Harvey and Siddique [1, 2]; second, we present additional evidence that distinguishes between downside and upside risks. This new approach is motivated by the strong empirical evidence that the standardised residuals from conditionally heteroskedastic models fitted to stock returns are asymmetrically distributed [3, 4]. The evidence we present is from four European equity markets, namely the U.K., Germany, France, and Spain, using daily data from January 2002 to December 2017.

Many early studies on spillovers focus on how a *single* international market (often the US or world market) influences other stock markets but do not distinguish regional versus world market factors [5, 6]. However, evidence of co-movements in the mean and volatility of equity returns suggests that factor models, such as those developed in Bekaert and Harvey [5] and Ng [7], are useful ways of modelling the behaviour of stock returns.

Specifying unexpected returns to depend on a world factor as well as an idiosyncratic shock, Bekaert and Harvey [5] find evidence that emerging market volatility is affected by a world factor, and that the influence of the world factor varies considerably over time. Ng [7]

constructs a volatility spillover model by assuming that there are three sources of shocks — local, regional and world. By considering innovations from the Japanese and US markets as regional and world shocks respectively, she analyses how much of the return volatility of any particular market in the Pacific– Basin is driven by a world factor and how much is left to be explained by a regional force. This is important for evaluating the relative importance of the world's two largest markets on smaller markets, such as the six Pacific–Basin countries examined — Hong Kong, Korea, Malaysia, Singapore, Taiwan, and Thailand. To conclude, Ng [7] finds evidence of spillovers in volatility from the US and Japanese markets to six Asian stock markets, with the US market exerting a stronger influence, although the external shocks appear to explain only a small fraction of volatility in these markets.

In another paper, Forbes and Chinn [8] estimate a factor model in which a country's market returns are a function of global factors (global interest rates, oil prices, gold prices, and commodity prices), sectoral factors (stock returns for 14 sectoral indices), cross-country factors (returns in other large financial markets), and country-specific effects. Forbes and Chinn [8] find that both cross-country factors and sectoral factors are important determinants of stock and bond returns in countries around the world (although it is often difficult to differentiate between these two sets of factors). Not surprisingly, movements in the largest regional economy tend to be the most important cross-country factor for nearby countries (such as the U.S. market for the Americas), although movements in the U.S. market are also important for most regions. In the later half of the 1990s, the U.S. factor and sectoral factors gained importance in most regions, while the Japanese and U.K. factors lost importance.

A large body of research has attempted to identify how the integration of previously segmented markets has changed patterns of cross-country equity correlations and interdependencies. Increased integration with global markets, however, does not necessarily generate increased correlations between domestic and global asset returns. One reason why integration may not generate increased correlations is differences in industrial structures between individual countries and the world average. Subsequent research has seen an active debate on the relative importance of industry effects versus country-specific effects in explaining cross-country correlations and volatility. For example, Heston and Rouwenhorst [9] argue that industrial structure explains very little of the cross-sectional differences in country return volatility in Europe, and that the low correlation between country indices is almost completely due to country-specific sources of return variation.

While there is ample evidence that full convergence in European bond markets and money markets had been achieved by the mid- to late 1990s, it is far less clear whether, and to what extent, European equity markets have become more integrated. This has important implications both for investors' portfolio allocation decisions and for policy-makers in meeting the challenges of European integration and shaping policy responses to more integrated and interdependent financial markets in Europe. Fratzscher [10] analyses the integration process of European equity markets since the 1980s. To address the above questions, the paper builds on an uncovered interest parity condition applied to asset prices to define financial market integration, and it employs a trivariate GARCH model for 16 OECD countries to test the implied integration hypotheses empirically. The paper has a number of important findings. First, European equity markets have become highly integrated with each other only since 1996. And second, the Euro area market has taken over from the US the role as the most important market in explaining equity returns in most individual European markets. It compares the relative importance of the three EMU pillars of exchange rate stability, real convergence, and monetary policy convergence in explaining the time variations of equity market integration in

Europe. Using a GARCH methodology with time-varying coefficients to analyse and compare the role of these three factors, the evidence suggests that EMU has indeed fundamentally altered the nature of financial integration in Europe. Fratzscher [10] found that it was in particular the reduction and elimination of exchange rate volatility, and to some extent also monetary policy convergence, that has played a central role in explaining the increased financial integration among EMU members. Moreover, the shock transmission across equity markets was found to be asymmetric, i.e. negative shocks are more strongly transmitted, large shocks have a stronger impact than small shocks, and these asymmetry and threshold effects have become larger over time.

In this paper, we begin with some evidence outlining why time-varying conditional skewness should be incorporated into the modelling process. Next, we present some preliminary data analysis in section 3. In particular, we document evidence of time-varying asymmetry in the markets that we study. The evidence we present here justifies our use of a time-varying skewness framework for studying spillover effects. The evidence also highlights the importance of studying the extent of spillovers in skewness. The models that we employ for studying spillovers are described in detail in section 4. The models assume that unexpected returns comprise world, regional and local shocks, with the difference that these shocks are now characterised not just by time-varying conditional volatility, but also by time-varying conditional skewness. Empirical results are presented and discussed in section 5, and section 6 concludes.

THE NATURE OF CONDITIONAL SKEWNESS

The second moment of returns, variance, has been the subject of a large literature in finance []. Variance of returns has been widely used as a proxy for risk in financial returns. Therefore, the properties of variance by itself as well as the relation between expected return and variance have been important topics in asset pricing. It is useful to focus on the intertemporal relation between return and risk where risk is measured in the form of variance or covariance. An important concern has been the sign and magnitude of this trade-off.

The generalised autoregressive conditional heteroscedasticity (GARCH) class of models, including the exponential GARCH (EGARCH) specification, have been the most widely used models in modelling time-series variation in conditional variance. Persistence and asymmetry in variance are two stylised facts that have emerged from the models of conditional volatility. Persistence refers to the tendency where high conditional variance is followed by high conditional variance. Asymmetry in variance, i.e., the observation that conditional variance depends on the sign of the innovation to the conditional mean has been documented in asymmetric variance models used in several seminal econometric papers [11-13]. These studies find that conditional variance and innovations have an inverse relation: conditional variance increases if the innovation in the mean is negative and decreases if the innovation is positive. The fourth moment of financial returns, kurtosis, has drawn substantial attention as well. This has been primarily because kurtosis can be related to the variance of variance and, thus, can be used as a diagnostic for the correct specification of the return and variance dynamics.

In contrast, skewness has drawn far less scrutiny in empirical asset pricing, though skewness in financial markets appears to vary through time and also appears to possess systematic relation to expected returns and variance. The time-series variation in skewness can be viewed as analogous to heteroscedasticity. Moreover, estimating time-varying moments is important for testing asset-pricing models that impose restrictions across moments. Estimation of time-varying skewness may also be important in implementing models in option pricing. The

presence of skewness can also affect the time-series properties of the conditional mean and variance.

Modelling asymmetry of returns is becoming more important in economics and finance. Skewness that measures asymmetry of the distribution based on its standardized third central moment is observed in stock returns data [1, 14, 15]. A negative (positive) skewness reflects the prices change in such a way that there is a higher (lower) probability of a large increase in price than a large fall. By knowing the shape of the portfolio return distribution, investors will be able to make better judgments depending on their risk preferences.

Several studies in the empirical finance literature have reported evidence of two types of asymmetries in the joint distribution of stock returns. The first is skewness or asymmetry in the distribution of individual stock returns, which has been reported by numerous authors [1, 2]. The second asymmetry is in the dependence between stocks: stock returns appear to be more dependent during market downturns than during market upturns, a characteristic we refer to as asymmetric dependence. Evidence that stock returns exhibit some form of asymmetric dependence has been reported by several authors [16-17].

Moreover, there is strong evidence that standardised residuals from conditionally heteroskedastic models fitted to stock returns are asymmetrically distributed [15]. If there is predictability in the shape of the conditional distribution of stock returns, the implications for asset and derivative pricing and risk management are immediate. Even if the first two moments are sufficient for asset pricing, variation in the shape of the distribution may affect the estimation of the conditional mean and conditional variance of an asset return, just as (non-varying) asymmetry affects the estimation of the conditional mean and variance

Harvey and Siddique [1] were the first to study the conditional skewness of asset returns, and extend the traditional GARCH(1,1) model by explicitly modelling the conditional second and third moments jointly. Specifically, they present a framework for modelling and estimating time-varying volatility and skewness using a maximum likelihood approach assuming that the errors from the mean have a non-central conditional t distribution. They then use this method to model daily and monthly index returns for the U.S., Germany, and Japan, and weekly returns for Chile, Mexico, Taiwan, and Thailand; concurrently estimating conditional mean, variance and skewness. We also present a bivariate model of estimating co-skewness and covariance in a GARCH-like framework. We find significant presence of conditional skewness and a significant impact of skewness on the estimated dynamics of conditional volatility. Their results suggest that conditional volatility is much less persistent after including conditional skewness in the modelling framework and asymmetric variance appears to disappear when skewness is included.

In a later paper, Harvey and Siddique [2] offer the following intuition for including skewness in the asset-pricing framework. In the usual set-up, investors have preferences over the mean and the variance of portfolio returns. The systematic risk of a security is measured as the contribution to the variance of a well-diversified portfolio. However, there is considerable evidence that the returns distributions cannot be adequately characterised by mean and variance alone, which leads them to the next moment – skewness. Given the statistical evidence of skewness in returns, it is reasonable to assume that investors have preferences for skewness. With a large positive skewness (high probability of a large positive return), the investors may be willing to hold a portfolio even if its expected return is negative. As they show, this is still fully consistent with the Arrow-Pratt notion of risk aversion. Similarly,

variation in skewness risk should also be important for the cross-section of assets. Skewness may be important in investment decisions because of induced asymmetries in ex-post (realised) returns. At least two factors may induce asymmetries. First, the presence of limited liability in all equity investments may induce option-like asymmetries in returns. Second, the agency problem may induce asymmetries in index returns. That is, a manager has a call option with respect to the outcome of his investment strategies. Managers may prefer portfolios with high positive skewness. So, if investors know that the asset returns have conditional skewness at time t , excess asset returns should include a component attributable to conditional skewness. Their asset-pricing model formalises this intuition by incorporating conditional skewness. This model is found to explain much of the time-series variation in the expected market risk premium.

Skewness in the returns of financial assets can arise from many sources. Lempériere et al [15] points out that managers have an option-like features in their compensation. The impact of financial distress on firms and the choice of projects can also induce skewness in the returns. More fundamentally, skewness can be induced through asymmetric risk preferences in investors. Harvey and Siddique [2] and Chen, Hong and Stein [18] are detailed studies into the determinants and economic significance of skewness in stock returns; stocks that are experiencing relatively high turnover and/or usually high returns over previous periods tend to be more negatively skewed. Stock capitalisation also appears to be important in explaining the degree of skewness in stock returns.

Perez-Quiros and Timmermann [19] relate time-varying skewness to business cycle variation. The skewness in stock returns is economically significant. Chen, Hong and Stein [18] used cross-sectional regressions of skewness in the daily stock returns of individual firms, measured over six month periods, and found that periods of high return and unusually high turnover tend to be followed by periods of negative skewness, indicating that the asymmetry they find in stock returns changes options prices substantially.

The question of predictability in the shape of a variable's conditional distribution is usually framed in terms of predictability in conditional skewness, or 'conditional heteroskewness', with attention focusing primarily on predictability using the variable's past history. Recent investigations have uncovered some evidence of such predictability in stock returns. Specifying the conditional distribution of the standardised residuals of a GARCH-M model as a non-central t -distribution, with skewness depending on the conditional skewness in the previous period, Harvey and Siddique [1] present evidence of skewness in the conditional distributions of daily stock index returns in the US, German, Japanese, Chilean, Mexican, Taiwanese and Thai markets, and that this asymmetry in the shape of the distribution depends on the degree of skewness in previous periods. Harvey and Siddique [2] incorporate time-varying conditional skewness into an asset-pricing model and find that ignoring skewness results in significant pricing errors.

Perez-Quiros and Timmermann [19] found time-variation in the skewness of size-sorted portfolios US stocks. They investigated the determinants of skewness in the daily stock returns using an autoregressive conditional density model with an asymmetric Generalized- t distribution to estimate the time-varying skewness and the time-varying effects of prior return/turnover on skewness. Using NYSE and AMEX data from 1962 to 2000, the authors find that if today's return is positive and turnover ratio is relatively high, investors would expect tomorrow's return to be from a more positively skewed distribution.

In terms of European evidence, El Babsiri and Zakoian [20] develop an original set of GARCH

models which allow for time-varying skewness and kurtosis (hetero-skewness and hetero-kurtosis) and two kinds of asymmetry: (i) different volatility processes for up and down moves in equity markets (contemporaneous asymmetry); (ii) asymmetric reactions of these volatilities to past positive and negative changes (dynamic asymmetry or leverage effect). In an application to a daily French stock index returns, they found that this model with conditional hetero-skewness, hetero-kurtosis, and leverage effects in volatility improves upon models without these effects.

Overall, the evidence of predictability in the skewness of stock returns is, however, difficult to interpret, particularly its implications for risk management. The majority of studies on this issue proceed by fitting a model that allows for predictability in skewness, and testing if the parameters that embody conditional heteroskewness are statistically significant. However, little is known about the behaviour of models with time-varying conditional skewness. In particular, these models may not be robust to outliers. On the other hand, the models may not be able to pick up predictability in extreme realisations, even if predictability exists, as extreme realisations occur infrequently.

Earlier studies of mean and/or volatility spillovers assumed that the conditional distribution of stock returns to be symmetric about its conditional mean. As noted in the above studies, recent work suggests that dynamics in the conditional third moment is an empirically relevant feature of stock returns. Therefore, this paper extends the standard modelling of volatility spillovers to allow shocks have time-varying conditional skewness. Moreover, the presence of time-varying conditional skewness in equity returns raises a few questions concerning the measurement of the influence of global, regional and local factors on individual stock markets. We address whether incorporating time-varying skewness into an analysis of spillovers provide substantially different measurements of the relative importance of world and regional factors on the volatility of domestic equity returns.

DATA AND SUMMARY STATISTICS

We use daily equity market index returns from the first week of January 2002 to the last week of December 2017. The data are obtained from Thomson Reuters Datastream, and the daily percentage returns are calculated as the difference of log closing prices (multiplied by 100). The indexes used for the European markets in this study are the FTSE100, Xetra DAX, CAC40, and IBEX-35. For the world factor we use daily returns on the MSCI World Index. As a proxy for the regional factor, we use daily returns on MSCI's Europe Index. Table 1 below contains summary statistics on these weekly returns.

Table 1: Summary Statistics for Daily Stock Returns^a

	World	Region	UK	Spain	France	Germany
Mean	0.031	0.039	0.037	0.035	0.038	0.040
Std. Error	0.952	1.053	0.867	1.087	1.112	1.061
Skewness	-0.556***	-0.625***	-0.824***	-0.268**	-0.333***	-0.595***
Kurtosis	32.216***	8.571***	11.531***	5.837***	5.641***	9.435***
Jarque-Bera	146.8***	60.39***	1068***	81.01***	1064***	477.9***
$\rho_1(1)$	-0.069*	-0.052	-0.085**	-0.075*	-0.031	-0.063
Q1(10)	12.99	9.658	23.05**	11.80	17.47*	16.228*
$\rho_2(1)$	0.064	0.089**	0.314***	0.202***	0.340***	0.317***
Q2(10)	89.62***	193.9**	114.8***	179.1***	190.0***	135.5***
$\rho_3(1)$	-0.047	-0.001	-0.124***	-0.009	-0.244***	-0.236***
Q3(10)	40.73***	4.836	11.93	10.77	40.42	59.88***
$\rho_4(1)$	0.004	0.026	0.103**	0.068	0.259***	0.248***
Q4(10)	34.020***	2.315	6.558	68.08***	42.69	65.18***

^a *, **, and *** denote statistical significance at 10, 5, and 1% respectively. $\rho_j(1)$ is the 1st order autocorrelation of the returns to the j th power. $Q_j(10)$ is the Ljung-Box Q statistic at lag 10 for the returns to the j th power.

The Jarque-Bera test statistic clearly indicates that the returns are non-normal, and in all cases this is due to the presence of skewness and excess kurtosis. The data show strong evidence that negative shocks are more frequent than positive shocks (negative skewedness), that large shocks are more common than expected statistically (excess kurtosis) and that equity returns are autocorrelated. The statistically significant excess kurtosis is very likely due, at least in part, to the presence of autoregressive conditional heteroscedasticity, as evidenced by the prominent autocorrelations in the square of all the returns series. Significant autocorrelation in the returns taken to the third power is sometimes used as an indicator of the possible presence of autoregressive third moments. The statistics would then indicate the possible presence of autoregressive skewness in U.K., French and German returns.

MODELLING TIME-VARYING CONDITIONAL SKEWNESS

To confirm the presence of time-variation in conditional skewness, and to assess the need for and potential gains from using a framework that permits this, we fit univariate models of time-varying conditional skewness to these returns: the stock returns are modelled as following some AR-GARCH process, with the standardised residuals following a zero-mean unit-variance skewed t distribution developed in Hansen [21].

Letting $r_{i,t}$ represent the time t return on the equity index of market i , with $i = w, g, 1, 2, 3, 4$ representing the world, regional, and the four individual European markets respectively, we model returns as:

$$r_{i,t} = \alpha_{i,0} + \alpha_{i,1}r_{i,t-1} + \alpha_{i,2}r_{i,t-2} + \alpha_{i,3}r_{i,t-3} + \alpha_{i,4}r_{i,t-4} + \alpha_{i,5}r_{i,t-5} + \alpha_{i,6}r_{i,t-6} + \alpha_{i,7}r_{i,t-7} + \alpha_{i,8}r_{i,t-8} + \alpha_{i,9}r_{i,t-9} + \alpha_{i,10}r_{i,t-10} + \epsilon_{i,t} \tag{1}$$

$$\epsilon_{i,t}^2 = \omega_{i,t} + \beta_{i,1}\epsilon_{i,t-1}^2 + \beta_{i,2}\epsilon_{i,t-2}^2 + \beta_{i,3}\epsilon_{i,t-3}^2 + \beta_{i,4}\epsilon_{i,t-4}^2 + \beta_{i,5}\epsilon_{i,t-5}^2 + \beta_{i,6}\epsilon_{i,t-6}^2 + \beta_{i,7}\epsilon_{i,t-7}^2 + \beta_{i,8}\epsilon_{i,t-8}^2 + \beta_{i,9}\epsilon_{i,t-9}^2 + \beta_{i,10}\epsilon_{i,t-10}^2 + \gamma_{i,t}[\max(0, \epsilon_{i,t-1})]^2 \tag{2}$$

$$z_{i,t} \sim g(z_{i,t} | \omega_{i,t}, \gamma_{i,t}) \tag{3}$$

$$g(z_{i,t} | \omega_{i,t}, \gamma_{i,t}) = \begin{cases} \frac{1}{\sigma_{i,t}} \left[1 + \frac{1}{2} \frac{b_{i,t} z_{i,t} + a_{i,t}}{1 + \gamma_{i,t}} \right]^{-\frac{i+1}{2}} & \text{when } z_{i,t} < -a_{i,t}/b_{i,t} \\ \frac{1}{\sigma_{i,t}} \left[1 + \frac{1}{2} \frac{b_{i,t} z_{i,t} + a_{i,t}}{1 + \gamma_{i,t}} \right]^{-\frac{i+1}{2}} & \text{when } z_{i,t} \geq -a_{i,t}/b_{i,t} \end{cases} \tag{4}$$

The volatility equation (2) is the Glosten et al. [12] specification that allows for conditional

volatility $\sigma_{i,t}^2$ to react asymmetrically to the previous period's shock according to whether the shock is positive or negative. The conditional distribution of the standardised residuals $z_{i,t}$ is characterised by two parameters: η_i is a degree of freedom parameter and $\lambda_{i,t}$ determines the degree of asymmetry in the distribution; these are restricted to $2 < \eta_i < \infty$ and $-1 < \lambda_{i,t} < 1$. The values $a_{i,t}$, $b_{i,t}$ and c_i are defined as:

$$a_{i,t} = 4 \left(\frac{c_i}{\eta_i} \right)^{\frac{2}{\eta_i}} \quad (5)$$

$$b_{i,t}^2 = 1 + 3 \left(\frac{c_i}{\eta_i} \right)^{\frac{2}{\eta_i}} a_{i,t}^2 \quad (6)$$

$$c_i = \frac{\frac{\eta_i + 1}{2}}{\sqrt{\left(\frac{\eta_i}{2} \right)^{\frac{2}{\eta_i}}}} \quad (7)$$

where $a_{i,t}$ and $b_{i,t}$ may vary over time as we specify $\lambda_{i,t}$ to be possibly time-varying with the following autoregressive specification:

$$\lambda_{i,t} = f(\lambda_{i,t-1}, \lambda_{i,t-1}, \max(0, \lambda_{i,t-1})) \quad (8)$$

This distribution is fat-tailed, and is skewed to the left (right) when $\lambda_{i,t}$ is less (greater) than 0. It reduces to the student's t density when $\lambda_{i,t}$ is equal to zero. We refer to $\lambda_{i,t}$ as the "asymmetry parameter" or the "skewness parameter" as this parameter determines whether the distribution is symmetric or not. This parameter is, however, not the same as the coefficient of skewness; nonetheless, $\lambda_{i,t}$ and the conditional skewness coefficient measure the same thing, and we will refer to time-variation in $\lambda_{i,t}$ as time-variation in conditional skewness. Equation (8) that determines $\lambda_{i,t}$ will be referred to as the "asymmetry equation" or "skewness equation". The specification in (8) that we use differs from previous applications of the Autoregressive Conditional Density (ARCD) model as we allow for negative shocks and positive shocks to have different effects not just on volatility (the usual "leverage effect") but also on skewness.

The proof that a random variable with this distribution has zero mean and unit variance is in Hansen [21]. The models are estimated by maximum likelihood. In fitting the model, we impose the restrictions $-1 < \lambda_{i,t} < 1$ and $2 < \eta_i < \infty$ using the logistic transformations:

$$\lambda_{i,t} = 1 - \frac{2}{1 + \exp(\lambda_{i,t})} \quad (9)$$

$$\eta_i = 2 + \frac{30}{1 + \exp(\eta_i)}$$

and re-specify (8) as $\lambda_{i,t} = \alpha_0 + \alpha_1 \lambda_{i,t-1} + \alpha_2 \lambda_{i,t-1} + \alpha_3 \max(0, \lambda_{i,t-1})$

The results from this estimation exercise are shown in Table 2.

Table 2: Univariate Model with Time-Varying Conditional Skewness^a

	World	Region	UK	Spain	France	Germany
<i>Mean Eq.</i>						
$\alpha_{i,0}$	0.139 (0.069)**	-0.106 (0.109)	0.393 (0.151)***	-0.189 (0.155)	0.093 (0.126)	0.111 (0.117)
$\alpha_{i,1}$	-0.069 (0.039)*	-0.016 (0.047)	0.006 (0.047)	-0.072 (0.049)	0.040 (0.044)	0.014 (0.049)
<i>Variance Eq.</i>						
$\beta_{i,0}$	0.036 (0.025)	0.420 (0.333)	0.644 (0.325)**	0.070 (0.056)	0.471 (0.227)**	0.547 (0.327)*
$\beta_{i,1}$	0.954 (0.016)***	0.841 (0.095)***	0.818 (0.040)***	0.971 (0.022)***	0.836 (0.043)***	0.817 (0.070)***
$\beta_{i,2}$	0.068 (0.031)**	0.179 (0.093)*	0.186 (0.056)***	0.070 (0.021)***	0.233 (0.069)***	0.217 (0.087)**
$\beta_{i,3}$	-0.068 (0.044)	-0.165 (0.077)**	-0.085 (0.067)	-0.080 (0.017)***	-0.177 (0.063)***	-0.155 (0.075)**
<i>Skew Equation</i>						
$\gamma_{i,0}$	-0.208 (0.252)	-0.007 (0.158)	-0.195 (0.131)	0.025 (0.106)	0.035 (0.070)	-0.072 (0.130)
$\gamma_{i,1}$	0.117 (0.388)	0.525 (0.147)***	0.301 (0.214)	0.189 (0.266)	0.543 (0.382)	0.005 (0.397)
$\gamma_{i,2}$	0.301 (0.132)**	0.133 (0.069)*	0.062 (0.025)**	0.052 (0.021)**	0.010 (0.024)	0.043 (0.035)
$\gamma_{i,3}$	-0.470 (0.231)**	-0.117 (0.102)	-	-	-	-
<i>Degrees of Freedom</i>						
η	9.512 (3.769)**	6.879 (1.671)***	12.67 (5.567)**	14.77 (8.242)*	5.466 (1.234)***	7.441 (2.550)***
LR	5.808*	2.233	3.482	5.108*	0.414	1.514
Wald	5.712*	13.34**	9.367**	9.415**	4.381	1.484
K-S	0.019	0.024	0.033	0.024	0.023	0.023
$(q_t \bar{q})^{\rho 1}$	0.026	0.001	0.021	0.064	0.030	0.029
Q1(10)	6.344	9.838	3.626	6.156	16.59*	18.888**

^aThe model being estimated consists of equations 1, 2, and 9. Standard errors are in parentheses, and *, **, and *** denote statistical significance at 10, 5, and 1% respectively. Wald and LR denote the Wald and Likelihood Ratio test statistics for the restriction $\gamma_{i,1} = \gamma_{i,2} = (\gamma_{i,3}) = 0$. $q_t = \int_{-\infty}^{y_t} g(u_t) du_t$. K-S is the Kolmogorov-Smirnov test for uniformity. ρ_j is the 1st order autocorrelation of $q_t \bar{q}$ to the j th power. Qj(10) is the Ljung-Box Q statistic at lag 10 for the returns to the j th power.

In Table 2, the goodness-of-fit measures for all returns series suggest that the models capture the dynamics of the returns well; the Kolmogorov-Smirnov test does not reject the null of uniformity in all cases, and the autocorrelations and Ljung-Box Q statistics show that, to a large extent, all the dynamics in the data have been accounted for. Both the return on the world and regional indexes show clear evidence of time variation in conditional skewness. The parameters $\gamma_{i,1}$, $\gamma_{i,2}$, and $\gamma_{i,3}$ in the asymmetry equation are mostly statistically significant at 5%. A Wald test on the joint significance of these parameters in each of the equation rejects the null that the parameters are zero. The results from the individual markets in our study are much less convincing. Individual and joint tests on the parameters $\gamma_{i,1}$, $\gamma_{i,2}$, and $\gamma_{i,3}$ in the asymmetry equation show mixed results, as do the Likelihood Ratio tests.

The world, regional and individual market returns in our study tend to be more negatively skewed during periods of high volatility. Table 6.3(a) displays the correlation between the

degree of skewness as measured by $\lambda_{i,t}$ and $\sigma_{i,t}^2$, the conditional volatility of returns from the univariate models.

Table 3(a): Correlation between $\lambda_{w,t}$ and $\sigma_{w,t}^2$, $\lambda_{g,t}$ and $\sigma_{g,t}^2$ and $\lambda_{i,t}$ and $\sigma_{i,t}^2$

World	Region	U.K.	Spain	France	Germany
-0.450	-0.697	-0.143	-0.049	-0.167	-0.142

The correlation of negative skewness with high volatility adds further weight to the economic significance of conditional skewness in the data, and the usefulness of refining our understanding of volatility spillovers to distinguish downside risks from overall volatility.

The correlations, shown in Table 3(b) below, between the estimated asymmetry parameters from the six univariate models suggest that a factor model would be an appropriate framework for such an analysis. The correlations are all fairly large and positive.

Table 3(b): Correlation between $\lambda_{w,t}$, $\lambda_{g,t}$ and $\lambda_{i,t}$ ^{a, b}

	World	Region	U.K.	Spain	France	Germany
World	1.000	0.558	0.248	0.111	0.191	0.236
Region		1.000	0.400	0.310	0.390	0.421
U.K.			1.000	0.376	0.447	0.686
Spain				1.000	0.270	0.401
France					1.000	0.517
Germany					-0.199	1.000

^{a, b} $\lambda_{w,t}$ and $\sigma_{w,t}^2$, $\lambda_{g,t}$ and $\sigma_{g,t}^2$ and $\lambda_{i,t}$ and $\sigma_{i,t}^2$ are the fitted asymmetry parameters and conditional variances obtained from the univariate models with time-varying conditional skewness (see note to Table 2).

The results from the univariate models strongly suggest that it will be productive to study the issue of volatility spillovers using a factor model with time-varying conditional skewness. We construct, in the spirit of Bekeart and Harvey [2] and Ng [7], the following sequence of models.

The world market returns series is assumed to follow the process described in equations (1) through (8) above, which are reproduced again below for convenience. The world factor is assumed not to depend on any of the individual markets in this study, or on the regional factor. The regional market returns series on the other hand is driven by a world shock, and a regional shock that is assumed to be independent of the world shock:

$$r_{g,t} = \alpha_{g,0} + \alpha_{g,1}r_{w,t} + \alpha_{g,2}r_{g,t} + \epsilon_{g,t} \tag{1}$$

$$\epsilon_{g,t} = \alpha_{g,1} \epsilon_{w,t} + e_{g,t}, e_{g,t} = z_{g,t} \tag{2}$$

$$z_{g,t} \sim \mathcal{G}(z_{g,t} | \alpha_{g,1}, \epsilon_{g,t}) \tag{3}$$

$$\sigma_{g,t}^2 = \alpha_{g,0} + \alpha_{g,1} \sigma_{g,t}^2 + \alpha_{g,2} e_{g,t}^2 + \alpha_{g,3} [\max(0, e_{g,t})]^2 \tag{4}$$

$$\epsilon'_{g,t} = \alpha_{g,0} + \alpha_{g,1} \epsilon'_{g,t} + \alpha_{g,2} e_{g,t} + \alpha_{g,3} \max(0, e_{g,t}) \tag{5}$$

The unexpected returns on individual markets are, in turn, assumed to depend on the world shock, the idiosyncratic portion of the regional shock, $e_{g,t}$, and a country-specific shock that is independent of both $e_{g,t}$ and $\epsilon_{w,t}$:

$$r_{i,t} = \alpha_{i,0} + \alpha_{i,1}r_{w,t-1} + \alpha_{i,2}r_{g,t-1} + \alpha_{i,3}r_{i,t-1} + \varepsilon_{i,t} \quad (6)$$

$$\varepsilon_{i,t} = \alpha_{i,1}w_{i,t} + \alpha_{i,2}e_{g,t} + e_{i,t}, e_{i,t} = z_{i,t} \quad (7)$$

$$z_{i,t} \sim \mathcal{G}(z_{i,t} | \alpha_{i,1}, \alpha_{i,2}) \quad (8)$$

$$\sigma_{i,t}^2 = \alpha_{i,0} + \alpha_{i,1}\sigma_{i,t-1}^2 + \alpha_{i,2}e_{i,t-1}^2 + \alpha_{i,3}[\max(0, e_{i,t-1})]^2 \quad (9)$$

$$\lambda_{i,t} = \alpha_{i,0} + \alpha_{i,1}\lambda_{i,t-1} + \alpha_{i,2}\lambda_{i,t-1} \quad (10)$$

Throughout, $\varepsilon_{i,t}$ is used to denote the time t unexpected return for each series (w, g, i) while $e_{i,t}$ denotes the idiosyncratic shock; $\sigma_{i,t}^2$ and $\lambda_{i,t}$ always denote the conditional variance and skewness of an idiosyncratic shock, while $h_{i,t}$ will refer to the conditional volatility of unexpected returns (which combines the idiosyncratic shock with the external factors).

We observe that $\lambda_{i,t}$ and $\sigma_{i,t}^2$ are connected through (9). The world shock affects the volatility and skewness of unexpected regional returns only through (2), while the world and idiosyncratic regional shocks influence the volatility and skewness of unexpected country returns through (7). These two equations are referred to as the *factor equations*.

The factor loadings $\phi_{i,1}$ and $\phi_{i,2}$ capture the impact of the global and regional factors on the volatility and skewness of country i 's return, and so in our analysis we consider the relative size and significance of these two parameters. To understand the economic significance of these factors, we calculate the proportion of variance in the market returns explained by the global and regional factors.

Since the conditional variance of country i 's stock return is

$$\left[\sigma_{i,t}^2 | \mathcal{I}_{i,t-1} \right] = h_{i,t} = \sigma_{i,1}^2 \sigma_{w,t}^2 + \sigma_{i,2}^2 \sigma_{g,t}^2 + \sigma_{i,t}^2 \quad (11)$$

we estimate the proportion of country i 's volatility accounted for by the factors by the average values of

$$VR_{i,t}^w = \frac{\hat{\sigma}_{i,1}^2 \hat{\sigma}_{w,t}^2}{\hat{h}_{i,t}} \quad \text{and} \quad VR_{i,t}^g = \frac{\hat{\sigma}_{i,2}^2 \hat{\sigma}_{g,t}^2}{\hat{h}_{i,t}} \quad (12)$$

EMPIRICAL RESULTS

As one of our aims is to evaluate how incorporating time-varying skewness into our analysis will affect the measurement of spillovers, we also present for comparison the corresponding parameter estimates from spillover models that restrict conditional skewness to be constant, i.e., a model where the world, regional and country returns are assumed to be generated by (1) - (4), (1) - (5), and (6) - (10) respectively, but where $\gamma_{ij} = 0 \forall j \neq 0, i = w, g, 1, \dots, 4$. Comparisons are made not just of the parameter estimates, but also of the variance ratios. We follow this with a discussion of the relative influence of global and regional factors in downside risk in the individual markets implied by the skewness coefficients and probabilities from the spillover models with time-varying conditional skewness.

Parameter Estimates for Constant Spillover Models

Tables 4 and 5 report the results for the spillover models. Table 4 presents the results from the model where conditional skewness of all idiosyncratic shocks is permitted to be time varying (including the idiosyncratic world and regional shocks). The parameter estimates of $\phi_{i,1}$ and $\phi_{i,2}$ in Table 4 show that the spillover effects of both the world and regional factors are

statistically significant.

Table 4: Constant Spillover Model with Time-Varying Conditional Skewness

	U.K.	Spain	France	Germany
Mean Equation				
$\alpha_{i,0}$	0.311 (0.117)***	-0.182 (0.149)	0.060 (0.114)	0.018 (0.105)
$\alpha_{i,1}$	0.018 (0.047)	-0.100 (0.047)**	-0.006 (0.045)	-0.054 (0.045)
$\alpha_{i,2}$	-0.244 (0.081)***	0.201 (0.110)*	0.010 (0.076)	-0.033 (0.066)
$\alpha_{i,3}$	0.245 (0.126)*	-0.095 (0.161)	0.214 (0.111)*	0.265 (0.099)***
Factor Equation				
$\phi_{i,1}$	0.854 (0.117)***	0.078 (0.138)	0.498 (0.113)***	0.654 (0.098)***
$\phi_{i,2}$	0.169 (0.092)*	0.513 (0.098)***	0.234 (0.083)***	0.280 (0.076)***
Variance Equation				
$\beta_{i,0}$	0.347 (0.188)*	0.099 (0.073)	0.202 (0.155)	0.198 (0.172)
$\beta_{i,1}$	0.812 (0.037)***	0.956 (0.019)***	0.869 (0.040)***	0.917 (0.059)***
$\beta_{i,2}$	0.191 (0.051)***	0.073 (0.019)***	0.188 (0.065)***	0.084 (0.046)***
$\beta_{i,3}$	-0.052 (0.068)	-0.065 (0.022)***	-0.122 (0.060)**	-0.056 (0.035)
Asymmetry Equation				
$\gamma_{i,0}$	-0.145 (0.098)	0.009 (0.077)	0.073 (0.069)	-0.075 (0.056)
$\gamma_{i,1}$	0.369 (0.224)*	0.398 (0.241)*	0.595 (0.226)***	0.652 (0.103)***
$\gamma_{i,2}$	0.100 (0.040)**	0.058 (0.019)***	-0.011 (0.022)	-0.043 (0.028)
Degrees of Freedom				
η	15.28 (8.094)*	10.76 (4.426)**	5.896 (1.469)***	6.220 (1.548)***

^a The model being estimated consists of equations 4.6, 4.7, 4.9 and 4.10 where $z_{i,t} \sim g(z_{i,t} | i, i_t)$ is the distribution as specified in equation 2.4. Standard errors are in parentheses, and *, **, and *** denote statistical significance at 10, 5 and 1% respectively.

The parameter estimates reported in Table 5 below are for the model restricting conditional skewness to be constant throughout the sample period. In both cases, we obtain the usual results concerning mean spillovers (defined in our models as persistent effects on individual markets of past information in global and regional returns). The global market in general displays larger spillover effects in the mean than the regional factor in all markets, except for Spain. For all markets, the coefficient estimates in the mean equation and the variance equation are to a close approximation the same in both the constant and time-varying conditional skewness models. The variance equation, which captures the evolution of the conditional variance of the idiosyncratic country shock, displays asymmetric effects of past

shocks on variance. The asymmetry equation also shows time-variation in the skewness of the idiosyncratic shock.

Table 5: Constant Spillover Model with Constant Conditional Skewness

	U.K.	Spain	France	Germany
Mean Equation				
$\alpha_{i,0}$	0.308 (0.116)***	-0.188 (0.150)	0.057 (0.114)	0.019 (0.104)
$\alpha_{i,1}$	0.014 (0.047)	-0.099 (0.048)**	0.000 (0.042)	-0.049 (0.047)
$\alpha_{i,2}$	-0.214 (0.083)***	0.190 (0.109)*	0.007 (0.076)	-0.053 (0.067)
$\alpha_{i,3}$	0.191 (0.127)	-0.078 (0.154)	0.198 (0.110)*	0.262 (0.104)**
Factor Equation				
$\phi_{i,1}$	1.027 (0.079)***	0.582 (0.104)***	0.731 (0.085)***	0.919 (0.073)***
$\phi_{i,2}$	0.166 (0.099)*	0.512 (0.099)***	0.231 (0.082)***	0.269 (0.074)***
Variance Equation				
$\beta_{i,0}$	0.289 (0.153)*	0.090 (0.070)	0.207 (0.156)	0.261 (0.267)
$\beta_{i,1}$	0.835 (0.038)***	0.959 (0.018)***	0.867 (0.040)***	0.892 (0.084)***
$\beta_{i,2}$	0.158 (0.055)***	0.073 (0.018)***	0.190 (0.066)***	0.103 (0.069)
$\beta_{i,3}$	-0.027 (0.061)	-0.069 (0.024)***	-0.124 (0.060)**	-0.065 (0.047)
Skewness Parameter				
λ	-0.217 (0.136)	0.014 (0.120)	0.189 (0.124)	-0.225 (0.135)*
Degrees of Freedom				
η	13.29 (6.175)**	9.695 (3.684)***	5.868 (1.450)***	6.571 (1.597)***

^aThe estimated model consists of equations 4.6, 4.7, and 4.9 where $z_{i,t} \sim g(z_{i,t} | i, i_t)$ is the distribution as specified in equation 2.4. Standard errors are in parentheses, and *, **, and *** denote statistical significance at 10, 5 and 1% respectively.

Compared with the estimates of the same parameters in the model that does not allow for time variation in skewness in Table 5, we find that in all cases the coefficient $\phi_{i,1}$ on the world factor is substantially smaller, especially in the case of Spain; the coefficient on the world factor for this market is close to zero and not statistically significant at conventional levels of significance. The coefficient of the regional factor has remained roughly the same from Table 4 to Table 5.

Spillover Effects in Variance

The results above suggest that when time-varying skewness is taken into account, risk in the six markets in our study seems to be driven more by regional factors than by world factors. To gain some insights into the economic significance of the results and to determine how well the model explains the time-variation of interdependencies, we calculate for each market the proportion of the movements in the conditional variance that can be attributed to the world and regional factors. Table 6 shows the average of the period t variance ratios for the world

and regional factors. The rows labelled ‘World’ and ‘Region’ respectively show the average value of $VR_{i,t}^w$ and $VR_{i,t}^g$ as described in (12).

Table 6: Average Variance Ratios for World and Regional Factors

	<u>UK</u>	<u>Spain</u>	<u>France</u>	<u>Germany</u>
<i>Spillover Model with Time Varying Conditional Skewness</i>				
World	0.209	0.001	0.081	0.160
Region	0.010	0.054	0.021	0.028
<i>Spillover Model with Constant Conditional Skewness</i>				
World	0.270	0.063	0.156	0.273
Region	0.007	0.049	0.015	0.023

The variance ratios for four models are displayed. The top panel lists the variance ratio for the spillover models, first with time-varying conditional skewness, and then with conditional skewness restricted to be constant. The spillover models show that the world factor plays an important role in explaining the variance of the unexpected returns for the London, Paris, and Frankfurt markets, whereas the regional factor accounts for only a very small fraction of the variance in all markets.

The world factor becomes negligible for all markets when the skewness is permitted to be time-varying, while in the constant skewness model the importance of the world factor increases substantially. The parameter estimates and estimates of the variance ratios from the spillover model with time-varying skewness seem more appealing than those from the non-time-varying skewness model. From Table 6, the variance ratios are generally between 0.1 and 0.2 for both sets of equations, indicating that the models manage to explain generally between 10% and 20% of the time variation of local returns for each period. Although these percentages might seem small, it should be kept in mind that the data has daily frequency, therefore including a lot of volatility. Moreover, these numbers compare very favourably to similar models conducted with either daily or weekly data, for example Ng [7].

CONCLUSIONS

We present new measurements of the relative importance of global, regional and local components of risk in equity markets, an issue with implications for important financial market activities, using a factor model that allows for time-varying conditional skewness. The inclusion of the latter factor follows the evidence first proposed by Harvey and Siddique [1-2] that such time-varying conditional skewness is priced in a variety of equity markets. The evidence we present is from four European markets, namely the U.K., Germany, France, and Spain, using daily data from 2002 to 2017, and using world and regional indexes as a proxy for world and regional factors. We consider the effects of omitting time-varying conditional skewness from an analysis of spillovers. We also explore spillovers both in terms of volatility as well as downside risks.

We find that incorporating time variation in skewness affects the measurement of the sources of risk substantially, and doing so results in a smaller measurement of the importance of the world factor in explaining risk in the individual equity markets considered. Incorporating time-varying skewness in the analysis also allows us to clarify the notion of volatility spillover effects. There is evidence that downside-risk spillover effects are due more to the world factor and not the regional factor. The variety in the source of risk in equity markets in our sample period re-emphasises the need to allow for time-varying spillovers, as in Bekeart and Harvey [5] and Ng [7]. We do not explore the specific reasons why spillover effects vary over time.

Another avenue of research is to explore the view that it is the nature of news that results in either the world factor or the regional factor playing the more important role. We could investigate the influence of key events on the role of world and regional factors on European equity markets. One way of exploring this might be to allow for Markov switching between the world and regional factor, and relating switches to specific news items.

Finally, more research into the economic reasons why asymmetry in the conditional distribution of stock returns is time varying is needed. Our lack of knowledge of the causes of time-varying conditional skewness notwithstanding, the results in this paper show that studies of spillovers and linkages between equity markets, and its various sources of risk, will benefit from explicitly incorporating predictability in conditional skewness.

References

- Harvey, C. R. and Siddique, A. (1999), "Autoregressive Conditional Skewness," *Journal of Financial and Quantitative Analysis*, 34, 465-487. <https://www.cambridge.org/core/journals/journal-of-financial-and-quantitative-analysis/article/div-classtitleautoregressive-conditional-skewnessdiv/1A8FA5EB3AF111F0A1B5DF2EC0B8E0B2#>
- Harvey, C. R. and Siddique, A. (2000), "Conditional Skewness in Asset Pricing Tests," *Journal of Finance*, 55, 1263-1295 https://faculty.fuqua.duke.edu/~charvey/Research/Published_Papers/P56_Conditional_skewness_in.pdf
- Harvey, C.R., Liechty, J. C., Liechty, M.W, and Muller, P. (2010), "Portfolio Selection with Higher Moments," *Quantitative Finance*, 10: 5, 469-485 <https://www.tandfonline.com/doi/full/10.1080/14697681003756877?src=recsys>
- DeMiguel, V., Plyakha, Y, Uppal, R. and Vilkov, G. (2013). "Improving Portfolio Selection using Option-Implied Volatility and Skewness," *Journal of Finance and Quantitative Analysis*, 48:6, 1813-1845 <http://faculty.london.edu/avmiguel/DPUV-JFQA-2014.pdf>
- Bekaert, G. and Harvey, C. R. (1997), "Emerging Equity Market Volatility," *Journal of Financial Economics*, 43, 29-77 <https://ideas.repec.org/a/eee/jfinec/v43y1997i1p29-77.html>
- Hamao, Y., Masulis, R. W. and Ng, V., (1990), "Correlations in Price Changes and Volatility across International Stock Markets", *Review of Financial Studies* 3, 2, 281-307. <https://www.tandfonline.com/doi/full/10.1080/1350485042000203850?src=recsys>
- Ng, Angela (2000), "Volatility Spillover Effects from Japan and the US to the Pacific-Basin", *Journal of International Money and Finance*, 19, 207-233. https://econpapers.repec.org/article/eeejimfin/v_3a19_3ay_3a2000_3ai_3a2_3ap_3a207-233.htm
- Forbes, K.J, and Chinn, M.D. (2004). "A Decomposition of Global Linkages in Financial Markets over time," *The Review of Economics and Statistics*, 86:3, 705-722. <http://web.mit.edu/kjforbes/www/Papers/DecompositionOfGlobalLinkagesInFinancialMarkets-Restat.pdf>
- Heston, S.L. and Rouwenhorst, K. (1994). "Does industrial structure explain the benefits of international diversification?" *Journal of Financial Economics*, 36:1, 3-27. <https://ideas.repec.org/a/eee/jbfina/v34y2010i1p236-245.html>
- Fratzscher, M. (2001). "Financial Market Integration in Europe: On the Effects of Emu on Stock Markets", *ECB Working Paper* No. 48. <https://ideas.repec.org/p/ecb/ecbwps/20010048.html>
- Nelson, D.B. (1991). "Conditional Heteroscedasticity in Asset Returns: A New Approach", *Econometrica*, 59:2, 347-70. https://econpapers.repec.org/article/ecmemetrp/v_3a59_3ay_3a1991_3ai_3a2_3ap_3a347-70.htm
- Glosten, L.R., Jagannathan, R. and Runkle, D.E. (1993). "On the Relation between the Expected Value and the Volatility of the Nominal Excess Return on Stocks", *Journal of Finance*, 48:5, 1779-1801. <https://faculty.washington.edu/ezivot/econ589/GJRJOF1993.pdf>
- Engle, R.F. and Ng, V.K. (1993). "Measuring and Testing the Impact of News on Volatility", *Journal of Finance*, 48:5, 1749-1778. <https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1540-6261.1993.tb05127.x>
- Peiro, A. (1999). "Skewness in Financial Returns", *Journal of Banking & Finance*, 23:6, 847-862. <https://ideas.repec.org/a/eee/jbfina/v23y1999i6p847-862.html>

Lempérière, Y, Deremble, C., Nguyen, T, Seager, P, Potters, M. and Bouchard, J.P. (2017) "Risk Premia: Asymmetric Tail Risks and Excess Returns" *Journal of Quantitative Finance*, 17, 1-14.

<https://www.tandfonline.com/doi/abs/10.1080/14697688.2016.1183035>

Longin, F. and Solnik, B. (2002). "Extreme Correlation of International Equity Markets," *Journal of Finance*, 56:2, 649-676. <https://onlinelibrary.wiley.com/doi/full/10.1111/0022-1082.00340>

Ang, A. and Bekaert, G. (2002). "International Asset Allocation with Regime Shifts", , 15:4, 1137-1187. <https://academic.oup.com/rfs/article/15/4/1137/1568247>

Chen, J., Hong, H. and Stein, J. C. (2000), "Forecasting Crashes: Trading Volume, Past Returns and Conditional Skewness in Stock Prices," *Journal of Financial Economics*, 61, 345-381.

https://econpapers.repec.org/article/eeejfinec/v3a61_3ay3a2001_3ai3a3_3ap3a345-381.htm

Perez-Quiros, G. and Timmermann, A. (2001), "Business Cycle Asymmetries in Stock Returns: Evidence from Higher Order Moments and Conditional Densities", *Journal of Econometrics*, 103, 259-306.

https://ideas.repec.org/a/eea/ijaeqs/v4y2007i2_6.html

El Babsiri, M. and Zakoian, J-M. (2001). "Contemporaneous Asymmetry in GARCH processes," *Journal of Econometrics*, 101:2, 257-294. <https://ideas.repec.org/a/eee/econom/v101y2001i2p257-294.html>

Hansen B. E. (1994), "Autoregressive Conditional Density Estimation," *International*

Economic Review, 35, 705-730. <https://www.jstor.org/stable/2527081>

Income Diversification of Rural Households in Zoba Maekel, Eritrea

Ghirmai Tesfamariam Teame

College of Business and Economics, Eritrea

ABSTRACT

The study, conducted in Zoba Maekel, Eritrea, has examined the factors affecting the diversification of income of rural households using two concepts of diversification. The first one is based on household's diversification away from their own farm, which is measured as the proportion of rural households' income from non-farm activities in their total income; whereas the second one focuses on diversification as an increase in the number of rural households' income earning activities regardless of their sectoral or functional classification, which is measured using Shannon Equitability Index. The study has reported that household's income diversifications are highly related to their access to formal credit, livestock possessions, and year of schooling of household's head or average year of schooling of members of the household. Moreover, it has supported the hypothesis that diversification is an *ex-post* coping strategy for low agricultural productivity, and confirmed the presence gender bias in the overall diversification of rural households.

Keywords: income diversification, non-agricultural income, Shannon equitability index, Eritrea, Tobit

JEL Classification: O1, O2, C3

BACKGROUND

The rural sector is commonly viewed by policy makers and implementers as a sector which is stirred more or less by farm, and the income derived by the rural sector as equal with farm income. This erroneous belief stems from the fact that rural households inexorably depend heavily on their farms; mainly on outputs retained from their farms, income earned from the sale of crops or livestock, and income earned from employment on local farms; for much of their livelihoods. As a result, policymakers view the efforts to tackle rural poverty are equivalent to policies that are intended to enhance farm productivities. However, this traditional view of rural households as being purely agricultural is clearly superseded. Since there is growing evidence that a large proportion of rural households' total income is earned away from the agricultural sector and that the rural households are much more than just farmers. For example, in addition to income it earns from its farm, a rural household might earn income from its engagement in local non-farm wage activities, trades, hiring out its labor away from its farm in others farm (off-farm activities), sale of livestock, and from remittances.

According to [3], rural households seldom depend on one source (mainly agriculture) for all their income; use one asset to hold all their wealth; or just use all households' assets in a single activity. Thus, rural households' participation in multiple income generating activities and thereby diversifying their income sources is a custom. As a result, diversification of sources of income has become part of the livelihood strategy of rural households, and it is a widely recognized fact that the path towards a sustainable rural livelihood involves escaping from a lasting dependence on insufficient number of sources of income. Therefore, identifying as well as promoting a diversified sources of income of rural households has gained widespread support among development policy makers, especially in the developing countries, which are facing repeated income and consumption shocks [5]. According to [9, 17], rural households'

livelihood diversification can be defined as households' practices to increase their portfolio of assets and their income sources or activities in order to withstand and/or enhance their living standards.

In general, rural households' income diversification is the spreading out of households' sources of income away from their farm, to employments in local or migratory non-farm wage or self-employments; employments in the farm of others; livestock of others; and reliance on pensions, remittances, rent, and other types of income transfers. Even though the allocation of their labor away from their own farms generally constitutes rural income diversification, the motives for diversification may differ significantly across households. That is diversification can be undertaken for accumulation objectives (because households are drawn to it), driven mainly by "pull" factors. Moreover, some households are forced to undertake income diversification to manage risk, cope with shock, escape from stagnating or declining agricultural productivity, or to escape resource constraint and hence driven by "push" factors [20]. Thus, the diversified income generating activities, which are pursued by rural households, are considered as risk aversion behaviors to reduce households' vulnerability to fluctuations in agricultural productivities; as well as to cope with imperfections in rural labor, credit and land markets, thereby to follow smooth consumption pattern [8, 18].

The available literature reveals that the diversification of rural households' sources of income is the highest in Africa; where about 42 per cent of rural households' income are earned from non-farm activities, i.e., away from their own farm, compared to the 32 per cent in rural Asia and 40 per cent in rural Latin America [18, 19 and 14]. Moreover, with the prevailing pace of the integration of the agricultural sector into the global markets and with the intensification of rural-urban linkages, there is no doubt that these shares of income from the rural non-farm sector will eventually increase. Reference [19] shows that even though there is regional difference in the level of income diversification, the pattern of this diversification is clearly linked to rural households' access to assets (for example, human capital, social capital, and physical capital) and other types of endowments. Thus, household characteristics, private and public asset endowments, as well as geographical area specific characteristics such as agro-climate are believed to play a pivotal role in determining rural households' diversification of income sources.

Eritrea, which is located in the Horn of Africa, is one of the world's poorest countries with the lowest per capita incomes and high incidence of absolute poverty [12]. The overall poverty estimate for the country is 66 per cent, with 37 per cent living in extreme poverty [23]. It is more prevalent in the rural areas, since around 67 per cent of the poor are living in rural Eritrea [1]. With its economy predominantly based on agriculture; cultivation of crops, animal husbandry and trade related to these activities are the main sources of income for the rural Eritreans. On the average, they account for about 60 per cent of total households' income [24]. Moreover, from the entire population of the country, more than 70 per cent is engaged in rural and agricultural based economic activities, and thus earn their livelihood mainly from the agricultural sector.

In Eritrea, rural areas are not only the places where most of the country's poor lives, but also the places where livelihood is no longer considered as being a synonym for farming activities. Instead, it has been acknowledged that people in rural Eritrea pursue multiple strategies to make a living and earn income from various sources, which is reflected in the combination of crops farmers grow as well as the diversification of their activities in the non-farm sector. A good understanding about the determinants of diversification of sources of income by rural households' away from their agricultural plot (farm), as well as their overall diversification

measured in terms of the number of rural households' income earning activities is essential for designing policies that are intended to further promote diversification of activities and income by rural households. For this reason, the study aims to undertake a quantitative assessment of factors that affect income diversification of rural households away from their own farm as well as rural households' overall diversification in terms of the mix of activities households participates on. Therefore, the study is organized in six sections. Section one of the study examines the general background of rural income diversification. In the second section, classifications of income sources of rural households is given. Section three of the study briefly discusses the methodology used for collecting the data as well as techniques followed on the measurements of dependent and independent variables. The fourth section highlights the econometric model which is adopted for the study, the framework used for measuring income diversity and the techniques of estimation followed. In the fifth section, empirical results of the study are discussed. Finally, findings of the study are summarized in the sixth section.

CLASSIFICATION OF SOURCES OF INCOME

In the livelihood literature, there are wide ranges of techniques in classifying the sources of income of rural household that can help us understand the reasons and ways of diversification of rural households away from their own farm. Usually, terms like non-farm or more generally off the farm income are applied, in a seemingly identical way, however with somewhat different meanings. According to [8, 9], off-farm income, for example, refers to income earned in the form of not only wage but also includes in kind payments for labor on others farm. This includes sharecropping and other types of non-wage labor arrangements which is still ubiquitous in many less developed countries. On the other hand, off-farm income has also been referred to all income that are earned from activities that are away from household's own farm, regardless of sectoral or functional classification; where as non-farm income is usually deployed to mean income arising from outside the agriculture [4]. Therefore, based on [4]'s classification, we have followed farm vs. off-farm sources of income, where the off-farm sources of income refers to income sources away from farmer's own farm, regardless of their sectoral or functional classification. Thus, based on this classification, we have identified wage-employment in non-farm sector, wage-employment in farm sector, self-employment in non-farm sector, both self and wage-employments away from household's own farm (off-farm) and agricultural self-employment (livestock production) as the five different income sources away from household's farm income (crop production), in the research area. Based on these classifications, we look at rural households' income diversification either as diversifying away from farm income, or as an expansion in the number of household's income earning activities.¹

Measuring Income Diversity

We have followed two measures regarding the diversification of rural household's sources of income. Most of the time, income diversification of a rural household refers to an increase in the proportion or share of household's income from sources that are away from its own farm. Thus, based on this definition, the extent of diversification of a rural household out of its own farm can be measured using the percentage of household's non-farm income in total household income. Where non-farm income refers to household's income earned from both non-farm self and wage-employments. On the other hand, the number of income sources of a rural household as well as the relative importance of these sources can be used as a measure of income diversifications of a rural household. Thus, using the six sources of income, which are identified in the study area, and applying the Shannon Equitability Index (SE) concept, we can examine the overall diversity of household's income. In calculating a household's Shannon equitability

¹ Refer to [25, 26] for details on the determinants of income diversification or determinants of participation in various rural non-farm activities in the case of Eritrea.

index, the number of income sources of a rural household and their proportion in household's total income are taken into account. As the number of income sources of a rural household increases and if the income earned from these sources are evenly distributed among these sources, then the value of household's *SE* will obviously increase. Following [27, 2], *SE* is derived from a concept which was originally used to assess the diversity of species, called the Shannon index (*S*). The original Shannon index concept, which has been modified to fit to our study, is given by

$$S_{income} = \sum_{i=1}^I [(income\ share_i) \cdot \ln(income\ share_i)]$$

Where the number of income earning activities of a rural household is given by *I*. Moreover, the *income share_i* refers to the income share of an income earning activity *i* in household's total income. Both the number of household's income sources and their evenness are taken into account in calculating the Shannon index (*S_{income}*), which is calculated for every household. The value of the Shannon index tends to increase with an increase with diversity. Therefore, based on *S_{income}* discussed above, the following formula can be used to calculate the Shannon equitability index (*SE*).

$$SE = \frac{S_{income}}{\sum_{i=1}^I \frac{1}{I} \cdot \ln \frac{1}{I}} \cdot 100$$

The denominator refers to the maximum possible *S_{income}* value. The value of the Shannon equitability index, which is obtained from the above formula, represents the share of the actual income diversification in relation to the maximal possible diversity of income. Moreover, its value ranges from zero to 100.

METHODOLOGY

Four villages from the three Sub zones of Central Region (*Zoba Maekel*), one of the six administrative zones that comprise the country, are selected for the study. Taking time and financial constraints into account, purposive sampling is followed in the selection of the central region. The unit of observation (unit of analysis) is a rural household, where a household according to [8], is defined as a social unit that shares the same abode or hearth.

In the study area, sampling frame did not exist at a household level. Thus, multistage sampling procedures are used at different levels of sampling, in order to develop an unbiased and representative sampling frame as well as to capture the advantages of these designs. Information about the 81 villages in the three Sub Zones, is collected from the Administration of *Zoba Maekel*. The sub zones are used as the first stage sampling units,

In the second stage, four villages were selected randomly from the three Sub Zones, which was selected earlier. All the selected villages have administrative records of households' list. However, their accuracies are questionable, since they were prepared for other purposes. Therefore, rather than relying on the existing administrative records, preparation of fresh lists for each village was deemed essential. Thus, a Household Listing Schedule is developed in the third stage, and a total of 5,253 households in all the selected villages have been listed by visiting their residential places. To ensure that households from the entire lists are represented, sampling interval and a random start are calculated for each village. Following

this procedure and using a standardized questionnaire, a total of 202 households are randomly selected from the four villages, namely: *Shimanugs-Laelay, Hazega, Zigib and Adi-Tsenaf*.

Measurement of the Independent Variables

To collect the required data, a standardized questionnaire is administered to the randomly selected 202 rural households from the four villages. A list independent variables (regressors) is prepared from the data, which is collected at the household level. In our empirical analysis, the same set of independent variables are used in both regression models. Thus, it is imperative to give a short explanation of these independent variables. Some of the set of explanatory variables that are considered in the study include detailed household's demographic characteristics as well as physical capital, which comprises land and livestock owned by a household. Together, they are considered as productive assets. For the purpose of the study, landholding or the total area of land owned by a household is measured in *tsimdi* (local measurement, where *one tsimdi* = 0.25 hectare), and it includes rain-fed and irrigated lands. To have a standard measure for household's livestock ownership, conversion factors are applied to the different types animals owned by a household. Thus, [10]'s livestock conversion factors are used where a tropical livestock unit (TLU) is equivalent to a standard Zebu Bovine of 250 Kg live weight.

Moreover, under the category of human capital, a set of variables at the household level and at the head of household level are considered. These include: head of household's age; level of education of household's head and average education of members of a household, which are measured by the number of completed years spent by member of a household in school; dependency ratio; adult members of a household versus the number of dependents. To show the marginal rate of return of having additional years of age on rural household's income diversification, the variable age of head of household is modelled quadratically. Moreover, the variable sex of head of household is presented as a categorical variable, which takes the value of one for a male headed household and zero for female headed household. The dependency ratio measures the ratio of dependent or members of a household who are above 65 and below 15 years of age to the number of economically active (adults) members of a household (members of a household who are 15 to 65 years old).

In calculating a household's social capital index, the technique which has been developed by [13] is adopted, where the number household's membership in organizations or associations, which measures the density of membership of all household members, is multiplied by the household's decision making index in these organizations. Household's decision making index is calculated from the subjective evaluation of the household members regarding their role in decision making process of the organizations or groups (ranging from very active to not very active).²

To measure household's access to different types of formal credits, another dummy variable is introduced, which is given by "access to formal credit". It takes the value of one for a household that participates in any kind of formal credit schemes and zero otherwise.

Household's access to the market is measured using its proxy "distance to the nearest tarmac road". Households are asked to estimate how long, on the average, does it take them to reach to the nearest tarmac road on foot. In addition to these, location dummies, which correspond to

² Interested readers may refer to [13: p. 18] for detailed procedures on calculating a household's social capital index.

each village, are included to separate or control the effect of closeness to the market from other spatially fixed effects.

The number of crop failures, in the last five years, that a household may have possibly suffered is used as a proxy measure for low agricultural output (shock).

Measurement of the Dependent Variables

As discussed above, two definitions and thus two models of rural household's income diversification are adopted for the purpose of the study. In both models, the same set of explanatory variables are used to help us compare the effect of these variables on the two dependent variables: the overall diversity of rural household's income, which is measured using Shannon equitability index and the household's share of non-farm income in their total income. These two dependent variables, which are continuous however with a limited range between zero and 100, are used to measure rural households' income diversity. In calculating the values of these two dependent variables, large number of observations are found to have zero values. This indicates that either the household is not participating in any activity away from its own farm or the household derives all its income from only one source.

THE MODEL

The values of the two measures of household's income diversification lie between zero and 100 per cent. Thus, conventional linear regression methods have difficulties in explaining the qualitative difference between these zeroes and continuous observations. Therefore, the study has applied a Tobit model. Though Tobit models are originally developed for censored data, they are widely used for models that have negative values for their underlying latent dependent variables, commonly known as corner solution model. For example, for more or less similar settings (similar set of dependent and independent variables), [21, 6] have used Tobit models. In our study, the presence of zero values in the dependent variables are due to non-diversification or non-participation of rural households in other income earning activities beside their own farm rather than a zero income from an activity. In a Tobit model, it is assumed that the values of the dependent variable are clustered around its limiting value, usually zero. Moreover, in estimating a regression line, Tobit models use all observations, both those at the above specified limit and those above it. Thus, compared to the alternative regression models that only use observations above the limit in estimating a regression line, Tobit models are more preferred [16]. According to [12, 15], the stochastic model underlying a Tobit is expressed by the following relationship:

$$D_i = \begin{cases} h_j \tilde{a} + e_j & \text{if } h_j \tilde{a} + e_j > 0 \\ = 0 & \text{if } h_j \tilde{a} + e_j \leq 0 \end{cases} \quad j=1, 2, \dots, N.$$

In the above regression model, the dependent variable is given by D_i , the vector h_i represents the set of independent variables, and the number of observations is given by N , the vector \tilde{a} indicates the unknown parameters that will be estimated, while e_j refers to the randomly distributed residuals. The above presented Tobit model assumes that the $(h_j \tilde{a} + e_j)$, which is an underlying stochastic index, is observed only when it is positive. However, it is qualified as an unobserved, latent variable.

EMPIRICAL RESULTS

As discussed above, two definitions of rural household's income diversification are adopted in the study. Thus, to examine the influence of different factors (explanatory variables) on rural household's income diversification, two Tobit regression models corresponding to these two definitions of diversification are estimated, and they are presented in table 1. Generally, Tobit

estimates are found to be inconsistent when the variance of the residuals is not constant or when they are heteroscedastic or if they are not distributed normally. Therefore, during the estimation process, robust standard errors are used.

The two Tobit regression results, which are presented in table 1 below, examines the factors that affect rural household's income diversification. In the first column of table 1, the determinants of the share of a household's non-farm income in its total income is examined. Thus, results of the study shows that head of the household's age has a positive and statistically significant influence on the diversification of a rural household out of its farm. However, after the age of head of the household crossed a certain threshold level, that share starts to decrease. Thus, an inverted U-shape relationship between head of the household's age and the diversification of the household away from its farm is reported in the study area. Another key asset that affects the diversification of a rural household's income away from their own farm is the human capital. Here, the level of education has the expected effect, that is, as the average number of completed years of schooling of household members increases, household's motivations to obtain income from own-farming gets lower, and the household becomes more motivated and have greater incentives to commit their time and resources to self-employment and wage-employment activities in the non-farm sector. Consequently, education is more likely to increase the share of non-farm income in rural household's total income, since it increases the degree of awareness of the rural household members and it helps them to acquire employable skills which can be absorbed by the non-farm sector. Moreover, the higher the number of crop failures or shocks faced by a household in the last five years has a statistically significant impact on increasing the share of non-farm income of rural household's in their total income. It forces or pushes the household to look for coping mechanisms by engaging in likes of trade, handicrafts and wage- employments. Furthermore, the higher the number of livestock units a household owns, the more will it diversify out of its own farm. Because, a household can sell some of its livestock or use them as a collateral to finance its participation in non-farm self-employments like starting up of a business. Finally, the more access a household has to formal credit, which is measured its access to formal credit in the last five years, has an increasing effect on the share of non-farm income in total household's income by diversifying their income sources out of their farm. Because it relaxes the financial constraints that hinders investment in non-farm self-employment activities.

Table 1
Tobit estimates of the determinants of rural households' income diversification

Method: ML - Censored Normal (TOBIT) (Quadratic hill climbing)				
Sample:202				
Included observations: 200				
Left censoring (value) at zero				
QML (Huber/White) standard errors & covariance				
Variables	Household's non-farm income share in their total income		Shannon Equitability index	
	Coefficients	z-Statistic	Coefficients	z-Statistic
Constant	-1.639267	-3.42	111.3333	4.71
Rain fed area	-0.002978	-0.14	1.931467	1.56
Irrigated Area	-0.126379	-1.11	-7.231239	-1.00
Livestock Possession	0.049725	2.26**	2.919175	3.03**
Sex (head of household (HoH)	0.067762	0.79	8.00967	1.99**
Age of HoH	0.044164	2.32**	-0.973036	-1.12
(Age of HoH) ²	-0.000378	-2.19**	0.005797	0.73
Household's head year of Schooling	0.012721	1.10	1.048216	2.37**
Household members average Education	0.051086	2.45**	0.035877	0.03
Adult members	0.032675	1.03	-1.961551	-1.36
Shock	0.085364	3.43**	0.713049	1.78*
No. of dependents (<15 & >65 years of age)	0.005522	0.16	-0.668166	-0.44
Dependency Ratio	0.089551	1.22	-4.125114	-1.65*
Distance to the market	-0.002329	-0.93	-0.031722	-0.18
Social capital	-0.000433	-0.91	0.272780	2.05**
Access to formal credit	0.093810	2.38**	6.227043	2.25**
Dummy for Hzego	0.037122	0.14	-5.815499	-0.30
Dummy for Zigib	0.063396	0.70	-8.368548	-1.62
Dummy for Adi Tsenaf	0.018688	0.10	-6.19803	-0.44
R-squared		0.439775		0.342812
Adjusted R-squared		0.359529		0.252331
Log likelihood		-		-
		99.21642		861.8702
		-		-
Avg. log likelihood		0.496082		4.309351
Left censored obs		86		3
Uncensored obs		114		197

Note: **, * indicates statistical significance at 5 per cent and 10 per cent levels, respectively

Considering the second model, which deals with the determinants of the overall degree of diversification of rural households, the study has reported that possession of livestock has an increasing effect on the overall level of diversification. Because, livestock are considered as a sign of wealth, as a household can sell some or use them as a collateral in financing the opening of self-employment in the non-farm sector or participate in more income generating activities. Similarly, the probability that a rural household is a male-headed (or sex of head of the household) has an increasing effect on the overall diversification, which implies that there is gender bias in the overall diversification of rural households, and male-headed households

earn their income from more income sources than their female-headed counterparts do. Similarly, the number of completed years of schooling of head of a household as well as access to formal credit of a household have a positive effect on increasing a household's Shannon equitability index, which measures household's overall diversification. In addition to these, a positive and statistically significant effect of households' social capital index on their overall diversification is reported by the study, implying that households with extended social networks or safety nets are more likely to broaden their participation in various income sources. Moreover, shock or the occurrence of low agricultural productivity (crop failures) within the last five years has an increasing effect on the overall diversification of rural households, which supports the hypothesis that diversification is an *ex-post* coping strategy for low agricultural productivity. These results imply that the number of rural households' sources of income as well as their income significantly increases as the value of the variables with significant effects increases keeping the effect of other variables constant, and the income earned from these activates tend to be evenly distributed among these sources. On the contrary, a household's dependency ratio is found to have a decreasing effect on its overall diversification. This negative effect implies that a household with higher dependency ratio or having more dependents (members of a household who are above 65 and below 15 years of age) per household's economically active members are found to have fewer number of sources of income, which are more unevenly distributed.

SUMMARY

The study, based on Tobit regression analysis two income diversification models, concludes that the units of livestock owned by a rural household positively influences diversification of a household away from its own farm and its overall income diversity. Moreover, the study has reported that gender bias is prevalent in the overall diversification of rural households, as the probability of being male-headed household has an increasing effect on their overall income diversity. In addition to these, access to formal credit and shock have an increasing effect on the diversification a rural household away from its own farm as well as on its overall diversification. Furthermore, the results of the study reported that an increase in the level of average education of members of households leads to an increase in their share of non-farm income, and an increase in year of schooling of head of households has an increasing effect on the overall level of diversification of rural households. Finally, even though the age of household's head has a positive role on diversification of a household away from its own farm, its role decreases after reaching a certain threshold age level.

ACKNOWLEDGEMENT

This paper is part of a bigger study prepared for the Master's thesis by Mr. Ghirmai Tesfamariam Teame at the University of Asmara, College of Business and Economics, Department of Economics and Finance, under the supervision of Dr. Tesfa-Yesus Mehary. The research was funded by the School of Graduate Studies, University of Asmara.

References:

- Araya, B. (2004). *Poverty and Natural Resource Management in the Central Highlands of Eritrea* (PhD dissertation, Groningen University, Netherlands).
- Beals, M., Gross, L. and Harrel, S. (2000). *Diversity Indices: Shannon's H and E*. Retrieved from <http://www.tiem.utk.edu/per cent7Egross/bioed/bealsmodules/shannonDI.html>.
- Barrett, C. B., & Reardon, T. (2000). Asset, activity, and income diversification among African agriculturalists: Some practical issues.
- Barrett, C. B., Bezuneh, M., & Aboud, A. (2001). Income diversification, poverty traps and policy shocks in Côte d'Ivoire and Kenya. *Food Policy*, 26(4), 367-384.

- Block, S., & Webb, P. (2001). The dynamics of livelihood diversification in post-famine Ethiopia. *Food policy*, 26(4), 333-350.
- De Janvry, A., & Sadoulet, E. (2001). Income strategies among rural households in Mexico: The role of off-farm activities. *World development*, 29(3), 467-480.
- Ellis, F. (1992). *Peasant Economics: Farm households and agrarian development*. Cambridge University Press. Cambridge.
- Ellis, F. (1998). Household strategies and rural livelihood diversification. *The journal of development studies*, 35(1), 1-38.
- Ellis, F. (2000). *Rural livelihoods and diversity in developing countries*. Oxford university press.
- Food and Agricultural Organization (FAO). (1984). *Year Book of Production*. FAO: Rome
- Government of the State of Eritrea (GOE). (2004). *Eritrea: Interim poverty reduction strategy paper (I-PRSP)*. Government of the State of Eritrea, Asmara.
- Greene, W.H. (2003). *Econometric Analysis* (5th Ed.). Prentice Hall. Pearson Education International.
- Grootaert, C. (1999). *Social capital, Household Welfare and Poverty in Indonesia*. Washington D.C.: The World Bank.
- Haggblade, S., Hazell, P., & Brown, J. (1989). Farm-nonfarm linkages in rural Sub-Saharan Africa. *World Development*, 17(8), 1173-1201.
- Kleijnen, J. P., Vonk Noordegraaf, A., & Nielen, M. (2001, December). Sensitivity analysis of censored output through polynomial, logistic, and tobit regression meta-models: theory and case study. In *Proceedings of the 33rd conference on Winter simulation* (pp. 486-491). IEEE Computer Society.
- McDonald, J. F., & Moffitt, R. A. (1980). The uses of Tobit analysis. *The review of economics and statistics*, 318-321.
- Niehof, A. (2004). The significance of diversification for rural livelihood systems. *Food policy*, 29(4), 321-338.
- Reardon, T. (1997). Using evidence of household income diversification to inform study of the rural nonfarm labor market in Africa. *World development*, 25(5), 735-747.
- Reardon, T., Stamoulis, K., Balisacan, A., Cruz, M. E., Berdegue, J., & Banks, B. (1998). Rural non-farm income in developing countries. *The state of food and agriculture, 1998*, 283-356.
- Reardon, T., Berdegue, J., Barrett, C. B., & Stamoulis, K. (2007). Household income diversification into rural nonfarm activities. In S. Haggblade, P. B. R. Hazell, T. Reardon (Eds.), *Transforming the rural nonfarm economy: opportunities and threats in the developing world*, 115-140. Baltimore: The John Hopkins Publishing Press.
- Woldenhanna, T., & Oskam, A. (2001). Income diversification and entry barriers: evidence from the Tigray region of northern Ethiopia. *Food Policy*, 26(4), 351-365.
- Wooldridge, J. M. (2002). *Econometric analysis of cross section and panel data*. MIT press.
- World Bank. (2007). *Eritrea: Country Brief*. Retrieved from <http://go.worldbank.org/CSITZX5Z80>.
- World Bank. (1996). *Eritrea Poverty Assessment*. Report No. 15595-ER. Population and Human Resources Division. Eastern Africa Department. African Region.
- Teame, G. T. (2015). Determinants of Rural Households' Participation in Income Generating Activities in Central Region, Eritrea. *Journal of Economics and Sustainable Development*, 6(17), 193-205.
- Teame, G. T., & Woldu, T. Y. M. (2016). Factors Affecting Rural Households' Income Diversification: Case of Zoba Maekel, Eritrea. *American Journal of Business, Economics and Management*, 4(2), 7-15.
- Schwarze, S., & Zeller, M. (2005). Income diversification of rural households in Central Sulawesi, Indonesia. *Quarterly Journal of International Agriculture*, 44(1), 61-74.

Service Quality, Customer Satisfaction and Behavioural Intentions in the Banking industry: the case of Middle East

Jaya Sangeetha

ABSTRACT

The link between Service Quality, Customer Satisfaction and Behavioural Intentions has been of interest to academicians and practitioners alike considering their potential to contribute to the effectiveness and success of the organization. This study endeavours to establish the nature of link between the three constructs in the Middle Eastern country and culture context, using a customized measurement tool developed for this unique context. Using cluster sampling method involving 373 retail banking customers of the major commercial banks in Oman, the study reveals that in the retail banking environment, Service Quality contributes to Customer Satisfaction and the link is strong and significant. Customer Satisfaction is found to lead to Behavioural Intentions but the link is weak but significant. Guidelines are provided for practicing managers for formulating strategies to leverage and strengthen the relationships.

Key words: Service Quality, Customer Satisfaction, Behavioural Intentions, Banking, Middle East.

INTRODUCTION

The financial sector has been facing a dynamic and turbulent environment in which excellence and customer retention has become the key for success. Service quality is commonly noted as a critical prerequisite for establishing and sustaining satisfying relationships with valued customers. Service quality and its association to customer satisfaction has emerged as a topic of significant and strategic concern (e.g. Bolton and Drew, 1991; Cronin and Taylor, 1992; Taylor and Baker, 1994).

From a managerial standpoint, customer satisfaction only matters to the extent that it affects behavioural outcomes. A study conducted by Levesque and McDougall (1996) confirmed and reinforced the idea that unsatisfactory customer service leads to a decrease in customer satisfaction and willingness to recommend the service to a friend. This would in turn lead to an increase in the rate of switching by customers. Therefore, considerable emphasis in the recent literature has been placed on relating perceived service quality to customer satisfaction and in turn to behavioural intentions. This would ultimately predict patronage behaviour and influence financial results.

This study aims to understand the direction and the strength of the relationship between the three important constructs - Service Quality, Customer Satisfaction and Behavioural Intentions in the context of retail banking in Sultanate of Oman.

LITERATURE REVIEW

Practitioners and academics alike are keen on accurately measuring service quality to better understand its essential antecedents and consequences, and ultimately, establish methods for improving quality to achieve competitive advantage and build customer loyalty (Palmer and Cole, 1995; Zahorik and Rust, 1992).

Banking and Service Quality: The Middle East context

Banking is a high involvement industry. Delivering quality service and products to the customer is essential for success and survival in today's global and highly competitive banking environment (Wang et al., 2003). Escalating competition has led many retail banks to direct their strategies towards increasing customer satisfaction and loyalty through improved service quality. To work towards this goal, it becomes imperative to determine the direction and strength of association between service quality, customer satisfaction and behavioural intentions in commercial banks.

In the Middle East, a few studies have been done on the service quality and customer satisfaction in Islamic banking (Al-Tamimi and Al-Amiri, 2003) and on commercial banks (Jamal and Naser, 2002; Hossain and Leo, 2009; Jabnoun and Al-Tamimi, 2002; Mohammad and Alhamdani, 2011).

The study by Jamal and Naser, 2002 proposes that the core and relational dimensions of service quality are linked to satisfaction. Further, customer expertise is found to be negatively related in the banking context. Evaluation of service quality by Hossain and Leo, 2009 was based on customer perceptions in banking in the Middle East and Qatar in particular. However, the other constructs like customer satisfaction and behavioural intentions were not included in the study. In UAE, Jabnoun and Al-Tamimi (2002) developed and tested an instrument measuring service quality in the UAE commercial banks based on SERVQUAL and limited it to measurement of perceptions only. Customer perceptions of service quality and its effect on customer satisfaction in the context of Jordan was the topic of the study by Mohammad and Alhamdani, 2011. Modified version of SERVQUAL was used for measuring service quality and customer satisfaction was assessed using nine items adapted from Lasser et al. (2000). The findings revealed that service quality is an important antecedent of customer satisfaction.

The literature on Middle East context reveals two gaps. Firstly, a gap in terms of studies which have considered the direction and the strength of the inter-relationships between the three vital constructs - service quality, customer satisfaction and behavioural intentions - in the middle-east context; secondly, studies which have attempted to study the above said relationships using customized instruments considering the unique culture and context of this region. This paper endeavours to fill these gaps.

Interrelationship among service quality, customer satisfaction and behavioural intentions

- (i) Service quality is the customers' overall impression of the relative inferiority/superiority of the organization and its services (Bitner and Hubbert, 1994, p.77). Satisfaction is a feeling or an attitude of a customer towards a service after it has been used. In this context, there are arguments in the marketing literature that both service quality and satisfaction are best conceptualised as unique constructs that should not be treated as equivalents in models of consumer decision making (Taylor and Baker, 1994, p. 165). Hence, many have attempted to establish the nature of the relationship between service quality and customer satisfaction. There is substantial amount of research which has proposed a causal link between service quality and customer satisfaction (Anderson and Sullivan, 1993; Bolton and Drew, 1991; Cronin and Taylor, 1992; Woodside et al., 1989). Andersen and Sullivan (1993), Cronin and Taylor (1992) and Woodside et al. (1989) provide empirical evidence in support of perceived service quality as an antecedent to customer satisfaction.

To ascertain the same in this study, the following hypothesis is framed.

H₁ Service quality of retail banking is positively related to customer satisfaction and the relationship is linear.

And the regression model is proposed as follows

$$SQ = \alpha_0 + \beta_1 CS + \varepsilon \quad \dots\dots\dots(1)$$

Where, SQ is the service quality measure and CS is the customer satisfaction measure.

(ii) Customer satisfaction is generally described as the full meeting of one's expectations (Oliver, 1980). This construct is a major outcome of marketing activity whereby it serves as a link between the various stages of consumer buying behaviour. Hence, it is widely recognized as a key influence in the formation of customers' future behavioural intentions (Anderson et al., 1994; Cronin and Taylor, 1992; Zeithaml et al., 1996; Taylor and Baker, 1994). Yu (2002) posited that the higher the level of customer satisfaction, the higher the level of repurchase and recommendation to others. Satisfied customers are also likely to tell other about their favourable experiences and thus engage in positive word of mouth advertising (Richens, 1983; File and Prince, 1992). This positive word of mouth is particularly useful in collectivist Middle Eastern cultures where social life is structured in a way to improve social relationships with others in the society (Hofstede, 1980).

Dissatisfied customers, on the other hand, are likely to switch brands and engage in negative word of mouth advertising. To examine the relationship between customer satisfaction and behavioural intentions in retail banking in Oman, the following hypothesis is being framed.

H₂ Customer satisfaction in retail banking is positively related to behavioural intentions.

The model is proposed as follows:

$$CS = \alpha_0 + \beta_2 BI + \varepsilon \quad \dots\dots\dots(2)$$

Where, CS is the customer satisfaction measure and BI is behavioural intentions.

The next section explains the methodology adopted for the development of the customized scales followed by discussion of research design. Section 4 deals with data analysis and discussion followed by conclusion and significance of the study in section 5. Section 6 provides the limitations and scope for future research.

RESEARCH METHODOLOGY

Development of customized instrument

Considering the unique country and cultural context, a customized instrument is warranted for measuring service quality, satisfaction and behavioural intentions (Jaya Sangeetha and Mahalingam, 2011). Hence, a customized instrument for measuring the constructs was developed using the procedure recommended by Churchill (1979) including the confirmation of the psychometric properties of each scale. The process is enumerated in Table 1.

The order of importance of the dimensions of the constructs was estimated by deploying the constant sum rating scale. The new scales developed for service quality, customer satisfaction and behavioural intentions have several theoretical and practical contributions as it has considered the universal dimensions and also customized it to the settings and hence lends more predictive and diagnostic value.

Scales directly measuring perceived performance relative to expectations have also been found to be less biased and more useful than scales merely measuring performance (Devlin, Dong and Brown 1993). Along the same lines, in this study each service quality item was surveyed using statements such as - "politeness of branch staff" is "much worse than I expected" to "much better than I expected". Customer satisfaction measurement incorporated the possible responses ranging from "not at all satisfied" to "Extremely satisfied". Behavioural intentions were estimated using responses ranging from (1) = "Strongly Disagree" to (5) = "Strongly Agree".

Considering the response from the pre-tests the decision was taken to translate the questionnaire into Arabic. The Arabic version was back-translated to check for clarity and suitability.

The psychometric properties of the scales were confirmed by checking for reliability and validity. A Cronbach's alpha analysis was used to assess the internal consistency or reliability of the scale employed in the pilot stage. The Cronbach's alpha coefficient was found to be above 0.7 for all the proposed dimensions for service quality, satisfaction and behavioural intentions, which indicated an acceptable level of reliability (Nunnally and Bernstein, 1994).

The data collected was subjected to Exploratory Factor Analysis to achieve data reduction and consolidation. The research has resulted in the development of scales for measurement of service quality, customer satisfaction and behavioural intentions for this context. The scales take into consideration the multi-dimensional nature of service quality with seven dimensions - core service/ service product (8 items), tangibles and systematization (9 items), credibility (3 items), empathy (7 items), security (3 items), assurance (3 items) and responsiveness (5 items). The same dimensions and items are found to be relevant in measuring the customer satisfaction. The seven relevant factors extracted for service quality and customer satisfaction together accounted for 79.89% variance the behavioural intentions scale was reduced to three dimensions - loyalty (5 items), price sensitivity (5 items) and response to problem (3 items). The 3 factors accounted for 69.8% variance.

Validity of the scales was assessed by testing the content, convergent and discriminant validity. Content validity is assessed using a combination of extensive literature reviews and 15 one-to-one interviews. 10 one-to-one interviews with retail banking customers and 5 interviews with the bank managers were conducted. Each interview lasted between 20 and 45 minutes. Discussion themes were prepared in advance. These related to customers' and managers' own service experiences.

The scale's convergent validity was assessed by statistical and practical significance of the association between the weighted service quality (WTSQ) and the un-weighted service quality (UNWTSQ). Correlations between the weighted service quality (i.e. WTSQ) and un-weighted service quality (i.e. UNWTSQ) are found to be high at 0.976; which shows high convergent validity. Similar assessment for customer satisfaction gave a value of 0.987 confirming high convergent validity.

Discriminant validity was measured by the correlation of the weighted service quality (WTSQ) with a similar, but conceptually distinct measure - overall satisfaction (OSAT) (as measured by a single statement in the survey). The correlation is found to be low at 0.439 indicating discriminant validity. The correlation between weighted customer satisfaction (WTSAT) and overall service quality (OSQ) results in a value of 0.367 indicating discriminant validity.

The scale was administered to 605 retail banking customers based on the market share of the major commercial banks in Oman (IMF Working paper (WP/10/61)) and 373 usable questionnaires were obtained. The psychometric properties were checked again to confirm the reliability and validity of the collected data.

Table 1: Stages of development and validation of service quality, satisfaction and behavioural intentions scale based on Churchill (1979)

Phases	Stages	Techniques suggested for this study
I	Specification of the domain of the scale	Define and delineate online relationship quality and its dimensions based on the literature and the results of a qualitative exploratory study
	Qualitative study and Item generation	Generate a list of items derived from the literature Reconcile, reformulate and, when necessary, create items suitable for the country and culture context using personal interviews with retail banking customers. One-to-One interviews with a panel of experts. (5 bank managers) Resulted in a preliminary scale (containing 57 items each for Service quality and satisfaction; 13 items for behavioural intentions)
II	Pre-test 1	
	Initial review	Initial Questionnaire was vetted by experienced fellow researchers
III	Pre-test 2	
	Data Collection	Administer a paper-based questionnaire (60 respondents)
	Clarification of the measures	Improve the instrument by translating into Arabic and back translation, modifying the scale to improve response
	Improvement of the measures	Perform exploratory factor analysis (EFA) for data reduction and interpretation. Improve the instrument based on EFA findings
	Scale reliability assessment	Assess reliability using Cronbach alpha
	Scale validity assessment	Assess convergent validity Assess discriminant validity Assess predictive validity
IV	Pre-test 3	
	Data Collection	Administer the refined questionnaire in Arabic and English based on cluster sampling (606 questionnaires; 373 valid responses)
4b.	Scale reliability reassessment	Perform EFA Assess reliability using Cronbach alpha
4c.	Scale validity re-assessment	Assess convergent validity Assess discriminant validity Assess predictive validity

DATA ANALYSIS AND DISCUSSION



To understand the direction and the strength of relationship between perceived service quality and customer satisfaction, the data collected was subjected to Chi-Square test. The test was performed between weighted service quality scores and weighted satisfaction scores to determine the degree of association between the two constructs. The results gave a very high value for 2-tail Pearson's Chi-Square which is also found to be significant. Corresponding Phi and Cramer's V values are also found to be satisfactory and significant at 18.69 and 0.993 respectively. All the three parameters strongly establish that weighted service quality and weighted satisfaction are dependent on each other.

Regression analysis was performed with weighted service quality as the independent variable and weighted satisfaction as the dependent variable. The curves estimation was also performed to ascertain if the relationship between the two constructs is linear or curvilinear. The results are as follows –

Table 2: Results of Regression Analysis using Curve Estimation

Variable	Constant	Standardized β Coefficients	R	R ²	t-value
WTSQ	.3153 (α_0)	0.6433(β_1)	0.6433	0.4138	16.140*
WTSQ ²	-.0911	-0.1650	0.6438	0.4145	-0.661**

Note: *Significant at 1% level; ** Not Significant

As found from table 2, the R value for the linear option and quadratic option is found to be 0.64329 and 0.64383 respectively. Also, the R square values are found to be 0.41382 and 0.41451 respectively showing that the variance explained in satisfaction does not change with the inclusion of service quality of the second order. Also, the t value and the associated p-values are found to be significant for service quality of the first order and the t value for service quality of the second order is not found to be significant. The above analysis proves that service quality leads to satisfaction and it is observed that there exists a linear and strong relationship between service quality and customer satisfaction.

The findings of the above analysis lead to the inference that service quality plays a vital role in determining satisfaction with retail banking services and must be managed well to satisfy the customers. Hence, the bank management needs to recognize the importance of service quality and manage it appropriately to lead to the desired level of customer satisfaction.

To analyse the relationship between customer satisfaction and behavioural intentions, Chi-Square test is conducted between weighted satisfaction scores and behavioural intentions scores to determine the degree of association between the two constructs. The results gave convincing and significant value for Pearson's Chi-Square. Phi and Cramer's V values were significant at 10.921 and 0.989 respectively. All the three parameters strongly establish that weighted satisfaction and behavioural intentions are dependent on each other.

Regression analysis is performed with weighted satisfaction as the independent variable and behavioural intentions as the dependent variable gave the following report:

Table 3: Results of Regression Analysis with Weighted Satisfaction and Behavioural Intentions

Variable	Constant (α_0)	Standardized β_2 Coefficients	R	R ²	t-value
WTSAT	2.534 (α_0)	0.130	0.130	0.017	2.522*

Note: * Significant at 5% level

According to table 3, the R value indicates a weak positive but significant relationship. This establishes that satisfaction in retail banking leads to behavioural intentions in retail banking customers, though the relationship is found to be weak.

CONCLUSION AND SIGNIFICANCE OF RESEARCH

In the financial sector where account balances reduce at the rate of 24 percent, 35 percent of the clients deal with multiple financial institutions and 5 percent annual defection rate is

prevalent (Aurier and N'Goala, 2010), there is a growing interest in developing lasting and beneficial relationships with consumers (Theron and Terblanche, 2010).

Quality is undeniably of paramount importance to service providers. Research has demonstrated the strategic benefits of quality in contributing to satisfaction which in turn has been suggested to influence the behavioural intentions which in turn positively influence organizational effectiveness. This study findings indicate that in the retail banking context in the Middle East, service quality leads to customer satisfaction. Therefore, management initiatives should not just focus on improving customer satisfaction but also target on improving the customer perceptions of overall service quality. Service quality is more abstract than customer satisfaction and is likely to be influenced by variables such as advertising, other forms of communication and the experience of others (Bitner and Hubbert, 1994). Organizations today can leverage the same effectively.

The weak but significant association between customer satisfaction and behavioural intentions indicates that in the Middle Eastern context many customers who state that they are satisfied with a service nevertheless do not exhibit strong behavioural intentions. This could be explained by different research findings.

One theory proposes that in between satisfaction and behavioural intentions, there lies another state called attitudinal loyalty (Fishbein and Ajzen, 1972). Three decades of research shows that attitudes are important predictors of behavioural intentions. The positive impact of attitudinal loyalty on behavioural intention is also evident in the marketing literature (e.g. Harris and Goode, 2004; Johnson, Herrmann, and Huber, 2006; Macintosh and Lockshin, 1997). Research shows that despite strong satisfaction, strength of attitudinal loyalty depends on a customers' willingness to maintain a relationship with a firm. This in turn is contingent on his or her perception of the benefits of a high-quality service that provides a continuous flow of value.

Effect of satisfaction on intention can also be explained based on the moderating effect of service context (Lewis and Soureli, 2006). Satisfaction has been found to have a stronger impact on behavioural intentions in industries where the amount of customer processing is low and service component of the offering is large. However, retail banking has high customer processing and minimal service component due to availability of self-service technologies. Hence, justifies for the weak relationship. Considering the findings, creating a psychological bonding through various marketing programs is the key to maintain favourable behavioural intentions in retail banking in Oman.

Apart from service context, expertise of the customers could be another moderating variable which could be used to explain the weak psychological bonding leading to weak attitudinal loyalty. Research findings of some studies indicate that Expertise is significantly but negatively related to customer loyalty i.e. greater the expertise, lower the loyalty. The strength of relationship between customer satisfaction and loyalty has been found to be weaker for experts than novices (Jamal and Naser, 2002). In retail banking, expertise level is significantly high among customers. This leads to their ability to easily distinguish between competing service providers leading to patronizing multiple banks for their needs. This may justify why sometimes satisfied customer have low intentions to behave (Chandrashekar et al, 2007). In the interest of the organization, customer 'will be less' tempted by an alternative marketplace offering 'only after' developing a psychological bond to the firm (i.e. A high attitudinal loyalty) (Dick and Basu, 1994; Shankar, Smith and Rangaswamy, 2003). The psychological attachment to the service provider can be enhanced using tangible cues as they are known to influence

customers' affective responses such as pleasure, relaxation and feelings of excitement (Wakefield and Blodgett, 1999).

As customers become increasingly sophisticated and knowledgeable in making their own financial decisions, it is becoming a challenge of how best to outperform demand and expectations of customers (Walsh, Evanschitzky and Wunerlich, 2008). This is supported by a growing trend whereby more and more customers interact with self-service technology to create service outcomes instead of interactions with an employee of a service firm. Hence, it is essential for marketers to develop and implement a retention strategy in which customer with increased levels of awareness and expertise are retained and their share-of-wallet is increased. Bank managers need to satisfy and delight expert customers, to improve their loyalty levels. One way to do this could be to customize loyalty programs with appropriate content and tailoring products to their specific needs (Coelho and Henseler, 2012).

Another concept that can be used to bolster the satisfaction-attitudinal loyalty link is by creating multiple positive service experiences resulting in the accumulated satisfaction. Also, according to Johnson, Herrmann and Huber (2006), attitudinal loyalty-behavioural intention relationship becomes stronger with the passage of time. This then leads to the formation of attitudinal loyalty. This can be achieved by implementing effective relationship management programs. This would help customers to perceive continuous flow of value.

The difference in the macro-environmental conditions including culture and country contexts could also be cited for the deviation in the expected satisfaction-behavioural intentions relationship strength. Research findings propose strong positive relationship between satisfaction and behavioural intentions; however, the findings are predominantly based on the developed western macro-environmental conditions. These factors may not hold true to the same extent in other parts of the world. Based on the banking sector developments related to the level of liberalization and competition and on the differences in sample characteristics (from countries with different culture) in terms of occupation, income and bank status, the results can be justified to be different than what is expected in the West (Jaya Sangeetha and Mahalingam, 2011). Even within the East and the developing world, the differences in culture among the different countries could be one of the reasons to lead to different outcomes of satisfaction.

Thus, this research explores the relationship between the vital constructs of service quality, customer satisfaction and behavioural intentions which are considered the key for customer retention and hence organizational success. The research brings forth the unique aspects of the Middle Eastern culture and provides the practicing managers in the financial industry a glimpse of the nature of relationships between service quality, customer satisfaction and thereby suggests the organizational strategies to be undertaken. This research magnifies the importance of forming strategies to strengthen the satisfaction-attitudinal loyalty relationship such as relationship marketing, individualized attention to certain segments and ensuring positive experiences. The study would be a useful tool in contributing to better efficiency and effectiveness in achieving long-term relationships, thus resulting in customer retention and organizational success.

LIMITATIONS AND SCOPE FOR FUTURE RESEARCH

The study is limited only for one service sector, retail banking. Before generalizing its applicability to the other areas in banking namely corporate banking and to other service

sectors, it should be tested and replicated. This could form the scope of future research in these areas.

Some of the constructs relevant to retail banking like trust have not been included in the scope of research whose applicability can be tested in future studies.

References

- Al-Tamimi, H. A. H and Al-Amiri, A. (2003), "Analysing Service Quality in the UAE Islamic Banks", *Journal of Financial Services Marketing*, Vol. 8, pp. 119-132.
- Anderson, E. and Sullivan, M. (1993), "The antecedents and consequences of customer satisfaction for firms", *Marketing Science*, Vol. 12 No.2, pp.125-43.
- Anderson, E.W., Fornell, C. and Lehmann, D.R. (1994), "Customer satisfaction, market share, and profitability", *Journal of Marketing*, Vol. 58 No. 3, pp. 53-66.
- Aurier, P. and N'Goala, G. (2010), "The differing and mediating roles of trust and relationship commitment in service relationship maintenance and development", *Journal of the Academy of Marketing Science*, Vol. 38 No. 3, pp. 303-325.
- Bitner, M.J. and Hubbert, A.R. (1994), "Encounter satisfaction versus overall satisfaction versus quality: the customer's voice", *Service Quality: New Direction in the Theory and Practice*, Sage Publications, Thousand Oaks, CA, pp. 72-94.
- Bolton, R.N. and Drew, H.J. (1991), "A multistage model of customers' assessments of service quality and value", *Journal of Consumer Research*, Vol. 17 No. 4, pp. 375-84.
- Chandrashekar, M., Rotte, L., Tax, S. S., and Grewal, R. (2007), "Satisfaction Strength and Customer Loyalty", *Journal of Marketing Research*, Vol. 54 No. 2, pp. 153-163.
- Churchill, A. G. Jr. (1979), "A Paradigm for Developing Better Measures of Marketing Constructs", *Journal of Marketing Research*, Vol. 16 No. 1, pp. 64-73.
- Coelho, S. P. and Henseler, J. (2012), "Creating Customer Loyalty through Service Customization", *European Journal of Marketing*, Vol. 46 No. 3/4, pp. 331-356.
- Cronin, J.J. and Taylor, S.A. (1992), "support market segmentation and explain switching behaviour", *Journal of Marketing*, Vol. 56 No. 3, pp. 55-68.
- Devlin, J.S., Dong, K.H. and Brown, M. (1993), "Selecting a scale for measuring quality", *Marketing Research: A Magazine of Management and applications*, Vol. 5 No. 3, pp. 12-17.
- Dick, A. S. And Basu, K. (1994), "Customer loyalty: Towards an integrated framework", *Journal of the Academy of Marketing Science*, Vol. 22 No. 2, pp. 99-113.
- File, K. M., Judd, B. B. And Prince, R. A. (1992), "Interactive Marketing: The Influence of Participation on Positive Word-of-Mouth and Referrals", *Journal of Services Marketing*, Vol. 6 No. 4, pp. 5-14.
- Fishbein, M. And Ajzen, I. (1975), "Belief, Attitude, Intention and Behaviour: An Introduction to Theory and Research", Reading, Mass.: Addison Wesley Publishing Co.
- Harris, L. C. And Goode, M. M. H. (2004), "The four levels of loyalty and the pivotal role of trust: A study of online service dynamics", *Journal of Retailing*, Vol. 80 No. 2, pp. 139-58.
- Hofstede, G. (1980), "Culture's Consequences: International Differences in Work-Related Values", Beverly Hills CA: Sage Publications, 1980.
- Hossain, M., & Leo, S. (2009), "Customer perception on service quality in retail banking in Middle East: the case of Qatar", *International Journal of Islamic and Middle Eastern Finance and Management*, Vol. 2 No. 4, pp. 338-350.
- IMF Working paper (WP/10/61) titled "Oman: Banking Sector Resilience".
- Jabnoun, N. and Al-Tamimi, H. A. H (2003), "Measuring Perceived service quality at UAE Commercial Banks", *The International Journal of Quality & Reliability Management*, Vol. 20 No. 4/5, pp. 458-472.
- Jamal, A. and Naser, K. (2002), "Customer satisfaction and retail banking: an assessment of some of the key antecedents of customer satisfaction in retail banking", *The International Journal of Bank Marketing*, Vol. 20 No. 4/5, pp. 146-160.

- Jaya Sangeetha and Mahalingam. S. (2011), "Service quality models in banking: a review", *International Journal of Islamic and Middle Eastern Finance and Management*, Vol. 4 No. 1, pp. 83-103.
- Johnson, M. D., Herrmann, A. And Huber, F. (2006), "The Evolution of Loyalty Intentions", *Journal of Marketing*, Vol. 70 No. 2, pp. 122-132.
- Levesque, T. and McDougall, G.H.G. (1996), "Determinants of customer satisfaction in retail banking", *The International Journal of Bank Marketing*, Vol. 14 No. 7, pp. 12-20.
- Lewis, R. B. and Soureli, M. (2006), "The antecedents of Consumer Loyalty in Retail Banking", *Journal of Consumer Behaviour*, Vol. 5, pp. 15-31.
- Macintosh, G. And Lockshin, L. S. (1997), "Retail relationships and store loyalty: A multi level perspective", *International Journal of Research in Marketing*, Vol. 14, pp. 487-497.
- Mohammad, A. A. S. And Alhamdani. S. Y. M. (2011), "Service Quality Perspectives and Customer Satisfaction in commercial Banks Working in Jordan", *Middle Eastern Finance and Economics*, Issue 14, pp. 60-72.
- Nunnally, J.C. and Bernstein, I.H. (1994), *Psychometric Theory* (3rd Ed), New York: McGraw Hill.
- Palmer, A. and Cole, C. (1995), *Services Marketing: Principles and Practice*, Prentice-Hall, Englewood, Cliffs, NJ.
- Richins, M. L. (1983), "Negative Word-of-Mouth by Dissatisfied Consumers: a Pilot Study", *Journal of Marketing*, Vol. 47, No. 1, pp. 68-78.
- Shankar, V., Smith, A. K. And Rangaswamy, A. (2003), "Customer satisfaction and loyalty in online and offline environments", *International Journal of Research in Marketing*, Vol. 20 No. 2, pp. 153-75.
- Taylor, S.A. and Baker, T.L. (1994), "An assessment of the relationship between service quality and customer satisfaction in the formation of consumers' purchase intentions", *Journal of Retailing*, Vol. 70, pp. 163-78.
- Theron, E. And Terblanche, N. S. (2010), "Dimensions of relationship marketing in business-to-business financial services", *International Journal of Market Research*, Vol. 52 No. 3, pp. 383-402.
- Wakefield, K. L. And Blodgett, J. G. (1999), "Customer response to intangible and tangible service factors", *Psychology & Marketing*, Vol. 16 No. 1, pp. 51-68.
- Walsh, G., Evanschitzky, H. and Wunderlich, M. (2008), "Identification and Analysis of moderator variables: Investigating the Customer Satisfaction-Loyalty link", *European Journal of Marketing*, Vol. 42 No. 9/10, pp. 977-1004.
- Woodside, A.G., Frey, L.L. and Daly, R.T. (1989), "Linking service quality, customer satisfaction and behavioural intention", *Journal of Health Care Marketing*, Vol. 9 No. 4, pp. 5-17.
- Zahorik, A. J. and Rust, T.R. (1992), "Modeling the impact of service quality on profitability: a Review" *Advances in Services Marketing and Management*, Vol. 1, Swartz, A.T., Bowen, E.D. and Brown, W.S, eds. Greenwich, CT: JAI Press, pp. 247-76.
- Zeithaml, V.A., Berry, L.L. and Parasuraman, A. (1996), "The behavioural consequences of service quality", *Journal of Marketing*, Vol. 60, April, pp. 31- 46.



Macro-financial linkages between emergent and sustainable economies in a context of the European sovereign debt crisis

Nuno B. Ferreira

IBS-ISCTE IUL, Quantitative Methods, Lisbon, Portugal;

ABSTRACT

The aim of the study is to identify the international economic linkages between European emergent countries and different economies under the European sovereign debt crisis from the 1990s through 2015. More precisely, we compared the worst-performing European economies with more economically sustainable economies (such as France, Germany, the United Kingdom and Norway). Switzerland, China, Japan and the United States were also included to evaluate the external impacts on the European Union. To examine the increasing macro-financial linkages, their interactions were included in the Global VAR model. Credit variables and oil were used to analyse international transmission of the Euro area along with the US, China, Japan and Switzerland credit and aggregate demand shocks. The model was set up with quarterly data from a sample of 11 countries, and the followed global economic variables that included: Real GDP, inflation, real equity prices, real exchange rates, government bonds (10 year), interest rates (3 month) and the price of oil. The results showed that the US influence was contracted since all macroeconomic variables did not react significantly with the oil and US long-term interest rate shocks.

Keywords: GVAR analysis, national and regional shocks, impulse response analysis, trade weights

INTRODUCTION

The world economies are closely interlinked, via complex diffusion networks, which are difficult to model empirically. Bilateral relationships between economies are a necessary condition for sharing scarce resources (such as oil and other commodities), political and technological developments, cross-border trade in financial assets, as well as trade in goods and services and labour. Even after allowing for such factors, there might still be residual interdependencies due to unobserved interactions and spillover effects not taken properly into account by using the common channels of interactions. The GVAR, a VAR based model of the global economy, offers a solution to the so-called "curse of dimensionality." That is, the existence of too many parameters to be estimated on the available observations ([1] [2] [3] [4]). In summary, the GVAR can be viewed as a two-step procedure. In the first step, small-scale country-specific models are estimated conditionally based on the rest of the world. In the second step, individual country VAR models are stacked and solved simultaneously as one large global VAR model. The solution can be used for shock scenario analysis and forecasting as is usually done with standard low-dimensional VAR models. In this context, it is usual to present three main models that use common factors (e.g. small-scale factor-augmented VARs, Bayesian VARs and the global VARs). Individual units need not necessarily be countries, but could be regions, industries, goods categories, banks, municipalities, or sectors of a given economy, just to mention a few notable examples [5]. Mixed cross-section GVAR models, for instance, linking country data with firm-level data, have also been considered in the literature ([6] [7] [8] [9]).

In financial markets for the Euro area we have a "typical market" (or single market) which is the large primary development toward full economic integration. After the Lehman Brothers

debt crisis, different regional co-movements of real outputs and other macroeconomic variables drove external shocks or self-sustaining development in the world, and the impact regarding economic blocks integration has not yet been rigorously demonstrated. In this context, the relative importance of regional shocks originating from China and US needs to be considered when establishing a new pattern of world market integration after the Lehman debt crisis. Thus, the GVAR model was developed for the purpose of capturing spillovers in multi-country analyses, where restrictions arise as a result of the weights imposed on foreign variables, as well as from the homogeneity of each foreign factor on the long-run parameters of the corresponding VAR [10]. The past decade have witnessed several debt crises we are also interested in indagating if the predominant role of US remains valid.

The paper is structured as follows: Section 1 introduces our empirical framework (the GVAR model); Section 2 reviews the scientific literature; Section 3 presents the GVAR methodology; Section 4 describes the data; Section 5 outlines the results. After the results were calculated, we obtained the impulse function response analysis, which constitutes Section 6; and Section 7 provides the conclusion.

STATE OF THE ART

Since the introduction of the GVAR model by Pesaran et al. [11] there have been several applications of the GVAR approach in academic literature, especially over the last decade (e.g., the GVAR Handbook, edited by di Mauro and Pesaran [12], which provides an interesting collection of some GVAR empirical applications). This methodology has also found acceptance in policy institutions, including the International Monetary Fund (IMF) and European Central Bank (ECB), where this is one of the main methods used to distinguish interlinkage across different countries ([7] [8] [9]). The first attempt at a theoretical defence of the GVAR approach was provided by Déés et al. [13] (DdPS), who derived the VAR model augmented by the vector of the star variables and their lagged values as an approximation to a global VAR. The GVAR approach was initially established as a result of the 1997 Asian financial crisis to compute the effects of macroeconomic developments on the losses of major financial organisations. It was clear then that all major banks are highly exposed to systemic risk from adverse global or regional shocks, but quantifying these effects required a coherent global macroeconomic model [14].

Dreger and Wolters [15] investigated the implications of an increase in liquidity in the years preceding the global financial crises on the formation of price bubbles in asset markets. The implications of liquidity shocks and their transmission were also investigated in Chudik and Fratzscher [16]. In addition to liquidity shocks, Chudik and Fratzscher [16] identified risk shocks, and found that while liquidity shocks have had a more severe impact on advanced economies during the recent global financial crisis, it was mainly the decline in risk appetite that affected emerging market economies. Bussière, Chudik and Mehl [17] found that the reactions of real effective exchange rates in Euro countries to a global risk aversion shock after the creation of euro have become similar to those in Italy, Portugal and Spain before the European monetary union, i.e., of economies in the Euro areas' periphery.

Some other empirical GVAR papers that focused on modelling various types of risk (e.g. [18]) analysed interactions between banking sector risk, sovereign risk, corporate sector risk, real economic activity, and credit growth for 15 European countries and the US. In addition, Dovern and van Roye [19] used a GVAR to study the international transmission of financial stress and its effects on economic activity, whereas Feldkircher [20] assessed the spatial propagation and

the time profile of foreign shocks to the region and Gross and Kok [21] used GVAR specification to investigate contagion among sovereigns and banks.

Cesa-Bianchi, Pesaran, and Rebucci [22] explored the interrelation between volatility in financial markets on macroeconomic dynamics, who extended the GVAR model of DdPS by a volatility module. Finally, Feldkircher and Huber [23] analysed international spillovers of expansionary US aggregate demand and supply shocks and of a contractionary US monetary policy shock.

GVAR METHODOLOGY

The analysis was performed using the global vector autoregressive (GVAR) methodology, originally developed by Pesaran *et al.* [11] and further developed by Déés *et al.* [13]. The GVAR approach is a relatively novel empirical methodology used to examine a global macroeconomic environment. This methodology combines time series, panel data and factor analysis techniques. Pesaran, Schuermann and Smith [24] provided an overview of this modelling technique. di Mauro and Pesaran [12] offered a board-based collection of the more relevant studies using GVAR during the last decade.

The GVAR model is based on the following assumptions:

- I. There are N+1 countries or regions.
- II. The country-specific variables are related to global economic variables. Global economic variables include three groups:
 - 1) Country-specific weighted averages of foreign variables
 - 2) Deterministic variables, such as time trends
 - 3) Global (weakly) exogenous variables, such as oil prices

There are country-specific variables x_{it} . There are $(k_i \cdot k_i^*)$ foreign-specific variables specific to the i^{th} country. It was considered N+1 countries in the global economy, by $i=0,1,\dots, N$. Except for the US, which was labelled as zero and taken to be the reference country; all other N countries were modelled as small open economies. For each country, we considered two types of variables: **(1)** domestic variables, and **(2)** foreign variables. Each economy was linked to the others by the foreign variables and calculated as weighted averages of the corresponding country-specific variables, as well as the global (weakly) exogenous variables, such as oil prices and the deterministic variables, such as time trends.

This set of individual VARX* models was used to build the GVAR framework. Following Pesaran *et al.* [11] and Dees *et al.* [12], a VARX*(p_i, q_i) model for the i^{th} country relates a $k_i \times 1$ vector of domestic macroeconomic variables (treated as endogenous), x_{it} , to a $k_i^* \times 1$ vector of country-specific foreign variables (taken to be weakly exogenous), x_{it}^* :

$$\Phi_i = (L, p_i)x_{it} = a_{i0} + a_{i1}t + \Lambda_i(L, q_i) x_{it}^* + u_{it}, \quad (1)$$

For $t=1,2,\dots,T$, where a_{i0} and a_{i1} are $k_i \times 1$ vectors of fixed intercepts and coefficients on the deterministic time trends, respectively. u_{it} is a $k_i \times 1$ vector of country-specific shocks, which were assumed were serially uncorrelated with zero mean and a non-singular covariance matrix, Σ_{ii} , namely $u_{it} \sim i.i.d.(0, \Sigma_{ii})$. For algebraic simplicity, observed global factors in the country-specific VARX* models abstracted. Furthermore, $\Phi_i(L, p_i) = I - \sum_{i=1}^{p_i} \Phi_i L^i$ and $\Lambda_i(L, q_i) = I - \sum_{i=0}^{q_i} \Lambda_i L^i$ were the matrix lag polynomial of the coefficients associated with the domestic and foreign variables, respectively. As the lag orders for these variables, p_i and q_i , were selected on a country-by-country basis, we were explicitly allowing for $\Phi_i(L, p_i)$ and $\Lambda_i(L, q_i)$ to differ across countries.

The country-specific foreign variables were constructed as cross-sectional averages of the domestic variables using data on, for example, bilateral trade as the weights, w_{ij} :

$$x_{it}^* = \sum_{j=0}^N w_{ij} x_{jt}, \tag{2}$$

Where $j=0,1,\dots,N$, $w_{ij}=0$, and $\sum_{j=0}^N w_{ij} = 1$.

Although estimations were calculated on a country-by-country basis, the GVAR model was solved for the world as a whole, taking account of the fact that all variables were endogenous to the system as a whole. After estimating each country VARX*(p_i, q_i) model separately, all the $k=\sum_{i=0}^N k_i$ endogenous variables, collected in the $k \times 1$ vector $x_t = (x'_{0t}, x'_{1t}, \dots, x'_{Nt})'$, needed to be solved simultaneously using the link matrix defined in terms of the country-specific weights. To see this, the VARX* model in equation (1) can be more compactly written as:

$$A_i = (L, p_i, q_i) z_{it} = \varphi_{it}, \tag{3}$$

for $i=0,1,\dots,N$, where

$$A_i = (L, p_i, q_i) = [\Phi_i(L, p_i) - \Lambda_i(L, q_i)], z_{it} = (x'_{it}, x'_{it}*)'$$

$$\varphi_{it} = a_{i0}, a_{i1}t + u_{it}. \tag{4}$$

Note that given equation (2) can be written as:

$$z_{it} = W_i x_t, \tag{5}$$

Where $W_i = (W_{i0}, W_{i1}, \dots, W_{iN})$, with $W_{ii} = 0$, is the $(k_i+k^*_i) \times k$ weight matrix for country i defined by the country-specific weights, w_{ij} . Using (5), (3) can be written as:

$$A_i = (L, p) W_i x_t = \varphi_{it}, \tag{6}$$

$A_i = (L, p)$ is constructed from $A_i = (L, p_i, q_i)$ by setting $p=\max(p_0, p_1, \dots, p_N, q_0, q_1, \dots, q_N)$ and augmenting the $p-p_i$ or $q-q_i$ additional terms in the power of the lag operator by zeros. Stacking equation (6), the Global VAR(p) model was obtained in domestic variables only:

$$G(L, p) x_t = \varphi_t, \tag{7}$$

Where

$$G(L, p) = \begin{pmatrix} A_0(L, p)W_0 \\ A_1(L, p)W_1 \\ \vdots \\ A_N(L, p)W_N \end{pmatrix}, \varphi_t = \begin{pmatrix} \varphi_{0t} \\ \varphi_{1t} \\ \vdots \\ \varphi_{Nt} \end{pmatrix}. \tag{8}$$

For an early illustration of the solution GVAR model, using a VARX*(1,1) model, see Pesaran *et al.* [11], and for an extensive survey of the latest developments in GVAR modelling, both the theoretical foundations of the approach and its numerous empirical applications, see Chudik and Pesaran [2]. The GVAR(p) model in equation (7) can be solved recursively and used for some purposes, such as forecasting or impulse response analysis.

Chudik, Alexander and Pesaran [25] extended the GVAR methodology to a case in which common variables were added to the conditional country models (either as observed global factors or as dominant variables). In such circumstances, equation (1) should be augmented by a vector of dominant variables, ω_t , and its lag values:

$$\Phi_i(L, p_i)x_{it} = a_{i0} + a_{i1}t + \Lambda_i(L, q_i)x_{it}^* + Y_i(L, s_i)\omega_t + u_{it}, \tag{9}$$

$Y_i(L, s_i) = \sum_{i=0}^{s_i} Y_i L^i$ is the matrix lag polynomial of the coefficients associated with the common variables. Here, ω_t can be treated (and tested) as weakly exogenous for the purpose of estimation. The marginal model for the dominant variables can be estimated with or without feedback effects from x_t . To allow for feedback effects from the variables in the GVAR model to the dominant variables via cross-section averages, we defined the following model for ω_t :

$$\omega_t = \sum_{l=1}^{p_\omega} \Phi_{\omega l} \omega_{i,t-l} + \sum_{l=1}^{p_\omega} \Lambda_{\omega l} x_{i,t-l}^* + \eta_{\omega t} \tag{10}$$

It should be noted that contemporaneous values of star variables (* superscript) do not feature in the previous equation, and ω_t are 'causal.' Conditional and marginal models can be combined and solved as a complete GVAR model as explained earlier.

Data and model specification

In this paper, the GVAR model contained 11 countries from different regions of the world. Table 1 presents countries and regions included in the model. The estimation was made using five countries (Portugal, Ireland, Greece, France and Germany) grouped together in the Euro area and treated as a single economy, while the remaining six were modelled individually. The model estimated for 22 years (January 1993 through December 2015).

Foreign variables are denoted by a x_{it}^* vector and were constructed as weighted averages with country-specific weights used to specify the pattern of economic relations among the countries of interest. The country-specific foreign variables were built using fixed trade weights based on the average trade flows computed over 20 years, i.e., 1993–2013, and are defined as follows:

$$y_{it}^* = \sum_{j=0}^N w_{ij} y_{it}, \quad dp_{it}^* = \sum_{j=0}^N w_{ij} dp_{it}, \quad rer_{it}^* = \sum_{j=0}^N w_{ij} rer_{it},$$

Where w_{it} , the weights, are the share of country j in the trade of country i , such that $w_{it}=0$ and $\sum_{j=0}^N w_{ij} = 1$. The motivation behind choosing the trade weights was to accommodate the effects of external shocks that could pass through output in all countries via trade channels.

Table 1. Trade weights

Country	EURO	China	Japan	Norway	Switzerland	United Kingdom	United States
EURO	0.0000	0.2485	0.1583	0.5040	0.6850	0.5825	0.2827
China	0.1709	0.0000	0.3518	0.0503	0.0424	0.0670	0.3219
Japan	0.0850	0.3103	0.0000	0.0318	0.0482	0.0486	0.2435
Norway	0.0524	0.0052	0.0056	0.0000	0.0053	0.0510	0.0099
Switzerland	0.1268	0.0151	0.0175	0.0134	0.0000	0.0454	0.0340
United Kingdom	0.3030	0.0475	0.0443	0.3004	0.0817	0.0000	0.1080
United States	0.2619	0.3735	0.4226	0.1002	0.1374	0.2055	0.0000

The set of country-specific foreign variables represents the dynamics of the global economic variables, The set of country-specific foreign variables represents the dynamics of the global economic variables, which were assumed to impact and shape macroeconomic variables. In the case of the US economy, domestic and foreign variables were treated differently because the US

was treated as a reference country. The US model was linked to the world through the assumption that exchange rates were determined in the remaining country-specific models. Therefore, we have the following domestic and foreign variables for the US model:

$$x_{it} = (y_{it}, dp_{it}, eq_{it}, ep_{it}, r_{it}, ir_{it}) \text{ and } x^*_{it} = (y^*_{it}, dp^*_{it}, eq^*_{it}, r^*_{it}, ir^*_{it}, p^{oil}_t)$$

where y_{it} is the log real output, ex_{it} is the log real exports, im_{it} is the log real imports, rer_{it} is the log real effective exchange rates, dp_{it} is the log of the rate of inflation and p^{oil}_t is the log of the nominal spot price of oil.

Given the importance of the US economy in the global economy, we included the price of oil as an endogenous variable. We considered the set of real exchange rates as weakly exogenous for the US model, while the real exchange rates were treated as an endogenous variable and the price of oil preserved as an exogenous variable in the models for all other countries.

The economies modelled by GVAR methodology interact through three interrelated channels:

1. Domestic variables x_{it} depend contemporaneously on foreign variables x^*_{it} and on their lagged values.
2. Dependence of the country-specific (domestic) variables on common global exogenous variables.
3. Shocks in country i depend contemporaneously on shocks in country j , captured by the covariance matrix Σ_{ij} , where $\Sigma_{ij} = cov ar(u_{it}, u_{jt}) = E(u_{it}, u_{jt})$ for $i = j$.

EMPIRICAL RESULTS AND DISCUSSION

Although the GVAR model can be estimated using stationary and non-stationary variables, the perfect evidence about the order of integration is crucial and plays an important role. The assumption allows distinguishing short- and long-run relations and interpreting that long-run as co-integrating. The I (first) assumption cannot be rejected for the majority of the endogenous and exogenous variable. The results of unit root tests were not reported in this text, but they are available upon request. We proceeded with the estimation of the VAR relationships (i.e., coefficients of individual country models), which revealed stability over time.

In the following analysis particular attention was given to testing for the adjustment coefficients for the error-correction models, and the solved cointegrating vectors normalised on the real effective exchange rate presented in Tables 2 and 3.

Table 2. Adjustment coefficients (CVI)

Parameter estimates	EURO	China	Japan	Norway	Switzerland	United Kingdom	United States
α_y	-0.0102	-0.2648	-0.0281	-0.1502	-0.1025	-0.2305	-0.0540
α_{dp}	0.1651	0.2205	-1.1604	0.0205	-0.0164	-0.0074	0.0015
α_{eq}	-0.0068	-0.3420	0.0306	-0.0668	0.0647	0.1152	-0.2098
α_{ep}	0.0210	0.1186	-0.0961	0.1871	-0.1620	0.0893	NA
α_r	0.0039	-0.1179	-0.1500	-0.0041	-1.4077	0.2598	-0.3781
α_{ir}	0.0326	0.6697	0.4797	0.4001	2.3844	1.4672	2.0678

Table 3. Estimated coefficients of the solved cointegrating vectors

Parameter estimates	EURO	China	Japan	Norway	Switzerland	United Kingdom	United States
Trend	0.0000	-0.0024	-0.0399	-0.0053	-0.0042	0.0024	-0.0070
β_y	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
β_{Dp}	-1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
β_{Eq}	0.0000	0.1820	0.3131	0.0000	0.0000	0.0000	-0.0762
β_{Ep}	0.0000	1.0302	-4.2156	-0.6028	1.3861	-1.6455	NA
β_r	1.0000	0.1224	3.5082	-0.7387	0.0765	0.2246	0.6451
β_{Ir}	0.0000	-0.2082	-0.2322	0.4053	0.0091	-0.0135	-0.1397
β_{ys}	0.0000	-0.3387	0.2009	-2.4428	0.8013	0.6372	0.1168
β_{Dps}	0.0000	0.0321	-2.1817	-0.1160	0.1331	0.0904	-0.0038
β_{Eqs}	0.0000	0.0954	-0.1286	0.8830	0.0076	-0.1315	NA
β_{Eps}	NA	NA	NA	NA	NA	NA	-0.1961
β_{rs}	0.0000	-0.1296	2.4221	-0.6692	0.0609	-0.2988	NA
β_{irs}	0.0000	-0.0471	-0.3315	-0.0717	-0.1255	0.0656	NA
β_{poil}	0.0000	0.0250	1.3390	0.0324	-0.1616	-0.1163	0.0918

The market models were tested individually for the number of cointegrating relations occurring in each model. The Johansen test was applied in all cases) Since the VARX*(pi, qi) models include foreign variables as exogenous, an assumption was that domestic variables have no impact on their foreign equivalents.

The empirical cross-country correlations for the data set are summarised in Table 4. This table reports such correlation coefficients computed as averages of the correlation coefficients between the levels, first differences and residuals of each equation (variable) with all other country/region equations.

Table 4. Average pairwise cross-section correlations of the residuals of each VECMX

Country	Real GDP (y)			Inflation (Dp)		
	Levels	First Differences	VECMX Residuals	Levels	First Differences	VECMX Residuals
	EURO	0.6681	0.5193	-0.1907	-0.0922	0.1557
China	0.3780	0.0871	-0.1580	-0.1902	0.0851	-0.0914
Japan	0.6283	0.2493	0.0064	0.0423	0.1303	0.0461
Norway	0.3785	0.4269	-0.0632	0.3723	0.1733	0.0901
Switzerland	0.5857	0.3983	-0.0779	0.3816	0.2652	0.1167
United Kingdom	0.3029	0.4947	-0.0879	0.3852	0.2132	0.0594
United States	0.4791	0.2419	-0.0524	0.3910	0.2624	0.0860
Country	Real Equity Prices (Eq)			Real Exchange Rate (Ep)		
	Levels	First Differences	VECMX Residuals	Levels	First Differences	VECMX Residuals
	EURO	0.7393	0.5845	-0.1186	0.2479	0.0800
China	0.6092	0.2074	-0.1239	0.1687	0.0467	0.0819
Japan	-0.0885	-0.0110	-0.1511	-0.4570	-0.1058	-0.0264
Norway	0.6567	0.5255	0.0048	0.2138	0.1131	0.1071
Switzerland	0.7127	0.5019	-0.0406	0.2223	0.1068	0.1015
United Kingdom	0.6799	0.6107	0.0362	-0.3129	-0.3090	0.0782
United States	0.6718	0.5603	0.0531	NA	NA	NA
Country	Government Bond 10y (r)			Interest rate (Ir)		
	Levels	First Differences	VECMX Residuals	Levels	First Differences	VECMX Residuals
	EURO	0.5747	0.2907	0.0234	0.6529	0.1686
China	0.3094	0.0344	-0.0116	0.5109	0.1627	0.0250
Japan	-0.6317	-0.1084	-0.0414	0.4588	0.1386	0.0001
Norway	0.5449	0.2691	0.0438	0.6729	0.2651	0.0632
Switzerland	0.4978	-0.0419	0.0111	0.6743	0.1552	0.0235
United Kingdom	0.5754	0.3282	0.0238	0.7175	0.2974	-0.0073
United States	0.5338	0.3177	0.1429	0.7064	0.1978	0.0491

A two-tailed t-test rejected the hypothesis that these coefficients were significantly different from zero at the conventional level. The highest correlation averages on levels, among the six analysed variables, were 0.49 (real GDP), 0.57 (real equity prices) and 0.63 (interest rate - 3M). The findings suggest a significant co-movement for those variables and less synchronisation for the remaining.

There are still noticeable correlations in the first difference, as the average correlations range between 43% (real equity prices) and 16% (government bond 10 year), except for the real exchange rate variable. Regarding the residuals coefficients, the low correlations obtained — one of the main conditions for a well-functioning VAR model — confirmed the fitness of the model.

After having individually estimated each country-VARX* model (Table 5), the assumption of weak exogeneity of the foreign variables of each country using the weak exogeneity tests, was tested. In this way, it tested the joint significance of the estimated error-correction terms for the country-specific foreign variables and oil prices.

One of the main assumptions of the GVAR model was weak exogeneity, i.e., that there is no long-run imposing effect from country-specific domestic to foreign variables. This implies that if we assumed foreign country-specific prices to be weakly exogenous means that all countries are assumed to be small economies in the rest of the world.

To check the assumption, we performed a formal test for all country-specific foreign variables, as well as for the global variables. The null hypothesis of weak exogeneity was rejected for all variables in all models. (NA stands for non-available data.)

The estimation of the cointegrating VARX models provided the opportunity to examine the feedback of foreign-specific variables on their domestic counterparts, as derived by the coefficients estimates related to contemporaneous foreign variables in differences, which are viewed as impact elasticities.

Table 5. Test for weak exogeneity at the 5% significance level

Country	vs	Dps	Eqs	Eps	rs	Irs	poil	F-statistic	
								5% CV	d.f.
EURO	0.7489	4.8063	0.9246	NA	1.0563	0.7049	1.0685	3.1221	(2,73)
China	0.3853	0.0370	2.8013	NA	1.2272	1.7448	0.1788	3.1221	(2,73)
Japan	1.7952	0.8632	1.4496	NA	1.7274	0.5816	1.8789	3.1221	(2,73)
Norway	1.2859	0.8632	0.6058	NA	0.9718	1.1631	0.8736	2.7318	(3,72)
Switzerland	1.1477	0.3243	0.1439	NA	0.1705	1.4545	0.5403	2.7318	(3,72)
United Kingdom	0.0892	0.8238	0.3123	NA	0.6529	3.4466	1.2783	2.7318	(3,72)
United States	1.0878	3.0191	NA	0.1508	NA	NA	0.9756	3.1154	(2,77)

Impact elasticities measured the contemporaneous variation of a domestic variable due to a 1% change in its corresponding foreign-specific counterpart, and they were particularly useful in the GVAR framework in identifying general co-movements among variables across countries. Table 6 shows the impact elasticities with the corresponding t-ratios, computed based on White's heteroscedasticity-consistent variance estimator.

Dées et al. [13] asserted these estimates could be interpreted as impact elasticities between domestic and foreign variables. Most of these elasticities were significant and had a positive sign, as expected. They are particularly informative as regards the international linkages between the domestic and foreign variables. Focusing on the Euro area, we could see that a 1% change in real foreign output in a given quarter led to an increase of 0.5% in Euro area real output within the same quarter. Similar foreign output elasticities were obtained across the different regions.

Another interesting feature of the results is the very weak linkages that seem to exist across short-term interest rates, (Sweden being an exception) and the significant relationships across

long-term rates. This fact clearly shows a much stronger relationship between bond markets than between monetary policy reactions.

A closer inspection of the elasticities values in Table 6 show very high elasticities for Eq. A 1% change in the oil price in the Euro zone caused the Eq. variables to increase 1.34%, a very strong, significant response.

From this table we can see that the impact elasticities related to foreign real GDP are positive and statistically significant in all cases, highlighting a remarkable degree of synchronization in the output dynamics across economies. This suggests that when countries suffer from domestic-generated GDP growth pressures, their dynamics are dependent on the internal developments of foreign countries. All estimate values lie between zero and one, in particular, the lowest value obtained was for China (0.0674), while the highest are associated with Euro (1.8403) and Switzerland (1.2845).

Table 6. Contemporaneous effects of foreign variables on their domestic counterparts

Country	y	Dp	Eq	r	I _r
EURO	1.8403 [13.5380]	-0.4217 [-0.6068]	1.3472 [12.0688]	0.1212 [0.6582]	0.2596 [2.2071]
China	0.0674 [0.2090]	0.0004 [0.0741]	0.3500 [1.7320]	-0.1764 [-0.8457]	-0.0195 [-0.9153]
Japan	0.0455 [0.9305]	-1.6082 [-1.5103]	-0.2840 [-1.0626]	-0.4799 [-2.1161]	0.2106 [0.6997]
Norway	0.8328 [5.9822]	0.0017 [0.3667]	1.0289 [9.7762]	1.2986 [10.7519]	0.1012 [1.8852]
Switzerland	1.2845 [11.8672]	-0.0009 [-0.4721]	0.7478 [12.3953]	-1.0650 [-1.9516]	0.7377 [1.9199]
United Kingdom	1.0485 [10.5136]	0.0006 [0.2396]	0.8255 [19.5993]	0.5963 [9.5304]	0.1420 [2.9636]
United States	0.0436 [1.1283]	0.0037 [1.9034]	NA NA	NA NA	NA NA

Impact elasticities greater than one reveal an overreaction of the headline inflation in these countries on the increase in GDP of their main trading partners. It also appears that low elasticities are associated with large countries, while the opposite holds for small countries. This is compatible with the general finding that the transmission channel of GDP works mostly unidirectional from large to small countries. This finding was also evidenced by Galesi and Lombardi [26].

Impulse response functions

Impulse response functions provided counterfactual answers to questions concerning the effects of a particular shock in a given economy, or the effects of a combined shock involving linear combinations of shocks across two or more economies. The effects of the shocks can also be computed either on a particular variable in the global economy, or on a combination of

variables. The GIRFS are defined as: $GIRF(y_t, u_t, n) = \frac{F_n G^{-1} s_j}{\sqrt{s_j^u s_j}}$, where s_j denotes a binary

shock indicator vector, n is the shock horizon, Σ_u is the corresponding variance covariance

matrix of the GVAR and $F = G^{-1}H$. The dynamic analysis was carried out on the levels of the variables, which implies that the effects of a given shock are typically permanent. The propagation of five different macroeconomic shocks, in terms of a positive standard error (s.e.) shock to all markets in relation to y - log real output; D_p - log of rate of inflation; r - 10 years government Bond rates; I_r - interest rates 3 months, was also studied.

Figure 1. Generalised impulse responses of a positive unit (1 s.e.) shock to oil prices.

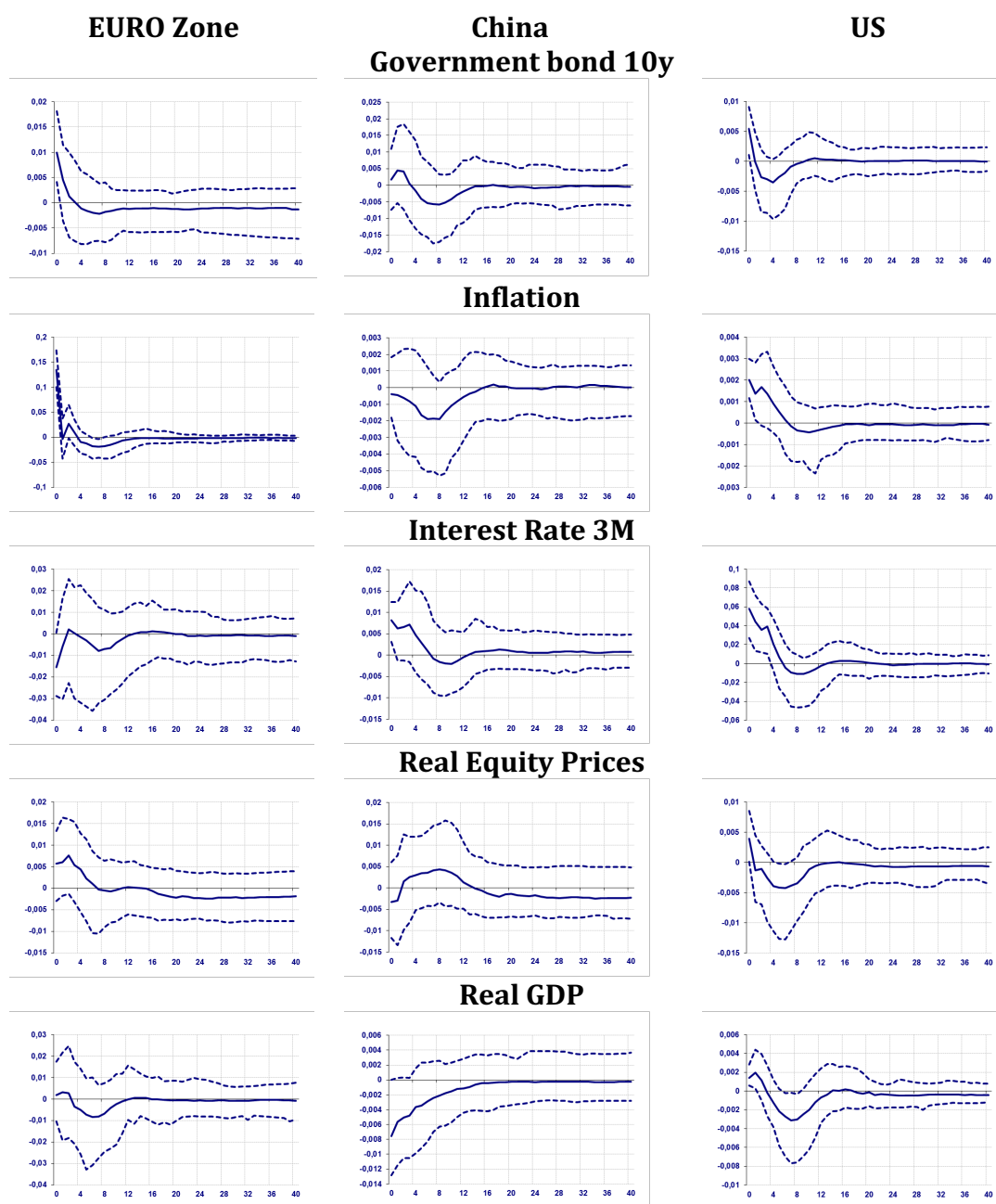
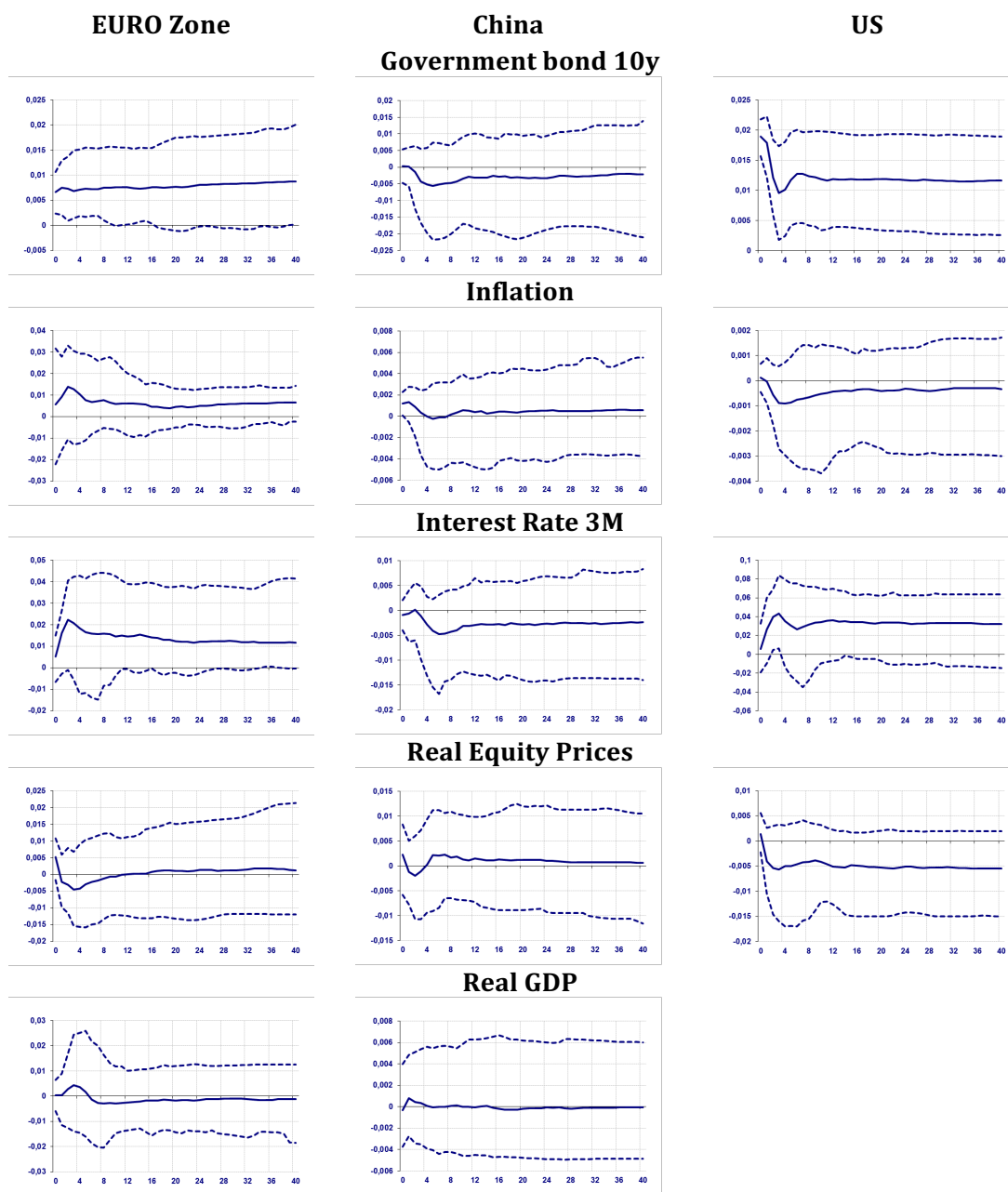


Figure 2. Generalised impulse responses of a positive unit (1 s.e.) shock to Government bond 10Y (US).



FINAL REMARKS

The shocks were divided into two categories: One were real shocks (e.g. macroeconomic variable shock); the second included the US long-term interest rate shock for each macroeconomic variable. The main goal in taking this approach was to see how the impact of these shocks originating in particular markets were felt and transmitted across other countries and regions. Initially, we looked at the response of the global economy to a one standard error positive to oil price [Figure 1]. As expected, oil importers, such as the US, the Euro area, Switzerland, the UK and Japan were negatively affected by the rise in oil prices. This effect was observed with more evidence in the 10 year government bond and in the inflation rate, which revealed the co-movement between oil price and these two variables. China was the most affected by the rise in oil prices regarding economic growth (GDP), which made sense because China is the world’s biggest importer of crude oil. This shock was associated with an instantaneous increase of about 1% in the 10 year government bond interest rates. The

spillover effects on oil price in the other major economies, though positive, seemed to be rather limited. In this context, the peaks in the responses of output were reached during the fourth through eighth quarters, which clarified the remarkable degree of synchronisation in the responses of the analysed economies to the shock above. As expected, the increase in the 10 year government bond was related to an instantaneous rise in the price levels for almost all the major economies.

Regarding inflationary impacts, the oil price shock was a little ambiguous. All markets, except Euro and Japan, exhibited a decrease in inflation. In general, the inflation rate suffered moderate fluctuations in the short run. It then stabilized between 0.30 and 0.80% from the eighth quarter on. The inflation shock impacted the GVAR system with a lag of approximately four months. For the interest rate for three months, we have four months of lag and for the real equity prices a 10 month lag period. So the latter variables had a larger period of response to the shock in the system. This inflationary pressure was transmitted to the real side, and was in line with a rise in short-term interest rates triggered, in turn, by increased inflationary pressures. The increase in oil prices coincided with downward movements in equity prices. Finally, the real exchange rate reaction was mixed across markets. This result may explain the differences already observed regarding the effect of the oil price shock on GDP. The depreciation or increase of each exchange rate could explain the remaining part.

Finally, we observed that the US influence was contracted since all macroeconomic variables did not react significantly to the shock. This result is not consensual. Among others, Konstantakis *et al.* [27] results showed evidence that a show in EU15 debt will affect negatively the evolution of US debt. These findings, in the spirit of the authors, could be attributed to the high degree of openness of the two economies, as well as to the financial integration of their banking sectors. The subprime crisis of 2009 could explain the remaining part.

References

- Greenwood-Nimmo, M.; Nguyen, V. and Shin, Y. (2012) International Linkages of the Korean Economy: The Global Vector Error-Correcting Macroeconomic Modelling Approach; Melbourne Institute Working Paper Series n^o 18/12.
- Chudik, A. and Pesaran, M. H. (2014) Theory and Practice of GVAR Modeling; CESIFO WORKING PAPER NO. 4807, 1-54.
- Bussière, M.; Chudik, A. and Sestieri, G. (2009) Modelling Global Trade Flows Results from a VAR Model; European Central Bank Working Paper Series n^o 1087.
- Chen, W. and Kinkyo, T. (2016) Asian-Pacific Economic Linkages: Empirical Evidence in the GVAR Framework. In Kinkyo, T.; Inoue, T. and Hamori, S. (2016) Remittances, and Resource dependence in east asia, World Scientific
- Michaelides, P.G.; Konstantakis, K.N.; Milioti, C. and Karlaftis, M.G. (2015) Modelling spillover effects of public transportation means: An intra-modal GVAR approach for Athens, Transportation Research Part E, 1-18.
- Dovern, J.; Feldkircher, M. and Huber, F. (2016) Does joint modelling of the world economy pay off? Evaluating global forecasts from a Bayesian GVAR. *Journal of Economic Dynamics & Control*, 70, 86-100.
- Tsionas, E.; Konstantakis, K. and Michaelides, P. (2016) Bayesian GVAR with k-endogenous dominants & input-output weights: Financial and trade channels in crisis. *Journal of International Financial Markets, Institutions & Money* 42, 1-26.
- Mohaddes, K. and Pesaran, M. (2016) Country-specific oil supply shocks and the global economy: A counterfactual analysis, *Energy Economics* 59, 382-399.
- Feldkircher, M. (2015) A global macro model for emerging Europe, *Journal of Comparative Economics* 43, 706-726.
- Bicu, A. C., & Lieb, L. M. (2015). Cross-border effects of fiscal policy in the Eurozone. (GSBE Research Memoranda; No. 019). Maastricht: GSBE.

- Pesaran, M. H.; Schuermann, T. and Weiner, S.M. (2004). Modelling regional interdependencies using a global error-correcting Macroeconometric Model. *Journal of Business and Economics Statistics* 22, 129—162.
- di Mauro, F. and M. H. Pesaran (2013). *The GVAR Handbook: Structure and Applications of a Macro Model of the Global Economy for Policy Analysis*. Oxford University Press.
- Dées, S., F. di Mauro, M. H. Pesaran, and L. V. Smith (2007). Exploring the international linkages of the Euro Area: A global VAR analysis. *Journal of Applied Econometrics* 22, 1-38.
- Giese, J. V., Tuxen, C. K., 2007. *Global Liquidity, Asset Prices and Monetary Policy: Evidence from Cointegrated VAR Models*. Unpublished Working Paper. The University of Oxford, Nuffield College and the University of Copenhagen, Department of Economics.
- Dreger, C. and Wolters, J. (2011). Liquidity and asset prices: How strong are the linkages? *Review of Economics & Finance*. 1, 43-52.
- Chudik, A. and Fratzscher, M. (2011). Identifying the global transmission of the 2007-2009 financial crisis in a GVAR model. *European Economic Review* 55 (3), 325-339.
- Bussière, M., A. Chudik, and A. Mehl (2011). How have global shocks impacted the real effective exchange rates of individual euro area countries since the euro's creation? *The B.E. Journal of Macro-economics* 13, 1-48.
- Gray, D. F., M. Gross, J. Paredes, and M. Sydow (2013). Modeling banking, sovereign, and macro risk in a CCA Global VAR. *IMF Working Papers* 13/218, International Monetary Fund.
- Dovern, J. and B. van Roye (2013). International transmission of financial stress: evidence from a GVAR. *Kiel Working Papers* 1844, Kiel Institute for the World Economy.
- Feldkircher, M. (2013). A Global Macro Model for Emerging Europe. *Oesterreichische Nationalbank (Austrian Central Bank) Working Paper* n° 185.
- Gross, M. and C. Kok (2013). Measuring contagion potential among sovereigns and banks using a mixed-cross-section GVAR. *Working Paper Series* 1570, European Central Bank.
- Cesa-Bianchi, A., M. H. Pesaran, and A. Rebucci (2014). Uncertainty and economic activity: A global perspective. *Mimeo*, 20 February 2014.
- Feldkircher, Martin and Huber, F. (2016). The international transmission of US shocks—Evidence from Bayesian global vector autoregressions. *European Economic Review* 81,167–188.
- Pesaran, M. H., T. Schuermann, and L. V. Smith (2009). Forecasting economic and financial variables with global VARs. *International Journal of Forecasting* 25 (4), 642-675.
- Chudik, Alexander and Pesaran, M.H, (2014) *Theory and Practice of GVAR Modeling*. Federal Reserve Bank of Dallas. Working Paper No. 180, 1-54.
- Galesi, Alessandro and Marco J. Lombardi. 2009. "External Shocks and International Inflation Linkages: A Global VAR Analysis." Working Paper, European Central Bank. 2009-1062, July.
- Konstantakis, Konstantinos; Panayotis Michaelides; Mike Tsionas and Chrysanthi Minou, (2015), System estimation of GVAR with two dominants and network theory: Evidence for BRICs, *Economic Modelling*, 51, (C), 604-616.

Bank Al-Maghrib communication: A new evaluation of the power of monetary and economic transparency

Abderrazak El Hiri

Professor at University Sidi Mohamed Ben Abdellah. Director of the Laboratory for Coordination of Studies and Research in Economic Analysis and Forecasting (CERAPE)

Salwa Habiby

PhD student at University Sidi Mohamed Ben Abdellah, CERAPE.

ABSTRACT

Theoretical arguments indicate that transparency could increase the credibility of low-inflation monetary policy, ameliorate the performance of decision-making and enhance the efficiency of interest rate setting. However, the qualitative nature of the communication makes its assessment difficult. The purpose of this article is to propose a new method of quantifying the information contained in central bank press releases and to examine whether the words spoken by policymakers can influence future monetary policy decisions in addition to macroeconomic variables. Through discourse analysis, we compared the importance attached to price stability and production. Then we developed a specific dictionary to measure Bank Al-Maghrib's communication and finally, we examined the utility of transparency in predicting monetary decisions by exploiting the prospective Taylor rule. By creating two indicators of transparency (monetary and economic), we find that central bank governor statements are significantly related to future interest rate decisions. This approach should improve the ability of market participants to predict interest rate decisions and reinforce the emphasis placed on the information in the Taylor rule in addition to anticipating inflation and production, especially that Morocco is considering the transition to an inflation-targeting regime.

Keywords: Transparency, flexible inflation targeting, press releases, textual analysis, prospective Taylor rule, Ordered Probit.

The particular charm of watercolor, with which any oil painting always looks red and pissing, is the continual transparency of the paper.
Eugène Delacroix (1847).

INTRODUCTION

Communication has become a very effective monetary policy instrument that can lead to greater predictability of central bank actions, which in turn reduces uncertainty in the financial markets. Indeed, by divulging information on future economic or political developments, the central bank could influence economic agents' expectations for interest rates.

In the literature, there are two ambiguities about the communication strategy: criticism of the central bank for its power to move financial markets in the desired direction; and a disagreement [1] about the extent to which communication variables add information to that contained in the macroeconomic variables that are included in the Taylor rule.

The degree of success of the communication is thus an empirical question. The purpose of this article is to find out if Bank Al-Maghrib's communication was informative, how to measure it and whether it can predict monetary policy decisions.

After a literature review on transparency, we will deal with some of the textual analysis of speech analysis with Tropes and Sphinx Quali software. This will allow us to have a global idea about a Bank Al-Maghrib communication tool, namely the Wali press releases, as well as the preference given to the inflation and growth objective. Then we will propose a method of quantifying the monetary and economic transparency specific to these releases. These communication variables will be integrated into the Taylor rule and tested by an ordered Probit model.

THE RELATIONSHIP BETWEEN TRANSPARENCY, INFLATION AND ECONOMIC GROWTH: LITERATURE REVIEW

Transparency is the fact that the central bank discloses to the public, in real time, a set of strategic and operational information. In other words, a transparent monetary policy means that changes in short-term interest rates should not surprise the market.

The aim of transparency is to enable economic agents to verify that the central bank is correctly pursuing the objectives assigned to it, which leads to a stabilization of inflation expectations (future interest rates) and thus the improvement of the effectiveness of monetary policy. [2].

There are different mechanisms that have been put in place to ensure greater transparency of the inflation targeting policy, namely:

- Regular consultations between the Governor and the Minister of Finance;
- Publication of regular reports (active communication) on the future orientations of monetary policy, forecasting models used, inflation, changes in interest rates and results of Executive Board votes;
- Justification in front of the government, parliament, and public opinion (through communiqués and conferences) of the monetary policy gap: explain a general price level above the inflation target and announce a timetable for back to normal. Indeed, central banks are considered responsible for the results obtained and must be submitted to evaluation procedures, followed sometimes by serious consequences in case of non-compliance with the stated objective.

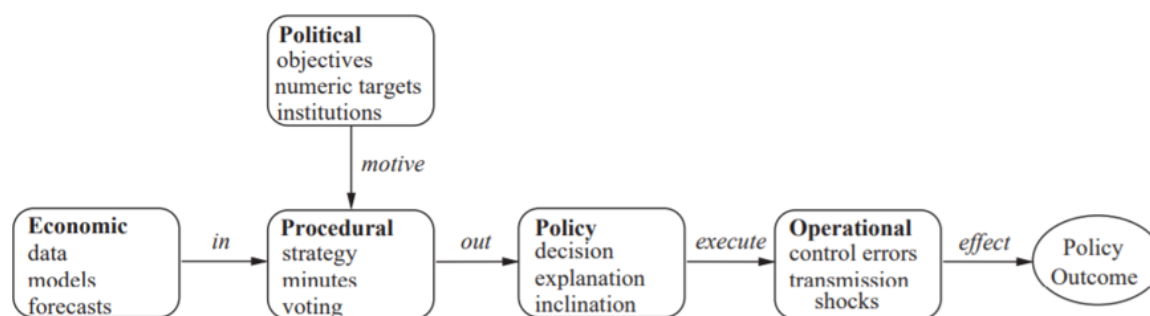
Kenneth and Kuttner bring together the commonalities of different countries' experiences in targeting inflation. Central bank transparency and accountability are included. [3].

In Appendix 1, we presented a non-exhaustive list of emerging market countries that opted for the inflation-targeting regime, which details how they meet the transparency criterion.

For inflation targeting countries, the main vehicle of communication is the minutes of the policy-making meeting and the inflation report published in the vast majority of cases on a quarterly basis. This report usually presents the central bank's assessment of economic conditions and its perspective on the outlook for inflation and growth. The main risks for projections and alternative scenarios are often included. The other main purpose of the Inflation report is to explain the rationale behind recent monetary policy decisions.

Transparency is a multifaceted concept associated with the different stages of the decision-making process of monetary policy. According to Geraats and Eijffinger, transparency can be classified into five categories: [4].

Figure 1: Conceptual Framework for the Monetary Policy Process.



Source: Eijffinger, S. C., & Geraats, P. M. (2006).

Political, economic and operational transparency could increase the credibility of low-inflation monetary policy, procedural transparency could ameliorate the performance of decision-making and policy transparency could enhance the efficiency of interest rate setting.

However, the effect of monetary policy on the growth of inflation and output (output) is determined not only by monetary policy decisions but also by the expectations and behavior of the public, according to their understanding of the bank's strategy [5]. The media as intermediaries between the central bank and the public greatly influences the understanding of this policy. In this sense, Svensson [6] proposes to central banks to disseminate their monetary rule including the weighting of inflation and real objectives to facilitate the public's understanding of their decisions.

Throughout this work, we will focus on a communication tool of Bank Al-Maghrib (BAM), namely the press releases made by the governor.

In what follows, we will first analyze the speech of these releases with Tropes and Sphinx software. Then we will shell them manually to quantify the communication. Finally, we will test the predictive power of the transparency indicators created.

SPEECH ANALYSIS WITH TROPES AND SPHINX IQ 2 SOFTWARE

The discourse analysis is a branch of textual analysis. It is the search for information relating to a specific context to examine their meaning and classify them in an objective way while being interested in the context, the receiver and the sequence of the sentences of the ad.

In order to have a general idea about the document, we will expose an analysis of the speech of the press releases using successively the software Tropes and Sphinx Quali. We note that press releases are written in French; so the output of the software is in French.

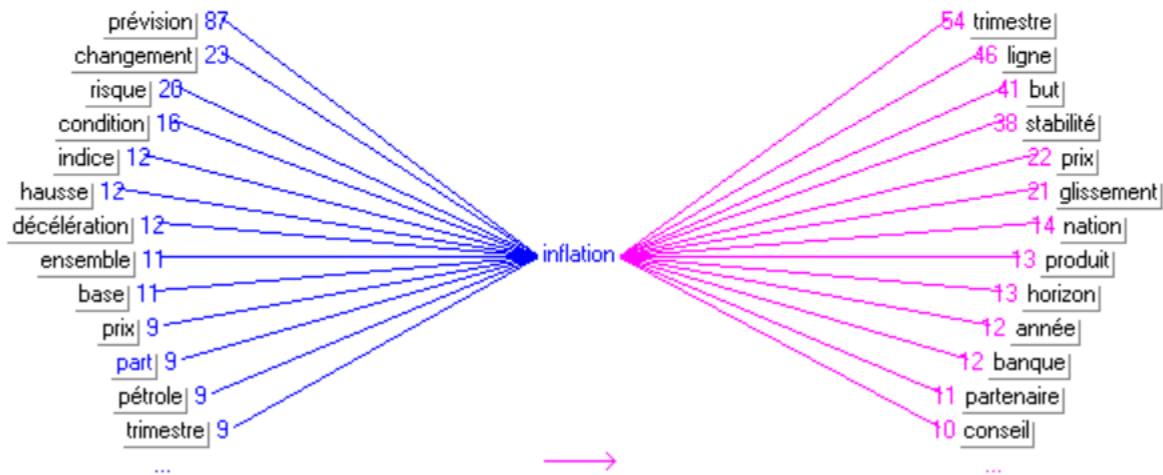
Analysis with Tropes software

The Tropes software is specialized in propositional discourse analysis. Without prior coding, Tropes analyzes all the text's propositions (level of generality, act, adjective, verb, scenario ..., etc.).

According to this software, the general style of press releases is rather narrative with a dynamic staging. It has detected 135 remarkable proposals each classified by decreasing frequency. The result is set out in Appendix 2.

Inflation is the most detailed context cited in the paper. It has been associated with the references shown in the graph below. We note that the references displayed to the left of the central class are his predecessors, those shown on his right are his successors.

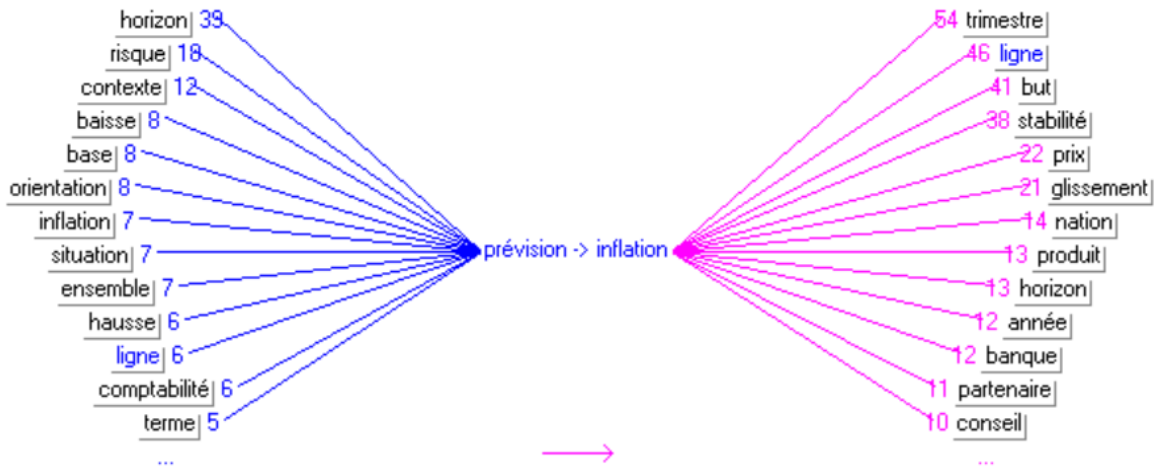
Figure 2: Star chart that displays the relationships between references.



Source: Tropes release.

We note that inflation is often associated with the word forecast, which has pushed us to analyze the relationship between the two words, in the same proposal and same order. The result is shown in the graph below:

Figure 3: Star chart that displays the relationships between a category of words and references.



Source: Tropes release.

Finally, the Tropes software raised the point of the length of the last press releases compared to the first. This communication feature could play a role assuming that preparing the ground for a change in interest rates might require more words than a situation of continued passivity.

Analysis with Sphinx Quali software

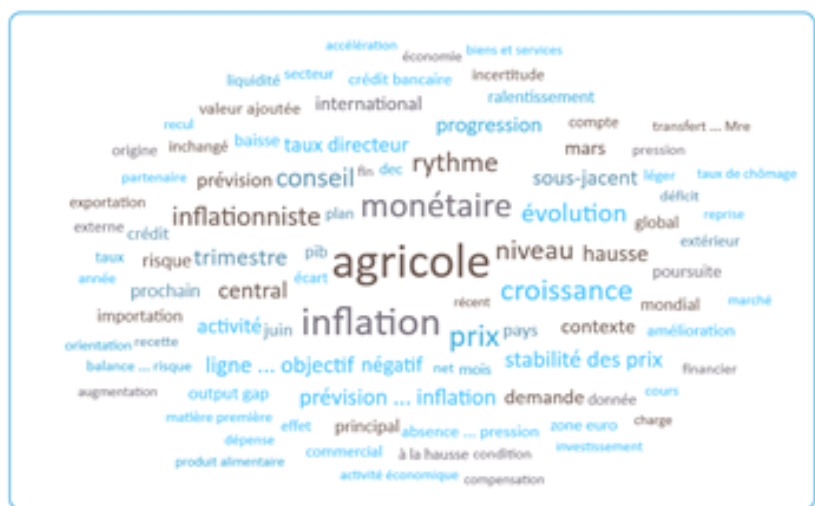
Sphinx Quali software enables textual and semantic¹ analysis through manual coding of content.

¹ It is a lexical analysis of sentences to determine the meaning of the document.

The qualitative information we processed includes 1,907 sentences, 7,116 words, and 127 detailed concepts.

The word cloud below outlines the main keywords of press releases. This allows a first appropriation of the content. As we can see, we attach a big importance to the objective of price stability and the agricultural sector.

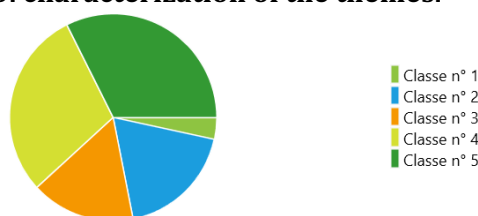
Figure 4: word cloud.



Source: Sphinx software release.

After a construction of a codebook, the software has identified five themes treated in the document with the feeling felt in each class:

Figure 5: characterization of the themes.



	Effectifs	Longueur moyenne	Les 5 mots spécifiques	Concept spécifique	Sentiment spécifique	Contexte spécifique	Orientation spécifique	Indice de richesse relative
Classe n° 1	46	4 mots	conseil - décembre				Sans opinion	0,37
Classe n° 2	250	12 mots	réunion - prévision - inflation - taux - évolution		Intérêt		Sans opinion	1,14
Classe n° 3	221	12 mots	milliard - fin - pib - recette - déficit		Blamer		Sans opinion	1,13
Classe n° 4	399	12 mots	inflation - trimestre - prix - annuel - prévision		Offense		Nettement négative	1,11
Classe n° 5	439	14 mots	agricole - croissance - trimestre - rythme - monétaire		Evaluation		Plutôt positive	1,25

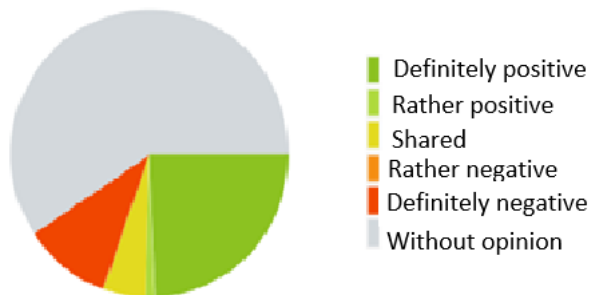
Source: Sphinx software release.

The answers to the last four categories are richer than the average because the index of wealth is greater than one. As regards the negative orientation of the fourth class, it is thought that the software detected the concern of BAM on the stability of inflation.

The last analysis to do with Sphinx is the analysis of feelings. Based on the passages expressing a feeling, a judgment or an evaluation, the software makes it possible to define the overall

opinion of the document. In our case, the direction of the press releases is not very polarized and the dominant trend reflects a neutral and ambiguous orientation.

Figure 6: Orientation of press releases and feelings.



Source: Sphinx software release.

QUANTIFYING THE COMMUNICATION OF BANK AL-MAGHRIB

Blinder [7], Fry [7], and Geraats [9] provided a measure of the five types of transparency for nine central banks. The sub-index for each of the five aspects is based on three questions, each of which has equal weight and does not exceed score one. A complete measure of transparency is obtained by summing the five sub-indexes so that we have a maximum score of fifteen.

In this work, we could follow their method to calculate the index of transparency of BAM, but this method will not allow us to have a series of data to integrate into our model. This is why, we thought to evaluate the press releases of our central bank and thus to introduce the importance of the media, the anticipation of the economic agents; and measure the impact of transparency on central bank decisions.

The degree of transparency can be measured by analyzing formal disclosure requirements or actual practices. We choose to create our own index of transparency since central banks' public communications vary greatly in their informational nature.

Proposal of a lexicon specific to the press releases

The most common content analysis methods are based on either the dictionary (documentary approach) or machine learning [10]. During this part, we will focus on the first approach. Although there is a general method for content analysis, classification and counting methods vary between studies.

Drawing on the work of Kohn & Sack [11], and Sturm & De Haan [12], we will quantify BAM's communication by creating a dictionary specific to press releases that the governor provides quarterly after each board meeting, to communicate to the general public the decisions that were made. Our data range is from December 2006 to March 2018.

This approach consists of a manual classification of all the phrases of the press release into two categories [13] (monetary and financial sphere / real sphere) and six inclinations (accommodative, restrictive, neutral/positive, negative, stable) and groups them by date.

This program of personalized words will allow us not only to know the effect of our indicators on the decisions of the central bank but also the meaning and the amplitude of the communication of the governor of BAM, unlike the LM or Harvard IV dictionaries that propose a raw list of English words inclined in two categories (positive / negative), and which do not take into account the financial context. For example, the word tax and liability are classified in

the negative category or it does not always translate a negative situation in the financial market [14].

A copy of the sentences used in our dictionary is given in Appendix 3. We note that sentences that are neither monetary nor economic were ignored. For example: "the Board of Bank Al-Maghrib held its quarterly meeting on Tuesday, March 27, 2011" or "the Board has, moreover, analyzed and approved the accounts of the Bank and the management report, as well as the allocation of income for the 2010 financial year.

After classifying press releases according to BAM's focus, we performed a standard textual analysis using the Krippendorff [15] methodology. This consists of the transformation of all the words into lower case, to remove the punctuations, the statistics, as well as all the definite and indefinite articles. Finally, we used the French algorithm of stemming [16] to have only the roots of words (for example continue (continuer) and will continue (continuera) will be replaced by the same word continue (continu)).

Then, in response to the limitation previously announced of LM or Harvard IV dictionaries, we will reason; in the construction of our dictionary; in terms of N-gram (coding of a sequence of words often used in the processing of natural languages) instead of uni-gram (one word). Indeed, for example, the word growth appears on the positive part of these dictionaries, but if we take the example of June 2013 (see Appendix 3 part real sphere), we note that the word "growth" is preceded by the word "deceleration", which gives it an opposite meaning, thus we woot it as negative information. This is an example of a bi-gram.²

In total, our dictionary contains 118 key N-gram. In Appendix 4 we have exposed a sample of N-grams with their occurrence frequency in each category.

Validation of the dictionary

After determining the list of N-grams, still ranked in two categories and six tilts, a quantitative analysis is needed to count the units and calculate their frequency in each category studied to derive their importance.

Loughran and McDonald [17] use two weighting methods: simple proportional and inversely proportional to the frequency of each document. Jegadeesh and Wu [18], meanwhile, use a weighting system for each word particularly suitable for financial applications. They assign weights for each word depending on how the market reacted to them in the past.

On our part, we will apply a basic formula in probabilistic statistics to count the proportion of each N-gram:

$$P(A) = \frac{\text{Card}(A)}{\text{Card}(\omega)}$$

With:

A is the N-gram. Card (A) is the number of times the N-gram has been cited in a particular category and inclination. Card (ω) is the number of times the N-gram has been repeated throughout the document.

² We note that we retained up to 6-gram.

In practice, it is enough to divide each element of the column "inclination" by its correspondent in the column "total" (See Appendix 4).

For an N-gram to be significant there must be at least a probability greater than 50% in an inclination. This is why we deleted 11 N-grams. For example, the 4-gram "close to its rhythm" has been spotted 15 times in the document with a probability that varies between 0.07 and 0.27, so the probabilities are less than 0.5.

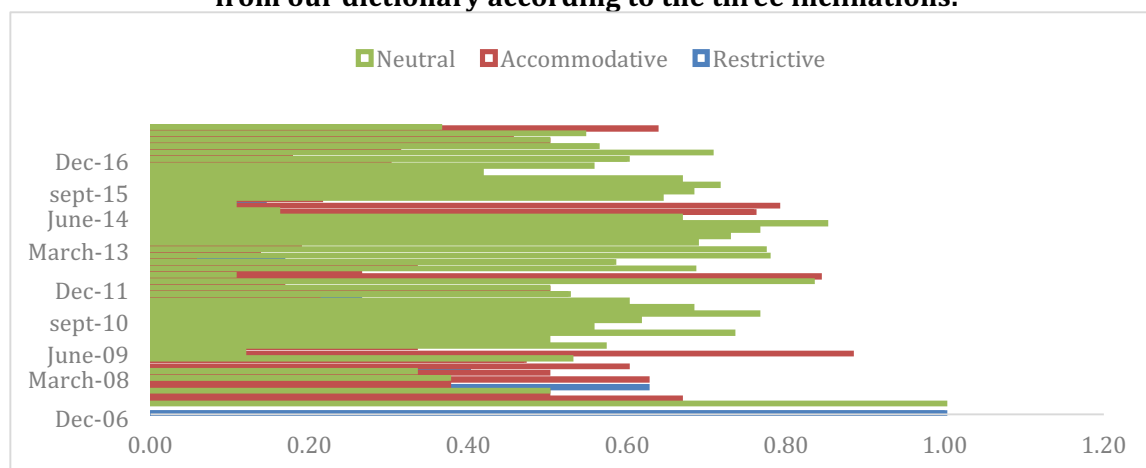
Our final dictionary thus contains 107 N-gram.

Weighting and counting

After having specified and validated our dictionary, we can use it to calculate the weighting of each N-gram in a particular category, inclination, and date. The methodology used is the weighted term approach. The probabilities obtained are between 0 and 1.

The results obtained for each category are illustrated in the following graphs:

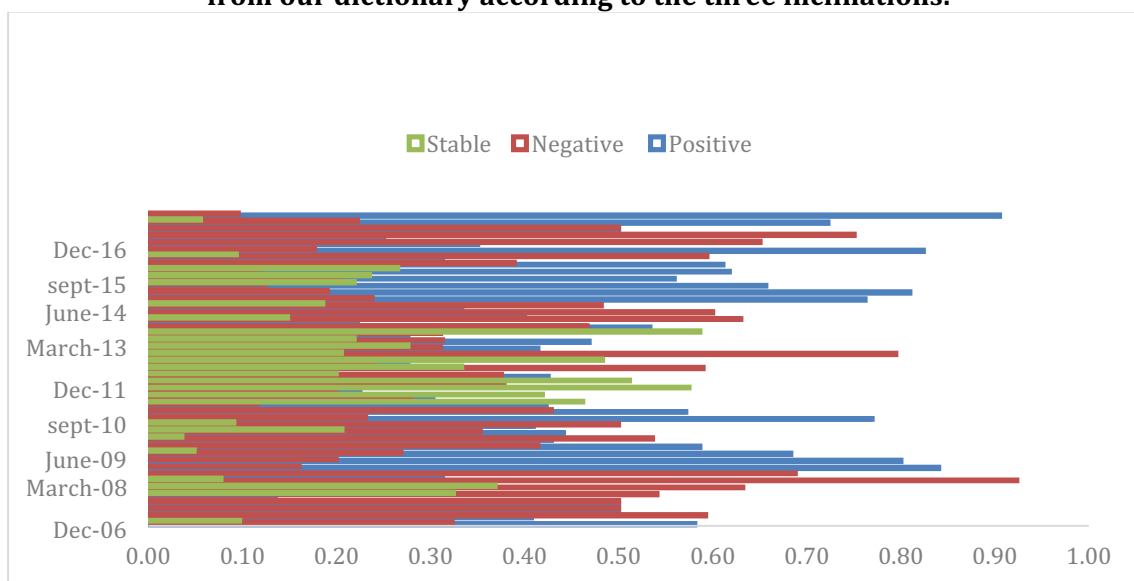
Figure 7: Evolution of the probabilities of the indices of the monetary transparency resulting from our dictionary according to the three inclinations.



During our sampling period, BAM made interest rate decisions: one restrictive in June 2008; five accommodative in March 2009, March 2012, September 2014, December 2014, March 2016; and forty neutral decisions.

Our dictionary reflects these decisions. Indeed, it is clear that the central bank's communication on monetary policy is mostly neutral (the dominant gray). The only time monetary policy is restrictive is in 2008 (blue color). The communication becomes accommodating (orange color) in the quarters announced above.

Figure 8: Evolution of the probabilities of the indices of the economic perspective transparency from our dictionary according to the three inclinations.



As for the real sphere, our probabilities reflect the repercussions of the financial crisis in 2008 on the Moroccan economy, notably growth, investment and employment through the channel of exports, foreign investment flows, tourism and transfers of Moroccans living abroad. Although Morocco was spared during the first half of 2008 from the consequences of the global crisis, our indicators have managed to capture it since March 2007 since we have retained in our dictionary the notion of economic prospects. In 2012, the central bank's communication was also negative since the growth rate was estimated at 2.4%. The tone of communication is positive in 2017 because of the changing of the global economic landscape and the willingness of our country to draw inspiration from certain countries to improve our economic performance.

Indicators of monetary and economic transparency

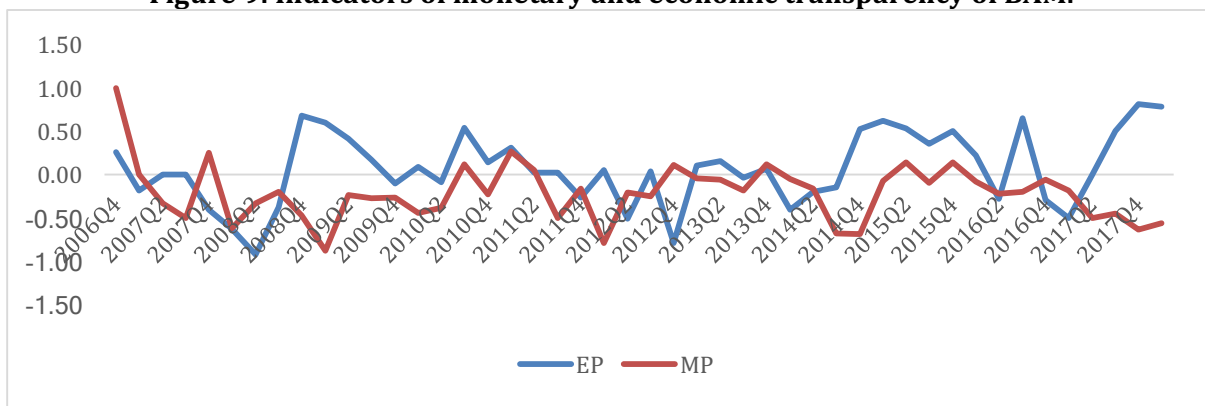
Now that we have analyzed and validated our probabilities, we must establish transparency indicators so that we can integrate them into the prospective Taylor rule.

This is how we will make the first difference between the end tilts of each category³: the monetary policy indicator will be equal to the probability of the "restrictive" policy - the likelihood of the "accommodative" policy. While the economic policy indicator will be equal to the probability of the "positive" perspective - the probability of the "negative" perspective:

$$I_{MP} = P_{restrictive} - P_{accommodative} \quad \text{and} \quad I_{EP} = P_{positive} - P_{negative}$$

³ These transparency indicators are between -1 and 1.

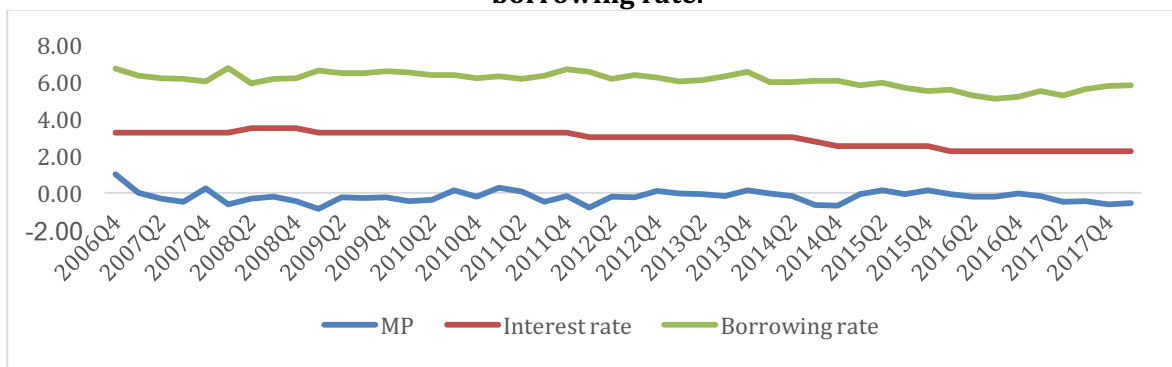
Figure 9: Indicators of monetary and economic transparency of BAM.



The following is a comparison of our indicators of monetary and economic transparency with the key rate, the borrowing rate, and real GDP.

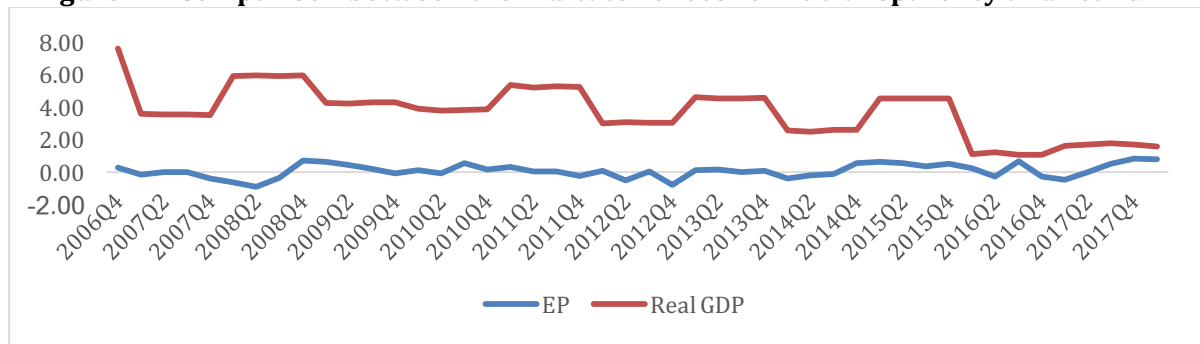
The interest rate is the rate set by the central bank. The borrowing rate is the percentage set in a loan. Real GDP measures the change in the production of goods and services by volume and take into account inflation.

Figure 10: Comparison between the monetary transparency indicator, the interest rate, and the borrowing rate.



Source: Bank Al-Maghrib website and author's calculation.

Figure 11: Comparison between the indicator of economic transparency and real GDP.



Source: Ministry of Finance website and author's calculation.

TESTING THE POWER OF MONETARY AND ECONOMIC INFORMATION IN INFLATION TARGETING: ORDERED PROBIT MODEL

We will successively present the ordered Probit model and the results of the estimation.

Presentation of the model

In order to empirically test the explanatory and predictive power of our indicators for monetary policy decisions in an inflation-targeting regime, we will include them in the prospective Taylor equation of type:

$$i_t = \rho i_{t-1} + (1 - \rho) r^* + \alpha (E_t(p_{t+1}) - p^*) + \beta (y_t - y^*) + \nu I_{MP} + \delta I_{EP} + \varepsilon_t.$$

Where i_t is the short-term nominal rate fixed by the BC (its instrument), r^* : short-term equilibrium interest rate, p^* : the inflation target (set at 2%), $(y_t - y^*)$ is the output gap, and (p_{t+1}) is the forecast of the inflation rate in $t + 1$ announced in t by BAM, since we evaluate the information quality given by the central bank (the publication of inflation forecasts is part of the arsenal of communication), I_{MP} is the index of monetary transparency, and I_{EP} is the index of economic transparency.

Therefore, if our transparency indicators are significant, they should have positive coefficients, since they reveal information to economic agents.

After performing the ADF test, we differentiated all variables once to stabilize them.

The indicators of transparency are qualitative variables, so to be able to estimate this equation we must use either the Probit model or the Logit model. However, it has already been announced that during the period of our sample the central bank used its instrument once (five times) to increase (decrease) the key rate by 25 points and 40 times to keep it neutral. Thus the change in the key rate fluctuates between -25, 0 and 25; which brings us back to an ordered model where the values taken by the variable are given discretely on a scale comprising a limited number of choices [19].

The variable to be explained in the ordered Probit model is therefore multimodal and hierarchical. For the coding we will use 1 for the variation -25; the 0 point variation will be 0, and the variation +25 points will be equal to 2.

RESULTS AND DISCUSSION

The distribution function of our model is Normal. Log-likelihood maximization algorithms carry out the estimation of the parameters [19].

To know the importance and benefit of communication, we tested the Taylor rule with/without transparency indicators. The results of the estimation are presented in Appendix 5.

The tests are statistically validated since the statistics of the log likelihood (6.344 / 9.854) are greater than the value of chi Deux $\chi^2_{3; 0,95} = 0,352$, as well as all the coefficients found are different from zero. However, they must be interpreted with caution, only the signs indicate whether the variable acts positively or negatively on the latent variable.

Note that after introducing the indicators of transparency, the pseudo- R^2 increased from 0.089 to 0.238. This model is more robust. Also, these indicators are significant (critical probabilities less than 0.05) and positive: an increase in restrictive and positive communication leads to an increase in the policy rate by Bank Al-Maghrib; vice versa an accommodating and negative communication leads to a lowering of the rate.

Now we want to know if the BAM governor's communication helps us to predict the next central bank's policy decisions, or the Taylor rule components provide sufficient information about expected inflation and output.

A test of the predictive qualities of both models was performed (see Appendix 6). The results are satisfactory. We found that the error rate of the model containing the communication channels is smaller than the one in the simple Taylor rule. Indicators of transparency are therefore informative, especially for the neutral value of the policy rate. However, we have not been able to predict the change in the restrictive policy; this may be due to the low (only one) number of values in our sample.

Then we made a forecast of the next interest rate (June 2018). Eviews generates datasets corresponding to:

$i-t_i$ = the realization of the estimate of the latent variable.

$t_i - (1)$ = the probability associated with the modality -1.

$t_i - (0)$ = the probability associated with modality 0.

$t_i - (2)$ = the probability associated with modality 1.

The result of the estimation is:

Table 1: Result of the forecast.

	$T_i = 1$	$T_i = 0$	$T_i = 2$
Probability	0,018	0,709	0,273

We have a 70% chance that the next interest rate belongs to class 0.

Indeed, in the press release of June 20, 2018, the board decided to keep the interest rate unchanged at 2.25%. Forecast checked.

CONCLUSION

In response to changes in the monetary policy environment, Bank Al-Maghrib has moved towards greater transparency in recent years. However, quantification of communication is problematic for researchers because of its qualitative nature.

This article presents a new investigation on the measure and extent of transparency of our central bank. We propose to examine whether the words pronounced by decision-makers can influence future monetary policy decisions in addition to prospective macroeconomic variables. We conducted a textual analysis of the speech to have a general idea of our communication tool, namely the press releases made quarterly by the Wali of BAM. The results of the propositional analysis state that the general style is rather narrative with dynamic staging, while semantic and feelings analysis show that the direction of the releases is not very polarized as well as the dominant trend reflects a neutral and ambiguous orientation. The common thread between the two analyzes is the emphasis on inflation and production, which fuels a flexible targeting policy. In order to understand the subtlety of the central bank's communication, we propose a dictionary specific to the lexicon of so-called releases. Manually we have classified the statements of the decision makers into two categories (monetary policy stance / economic perspective) and six inclinations (restrictive, accommodative, neutral/positive, negative, stable) to construct two-time series corresponding to the two indicators of transparency. We have then incorporated these indicators into the prospective Taylor rule.

Our results demonstrate a globally favorable and positive significance. Even if the

communication channels are not equitably significant (the index of monetary transparency is more significant than that of economic transparency), but at two, we can predict the next decision of the interest rate and thus proving the importance of adding information to market players in relation to the anticipation of inflation and production contained in Taylor's Prospective rule.

While the decision to leave interest rate unchanged can be correctly predicted, this model can hardly predict restrictive monetary decisions.

References

Rosa, C., & Verga, G. (2007). On the consistency and effectiveness of central bank communication: Evidence from the ECB. *European Journal of Political Economy*, 23(1), 146-175.

Jansen, D. J., & De Haan, J. (2009). Has ECB communication been helpful in predicting interest rate decisions? An evaluation of the early years of the Economic and Monetary Union. *Applied Economics*, 41(16).

Freedman, C., & Laxton, M. D. (2009). *Why inflation targeting?*(No. 9-86). International Monetary Fund.

Kuttner, K. N. (2004). The role of policy rules in inflation targeting. *Review-federal Reserve Bank of Saint Louis*, 86(4), 89-112. URL: <http://www.rieb.kobe-u.ac.jp/academic/ra/seminar/2004/seminar-details/kuttner.pdf>

Eijffinger, S. C., & Geraats, P. M. (2006). How transparent are central banks?. *European Journal of Political Economy*, 22(1), 1-21.

Cukierman, A., & Meltzer, A. H. (1986). A theory of ambiguity, credibility, and inflation under discretion and asymmetric information. *Econometrica: journal of the econometric society*, 1099-1128.

Svensson, L. E. (2009). Transparency under flexible inflation targeting: Experiences and challenges.

Blinder, A., Goodhart, C., Hildebrand, P., Lipton, D. and Wyplosz, C. (2001). 'How do central banks talk?', Geneva Report on the World Economy 3, ICMB.

Fry, M., Julius, D., Mahadeva, L., Roger, S., & Sterne, G. (2000). Key issues in the choice of monetary policy framework. *Monetary policy frameworks in a global context*, 1, 1-216.

Geraats, P. M. (2002). Central bank transparency. *The economic journal*, 112(483).

Thiéart, R. A. (2014). *Méthodes de recherche en management* (Vol. 4). Paris: Dunod.

Kohn, D. L., & Sack, B. P. (2003). *Central bank talk: does it matter and why?*. Divisions of Research & Statistics and Monetary Affairs, Federal Reserve Board.

Sturm, J. E., & De Haan, J. (2011). Does central bank communication really lead to better forecasts of policy decisions? New evidence based on a Taylor rule model for the ECB. *Review of World Economics*, 147(1), 41-58. URL: <https://rd.springer.com/article/10.1007/s10290-010-0076-4>

See the analytical framework of Bank Al-Maghrib's monetary policy. URL: <http://www.bkam.ma/en/Monetary-policy/Analytical-and-forecasting-framework/Analytical-framework>

Kearney, C., & Liu, S. (2014). Textual sentiment in finance: A survey of methods and models. *International Review of Financial Analysis*, 33, 171-185.

Krippendorff, K. (2012). *Content analysis: An introduction to its methodology*. Sage

<http://snowball.tartarus.org/algorithms/french/stemmer.html> (viewed on 15/03/2018).

Loughran, T., & McDonald, B. (2011). When is a liability not a liability? Textual analysis, dictionaries, and 10-Ks. *The Journal of Finance*, 66(1), 35-65.

Jegadeesh, N., & Wu, D. (2013). Word power: A new approach for content analysis. *Journal of Financial Economics*, 110(3), 712-729.

Greene, W. H., & Schlachter, D. (2011). *Econométrie* (Vol. 5, No. 4). France: Pearson éducation.

Bourbonnais, R. (2015). *Économétrie: cours et exercices corrigés*. Dunod.

In-equalities, Regulation, Ethics & Records - reflections from a case in Online Trade

Tove Engvall

Mid Sweden University
851 70 Sundsvall, Sweden

ABSTRACT

In an ethnographic study in online trade at the financial market, different forms of inequalities in client-broker/business relations have been found. It takes expression in for example design of technology, control of and access to information, competence and misuse of trust. Trust is at the center of concern, since that is crucial both to success and a risk for being taken advantage of. This relates to power between actors, responsibilities and accountability. This is where records role as evidence of human acts and conducts have a central role, both in relation to regulation and business ethics. As established structures for ensuring rights and obligations throughout societies are challenged by digitalization and globalization, this has to be recreated in the online context. The article conclude that both regulation and ethics are crucial in forming common values, behaviours and understanding of trust. If not, trust is easily violated which set people in trouble. In order to ensure trust, accountability is an important factor to consider, as well as informal means for ensuring fair behaviours that promotes the building and maintenance of trust among actors. As the technological development challenge processes and means for trust and accountability, new tools ought to be developed. As well as people-related aspects at both personal, business and societal level have to be considered.

Keywords: online trade, inequality, records, evidence, ethics

INTRODUCTION

Digitalization challenges established structures for how we manage justice, rights and obligations throughout societies. Laws often intends to ensure for citizens to be treated as equals, and if someone is violated – according to agreed laws – there will be consequences. This in order to promote fair behaviour.

Archives and records can be used as evidence of actions, activities and transactions (ISO 2016). They can, if related to regulatory frameworks, be acted upon in order to claim rights and obligations. In legal processes, they can be used as proof of whether someone has broken the law. In accountability processes actors can be held accountable for their acts. Common rules and values of what is acceptable and not are ways to create a common ground where participants have a shared notion of what they can expect from each other and trust.

Laws and regulations are not quite keeping up with technology. They are jurisdictional and defined by borders at different levels, such as nation states, municipalities, and regions. Meanwhile internet is a global system in which activities are carried out across jurisdictional borders. "On the one hand this spurs the growth of our economy, while on the other it allows computer crime to know no boundaries. Both lawful and unlawful activity on the Internet pose challenges to jurisdictional authority." (Duranti & Rogers, 2014, pp. 210-211). There is a growing conflict between national jurisdictions and the global internet, and the growth of multi-national telecommunication and other players create and further an imbalance of rights

and obligations between industry and consumers (Duranti & Rogers, 2014). The online context also makes it challenging to control compliance of laws and regulations.

Further more, different values and cultural patterns are crossed in the same online space. In the online environment, common grounds for common value systems have not yet kept pace with the technological development. Yet, businesses are transacted over digital networks between people that will probably never meet, which makes trust a crucial question (Duranti & Rogers, 2012). Along with this, personal data is a commodity and “this information is being collected, mined, analyzed and used for economic gain, surveillance and research beyond our wildest imaginings” (Duranti & Rogers, 2014, p. 209). This commodification and sale of information erode trust and personal liberty.

Common rules, rights and obligations and means to enforce them in order to promote fairness, are central in modern societies. They are also key factors in developing trust within societies. Which is something nation states have had a central role in ensuring. With digitalization this becomes more and more difficult to manage within the frames of individual countries, and common ground for trust on a global scale has not yet had time to develop.

This raises questions of how relations online develops in terms of equality and inequality, what role records and data have in shaping these patterns, and what can be considered to promote fair and equal relations.

An example from an ethnographic study in online trade will highlight some challenges and expressions of inequality in this online, international context. Many clients have lost a lot of money due to different reasons. Scam companies, cybercrimes, unequal ICT structures and gaps in legislation and consumer rights are some of the problems that have been indicated, as well as lack of competence and knowledge among trading clients (Engvall, 2017).

Online trade means that a client can trade different assets, such as stocks, forex, commodities and indexes, by access to a trading platform online. This trading platform is provided by a brokerage firm (Investopedia, 2016). “Clients open an account at a website where deposits and withdrawals are made and records of transactions are available. On the trading platform connected to the website, clients can open and close positions in trade” (Engvall, 2017, p. 34).

What emerged as a primary concern in the study, was about trust. What meaning it has and how it is used and abused. Trust is an ethical issue, and it was found in the study that it is connected to relations of power and inequality.

OBJECTIVES, METHOD AND THEORETICAL PERSPECTIVE

This paper uses results from an ethnographic study in online trade. The study was performed 2015-2017 and included participation in online trade, unstructured interviews and conversations (approximately 100), and semi-structured interviews (8) with brokers in online trade. The conversations and interviews were done primarily by phone or skype. Results from the study has previously been presented in an article (Engvall, 2017a) and a book (Engvall, 2017b), and is here discussed from an ethical and legal perspective, related to the role of recordkeeping.

Ethnography is often used to understand social actions and interactions, and include observations in natural situations, which is then analyzed. It builds on close contact with the studied group and its participants, and gains knowledge by own experience and interpretation.

The intention is to understand the participants perspectives. The process is often to first gather a thick material, which is then systematized and analyzed within theoretical frameworks (Alvesson & Sköldbberg, 1994). The overall aim with this research is to get a deeper understanding of a part of the online financial market, in order to identify what improvements can be made towards sustainable markets and information systems.

In the study, a reflective approach was used throughout the process. Experiences and insights led to new questions by reflecting on what had been found. That generated new input which was further reflected on. Continuously the approach has been to ask questions and look at the phenomena from different angles, with an intention to increase awareness about it. It has also included reflection and increasing the awareness of one's own perceptions and construction of the texts (Alvesson & Sköldbberg, 1994). According to Alvesson & Sköldbberg (1994), reflexivity include considerations of social, political, theoretical and linguistic aspects, as well as searching for underlying meanings. The purpose is not to define truths, but to open up for understanding and insights. Reflexive research include two elements; interpretation and reflection. Empirical material are interpreted and then reflected upon. The approach is also to go beyond what is taken for granted and search for deeper meanings (Alvesson & Sköldbberg, 1994). Central in the research is to contribute to social benefit, and to ask questions that seeks to make improvements for the benefit of society as a whole.

The research has had an abductive approach. Abduction means that the research often starts with collection and interpretation of empirical material, which is then analyzed with existing theories in order to develop understanding of different patterns and to find deeper meanings and structures. There is often an alteration between interpretation of empirical material, and use of existing theory in analysis of the findings. Insights lead to new questions, which lead to new analysis (Alvesson & Sköldbberg, 1994). The ethnographic study was performed in different phases. First there was a phase of active participation and conversations with brokers. Then experiences were summarized and challenges were identified to continue research around. Broad question areas were made, which were addressed in further conversations. This was a phase of writing, conversations and interviews. After that, there was a new phase of participation, for example in a course in trading and a new broker to trade with, and taking a more active part in the trading. Along with this, there were also further conversations with brokers. After this, there was again a phase of analysis and writing. Some other studies have also been done, for example with interviews with the public administration about the financial market and Big Data (Engvall, 2017c), which contributed to the body of knowledge that has further developed the understanding. All along the way, experiences, conversations, reflection and literature studies build up the body of knowledge and understanding. This article is part in this process, to use the insights from the study and discuss it from the perspective of records role as evidence of peoples' actions and transactions, related to legal and ethical perspectives and how this relates to trust.

RECORDS, RESPONSIBILITY AND TRUST

Facts, acts and records

Every social group ensures an ordered development of the relationships among its members by means of rules. Some of the rules of social life arise from the ad hoc consent of small numbers of people; others are established and enforced by an "institution", that is, by a social body firmly built on common needs, and provided with the means and power to satisfy them. The latter rules are compulsory; their violation incurs a sanction or penalty. A social group founded on an organizational principle which gives its institution(s) the capacity of making compulsory rules is a juridical system. Thus, a juridical system is a

collectivity organized on the basis of a system of rules. The system of rules is called a legal system. (Duranti, 1989-1990, p. 5)

Within legal systems, both human conducts and natural events takes place and exist as facts. Facts that has not been considered in the juridical system, are qualified as juridically irrelevant. Facts that are taken into consideration by the juridical system in which it takes place, are considered to be juridical facts (Duranti, 1989-1990, p. 5). There can also be historical facts that is not juridically relevant. Human facts that is a result from a determined will is called an action or act. Acts can be manifested orally and written. An archival document “implies the presence either of a *fact* and a *will* to manifest it or of a will to give origin to a fact. It also indicates a *purpose*. In fact, the existence of something written, directly or potentially, determines *consequences*” (Duranti, 1989, p. 16). Central elements are persons, responsibility and competence. This relates to persons as subjects of rights and duties, responsible for their acts, and competence and authority to accomplish an act (Duranti, 1990).

Records function as evidence of acts and facts

In the international standard for recordkeeping (ISO 15489:1-2016), a record is defined as “information created, received and maintained as evidence and as an asset by an organization or person, in pursuit of legal obligations or in the transaction of business” (ISO 15489:1-2016, p. 2). In order to use records as evidence, it is important to determine its trustworthiness, which is established by the records’ authenticity, reliability, integrity and usability (ISO 15489-1:2016). Reliability is about the record as a statement of fact. Authenticity is about the trustworthiness of the record as a record, that it is what it purports to be, free from tampering or corruption. This relies on different factors in the management of records, procedural control, different measures, metadata and audit trails, as well as knowing the original source, provenance and chain of custody (how records have been managed by different actors over time and space), and this have to be transparent (Duranti & Rogers, 2014). Records reliability and authenticity are key elements of governance in juridical systems, in order to provide trustworthy evidence (Iacovino, 2005). The Archives role as a trusted and impartial third party, also have an important role in providing trustworthiness in records as evidence. That the recordkeeper do not have any interest in manipulating the records in a certain way, but whose role it is to ensure its authenticity, reliability and integrity.

In its role as evidence, records are crucial in juridical and accountability processes. As evidence of what different actors have done and not done in certain situations. Having records does not mean that justice is provided. There is a difference between having records and doing something with it (Hurley, 2005). You need to know what you want to proof and there has to be processes for acting upon the evidence in order for them to be effective and authoritative. Just having records is not enough, they have to be related to a regulatory framework and means for compliance. But rules without evidence is difficult to enforce. And access to records are not enough, they also have to be in order, secure, and that their trustworthiness are assured.

The digital online environment poses specific challenges to the assurance of trustworthiness of records. Research in archives and information science are performed to address this, for example in the InterPARES Trust project. There is also a collaboration between digital forensics and archives and information science, in processes of analysis of evidentiary material. Digital forensics specialists are concerned with identifying and assessing digital objects that may serve as evidence of illegal activities, and to establish their evidentiary capacity. While an archivist is concerned with identifying digital objects, created as records of

activities, facts and events, and to assess their authenticity, reliability and accuracy to enable accountability and a trustworthy memory (Duranti & Rogers, 2013).

Records, governance and accountability

Records are an important part of organization and regulation of relations throughout societies and have a central role in governance in societies and to bind societies together. They support legal and ethical rights and obligations, provide evidence of activities, and are important tools for organizational and democratic accountability which underpins ethical and legal systems (Iacovino, 2005). Records also have symbolic meaning (Ketelaar, 2005) and carry values and ethics. Records can be used both for oppression, and for fairness and liberation, and are instruments of power and control (Ketelaar, 2005).

Iacovino refer to governance as both “‘government’ and its laws as in a nation-state or organized community, and ‘self-government’ as a means of control over personal and group behaviour within a self-governing community” (Iacovino, 2005, p. 255). Governance can be based on formal rules and regulations, but also on ethical habits and reciprocal and moral obligations, internalized by the members of a community. Which form the basis for trusting one another. Ethics concerns what is guiding peoples’ behaviour, and relates to values, moral and philosophical issues, and consciousness (Merriam Webster, 2018).¹ According to Iacovino,

Ethics involves relationships between individuals, individuals within a community life, how they live (...) juridical systems also recognize the need for moral principles to bind communities together. A community of interest, such as a profession that has developed a set of ethical standards, plays an important part in the regulatory controls over consistent professional practice. Professionals have a special responsibility to avoid or prevent harms beyond everyday responsibilities. The special responsibility is based on two grounds: an implicit contract that a professional has with society and a moral obligation to use knowledge wisely (Iacovino, 2005, p. 273-274).

Records are used to support individual rights and obligations, and function as evidence of ethical or unethical – and legal or illegal - behaviours and acts, as well as destruction of records (or avoidance of creating records) can be done to cover up unethical or illegal behaviours and acts. In the online environment, the risk of fraudulent manipulation of information has increased, as well as risks related to privacy (Iacovino, 2005, p. 274). Accountability can be seen as part of governance processes. They can be used to assess compliance. But in its simplest form, it means that an actor (whether a government, organization, enterprise or individual) are accountable for their actions they have either brought about or failed to prevent. Records can be used as proof of what happened, was decided etc, and are often seen as more trustworthy than tales. In the global online context, where relationships between sovereign states are replaced by relationships between individuals, social groups and businesses, it is important to develop an understanding of how communities are bound together and trust and responsibility is managed.

Records and trust

Records as trustworthy documentation of acts and facts are important tools for creation and protection of trust throughout societies. It is an integral part of making societies to function, and for people to interact, make exchanges and have a division of labor. For example, when you go to a doctor, a patient trust that the doctor will work for her/his best, and not to harm

¹ (<https://www.merriam-webster.com/dictionary/ethics>)

her/him. There is a documentation of the treatment of the patient, which enables accountability. This function to protect the trust-relationship between doctor and patient. When a person goes to a bank, he/she trusts that they will not steal the money he/she put into an account, and all transactions are documented as proof. This is part in trusting professionals and what they do in their performance of business and expertise, and records are part in ensuring this trust relation. Without trust, you would have to do and control everything yourself. Trust and violation of trust are important ethical issues which to a high degree relates to how people behave and what expectations there are of how people should behave.

Trust has been defined in many ways. In business, trust involves confidence of one party in another, based on an alignment of value systems with respect to specific benefits in a relationship of equals. In jurisprudence, trust is usually described as a relationship of vulnerability, dependence, and reliance in which we participate voluntarily. In substance, trust means having the confidence to act without the full knowledge needed to act. It consists of substituting the information that one does not have with other information. (Duranti & Rogers, 2014, p. 205)

In the online environment, new processes for interaction between different parties develops, jurisdictions are crossed, and people with different cultural norms meet. This challenge established norms and procedures for trustworthiness, why we have to reconsider how to create, assess and assure trust. Crucial is how information is managed, what policies and practices regarding handling of digital records that exist. Duranti & Rogers suggest a development of a conceptual understanding of trust with its characteristics, with domain specific theories, techniques, and parameters for assessment, in order to develop cross-cultural and international trust (Duranti & Rogers, 2014).

There can be different levels of trust, and it may involve different aspects. One level include a relation of a trustee and trustor, where the trustee is in some kind of vulnerability who is seeking aid, advice or protection from the trustor, based on his/her justifiable trustworthiness. Next level of trust is based on good faith, with a general assumption that the person will deal fairly without breaking their word. A further lower level of trust is that of unconscionability, which is based on terms that is unfair to one party (Duranti & Rogers, 2014).

Online, the terms for trust is not explicitly identified, framed or assured with means for consequences if violated. This leaves individuals and businesses to create and assess their own terms and means for trust. There is also a growing shift from trust in experts to personal interpretation, and to trust friends and social networks rather than professional experts and figures of authority. The question is though, what means for assessing another party's trustworthiness that exist and how to make actors responsible in case of violation of trust.

In the case of online trade, a client can be seen as a trustee, who is trusting the professional's competence. They might go into a business relation in good faith, assuming that the professional will keep their word. Meanwhile, mechanisms for ensuring trust is insufficient and has been violated in different ways, and also makes client-business relations unequal. Along with this, self-trust gets an increased importance.

POWER DIFFERENCIES AND INEQUALITIES IN ONLINE TRADE

In an ethnographic study in online trade, different forms of inequalities was found in client – business relations. What was found was that trust played an important role in this, both in cases of abuse and misuse of power, as well as positively for empowerment and development

of good business relations. Regulation is a way to create a fair playground and to balance powers on the market. This is also related to professional values and ethics. In the online environment, a lot of changes at a high speed create gaps that ought to be addressed. Inequalities can be expressed as differentiation in power, and in this case of online trade also the ability and conditions for making profit. It includes both to have capability to accomplish something, as well as it can be seen as a relational aspect. People have both internal and external factors working for or against them. Both as a resource for *power to* accomplish something, but also as *power over* someone else (using the concepts expressed by Law, 1991). Challenges in terms of power differences have been grouped related to competence; structural aspects; informational and technological structures; and trust, risk and power.

Competence

A central factor to whether a person makes profit in online trade is level of competence, skills and knowledge, as well as management of personal traits. This counts for both traders and brokers. According to interviewed brokers, one of the main reasons that clients have lost money are that they lack knowledge and competence, and are driven by fear and greed. Many people trade without knowing what they do, which makes them lose a lot of money. This has led to increased initiatives with education of traders. At the same time, marketing often tell people that anyone can be a professional trader after just one course with them, which is a bit misleading. Competence also include an understanding of the online trading environment, and its cultural and specific challenges a trader face, with an awareness of what risks there are. Competence is also important in order to increase confidence and self-trust, which have been raised by brokers as key factors to be successful. This is crucial in order for clients to not be easily convinced to just do what they are being told, but be capable of making informed decisions, as well as managing personal risks of fear and greed. It is when a person trust someone else more than him/herself that he/she risk being taken advantage of and manipulated. At the same time, in order to do business together, involved parties need a certain level of trust and if we should have a specialization in labour, you must be able to trust actors in a professional role. The open environment also requires of people to have a high level of inner strength, integrity towards external pressures, as well as to take responsibility for ones actions. Access to and understanding of trustworthy information are crucial in order to make informed decisions and have control of trading operations. On the other hand, misinformation, disinformation or incomplete information are dis-empowering of clients' possible performance. Timing of access to information also impacts the result. In terms of equality and inequality, professionals have an advantage because of knowledge and access to different resources. This put them in a major position in relation to a client. First of all, the trustworthiness of the information that is shared is crucial and a problem here can be misinformation, disinformation or untimely or incomplete information. Not giving a client crucial information and neglecting what is happening to the client's account can also be as destructive as giving bad information. Therefore, you could say that inequalities also exist in relation to the commitment and dedication a broker have, and what information this broker have access to.

Online trade are performed in a complex, and multicultural, global context, and learning to navigate this are part of the competence that is required to succeed. Different expectations of trust and business ethics may cause problems and is a risk for people to be taken advantage of. As there has not been sufficient societal structures and processes in place to deal with abuse of trust, responsibility lies to a high degree on individuals. As it is today, this make it a question of personal competence to assess probable trustworthiness of different actors. Common norms around trust should be developed, which can be done through regulation and stronger business ethics frameworks. For both of these, records would play an important role as evidence and in governance and compliance.

Structural aspects

Complex corporate structures can create confusion, and according to some of the interviewed brokers, they are set up and constructed in a way to avoid accountability and responsibility. Different functions can be performed by different companies, or by different offices in different countries. Combined with communication structures, it can be difficult for a client to address issues with an appropriate person in a company, and to claim their right. In case of scam companies or those who take advantage of their clients, many times the broker never respond, and they never have to meet the client in question. In this way, the technology enable control of communication and is a means for power differentiation (Engvall, 2017, p. 29). Control of communication lies with the companies, which also makes them controlling the 'space' where broker and client meet. It is also a very changing environment, and brokers often change job. Meanwhile, many brokers *speak* about that they want a long term relation with the client. But the context do not support that. This is one contradiction of how trust is spoken about. Many times people speak about trust, while acting in opposite direction. It is an environment where it is very easy to get away. Fraud companies can just shut down their website and reappear under a different name (Engvall, 2017).

Castells (2000) mean that internet and communication technologies are shaping relations of power by flows of information, wealth and information, and inequalities are created related to this. Beck (2000) has argued that virtual economies make it easier for capital to escape democratic control. In the case of online trade, a problem that has been raised by brokers, are that there are virtual bubbles in which companies place some client's money instead of letting it out on the market. So in case when the client lose money, it goes to the company. This is of course not something that the client get to know. But they can be placed in what is called 'A-book' or 'B-book'. The ease to hide capital like this has been raised by brokers as a main problem, which raises questions of compliance with regulation and business models.

From a consumer rights perspective, the responsibility is to a high degree on the client. Existing processes seem to be related to national contexts as well as the physical environment. It is difficult for consumer rights organizations to act with companies that do not have a physical office. During the case study, a report of a company was made to the police. The police meant that it was difficult for them to act in another country. It is also connected to citizenship. For example, a majority of companies say that they are situated in London. Meanwhile, when the police in London was contacted, they meant that they only proceed with a case for citizens of United Kingdom. In case the company is regulated by for example CySec, they have processes for complaints and there is an ombudsman where clients to a company licensed by CySec can raise their cause. In cases where the company do not have a license, it seems almost impossible to do anything (Engvall, 2017). The research has showed that regulation is crucial in order to have consumer protection frameworks, individual traders do not have any chance with the means that companies have available. The conditions are too inequal from the start.

What can be noticed though, is that people with different nationalities work in this business, for example from eastern Europe, Russia and Balkan countries. The online environment opens up previous barriers related to nationalities, and create new possibilities for people from different countries.

Informational and technological structures

The collaboration between broker and client is very central in online trading, and the communication between them are important. This is often performed by skype, phone and sometimes e-mail. In regulated companies, telephone calls are recorded. Skype or means to

share screen is common when brokers want to show and explain things to a client. It is a way to create a shared space, and for them to see the same thing at the same time. It is often argued by brokers that it is a way for clients 'to see with their own eyes in real time what is going on so that they can assess whether it is trustworthy'. This does not say anything about the trustworthiness of the information the brokers are sharing though, they see what the broker is showing them. But it is a way of creating *closeness* in the relation.

In the relation between business representatives and clients, there is an inequality of information about each other. Companies collect, buy and analyze information about clients and potential clients, which is used in conversations and strategies to make people invest money. People are leaving traces of information in the online environment that is collected and analyzed, and the question is what information clients and public authorities (to ensure consumer protection) have access to about companies?

As Duranti and Rogers (2014) have expressed, the possibilities for using information for different purposes has not only opened up possibilities but also risks regarding individuals privacy, and surveillance. Information are often extracted and accumulated from sources unknown to people. Yet still, people entrust different actors with their data and share information online, where actions on internet leave traces where data about people's habits are collected, analyzed, and commodified, which erodes trust. Traditional policies, practices and infrastructures to ensure trust in records are not enough. Transparency and accountability are key factors of those managing information. Transparency of how information is being collected, managed, used and protected, and assurance of that an actor "can be asked to respond for its actions legally, administratively, and, historically (...). Together, transparency and accountability provide us with knowledge and recourse in the case of failure, thereby promoting trust." (Duranti & Rogers, 2014, p. 209-210).

Control of communication is not only about control of technology and communication means, but also who is leading the conversation between client and broker. Because brokers often have an information advantage, that is also an advantage in the conversation. According to interviewed brokers, a problem have been brokers who pushes and manipulate clients to invest big amounts of money, and to boost their fear and greed. Supervision has increased though, with controls of brokers' behaviours towards clients.

What was found was that design and functioning of IT systems are relevant to a trader's performance, because it impacts how the user interpret and calculate risks for example. Inaccuracy of information and that certain functions don't work at critical times also impact the results to a high degree. During the case study there were occasions where the system didn't work or the information was inaccurate, which had an impact on the trading. What should be considered is to develop more tools for traders in order to have better control of their trading.

Technological tools, such as leverage (leverage is when invested money is multiplied with a certain number in order to increase the volume of money in trading), increase the difference between profit and loss. Which increase the difference between those who make profit and those who do not succeed. It could be interesting to study how money flows, to see whether there are patterns of centers and peripheries, as well as patterns in winnings and losses.

Related to power and inequalities, access to right information at the right time, control of information, control of clients personal data, control of money as well as control of functions in the system are some aspects identified. This all comes down to records. Trustworthiness of

data and records, along with transparency and accountability are key factors for fair relationships. In the online internet environment, where relationships are based on the exchange of information, it is a fundamental relation of power to have control over the information; to have access to it, to know whether it is trustworthy and to control who else has access to it and at what point in time. Therefore, equality in an online environment is highly related to management of information and centers around trust; whether someone trust the information or not. Which can be used, misused and exploited.

Trust, risk and power

Something that emerged during conversations with brokers in the study, was how trust was at the center of concern. A client need to have a certain level of trust in order to invest money with someone. This is also why brokers develop different strategies to make potential clients to trust them. Meanwhile, in order for trustworthiness to exist, it has to be created at different levels; among people, in companies, processes, the technical environment, the information, and societal systems. As it is now, there is a high responsibility on brokers and individuals to create trust and to take care of oneself. Trust lies primarily in personal relations, rather than institutional systems. Inequality depends on what people a client get in contact with, what personal network they have, and how well they manage. It is very difficult to assess who and what is trustworthy or not and better tools for users are required. Trust is also a central element in the process of fraud. A client have to trust the broker in order to be cheated. That is why a trust relationship is basically unequal, since trusting someone else is a way to give that person power.

Trust is a mechanism to manage risks and rests on faith in principles and good intentions and reliability of others. It enables collaboration and sharing of duties. It implies to be willing to take a risk, related to a notion of trustworthiness, which is often based on competence and expertise, honesty, reliability, benevolence, predictability, shared values and care (Öhman & Lundberg, 2015).

According to Giddens (1990), trust relates to a lack of information because

There would be no need to trust anyone whose activities were continually visible and whose thought processes were transparent, or to trust any system whose workings were wholly known and understood (...) the prime condition of requirements for trust is not lack of power but lack of full information" (Giddens, 1990, p. 33).

Records are used as objects that can be trusted as evidence of activities and transactions. The trust lies in records and records processes, related to regulatory frameworks that provide for rights and obligations and justice are ensured. Records can both replace personal trust, but also support it. Money are as well objects that are trusted, and used in exchanges. If for example person A give something to person B, person A get money in exchange instead of trusting that person B will give something in return, as well as person B might not have what person A want. With digitalization, several functions are performed by technologies and trust is placed in technology and algorithms instead of people and processes. This also have to include functions for justice and consumer rights, or otherwise all control will be on the business side.

Online trade is a high-risk environment, as well as a zero-sum game. When someone make profit, someone else lose money. Due to the high risks, trust is a factor for succeeding. Trust make information to flow more easy, since people are more willing to share information with

each other. But trust is also a risk in itself, since it makes actors vulnerable to each other. Business models based on mutual benefit are often raised by brokers as a reason to trust them. Since that would make brokers and clients to work towards the same goal and not against each other. In the interviews, care was also raised as a crucial element for success; that a broker care about the client's account and result. Personal responsibility in the professional role was yet another aspect that contribute to the development of trust.

Discussions about economic growth have focused much on external factors, but we now have to put more attention to psychological and relational factors, at all levels (individuals, business and institutional domains). Such as conscious decision-making, management of personal risks, change of destructive patterns, continuous personal leadership, improvements and awareness. Sustainable growth requires an inner growth. Self-trust is not just important for clients, but also for business representatives. Brokers and companies who trust themselves would not need to cheat clients in order to make money. In order for the financial market to be sustainable from an environmental perspective, there have to be a greater level of care in how money is produced and used. The level of energy used by certain activities (such as bitcoin mining) and what people do with their profit is a big impact to consider. Because of the high level of competition, it is very difficult for individual brokers and companies to make ethical choices, it has to also be supported by regulation and be more economically profitable compared to less sustainable choices.

DISCUSSION

The case study in online trade indicate that inequalities in client – business relations exist at different levels; in communication, information and technological structures, business organizational context, people-related issues, as well as gaps between the online business environment and jurisdictions. In this context individual traders are in a very weak position compared to brokers and companies. Trust has been identified as a central element, both as an enabler and a risk. It is crucial for business relations, both initially and also in the long term perspective for growth. But it is also a risk that people will be taken advantage of, since trusting someone put the person in a vulnerable position. This also relates to justice and accountability. In online activities, people with different values meet and interact, and common sets for practice has to be developed in order for it to work.

Laws and ethics are two means to create commonly accepted behaviours, and to have means for compliance and correction. There are often discussions of whether regulation or self-regulation should be applied, but they should not be seen as opposed but rather mutual in good governance. You could say that laws and regulations are explicit and external means for steering behaviours throughout societies, and ethics and norms are implicit and internal means for this. In both cases, records have an important role.

What this research shows, is that absolutely crucial from a client perspective is to have regulation. This ensure consumer rights, but also serve to shape business ethics and common values in the domain. As there for example have been stronger rules about speaking about risks with clients, this has been improved. Because of the high level of competition, and because it is very easy to escape responsibility in the online environment, trusting market actors' free will is not enough. A role of public institutions, is to work for justice among its citizens and to balance power inequalities throughout society. The financial market is a domain that is highly unequal and needs to be balanced if it should provide possibilities for more than the most capital strong actors. For this, better technological means for regulatory institutions are required in order to meet the digital development and to be able to work more proactively.

Meanwhile, regulation will not be able to cover everything in the complex online environment. Professional values and culture are therefore crucial, to also support business ethics online. With the development of the open environment online, where people have possibilities for direct participation, it will also be crucial with consumer awareness, competence and responsibility. It requires a more proactive sense of responsibility, care and awareness of what effect one's choices and actions have, in relation to the role a person have. This applies on not just individual level, but also business and societal level. Ethical decision-making requires that people act as moral agents, make active choices and analyze their decisions (Iacovino, 2006).

Finding ways for regulatory accountability, professional ethical standards, as well as individual responsibility to work in the same direction can be a way to promote a more sustainable pathway forward. As Iacovino (2006) express, laws and ethics can support each other. Often illegal activities such as fraud, corruption or abuse of people, are also professionally unethical. Legal sanctions and ethical standards are means to set a direction and framework for a common playground. So participants know what they can expect from others and thereby invest their trust in. Online activities cross national borders and jurisdictions, and international cooperation is needed. International frameworks and solutions that can establish and support trust online, will also require provision of authentic, reliable and accurate records (Duranti & Rogers, 2014). As well as supporting a democratic discourse globally.

Records, which can be used as evidence of actions and transactions, related to accountability processes and regulatory frameworks have over the course of many years functioned to protect and ensure trust, as well as functioning as trusted objects as such. With the development of the online environment, this has to be ensured as well and is crucial to consider in further technological development.

Related to ethics, there are different levels to consider from a records perspective, with different actors involved. At a client perspective it concerns personal ethical behaviour, which could include to be aware of their responsibility in making more conscious and informed decisions and improve risk management, which will require a personal recordkeeping. At business level it include professional ethics and behaviours, which to a high degree involves questions of information and communication management. At societal level it concerns public values and institutional ethics in relation to its citizens, as well as policymaking, regulation and supervision – which requires recordkeeping. It also involve social norms and a collective sense of ethical ideals.

There is never only one solution to a challenge, and both regulation and ethics can be used to support a pathway for good governance and justice, and to develop a trustworthy online environment.

References

- Alvesson, M. & Sköldberg, K. (1994). *Tolkning och reflektion. Vetenskapsfilosofi och kvalitativ metod*. [Interpretation and reflection. Philosophy of science and qualitative method]. Studentlitteratur AB, Lund, Sweden.
- Beck, U. (2000). *What is globalization?* Polity Press in association with Blackwell Publishers Ltd.
- Castells, M. (2000). *The rise of the network society*. Second Edition. Blackwell Publishers Ltd. UK
- Duranti, L. (1989). Diplomats: New Uses for an Old Science. *Archivaria* 28, 1989, pp.
- Duranti, L. (1989-1990). Diplomats: New Uses for an Old Science (Part II). *Archivaria* 29, (Winter 1989-1990), pp.
- Duranti, L. (1990). Diplomats: New Uses for an Old Science (Part III). *Archivaria* 30, (Summer 1990), pp.

- Duranti, L. & Rogers, C. (2012). Trust in digital records: An increasingly cloudy area. *Computer Law & Security Review* 28 (2012). Pp. 522-531
- Duranti, L. & Rogers, C. (2014). "Trust in online records and data," in Lowry, J. & Wamukoya, J. (eds.), *Integrity in Government through Records Management: Essays in Honour of Anne Thurston* (Farnham: Ashgate, 2014): 203-216.
- Duranti, L. & Rogers, C. (2013). Memory Forensics: Integrating Digital Forensics with Archival Science for Trusting Records and Data. *eForensics magazine* (online Polish Journal for Digital Forensics) (October 2013): <http://eforensicsmag.com/memory-forensics-step-by-step-free/>
- Engvall, T. (2016). Fear, Greed and Lack of Trust In Online Financial Trade. *Journal of Administrative Sciences and Technology*. Vol. 2017 (2017), Article ID 106163, 10 pages
- Engvall, T. (2017a). Fear, greed and lack of trust in online financial trade. *Journal of Administrative Sciences and Technology*. Vol. 2017 (2017), Article ID 106163, 10 pages. DOI: 10.5171/2017.106163
- Engvall, T. (2017b). *Trade, Trust and Information Power – In Transition to Sustainability*. Lambert Academic Publishing, Mauritius
- Engvall, T. (2017c). The data dilemma: who is in control? *Eabh international workshop: The Data Dilemma: A Risk or a Crisis?* 2017-10-11, Zagreb
- Giddens, A. (1990). *The consequences of modernity*. Stanford University Press
- Giddens, A. (2002). *Runaway world. How globalization is reshaping our lives*. Profile Books Ltd, UK
- Hurley, C. (2005). Recordkeeping and accountability. In McKemmish, S., Piggott, M., Reed, B. & Upward, F. (Eds). *Archives: Recordkeeping in Society*. Wagga Wagga, New South Wales, pp. 223-253
- Iacovino, L. (2005). Recordkeeping and juridical governance. In McKemmish, S., Piggott, M., Reed, B. & Upward, F. (Eds). *Archives: Recordkeeping in Society*. Wagga Wagga, New South Wales
- Iacovino, L. (2006). *Recordkeeping, ethics and law: regulatory models, participant relationships and risghts and responsibilities in the Online World*. Springer
- International Organization for Standardization (2016). Information and documentation – Records management – Part 1: Concepts and principles (ISO 15489-1:2016, IDT). Swedish Standards Institute, Stockholm
- Ketelaar, E. (2005). Recordkeeping and societal power. In McKemmish, S., Piggott, M., Reed, B. & Upward, F. (Eds). *Archives: Recordkeeping in Society*. Wagga Wagga, New South Wales
- Merriam-Webster (2018). <https://www.merriam-webster.com/dictionary/ethics> accessed 2018-05-30
- Öhman, P. & Lundberg, H. (Eds.). (2015). *Trovärdighet och förtroende i ekonomiska relationer*. (Credibility and confidence in economic relations.) Studentlitteratur AB, Lund

Sustainability And Agriculture

Dave Flynn, Ph.D.

Professor, Hofstra University

ABSTRACT

Water resources are being threatened by farming initiatives in developing countries as well as in more advanced countries. It entails the disruption of aged soils for cultivation of palm oil emitting CO² gases into the atmosphere. It also results from the use of fertilizers in agricultural areas in Europe and the United States. Unless significant intervention by non-government and government entities persuade for-profit enterprises to engage in significantly more sustainable agricultural practices, the availability of clean water resources will reach catastrophically low levels. Suggestions for reaching more sustainable outcomes are provided.

INTRODUCTION

As noted earlier (Flynn, 2014), the defining issue of the twenty-first century may well be the control and more generally, management of water resources. While water supplies are dwindling because of groundwater depletion, waste, and pollution, with demand is rising. Consumption of groundwater is increasing faster than it is naturally replenished and causing water tables to decline unremittingly (Rodell et al., 2009). Currently, 338 million people are sometimes subject to severe water shortages and by 2025 this number is projected to increase to about 3 billion (Rosegrant, 1997). Efforts must be made to create more sustainable water resources.

A sustainable economy must limit withdrawals from, and produce investments in all forms of capital (human, social, and natural) to ensure that no form of capital is diminished in order to increase short-term output of marketable goods and service (Lant, 2004:22). "Sustainability of human activities (predominantly production and consumption) is a growing concern among businesses, customers, governments, international bodies and non-governmental organizations. These concerns are often linked to energy efficiency, reduction of environmentally harmful emissions, ecosystem preservation and other conservation efforts. They are becoming a part of a "triple bottom line" for business accounting: financial, social and environmental" (Hermanowicz, 2005). Water consumption by agriculture far outpaces other users. Furthermore, the use of fertilizers has led to the pollution of streams, rivers, and lakes. Recently, Patel and Parshina-Kotaas (2017) have reported on the devastating effects of agricultural run-off in streams and rivers has caused the polluting of Lake Erie through algae growth. We will also consider the effect of agriculture, i.e. palm oil production, on indigenous populations especially in the Malaysian area on Borneo.

AGRICULTURE AND WATER CONSUMPTION

As argued Scott (2017) prior to The Neolithic Period, for roughly two hundred thousand years, modern humans lived as hunter-gatherers. Then, about twelve thousand years ago, came what is said to be our ascent to planetary dominance: the Neolithic revolution. This was our adoption of agricultural innovations that includes the domestication of animals including cows and pigs, and the transition from hunting gathering to planting and cultivating crops. The most important of these crops have been wheat, barley, rice and maize that remain the staples of humanity's diet. These cereal grains allowed population growth and the birth of cities and the

rise of complex societies (Lanchester, 2017). This development may arguably not be sustainable as currently practice by agro-business entities.

The Neolithic Period or Stone Age, 7,000 to 10,000 years ago, pertains to a stage of culture following the Paleolithic and is characterized by the use of polished stone implements, development of permanent dwellings, cultural advances such as pottery making, domestication of animals and plants, the cultivation of grain and fruit trees, and weaving. The change from hunting/gathering to primitive farming appears so abrupt that this technological change is often characterized as the Neolithic Revolution. The discovery of smelting and the creation of bronze tools has given the name Bronze Age to the Late Neolithic period (Hort).

Biotech in Agriculture

Biotech crops, genetically modified organisms (GMOs) have been steadily growing throughout the developed and developing world (see Figure #1). While the biotech crops are created to be resistant to various forms of blight, some biotech products may be less beneficial to the ecosystem. Monsanto, for example, has involved in litigation in the United States involving one of its weed killing fertilizers, Roundup. The active ingredient is glyphosate may cause non-Hodgkin's lymphoma as claimed by farmers, their families, and others (Hakim, 2017). European Union officials are considering blocking the use of glyphosate in its 28 nations. In the defense of bio-engineering Hugh Grant of Monsanto and James Collins of DuPont have considered the use of Crispr, the gene editing technique to increase the use of bioengineering for the future of agriculture after more than two decades of genetically modified organisms' usage in agriculture (Wall Street Journal, 2017).

Another herbicide, dicamba, has been found to damage 3.6 million acres of soybean, crops, or about 4 percent of all soybeans planted in the United States in 2017. Dicamba has been used beginning in 2017, on genetically modifies soybeans and cotton crops that are grown from seeds created (GMO) to be tolerant of weed killers. The problem is that the herbicide can drift off the fields where it is being applied, landing on nearby farms where conventional soybean seeds have been planted. An estimated 22 million acres of soybean crops were planted with G.M.O. seeds out fan estimated 89.5 million acres of soybeans planted nationwide (Lipton, 2017). Further, the algae outbreak in Lake Erie was most recently caused by phosphorous runoff from the Maumee and Sandusky rivers. Blue-green algae feeds on phosphorous which has sickened people and animals and caused damage to fishing and tourist industry (Maher, 2018: A3).

However, as recently argued by Lynas (2018) the problem is not only that almost all of the alarms about GMOs were false. It's that the anti-GMO campaign has deprived much of the world of a crucial, life-improving technology—and has shown the readiness of many environmentalists to ignore science when it contradicts their prejudices. Contrary to our initial fears, the overall impact of genetically modified crops has been to dramatically reduce the amount and toxicity of pesticides sprayed by farmers. Crops such as Bt corn, so called because it incorporates proteins toxic to insects from the bacterium *Bacillus thuringiensis*, have enabled farmers to rely less on sprayed insecticides. A meta-analysis, combining the results of nearly 150 peer-reviewed studies, was published in 2014 in the highly regarded journal PLOS One. It concluded that GMO crops used 37% less chemical pesticide (that is, both insecticide and herbicide) than conventional versions of the same crops, thanks largely to the new crops' internal biological protection against insects.

Pesticide reductions have been especially notable in developing countries. In Bangladesh, for instance, smallholder farmers have benefited from Bt varieties of eggplant. In the past, they

often sprayed their crop with toxic chemicals as many as 100 times in a season to fight off pests. The GMO eggplant has enabled them to dramatically reduce insecticide spraying, in some places almost to zero. Furthermore, the GMO seeds reproduce perfectly well. Those Bangladeshi farmers save and share their new Bt eggplant seeds, helping their neighbors and extended families also to reduce pesticide spraying. Many crops now in development in African countries, such as drought-tolerant corn and disease-resistant banana and cassava, will be sold royalty-free by local seed companies in an effort to improve the livelihoods of subsistence farmers and reduce poverty (Lynas, 2018).

In India, the water challenge is already grave and could get graver. By 2050, for instance, it is estimated that demand would go up to 1,180 million cubic metres, 1.65 times the current levels, a situation that would be made worse by fast dwindling fresh water resources (Vijayakumar, 2012). For example, the Yamuna River that flows through the ancient city of Delhi has helped sustain some of India's greatest empires. Hindu poets celebrated its life-giving properties. The Mughal dynasty built the Taj Mahal and other monuments along its banks. Today, the Yamuna is a foul sludge for much of its 855-mile run. In Delhi, it is black and nearly motionless, covered in many areas with a foam of industrial chemicals, floating plastic and human waste. Every 100 milliliters of the Yamuna in Delhi contains 22 million fecal coliform bacteria, up from 12,250 in 1988, scientists say. Anything over 500 is unsafe for bathing, India's government says. The comparable standard in Vermont is 235. Illnesses ranging from diarrhea to brain worms are reported along the river's edges. By the time the Yamuna exits Delhi, it is so defiled that scientists have declared the next 300 miles "eutrophic," or incapable of sustaining animal life (Pokharel & Rana, 2017) (please Figure #2).

A government report in 2015 found that 275 of 445 rivers in India are severely polluted, including the Ganges. An international nonprofit, WaterAid, says 70% of India's surface water is contaminated. Diarrhea, often caused by drinking bad water, is the fourth-leading cause of death in India, ahead of any cancer, and kills far more people than in China, which has a larger population. Greenpeace says that in 2015, the average Indian was subjected to more air pollution than the average Chinese for the first time, as China's "systematic efforts" to improve air have started working. A 2016 WHO report found that 10 out of the world's 20 most polluted cities were in India, based on residents' exposure to deadly small particulate matter (Pokharel & Rana, 2017).

Mixing Water and Poison

Recently, as reported by Tabuchi et al. (2018: A13), flooding throughout the United States is likely to worsen because of climate change, the federal government warned last year. Heavy rainfall is increasing in intensity and frequency. At the same time, rising sea levels combined with more frequent and extensive flooding from coastal storms like hurricanes may increase the risk to chemical facilities near waterways. The New York Times analysis looked at sites listed in the federal Toxic Release Inventory, which covers more than 21,600 facilities across the country that handle large amounts of toxic chemicals harmful to health or the environment. Of those sites, more than 1,400 were in locations the Federal Emergency Management Agency (FEMA) considers to have a high risk of flooding. An additional 1,100 sites were in areas of moderate risk. Other industrial complexes lie just outside these defined flood-risk zones, obscuring their vulnerability as flood patterns shift and expand. The presence of chemical sites in areas vulnerable to flooding is a holdover from an age where the advantages to industry of proximity to rivers and oceans — for transportation and trade, or for a ready supply of cooling water — seemingly outweighed the risks.

“Waterfronts are changing as a result of sea level rise,” said Jeanne Herb, an environmental policy expert at Rutgers University who has researched hazards posed by climate-related flooding to industries in New Jersey. “More often than not, these are facilities are on the water for a reason,” she said. “So how do we make sure that there are protections in place? That’s the big question.” Federal law does not explicitly require sites in floodplains that handle toxic chemicals to take extra precautions against flooding. Nor do most states or local governments have such requirements (Tabuchi et al., 2018: A13). The recent flooding as a result of Hurricane Harvey caused a release of lye into the waters in Barrytown, Texas. This is the case along the Gulf Coast because the country’s oil, gas and petrochemicals industries are concentrated there. At least 46 facilities reported an estimated 4.6 million pounds of airborne emissions beyond state limits between Aug. 23 and Aug. 30, 2017, the week spanning Harvey’s approach and landfall in Texas. The Chevron Phillips plant also reported one of the largest Harvey-related emissions of chemicals into the air.

When Tropical Storm Debby brought torrential rain to north and central Florida in mid-2012, it triggered a release of phosphoric acid from a chemical plant in White Springs that produces phosphates, which are used to make fertilizer. Flooding knocked out the power supply to its pumping system, causing water mixed with chemicals to spill into a storm-retention pond, which eventually also overflowed into a creek that feeds the Suwannee River. Released in large quantities into the environment, phosphates and phosphoric acid can cause uncontrolled algae and duckweed growth, causing oxygen levels in lakes and rivers to drop precipitously (Tabuchi et al., 2018).

We might also remember that on the morning of Thursday, January 9, 2014, the people of Charleston, West Virginia, awoke to a strange tang in the air off the Elk River. It smelled like licorice. The occasional odor is part of life in Charleston, the state capital, which lies in an industrial area that takes flinty pride in the nickname Chemical Valley. The company, Freedom Industries estimated the leak to be as small as twenty-five hundred gallons of MCHM—4-methylcyclohexane methanol (part of a chemical bath that the mining industry uses to wash clay and rock from coal before it is burned), about sixty barrels. Within days, the estimate had tripled. Eventually, the company raised it to ten thousand gallons, and reported that a second chemical, known as PPH, had leaked as well. At 6 P.M., the Governor appeared on television and issued a warning unprecedented in Chemical Valley: he told three hundred thousand people that their tap water was not safe for “drinking, cooking, washing, or bathing.” It was one of the most serious incidents of chemical contamination of drinking water in American history (Osnos, 2014).

In a new study published in the Proceedings of the National Academy of Sciences, reported recently (Plumer & Popovich, 2018: A10), researchers found that, since 1982, between 3 and 10 percent of the country’s water systems have been in violation of federal Safe Drinking Water Act health standards each year. In 2015 alone, as many as 21 million Americans may have been exposed to unsafe drinking water. The problem is particularly severe in low-income rural areas, the study found. And the researchers identified several places, including Oklahoma and West Texas, that have repeatedly fallen short in complying with water safety rules issued by the Environmental Protection Agency over the past decade. “These are often smaller communities flying under the radar,” said Maura Allaire, an assistant professor of urban planning at the University of California, Irvine, and a lead author of the study. “They’re struggling to maintain their aging infrastructure, and they’re struggling to keep up with the latest water treatment techniques” (Plumer & Popovich, 2018: A10).

PALM OIL AND SUSTAINABLE DEVELOPMENT

In less than 100 years, palm oil has moved from being a relatively minor subsistence crop in West and Central Africa to one of the world's major agricultural commodities. While oil palm in Africa has been cultivated for centuries by deliberate plantings and selective clearing, it has recently expanded dramatically in Southeast Asia, and increasingly in Africa and Latin America (Sayer, et al. (2012: 114). Palm oil production in Indonesia and Malaysia represents 33 % of the world's total production (Muna, 2016). Demand for palm oil continues to increase from India, Europe, China and the United States. Uses for palm oil is quite broad especially as fillers in many food products. Palm oil and its derivatives are part of thousands of products across the globe today (see Figure #3). One can find it in biodiesel, soap, doughnuts as well as soap, to mention only a few. Since 1990, palm oil consumption has quintupled worldwide. The demand in Asia, where palm oil is used in cooking oil, accounts for a \$44 billion industry. Indonesia is the world's largest producer of palm oil, with a forecasted annual growth in production of 10%. Early 2013, exports from Indonesia hit a five-year high (UDP.org).

There do exist many obstacles to the sustainability of palm oil production especially if producers do not abide by the directives of the Roundtable on Sustainable Palm Oil (RSPO) certification, as one example. At present, only about 10% of palm oil producers are RSPO certified. As a result, rivers have become polluted and air carries noxious particulates that result in environmental degradation and critically premature deaths. For example, smoke related deaths from burning to allow for agriculture has resulted in 100,300 premature deaths in Southeast Asia from July through October 2015 (Schonhardt, 2016). Further, in the fall of 2015, Indonesia released more carbon per day than the European Union (Fountain, 2017).

Hunters and Gatherers

As reported by Lanchester (2017), anthropologist James Suzman, spent more than two decades studying the Bushmen of the Kalahari. About a hundred and fifty thousand years ago, fifty thousand years after the emergence of *homo sapiens*, the Bushman, or Khaosian moved to south Africa and still live there. They are divided into a norther group, who still have traditional control of their land and still have the opportunity to hunting and gathering of plant species. The southern Bushmen were deprived of their land and resettled into modern ways of living. The northern Bushmen have thrived and the southern Busmen have not. The hunting and gathering has continued to provide a balanced and sustainable way of life to this day.

The indigenous tribes of Malaysia on Borneo were hunters and gatherers until their lands were acquired and turned into palm oil plantations (please see Figure #4). Also, one of the elders of the Kadazadadun and Murat communities, the indigenous tribes of Borneo in Miri (Malaysia) was photographed by the author in Miri in 2015 while attending the celebration of the Kaamatan festival marking the end of rice harvesting. They represents one of the communities that have been "crowded out" as a result of move to palm oil production (please see Figure #5).

Forest Preservation and Soil Management

All peatlands, where palm oil production thrives, consists of slowly decomposing vegetation in swamp forests, that has been accumulating for more than 10,000 years. Peat covers only about 3 percent of the Earth's land surface, but because it stores carbon over a long time, it contains as much carbon as all of the world's plants and trees, and almost as much as the atmosphere. Most peatlands are in northern regions, including Alaska, Canada and Russia. But tropical peatlands, especially are highly vulnerable to land-use changes and climate warming, both of which can lead to peat drying out and decomposing quickly, which would release the carbon back into the atmosphere. Recently, scientists have mapped what is the largest peatland in the tropics, an area larger than New York State in the Congo Basin in Central Africa (Fountain,

2017). If this land is not preserved, environmental damage may be daunting. According to Emma J. Stokes, who directs the Central Africa program for the Wildlife Conservation Society, said that protecting the peatlands was crucial, as the swamp forests are home to many animals, including some of the highest densities of lowland gorillas anywhere (Fountain, 2017).

As suggested earlier, the lack of oversight has led to the clearing of forests across Southeast Asia for oil palm production. However, fortunately, in Sarawak, Malaysia on the island of Borneo, the government has succeeded in preserving 68% of the original forest according to Natural Resources and Environment Minister Wan Junaidi (Bahari, 2016).

According to Dr. Lulie Melling, the Director of the Tropical Peat Research Laboratory Unit (TPRL), "one of the most appropriate methods to resolve the problem of peat fires is by compacting the soil using excavators...consolidating the soil will increase the moisture holding capacity of the soil...via a capillary rise of the soil...to prevent the occurrence of fire." (Bernama, 2016: A1). Sarawak uses such a process virtually eliminating the chance of fires, whereas in Kalimantan Province of adjacent Indonesia is among the regions facing the most serious problems due to peat fires, with the Air Pollution Index (API) reported in some areas to be more than 2000 in March of 2016 where an API of 3000 is considered dangerous.

Soil management was carried out by draining the peat, compacting it, and then controlling the water levels to ensure good soil conditions and moisture levels resulting in better yields of palm oil. Indonesia has more than 4,000,000 hectares of abandoned peat land creating the opportunity for fires without proper soil management (Bernama, 2016).

In October of 2010, notoriously, the Rajang River in Sarawak, at a length of more than 560 kilometers, was clogged with timber arguably from forest clearing for palm oil production. Reports emerged that there were navigation problems on the lower reaches of the river. Unusually, these issues occurred not because of high or low river levels, but because the river was choked with wood (a logjam). An image of the clogged Rajang River illustrates the magnitude of the issue (see Figure #6, for example). The blockage reportedly extended for 250 km. The reason that the wood entered the river appears to have been intense rainfall on 6th to 7th October (2010), but the question is where the wood has come from. There are two likely sources of wood like this. The first is that a logging camp or store was inundated (unlikely on this scale); the second is extensive landslides. In Malaysia, a significant controversy is playing out over the cause of the disaster. The Land Development Minister, James Masin has claimed that the cause was logging in the catchment. Meanwhile, the state forest director, Len Talif, is blaming shifting rainfall patterns. The source area appears to have been Sungai Melatai in the Balleh sub-catchment (AGU.Blogosphere, 2010).

Further consideration of indigenous species being crowded out of their habitat must include the orangutans, especially on Borneo. The Borneo orangutans was declared critically endangered in 2016, after research showed its population had declined by more than 80 percent over the past 75 years, mainly due to habitat destruction (Emont, 2017a). Further research has shown that the offspring of orangutans breast feed for up to 9 years, the most of any primate. The study found evidence that during periods when fruit and other food became scarce, young orangutans would supplement their diet with breast milk according to Christine Austin an author of this study and a researcher in the department of Environmental Medicine and Public Health at the Icahn School of Medicine at Mt. Sinai (NPR, 2017).

Recently, there has been discovered that there is a seventh great ape species: the Tapanuli orangutan from the upland forest on the Indonesian island of Sumatra. Unfortunately, the

Tapanuli orangutan may be the most endangered of all surviving apes, with only about 800 left. The Tapanuli orangutan population became isolated from other Sumatran orangutan populations sometime in the last 10,000 to 20,000 years (Cochrane, 2017). This species is being crowded out of their habitat by the exploitation of forests as experienced by other orangutans in Sumatra and Borneo. More recently, to estimate changes in the size of Borneo's orangutan population over time, researchers representing 38 international institutions compiled field surveys conducted between 1999 and 2015. They extrapolated the overall size of the island's population from the number of orangutan nests found throughout the species' range in Borneo. The team observed 36,555 nests and estimated a loss of 148,500 orangutans during that period. The data also suggested that only 38 of the 64 identified groups of orangutans now include more than 100 individuals, which the researchers say is the lower limit to be considered a viable grouping. That would leave the surviving number at around 148,000, according to the report. However, the World Wildlife Fund estimates that the remaining population of Borneo orangutans is much smaller, at around 105,000. The causes include illegal logging operations, slash-and-burn land clearing, hunting and other direct conflicts with humans (Cochrane, 2018: D2; please also see, Figure #7).

Roundtable on Sustainable Palm Oil Production (RSPO)

One of the rules of thumb in planting oil palm according to the RSPO is to avoid destruction to the environment – the rivers and streams, the erosion of the soil and the water catchment areas. A strip of land or forested area along rivers, must be at least 66 feet from the highest water mark is to be avoided. Further, the RSPO is a not-for-profit that unites stakeholders from the 7 sectors of the palm oil industry: oil palm producers, processors or traders, consumer goods manufacturers, retailers, banks/investors, and environmental and social non-governmental organizations (NGOs), to develop and implement global standards for sustainable palm oil. The RSPO has developed a set of environmental and social criteria which companies must comply with in order to produce Certified Sustainable Palm Oil (CSPO). When they are properly applied, these criteria can help to minimize the negative impact of palm oil cultivation on the environment and communities in palm oil-producing regions. The RSPO has more than 2,500 members worldwide who represent all links along the palm oil supply chain. They have committed to produce, source and/or use sustainable palm oil certified by the RSPO (RSPO.org). Certified PSPO palm oil production amounted to 2.4 million hectares in 2016 (please see Figure #8).

The lack of successful implementation of such programs as the RSPO, include, from the 1980s through the 2000s, there were issuances of Provisional Leases to so-called planters and contractors. These leases were issued before any survey was conducted on the land, that were often peat swamps (Munan, 2016). In the clearing of these peat swamps, fires were set to clear the land resulting in noxious haze. On South Sumantra, Indonesia, for example, 72% of the fire activity on was on peatlands (Schonhardt, 2016).

Rivers are often polluted and clogged from forest clearing for the purpose of palm oil planting. For example, the Sungai Pahang, the longest river on the Malaysian Peninsula, is now increasingly more shallow and may lose its historical standing as the longest river on the Malaysian peninsula. Further, a total of 43 rivers or 9% of Malaysian rivers, mostly in urban areas, are polluted (Borneo Post (b), 2016). It has affected the water supply for the residence and has threatened the ecosystem of the area that includes most aquatic life that are not able to fertilize their eggs between the rocks due to the murkiness of the water (Borneo Post (b), 2016). The life of organisms (including fish) downstream depends on the constant feeding of the river with debris. This debris includes leaves, twigs, branches, and whole trees, as well as the organic remains of dead animals. Debris not only provides food, it provides hiding places

for all sizes of animals and surfaces for phytoplankton and microorganisms to grow. Without flooding and without a healthy riparian zone, this debris will be scarce. Adding to the problem, although debris might come from the river above the dam, it is instead trapped in the reservoir, and never appears downstream. The bottom level of the food web is removed. All in all, the loss of sediment and debris means the loss of both nutrients and habitat for most animals (chamisa.freeshell.org/dam.htm). Recently discovered, altering the complex biological machinery with dams and diversions, leads to the long-term decline of the ecosystem. Only recently, have scientists explored the comprehensive ecological blueprint of river dynamics (Robbins, 2016: D6).

Another effect is the crowding-out of local species, as mentioned earlier. Recently, in Sulawesi, Indonesia, a heavily forested island in eastern Indonesia, a python consumed a man whole. The area has been cleared for palm oil plantations over the last decade. The local villagers searched for the twenty five year old father of two, Akbar Salubiro. He went missing after he had gone to harvest palm oil on the plantation. They discovered the 23 foot python with the outline of shoe in its stomach. They killed the python and found Mr. Akbar in its stomach. (Emont, 2017b: A10).

Sustainability of Palm Oil Production in Malaysia and Indonesia

Palm oil could help achieve high land use efficiency as its about 10 times more than other oilseed crops (Palm Oil Facts & Figures Factsheet, 2012). The energy yield ratio of palm biodiesel is 3.53, which is more than double that of rapeseed biodiesel (Yee et al., 2009), and also performs better than other competing oils, including soybean (Tam et al., 2007), coconut and jatropha (Pleanjai, 2009). In terms of greenhouse gas (GHG) emissions, a carbon saving benefit of 38% is achievable with the replacement of conventional diesel fuel with palm biodiesel (Yee et al., 2009). Oil palm plantation also allows agro-forestry and livestock crop integration (Tam et al., 2009), which could increase the intensification of land use in Malaysia.

The plantation area of oil palm in Malaysia has increased by 150% over the past 30 years (Fairhurst & Mutext, 1999). The fragmentation of forest associated with this man-made monoculture has adversely affected the forest ecological functions and threatens the already endangered species such as orangutans, elephants, tigers, and rhinos (Ardiansyah, 2006). Land clearing activities for palm oil plantations have been identified as the root cause for forest and peatland fires (Datamonitor, 2010) in Southeast Asia each years, which affect the health of millions of people in the region suffered from pneumonia and other respiratory diseases (Food and Agriculture Organisation of the United Nations, 2006).

As mentioned earlier, the majority of the world's palm oil production is in Indonesia and Malaysia (see Figure #9). As suggested by Lim et al. (2015), the success of sustainability efforts in Malaysia has met with limited success where the economic benefits of palm oil production have not fulfilled the commitment to many of the non-industrial stakeholders (see Figure #9). The existing palm oil production is economic focused rather than ecologically focused causing the disappearance of animal species and cultural values of those in the forest areas. The palm oil industry started with economic imperatives, rather than considering ecological issues by converting forests for palm oil production damaging natural environments and thus disempowering the local indigenous community (Lim et al., 2015: 14).

According to Sayer et al. (2012:117-118) the first of the ecosystem principles adopted by the Convention on Biological Diversity is that conservation is a matter of societal choice (Sayer and Maginnis, 2005). As such, many tropical countries with large populations of poor rural dwellers will opt for oil palm rather than natural forest. The overwhelming desire to escape

poverty and pursue economic advancement, coupled with continuing consumption of palm oil globally, suggests a future with more oil palm and less forest. The challenge is not to stop oil palm expansion, but to shape its development to minimize impacts on biodiversity, carbon, local peoples' welfare and other priorities. There are clear options for bringing degraded lands into production, improving yields, and providing incentives to stimulate smallholder innovations. Yet, much of the future expansion of oil palm will take place in regions where regional and local governance is relatively weak, spatial planning ineffective, and land tenure uncertain (Feintrenie et al., 2010). We might suggest that these institutional failures will be the main obstacle to protecting environmental values and achieving more equitable social outcomes as palm oil production expands. Thus there are three principle recommendations that would make the largest contribution to sustainably oil palm production: (1) promotion of yield intensification to reduce the requirement for area expansion; (2) good governance relating to smallholder tenure security and forest conservation; and (3) promotion of smallholder organizations to redress the balance of power in negotiated agreements with commercial estates and milling companies. Oil palm expansion is ultimately driven by the consumer. Consumer behavior can, and has, shaped the emergence of a more socially and environmentally aware industry. While there is still a long way to go, and many improvements to be made, the rate at which goals of equity and sustainability will be achieved is ultimately a function of consumer behavior and, as the Convention on Biological Diversity has acknowledged, a societal choice (Sayer et al., 2012: 118).

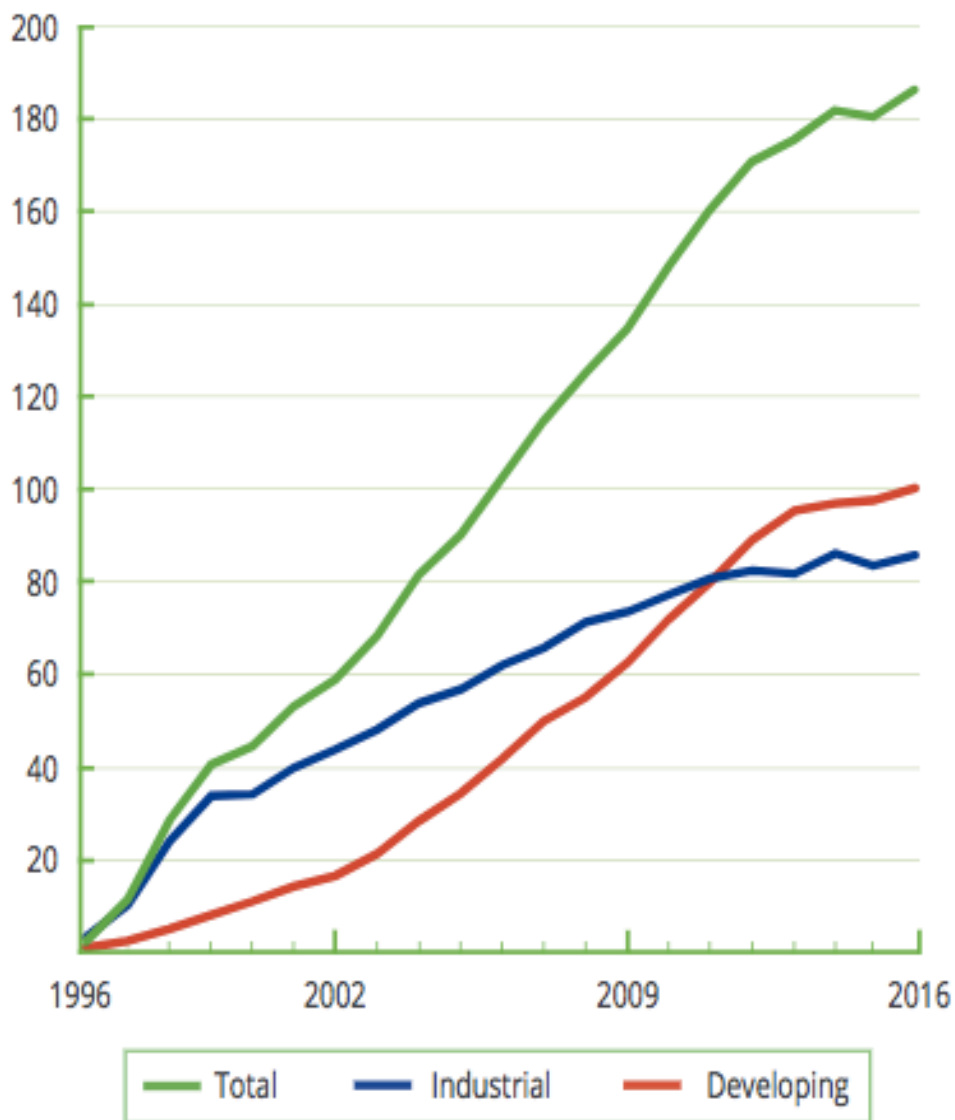
CONCLUSION

While it may seem quaint to attempt to return to the hunter and gatherer historic time, it may be feasible to preserve those cultures that still maintain such a way of life. This may be achieved, especially in parts of Africa and Borneo, by reducing and limiting the exploitation of these lands for farming of arguably, unsustainable crops and foodstuffs. Other solutions include the use of tiny beads of engineered resins that can absorb phosphorous. Other ideas include the use of substances inserted into tiles under the soil on farms to remove phosphorous before it reaches the rivers (Maher, 2018). Reluctantly, we may have to accept the use of GMO pest resistant crops to minimize the use of fertilizers.

Palm oil cultivation as a foodstuff for many products has been noted earlier. Furthermore, it is critical to development of some Southeast Asian economies, especially Indonesia and Malaysia. One critical dilemma is that much of the land that palm oil cultivated is on centuries old peat soil. When the peat soil is "disturbed" for planting, carbon is emitted into the environment. Also, as clear cutting of forests is employed to make land available for palm oil planting, trees are sometimes felled and left drifting, and thus clogging the rivers. Sometimes, fires are used to facilitate the clearing of the forests that results in the burning of peat below the forest floor. This has caused environmental disasters through pollution across Southeast Asia.

Ultimately, a balance needs to be achieved, albeit incrementally, balancing the development and environmental needs, a definition for sustainable development. This can be achieved with cooperation of the various constituencies of indigenous people, government policy makers, environmental agencies, and consumers. Therein, a sustainable solution will exist for palm oil production and consumption.

Figure 1. Global Area of Biotech Crops, 1996 to 2016: Industrial and Developing Countries (Million Hectares)

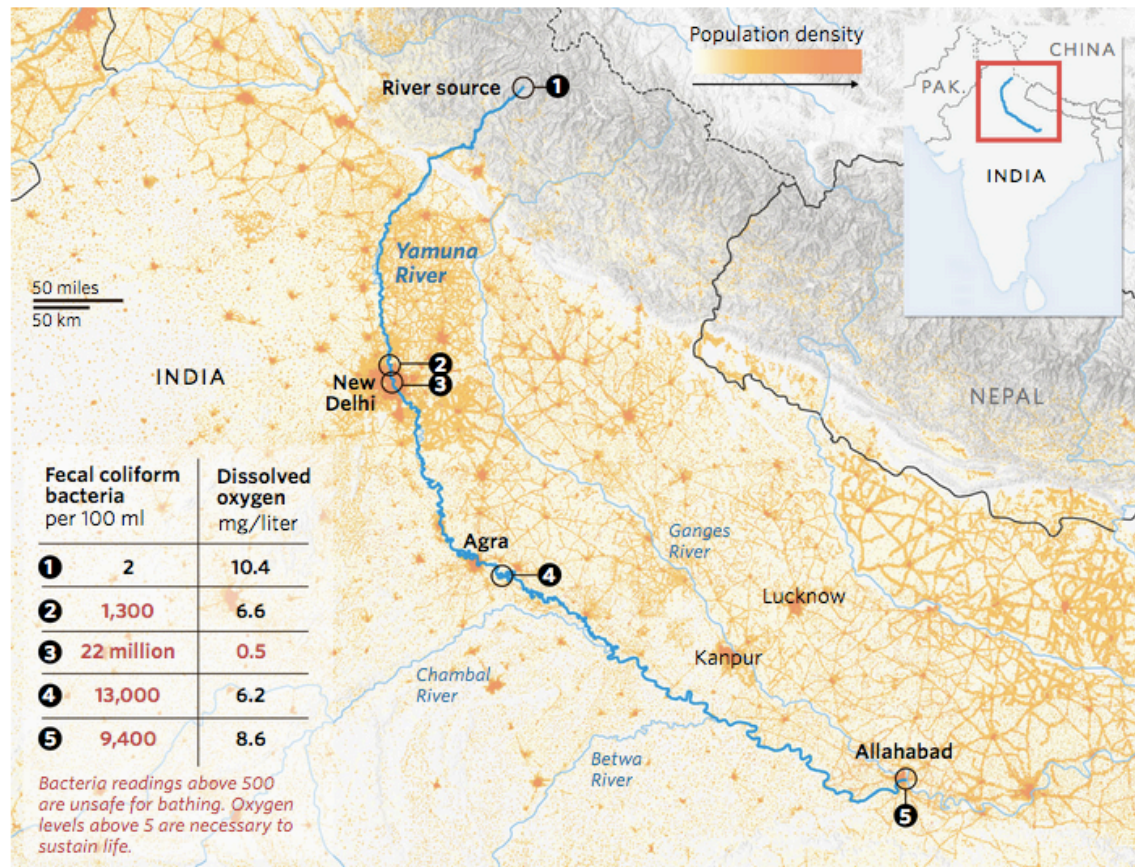


Source: ISAAA, 2016

Figure #2

River of Shame

The Yamuna River once helped sustain some of India's greatest empires. Now it is a foul sludge for much of its 855-mile run, with soaring levels of dangerous bacteria.



Sources: Central Pollution Control Board (fecal coliform, oxygen); Oak Ridge National Laboratory's LandScan dataset (population density)

Figure #3: Uses of Palm Oil Byproducts and Biomass in Food and Manufacturing Industries (Source: Fairhurst & Mutert, 1999)

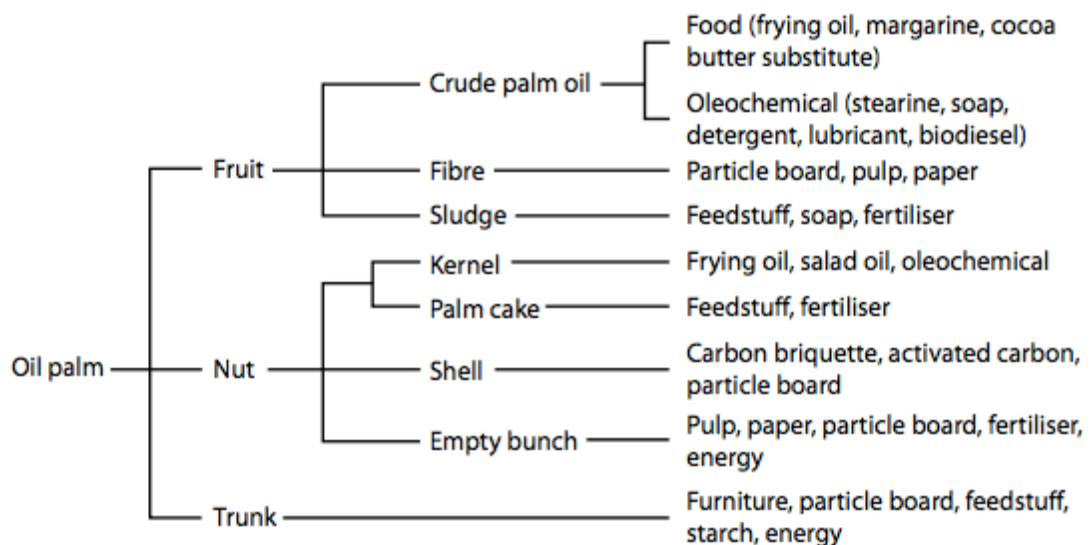


Figure #4



Dayak in full war regalia: hornbill feathers, shield, blowpipe, leopardskin vest, and head-hunting sword. (Collection Nationaal Museum van Wereldculturen. Coll.no. TM-60033041)

Figure #5



Figure #6 Rajang River, Sarawak, Malaysia
(Source: hornbillunleashed.wordpress.com/2010/10/08/10352/)



Figure #7 (Source: Cochrane, 2018)



Forest on Borneo abutting an oil palm plantation. Researchers say deforestation has been a significant driver of the orangutan's decline. Marc Ancrenaz

Figure #8

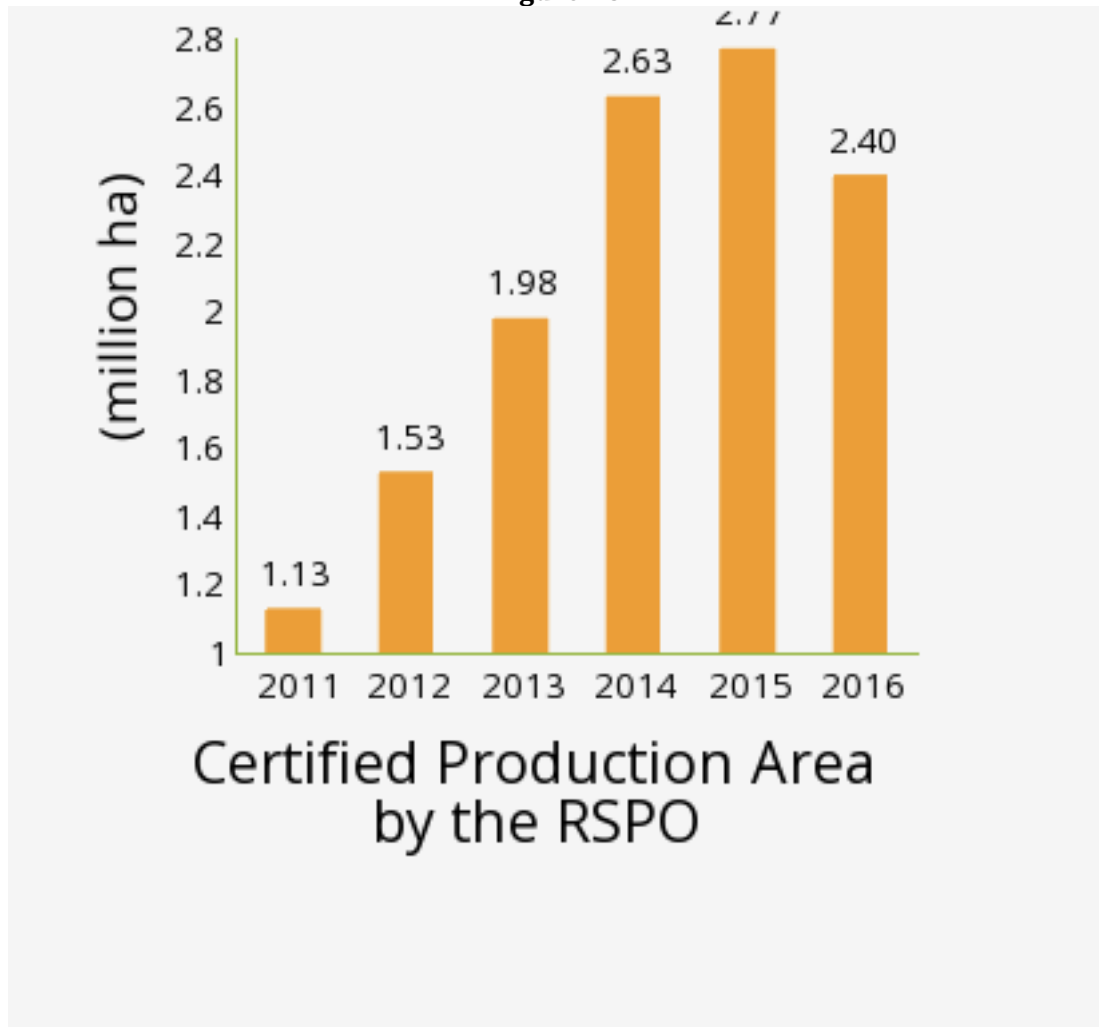


Figure #9 Key Palm Oil Areas in Malaysia and Indonesia



BIBLIOGRAPHY

- AGU.Blogosphere (2010) <http://blogs.agu.org/landslideblog/2010/10/21/the-curious-story-of-the-rajang-log-jam-in-sarawak-malaysia/>, 10 October.
- Ardiansyah, F. (2006). "Sustainable Oil Palm Development in Indonesia – Challenges and Opportunities." WWF (ed.), *International Palm Oli Conference*.
- Bahari, S. (2016). "Government takes forest preservation seriously, says Wan Junaidi." *Borneo Post*, May 23, A1.
- Bernamea (2016). "Prevent Peat Fires Via Soil Management". *Borneo Post*, 23 May, A1.
- Borneo Post (a) (2016). "9 Pct of Country's Rivers Are Polluted, says Wan Junaidi." *Borneo Post*, May 26, A 22.
- Borneo Post (b) (2016). "Sg Pahang on the Verge of Destruction – Expert." *Borneo Post*, May 23, A18.
- Cochrane, J. (2018). "Orangutan On Island of Borneo Succumb to Bullets and Bull Dozers." *New York Times*, 20 February, D2.
- Cochrane, J. (2017). "New Orangutan Species May be the Most Endangered." *New York Times*, 3 November, A8.
- Datamonitor ((2010) "Palm Oil Case Study: How Consumer Activism Led the Push For Sustainable Sourcing."
- Emont, J. (2017a). "A Refuge for Orangutans Presents a Quandary for Environmentalists." *New York Times*, 26 April, A4.
- Emont, J. (2017b). "Python Swallows an Indonesian Villager Whole." *New York Times*, 30 March, A10.
- Fairhurst, T.H. & Mutert, E. (1999). "Introduction to Palm Oil Production." *Better Crops International*, 3-6.
- Feintrenie, L., Chong, W.K., & Levang, P. (2010). "Why do farmers prefer oil palm? lessons learnt from Bungo District, Indonesia." *Small-Scale Forestry*, 9, 379–396.
- Flynn, D. (2017) "Sustainable Development and Palm Oil Production." *Proceedings*, Pan-Pacific Conference XXXIV, 154-156.
- Flynn, D. (2014). "Sustainable Development and Water Resource Scarcity." *Archives of Business Research*, 2, 5, 12-28.
- Food and Agriculture Organization of the United Nations (2006). "Health Guidelines for Vegetation Fire Events." *Unasylva*, 57, 224-245.
- Fountain, H. (2017). "Scientists Map Vast, Carbon-Rich Peatlands in Congo Basin." *New York Times*, January 12, A9.
- Hakim, D. (2017). "Monsanto's Roundup Faces European Politics and U.S. Lawsuits." *New York Times*, 5 October, B3.
- Hermanowicz, S.W. (2005). "Entropy and Energy: Toward a Definition of Physical Sustainability." Working Paper, (<http://repositories.cdlib.org/wrca/wp/swr v2>).
- Horticulture and & Landscape Agriculture: Purdue University (Hort). "Neolithic Revolution and the Discovery of Agriculture." https://hort.purdue.edu/newcrop/Hort_306/text/lec03.pdf
- International Service for the Acquisition of Agri-biotech Applications (ISAA) (2016). "Global Status of Commercialized Biotech/GMO Crops: 2016." <https://www.isaaa.org/resources/publications/briefs/52/download/isaaa-brief-52-2016.pdf>
- Lam M.K., Tan, K.T., Lee, K.T., & Muhamed, A.R. "Malaysian Palm Oil: Surviving the Food Versus Fuel Dispute for a Sustainable Future." *Renewable & Sustainable Energy Reviews*, 13, 6-7, 1456-1464.
- Lanchester, J. (2017). "How Civilization Started." *New Yorker*, 18 September: 22-26.
- Lant, C. (2004). "Water Resources Sustainability: An Ecological Economics Perspective." *Water Resources Update*, 127: 20-30.
- Latham, K.J. (2013). "Human Health and the Neolithic Revolution: an Overview of Impacts of the Agriculture Transition on Oral Health, Epidemiology, and the Human Body." *Nebraska Anthropologist*, 187, 95-102.
- Lim, C.I., Biswas, W., & Samyudia, Y. (2015). "Review of Existing Sustainability Assessment Methods for Malaysian Palm Oil Production." 12th Global Conference on Sustainable Manufacturing *Proceedings*, 13-18.
- Lipton, E. (2017) "E.P.A. Says Drift of Herbicide Damaged Crops in 25 States." *New York Times*, 2 November, B1.
- Lynas, M. (2018). "Confession of An Anti-GMO Activist." Review, *Wall Street Journal*, 23-24 June, C1-2.
- Maher, K. (2018). "Researchers Race to Thwart Algae Outbreaks." *Wall Street Journal*, 9 April, A3.

- Muna, S. (2016). "The Customer is Always Right." *Borneo Post*, May 22, P13.
- NPR (2017). "Orangutans Moms are the Champs of Breast-Feeding." 17 May. <https://www.npr.org/sections/health-shots/2017/05/17/528776636/orangutan-moms-are-the-primate-champs-of-breast-feeding>
- Osnos, E. (2014). "Chemical Valley: The coal industry, the politicians, and the big spill." *New Yorker*, April 7. <https://www.newyorker.com/magazine/2014/04/07/chemical-valley>
- Palm Oil Facts and Figures, 2012.
- Patel, J.K. & Parshina-Kotaas, Y. (2017). "Miles of Algae Covering Lake Erie." *New York Times*, 4 October, A11.
- Pleanjia, S.G. (2009). "Full Chain Energy Analysis of Biodiesel Production for Palm Oil in Thailand." S209-214.
- Plumer, B. & Popovich, N. (2018). "Poor Americans Exposed to Unsafe Water, Study Shows." *New York Times*, February 13, A10.
- Pokharel, K. & Rana, P. (2017). "The World's Next Environmental Disaster." 21-22 October. <https://www.wsj.com/articles/the-worlds-next-environmental-disaster-1508511743>
- Robbins, J. (2016). "Lifeblood in Gravel." *New York Times*, November 15, D6.
- Rodell, M., Velicogna, I. & Famiglietti, J.S. (2009). "Satellite-based estimates of groundwater depletion in India." *Nature*, 460, August: 999-1003.
- Rosegrant, M.W. (1997). "Water Resources in the Twenty-First Century: Challenges and Implications for Action." *Food, Agriculture, and the Environment Discussion Paper 20*, 1-32.
- Sayer, J., Ghazoul, J., Nelson, P. & Boedhihartono, A.K. (2012). "Oil Palm Expansion Transforms Tropical Landscapes and Livelihoods." *Global Food Security*, 1, 114-119.
- Sayer, J.A. & Maginnis, S. (Eds.), 2005. *Forests in Landscapes: Ecosystem Approaches to Sustainability*. Earthscan, London, 257pp.
- Schonhardt, S. (2016). "Southeast Asia Fires Tied to Deaths." *Wall Street Journal*, September 20, A12.
- Scott, J.C. (2017). *Against the Grain: A Deep History of the Earliest States*. New Have: Yale University Press.
- Shablovsky, S. (2017). "Hunters and foragers thrived while early agrarian societies struggled, argues an anthropologist." 1 August. <http://blogs.sciencemag.org/books/2017/08/01/hunters-and-foragers-thrived-while-early-agrarian-societies-struggled-argues-an-anthropologist/>
- Sinha, E., Michalak, A.M. & Balaji, V. (2017). "Eutrophication will increase during the 21st century as a result of precipitation changes." *Science*, 357, 28 July: 405-408.
- Tabuchi, H., Popovich, N., Migliozzi, B., & Lehren, A.W. (2018). "Mixing Water and Poison." *New York Times*, 7 February, A13.
- Tan, K.T., Lee, K.T., Mohamed, A.R., & Bhatia, S. (2009). "Palm Oil: Addressing Towards Sustainable Development." *Renewable & Sustainable Energy Reviews*, 13, 420-427.
- UDP.org
www.undp.org/content/dam/undp/library/Environment%20and%20Energy/Green%20Commodities%20Programme/Indonesia%20Factsheet%20pdf.pdf
- Vijayakumar, S. (2012). "Simple & cheap solution to India's grave water crisis: Waste water recycling." *Economic Times*, September 23. http://articles.economictimes.indiatimes.com/2012-09-23/news/34022987_1_desalination-plant-water-resources-waste-water
- Wall Street Journal (2017). "Data Science Will Transform Farming." 16 October: R7.
- Yee, K.F., Tan, K.T., Abdullah, A.Z., & Lee, K.T. (2009). "Life Cycle Assessment of Palm Biodiesel: Revealing Facts and Benefits for Sustainability." *Applied Energy*, 86, S189-196.

Stock Price Volatility and Policy Bailout: Evidence from Growth Enterprise Market in China

Qishui Chi

Business School, Shantou University,
Shantou, Guangdong, China

Songtao Wang

Business School, Shantou University,
Shantou, Guangdong, China

ABSTRACT

Growth enterprises in China have been increasing their paces to raise capital through Growth Enterprise Market (GEM) since October, 2009. Based on mass Monte Carlo simulation, this article utilizes multi break structural change method to examine the fluctuation characteristics of GEM stock index in China. This study indicates that time series of Chinese GEM stock index are not characterized by mean reversion. As a result, The rescue of the securities market in 2015 was invalid. The long-term growth of GEM stock indexes depend on investor mentality, the stock supply and so on. The results provide policies making guidance on GEM in China with empirical evidence.

Keywords: random walk, GEM, policy bailout

JEL Classification: C1; G1; G18

INTRODUCTION

The Growth Enterprise Market is a key part of China's securities market. It is important for investors to decide whether the stock price is subject to stochastic volatility. Besides, this is also very important for government in policy making. For a long time, scholars have studied whether the stock price obeys random walk. Suppose the stock prices in GEM are subject to random walks, then the prices in the future are unpredictable. Therefore, technical analysis will be useless. Analogously, it's impossible for government policies to change the way GEM indexes grow. But if GEM indexes are not stochastic, then government policies can influence the market effectively.

So far, no one has studied whether GEM price follows random walk. However, Many scholars find that the price of the stock market is random. Typical studies include: the stock prices of 22 OECD countries studied by Narayan and Smyth (2005); the Lisbon stock market examined by Borges (2011); Shen and Holmes (2014) researching in 12 Asia-Pacific countries; the real monthly U.S. stock returns from 1871 to 2003 invested by Clark and Coggin (2011); Indian stock market researched by Chattopadhyay (2016). Meanwhile, some studies show that stock price follows mean reversion process. There are many such studies including the following literature: Balsara et al (2007) studying China's B-shares prices from February, 1992 to June, 2005; Mishra et al (2015) studying Indian stock indexes.

Other studies have found that stock prices sometimes follows random walks and sometimes obey mean reversion. For example, Chang and Ting (2000) investigating Taiwan's stock price index, Hooi and Smyth (2007) studying stock prices in eight Asian countries, Lakshmi and Roy (2012) studying six Indian stock markets, Shirvani and Delcoure (2016) investigating stock prices of 18 OECD countries from 1985 to 2013.

The key purpose of this article is to investigate the volatility of GEM index based on breakpoints method. By using Monte Carlo simulation, we get the critical value of structural change test. The finding of this article provides policies making guidance on GEM in China with empirical evidence. This paper is written as follows. The second part describes the models and data processing. The third part presents the critical value of breakpoints test. The fourth part analysis the empirical results. The last part is the conclusion.

MODELS AND DATA PROCESSING

For investigating the volatility of GEM stock price, we set the null and alternative hypotheses of the time series at first.

The null hypothesis is as follows:

$$H_0 : \alpha = 0 \tag{1}$$

The alternative hypothesis is as follows:

$$H_1 : \alpha < 0 \tag{2}$$

Then, we set the linear model for testing breakpoints below.

$$\Delta sp_t = \alpha sp_{t-1} + \mu + \beta t + \theta DU1_t + \gamma DT1_t + \omega DU2_t + \psi DT2_t + \sum_{i=1}^p c_i \Delta sp_{t-i} + e_i \tag{3}$$

$DU1_t$ and $DU2_t$ above are mean abrupt changes, $DT1_t$ and $DT2_t$ are trend abrupt changes.

Therefore, according to the methods of Lumsdaine and Papell (1997), Wang et al (2009) and Chi and Wang (2013), we can obtain another 5 equations for searching breakpoints.

$$\Delta sp_t = \alpha sp_{t-1} + \mu + \beta t + \theta DU1_t + \gamma DT1_t + \psi DT2_t + \sum_{i=1}^k c_i \Delta sp_{t-i} + e_i \tag{4}$$

$$\Delta sp_t = \alpha sp_{t-1} + \mu + \beta t + \theta DU1_t + \gamma DT1_t + \omega DU2_t + \sum_{i=1}^k c_i \Delta sp_{t-i} + e_i \tag{5}$$

$$\Delta sp_t = \alpha sp_{t-1} + \mu + \beta t + \gamma DT1_t + \psi DT2_t + \sum_{i=1}^k c_i \Delta sp_{t-i} + e_i \tag{6}$$

$$\Delta sp_t = \alpha sp_{t-1} + \mu + \beta t + \theta DU1_t + \psi DT2_t + \sum_{i=1}^k c_i \Delta sp_{t-i} + e_i \tag{7}$$

$$\Delta sp_t = \alpha sp_{t-1} + \mu + \beta t + \theta DU1_t + \omega DU2_t + \sum_{i=1}^k c_i \Delta sp_{t-i} + e_i \tag{8}$$

The value of α and $t_{\hat{\alpha}}$ can be gotten via OLS regression of model 3-8. Let's write t statistics of $\hat{\alpha}$ as $t_{\hat{\alpha}}$ and obtain the minimum value $t[\lambda_{inf}^i] = \inf_{\lambda \in \Lambda} t_{\hat{\alpha}^2}(\lambda)$ from set of $t_{\hat{\alpha}}$. Compare $\inf_{\lambda \in \Lambda} t_{\hat{\alpha}^2}(\lambda)$ with critical value getting from simulation and $\alpha = 0$.

We get GEM stock prices data from Wind database. The key indexes in GEM are ChiNext Price index (CNPI) starting from June 1st, 2010, ChiNext Composite Index (CNCI) starting from August 20th, 2010, ChiNext TRN Index (CNTI) starting from June 1st, 2010.

We utilize STL decomposition method to seasonally adjust CNPI, CNCI and CNTI series.

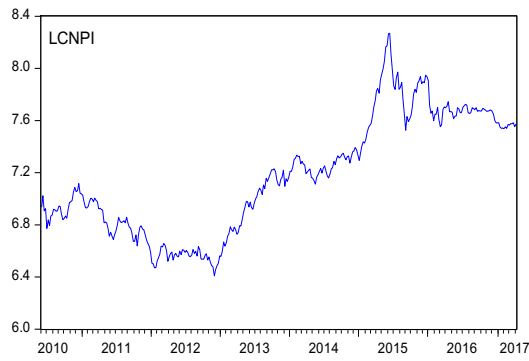


Fig. 1. The natural logarithm of CNPI

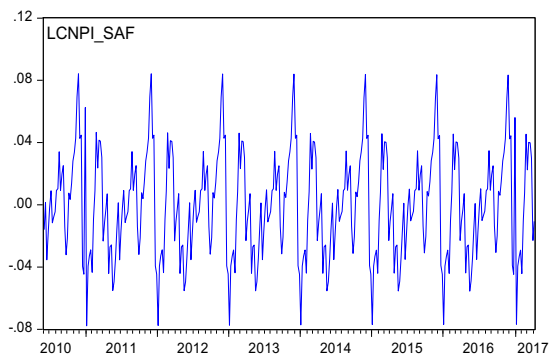


Fig. 2. Seasonal Factor of LCNPI

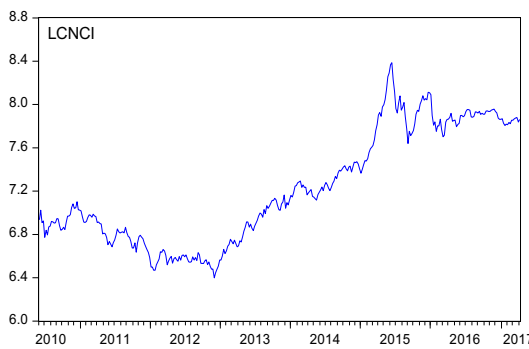


Fig. 3. The natural logarithm of CNCI

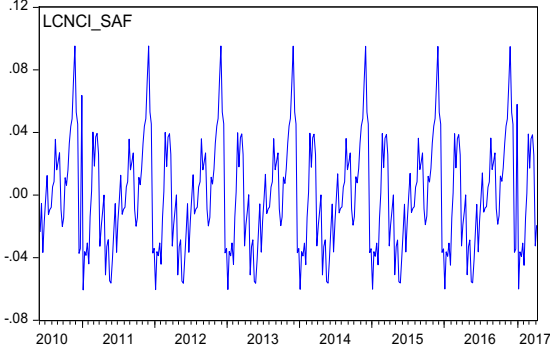


Fig. 4. Seasonal Factor of LCNCI

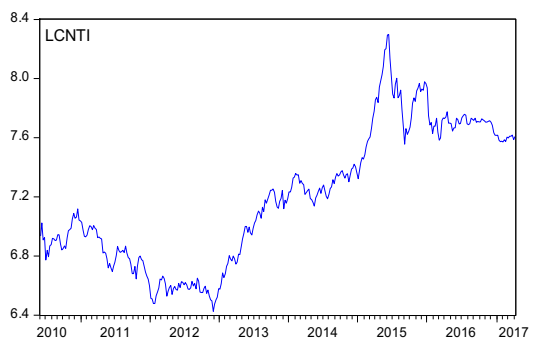


Fig. 5. The natural logarithm of LCNTI

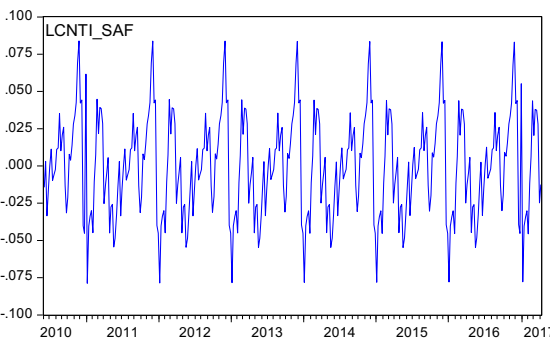


Fig. 6. Seasonal Factor of LCNTI

We believe the fluctuate of securities prices is influenced by inflation. CCPI (China Commodity Price Index) covers twenty-six commodities which has a close relationship with the GEM companies. We use CCPI to eliminate inflation factor in GEM prices and obtains real price logarithmic series LRCNPI, LRCNCI and LRCNTI. The period of the sample covers from June 4th, 2010 to April 7th, 2017.

THE CRITICAL VALUE OF BREAKPOINTS TEST

The software Eviews 10 is used to obtain the distribution of $\inf_{\lambda \in \Lambda} t_{\hat{\alpha}^2}(\lambda)$. We deem $y_t = \varepsilon_t$ as data generation process (DGP) to get a random series including 385 samples.

According the method of simulation in Chi and Wang (2013), and let model CC and BB correspond to equations 3 and 4, we obtain the Kernel density of them as below.

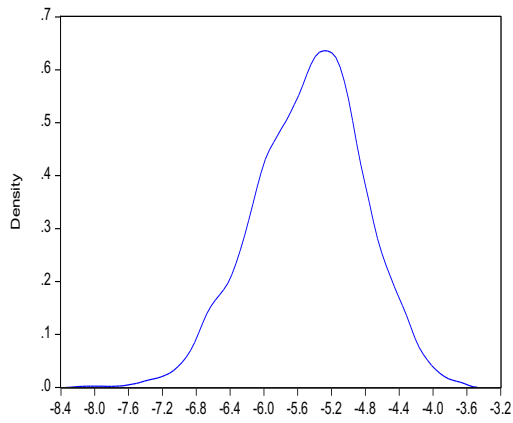


Fig. 7. Kernel density of model CC

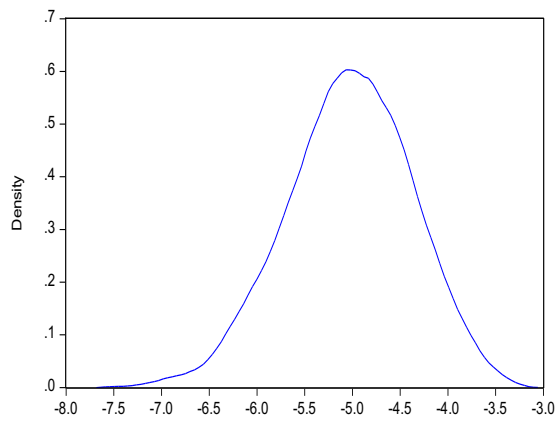


Fig. 8. Kernel density of model CB

Then, let CA, BB, AB and AA correspond to formulas 5 to 8, we can also get the figures of the Kernel density bellow.

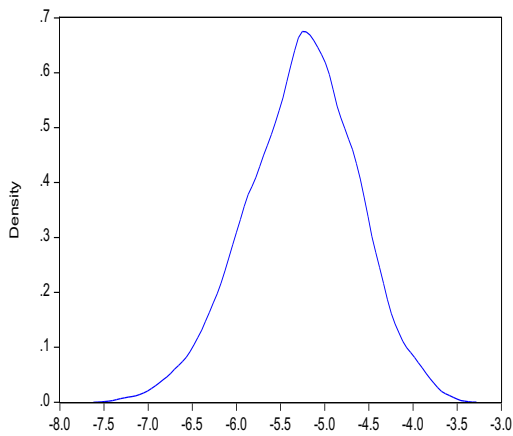


Fig. 9. Kernel density of model CA

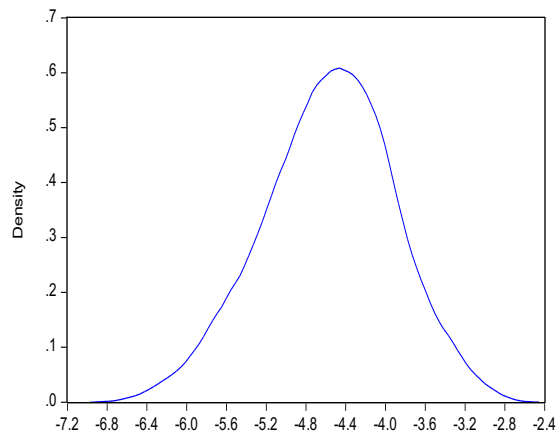


Fig. 10. Kernel density of model BB

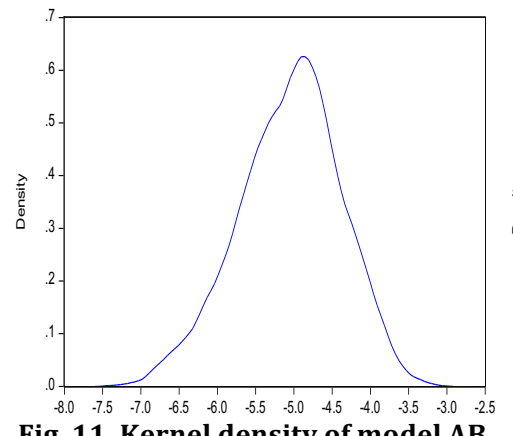


Fig. 11. Kernel density of model AB

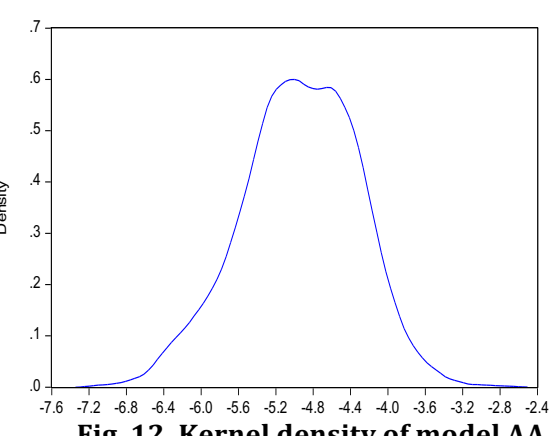


Fig. 12. Kernel density of model AA

Therefore, the critical values for testing break change are obtained.

Table 1. Critical Value

Model	CC	CB	CA	BB	AB	AA
Computation times	1,000	1,000	1,000	1,000	1,000	1,000
Sample size	358	358	358	358	358	358
1%	-7.012585	-6.699039	-6.776923	-6.156363	-6.672849	-6.477983
2.5%	-6.756680	-6.345585	-6.554663	-5.918221	-6.475058	-6.255102
5%	-6.566178	-6.155370	-6.306392	-5.706303	-6.208973	-6.058066
10%	-6.317349	-5.895820	-6.071776	-5.460814	-5.960187	-5.772871
15%	-6.121426	-5.702880	-5.896877	-5.268734	-5.740345	-5.579541
50%	-5.422432	-5.012013	-5.226086	-4.549462	-5.008840	-4.925621
85%	-4.830478	-4.358986	-4.612477	-3.908706	-4.363598	-4.306089
90%	-4.678602	-4.210989	-4.507325	-3.767342	-4.224888	-4.175881
95%	-4.469382	-3.989240	-4.298436	-3.512755	-4.010053	-4.002933
97.5%	-4.297633	-3.834984	-4.086204	-3.332543	-3.868515	-3.821451
99%	-4.131557	-3.639082	-3.957398	-3.143905	-3.725770	-3.627633

Note : DGP : $\Delta y_t = \varepsilon_t$

ADF UNIT ROOT TEST AND BREAKPOINTS TEST

ADF unit root test on GEM indexes

Unit root test for the GEM stock indexes necessary the breakpoint test because the breakpoint test is needless if time series is stationary. In other words, only unstable series need to be retested by the breakpoint test.

The result of ADF test on GEM indexes are shown as follows.

Table 2. Result of ADF test on GEM indexes

Series	Test form	t-Statistic	Test critical values		
			1% level	5% level	10% level
lrcnpi	(c, t, 0)	-2.028371	-3.984047	-3.422497	-3.134120
lrcnci	(c, t, 0)	-2.265831	-3.984047	-3.422497	-3.134120
lrcnti	(c, t, 0)	-2.023929	-4.030729	-3.445030	-3.147382
D(lrcnpi)	(c, 0, 1)	-17.41507	-3.448518	-2.869442	-2.571047
D(lrcnci)	(c, 0, 1)	-17.33712	-3.448518	-2.869442	-2.571047
D(lrcnti)	(c, 0, 1)	-17.41385	-3.448518	-2.869442	-2.571047

Table 2 shows all of real GEM stock indexes (LRSSPI, LRSSCI and LRSPMI) are I (1) processes at 1% significance level.

Breakpoints test

Let $k_{max} = 12$, we apply equations 3-5 and the method proposed by Lumsdaine and Papell (1997) to do GEM indexes breakpoint test. The result is shown in table 3.

For logic integrity, we also use the supplementary approach proposed Wang et al (2009) to do GEM indexes breakpoint test. The result is shown in table 4.

Table 3. GEM indexes breakpoint test equations 3-5

series	model	$\hat{\alpha}$	$t_{\hat{\alpha}}$	breakpoints	$\hat{\theta}$	$\hat{\omega}$	$t_{\hat{\theta}}$	$t_{\hat{\omega}}$	$\hat{\gamma}$	$\hat{\Psi}$	t_{γ}	t_{Ψ}	k	
Ircnpi	AA	-0.049247	-4.272523	11/21/2014	0.052455		-3.019474						9.00000	
				4/05/2013		0.049554								
	CC	-0.112587	-5.621671	12/02/2011	-0.034158		-2.472214		0.001803		4.373776		9.00000	
				3/13/2015		0.077005			4.270137		-0.001753		-5.184951	
	CA	-0.055401	-4.519791	1/09/2015	0.054665		3.759273		-3.409499					9.00000
				3/25/2011		-0.045705			3.401408					
Ircnci	AA	-0.044548	-3.951519	4/12/2013	0.041158		0.049708						9.00000	
				11/21/2014		0.049708			3.169397					
	CC	-0.139008	-5.878894	7/13/2012	-0.001681		-0.145512		0.002303		5.376502		9.00000	
				3/13/2015		0.092637			4.709523		-0.002015		-6.088815	
	CA	-0.055672	-4.261100	1/09/2015	0.052085		3.474527		-0.000772		-4.442141		9.00000	
				9/02/2011		-0.043647			-3.126128					
Ircnti	AA	-0.049313	-4.270017	11/21/2014	0.052252		3.493734						9.00000	
				11/21/2014		0.052252			3.493734					
	CC	-0.113225	-5.639437	12/02/2011	-0.034144		-2.472629		0.001810		4.386273		9.00000	
				3/13/2015		0.077210			4.285133		-0.001768		-5.882997	
	CA	-0.055413	-4.515181	1/09/2015	0.054518		3.752918		-0.000886		-5.185475		5.00000	
				3/25/2011		-0.045459			-3.390778					

Table 4. GEM indexes breakpoint test equations 6-8

series	model	$\hat{\alpha}$	$t_{\hat{\alpha}}$	breakpoints	$\hat{\theta}$	$\hat{\omega}$	$t_{\hat{\theta}}$	$t_{\hat{\omega}}$	$\hat{\gamma}$	$\hat{\varphi}$	$t_{\hat{\gamma}}$	$t_{\hat{\varphi}}$	k
Ircnpi	BB	-0.094117	-4.694313	7/20/2012	0.052455		3.501933	3.865295	0.001636		4.045143		9.00000
	CB	-0.121287	-5.623033	11/06/2015	0.080934	0.049554	4.371461		-0.007407	-0.001903	-3.521763	-4.741039	9.00000
	AB	-0.042316	-3.654622	4/06/2012	-0.038446	0.077005	-2.649053	4.270137	-0.000883	-0.001894	-3.573019	-5.885666	9.00000
Ircnci	BB	-0.100967	-4.793667	9/02/2011	0.041158	-0.045705	3.401408	-3.409499		-0.000894	4.244656	5.065533	9.00000
	CB	-0.139012	-5.887916	11/13/2015	0.092509	0.049708	4.745183	3.169397	0.001821	-0.001977	4.244656	-4.833480	9.00000
	AB	-0.048100	-3.651766	7/20/2012	-0.042737	0.092637	-3.456382	4.709523	-0.002018	0.002300	-6.168004	5.413734	9.00000
Ircnti	BB	-0.094379	-4.692299	7/15/2016	0.049734	-0.043647	3.870520	-3.126128	-0.002283	-0.000772	-1.539364	2.793410	9.00000
	CB	-0.121642	-5.629767	11/06/2015	0.080917	0.052252	4.376550	3.493734	0.001633	-0.001913	4.038430	-4.740504	9.00000
	AB	-0.042662	-3.668815	4/06/2012	-0.038600	0.077210	-2.658271	4.285133	-0.001905	0.002080	-5.892361	5.064345	7.00000
				9/02/2011		-0.045459		-3.390778	-0.000886	-0.000903	-5.185475	-3.590739	9.00000
				11/13/2015									9.00000

According to table 3 and 4, $t_{\hat{\alpha}}$ are smaller than the absolute critical value 10% (see table 1). Therefore, the null hypotheses can't be rejected at 90% confidence level. That is to say, the GEM indexes follow unit root process.

CONCLUSION

We use multiple break points test to study the fluctuation of GEM stock prices. Be based upon Monte Carlo Simulation for 1,000 times, we have finished the structural change tests on ChiNext Price index (CNPI), ChiNext Composite Index (CNCI) and ChiNext TRN Index (CNTI).

The inflation factor is eliminated by China Commodity Price Index (CCPI). The test result shows that CNPI, CNCI and CCTI are all unstable at or above 90% confidence level. There are more than 700 enterprises issue in GEM until 2017. The result that CNPI, CNCI and CCTI do not follow mean reversion process reveal any imposition of macroeconomic policies and change of equity market environment cannot change how stock prices grow in GEM. In other words, policy bailout in 2015 do not have structural change effect on CNPI, CNCI and CCTI. The rescue of the securities market in 2015 was invalid. The long-term growth of GEM stock indexes depend on investor mentality, the stock supply and so on. The results provide policies making guidance on GEM in China with empirical evidence. Consequently, the fluctuation of GEM prices may be different from other boards such as the Main Board in China. Therefore, it is necessary to conduct another investigation rather than apply the result of this research if we want to get the features of price fluctuation in this market.

ACKNOWLEDGEMENTS

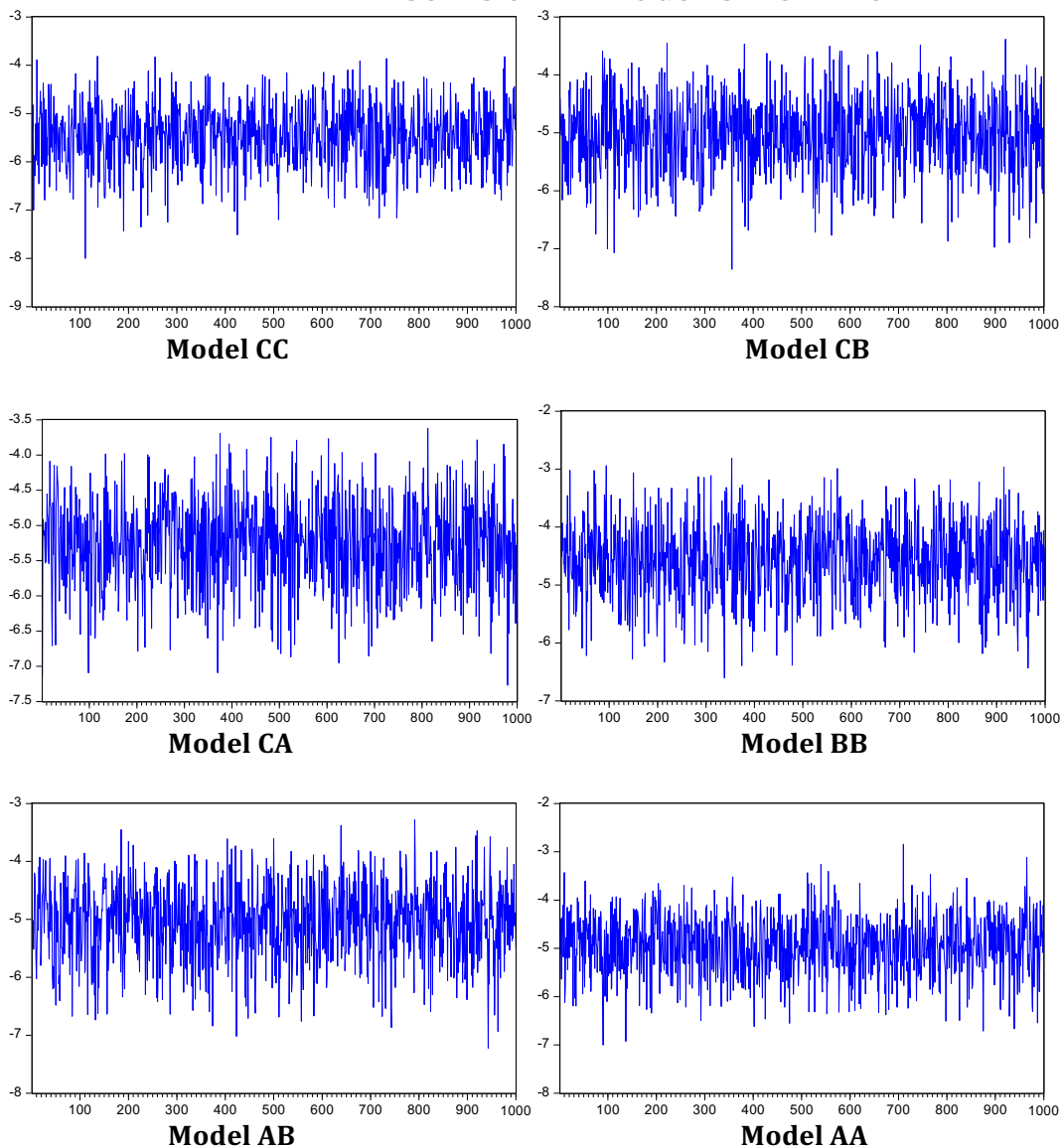
We express our sincere thanks to the research supports of Guangdong Provincial Department of Science & Technology via the Grant of Soft Science Research Project 2016A070705059. Meanwhile, we acknowledge the research supports of Shantou University via Grants NFC16009.

References

- Balsara, N. J., Chen, G. and Lin Z. (2007). The Chinese stock market: an examination of the random walk model and technical trading rules. *Quarterly Journal of Business & Economics*. 46 (2), 43-63.
- Borges, M. R. (2011). Random walk tests for the Lisbon stock market. *Applied Economics*. 43 (5), 631-639, doi: 10.1080/00036840802584935.
- Chang, K. P. and Ting, K. S. (2000). A variance ratio test of the random walk hypothesis for Taiwan's stock market. *Applied Financial Economics*. 10, 525-32, doi: 10.1080/096031000416406.
- Chattopadhyay, S. (2016). An exploration into the predictability of stock prices in India: mean reversion vs. random walk. *Money & Finance*. 85-128.
- Chi, Q. S. and Wang, Z. Q. (2013). Prices impacted by structural change in money supply. *Economic Science*. 1, 10-21.
- Clark, S. P. and Coggin, T. D. (2011). Are U.S. stock prices mean-reverting? Some new tests using fractional integration models with overlapping data and structural breaks. *Empirical Economics*. 40 (2), 373-391, doi: 10.1007/s00181-010-0338-y.
- Dickey, D. A. and W. A. Fuller. (1979). Distribution of the estimators for autoregressive time series with a unit root, *Journal of the American Statistical Association*. 74, 427-431.
- Dickey, D. A. and W. A. Fuller (1981). Likelihood ratio statistics for autoregressive time series with a unit root. *Econometrica*. 49, 1057-1072.
- Dsouza, J. J. and Mallikarjunappa, T. (2015). Does the Indian stock market exhibit random walk? *Paradigm*. 19 (1), 1-20, doi: 10.1177/0971890715585197.
- Hooi H. L. and Smyth, R. (2007). Do Asian stock markets follow a random walk? Evidence from LM unit root tests with one and two structural breaks. *Review of Pacific Basin Financial Markets & Policies*. 10 (1), 15-31.
- Im, K. S., Lee, J. and Tieslau, M. (2002). Panel LM unit root tests with level shifts, *mimeo*, Department of Economics, University of Central Florida.
- Im, K.-S., Pesaran, H. and Shin, Y. (2003). Testing for unit roots in heterogeneous panels. *Journal of Econometrics*. 115, 53-74.
- Lakshmi, V. D. M. V. and Roy, B. (2012). Testing the random walk model in Indian stock markets. *IUP Journal of Applied Finance*. 18 (2), 63-79.
- Lo, W. A. and MacKinlay, C. A. (1988). Stock market prices do not follow random walks: evidence from a simple specification test. *Review of Financial Studies*. 1 (1), 41-66.

- Lumsdaine, R. L. and D. H. Papell. (1997). Multiple trend breaks and the unit-root hypothesis. *The Review of Economics and Statistics*. 79, 212-218.
- Mishra, A., Mishra, V. and Smyth, R. (2015). The random-walk hypothesis on the Indian stock market. *Emerging Markets Finance & Trade*. 51 (5), 879-892, doi: 10.1080/1540496X.2015.1061380.
- Narayan, P. K. (2005). The structure of tourist expenditure in Fiji: evidence from unit-root structural break tests. *Applied Economics*. 37, 1157-1161, doi: 10.1080/00036840500109373.
- Narayan, P. K. and Smyth, R. (2005). Are OECD stock prices characterized by a random walk? Evidence from sequential trend break and panel data models. *Applied Financial Economics*. 15, 547-556, doi:10.1080/0960310042000314223.
- Narayan P. K. and Smyth R. (2006). Random walk versus multiple trend breaks in stock prices: evidence from 15 European markets. *Applied Financial Economics Letters*. 2 (1), 1-7, doi: 10.1080/17446540500424784.
- Papell, D. H. and R. Prodan (2007). Restricted structural change and the unit root hypothesis. *Economic Inquiry*. 45, 834-853.
- Pesaran, H. (2007). A simple panel unit root test in the presence of cross section dependence. *Journal of Applied Econometrics*. 22 (2), 265-312.
- Shen, X. and Holmes, M. J. (2014). Do Asia-Pacific stock prices follow a random walk? A regime-switching perspective. *Applied Economics Letters*. 21 (3), 189-195, doi: 10.1080/13504851.2013.848016.
- Shirvani, H. and Delcoure, N. V. (2016). The random walk in the stock prices of 18 OECD countries: Some robust panel-based integration and cointegration tests. *Journal of Economic Studies*. 43 (4), 598-608, doi: 10.1108/JES-03-2015-0053.
- Wang, Z.Q., Tian, Y. B. and Wang, S.Y. (2009). On structural change in China's imports and exports. *Systems Engineering-Theory & Practice*. 29 (2), 10-17.

APPENDIX: THE RESULTS OF ANALOGUE SIMULATION



Linking of taxpayer awareness to taxpayer compliance: The moderating role of account representative employee's performance

Gunawan

The Master of Management Degree in School of Economics and Management STIEM
Bongaya Makassar, Indonesia

Syamsul Ridjal

Professor of Management Science, School of Economics and Management STIEM
Bongaya Makassar, Indonesia

Hisnol Jamali

Associate Professor of Accounting, School of Economics and Management STIEM
Bongaya Makassar, Indonesia

ABSTRACT

The purpose of this paper is to suggest and empirically test a model that explains the linking of taxpayer awareness on taxpayer compliance. In this model, account representative employee's performance as a moderator variable. A valid research instrument was utilized to conduct a survey of 100 individual taxpayers registered in Tax Offices (KPP) Pratama North Makassar (Indonesia). The model was tested by using the partial least squares (PLS) structural equation modeling technique on the software WarpPLS, version 5.0. A thorough analysis of the role of moderator was carried out. Findings provide support for the proposed model and show that taxpayer compliance depend on taxpayer awareness as well as account representative employee's performance level. These relationships are moderated by account representative employee's performance. The model exhibits the highest predictive power when the account representative employee's performance is also high. The findings may be utilized by Indonesian government and tax practitioners interested in to improvement the taxpayer compliance.

Keywords: Taxpayer awareness, compliance, account representative employee's performance

INTRODUCTION

Contribution of the tax sector in Indonesia in financing State budget (APBN) is very dominant in terms of state revenue so important the role of tax, the government in this case the Directorate General of Taxation has made various efforts to maximize revenues tax. One of the efforts made is through the reform of legislation in the field of taxation with the enactment of self assessment system that requires taxpayers to fulfill their tax obligations, namely to fill out and submit the Notice (SPT) in the Tax Office. High awareness and compliance from the taxpayer is an important factor in the implementation of the system (Herryanto & Toly, 2013).

Self assessment system demands the active participation of the community in fulfilling the tax obligations (Trisnayanti & Jati, 2015). The self-assessment carries the mission and consequences of changing people's attitude (consciousness) to voluntary compliance. Compliance with voluntary tax obligations is the backbone of the self assessment system (Waluyo & Wirawan, 2011). The phenomenon that occurred in the world of taxation Indonesia lately makes people and taxpayers worried to pay taxes. Such conditions may affect taxpayer

compliance, as taxpayers do not want the tax already paid to be misused by the tax authorities themselves. Therefore, some communities and taxpayers are trying to avoid taxes. Taxpayer awareness (TA) of the tax function as state financing is needed to improve taxpayer compliance (TC) (Diana, 2013). The public must be aware of its existence as a citizen and must always uphold the 1945 Constitution as the legal basis of state administration (Arum, 2012).

Taxpayers' awareness (TA) to pay taxes can be interpreted as an awareness that taxes are a form of participation in supporting state development and / or awareness that delaying tax payments and reducing tax burdens are detrimental to the state and awareness that taxes are established by law and can be imposed (Mardiasmo, 2011: 87). Previous research evidence shows that tax awareness has a significant positive effect on taxpayer compliance (Dewi & Merkusiwati, 2018; Kesumasari & Suardana, 2018; Purba, 2018). These results are different from the findings of other researchers, that consciousness is not significant effect on taxpayer compliance. This means the taxpayer considers that the obligation in paying taxes has no direct added value to him (Hidayati, 2014; Nugroho et al., 2016; Ndonga, 2018).

High or low the level of taxpayer compliance is not only influenced by the taxpayer awareness factor, but there are other factors that are external factors indicated by the account representative employee's performance. Account representative is a liaison partner between the Directorate General of Taxes and the taxpayer. Duties and obligations of employee's account representative performance (ARP) namely; supervising taxpayer compliance, compiling taxpayer profile, and taxpayer performance analysis, taxpayer data reconciliation in the framework of intensification and evaluating the result of appeal based on applicable provisions (Regulation of the Minister of Finance Number 162 / PMK.011 / 2012).

The receipts of individual tax for the year 2016 experienced a very high increase, when compared with previous years. The high increase motivates the researcher to do this research so that this research is done with the intention to test and analyze whether the increase is caused by tax awareness owned by taxpayer which is higher or due to account representative employee's performance directly and or whether the increase happened because it is reinforced by the role of account representative employee's performance as a supporting of taxpayer awareness. Improving the taxpayer compliance is to provide good service to the taxpayer, especially an account representative employee's. Improving the quality and quantity of service is expected to increase the satisfaction to the taxpayer as the customer so as to increase compliance in the field of taxation (Law No. 16 of 2009 on General Provisions and Procedures Taxation).

The new paradigm that puts the government apparatus as servants of state and society tax) should take precedence in order to improve the performance of public services. Account representative performs supervisory duties of taxation obligations, conducts guidance and appeal to taxpayers and potential excavations (Regulation of the Director General of Tax No. PER-03 / PJ / 2013). Account representative employee's performance as has several taxpayers who must be supervised in carrying out its tax obligations (Eddy, 2013).

The research results (Alfiansyah & Venusita, 2012; Setiawan, 2017, Ulyani, 2017) provide evidence that account representative employee's performance has a positive and significant impact on taxpayer compliance. The evidence is different from the findings of other researchers, that the account representative employee's performance has a positive and insignificant effect on taxpayer compliance (Muammarsyah, 2011; Ashari et al., 2017). The inconsistency of the findings is shown by Sandi (2010), the account representative employee's

performance characterized by service and supervision has a positive and significant impact on taxpayer compliance, while consultation significant to taxpayer compliance.

The theory underlying the creation of influence among the variables built in this study refers to social learning theory proposed by Bandura (1977), that the social learning theory is relevant to explain the behavior of the taxpayer in fulfilling his obligation to pay taxes. The taxpayer will be obedient to pay taxes on time, if through his direct observation and experience; the tax levies have made a real contribution to development in his territory. Taxpayers will also be tax-imposed if they have received service and supervision and consultation from account representative employee's performance in accordance with their expectations as a manifestation of account representative employee's performance (Ulfah, 2018).

METHODS

This research is explanatory Research which attempts to explain causality relationship and to test and confirm the relationship between variables. The population in this study were 92,207 individual tax payers registered at KPP Pratama North Makassar in 2017 years, the sampling technique was performed by using simple random sampling with the support of slovin formula to obtain 100 person taxpayers on 0, 05%. To test hypotheses, we used structural equation modeling in WarpPLS 5.0 software. This is based on partial least square (PLS) and it is recommended for small-sized samples (Kock, 2011; Hasanuddin & Sjahrudin, 2017).

RESULTS

After completing the process of data collection, it can to achieve the participation of 100 individual taxpayers and valid questionnaires Wet considered as are presentative sample. Grouping of respondents by sex dominated by men as many as 58 people or 58.00%, that men have a level of awareness and compliance taxation more than women. At the age of respondents characterized by age 38-44 years or 36 persons (36.00%), that they are generally in a category that is physically relatively young, so they have a high working motivation to earn income and correlate with awareness and compliance in the field of high taxation. The marriage status of respondents dominated by respondents who have been married, i.e. by 83 people or 83.00%. It can be concluded that the married taxpayer has more ability in complying with applicable taxation provisions than the taxpayer of an unmarried person.

The higher the level of individual taxpayer education, the higher the awareness and compliance it has in the field of taxation, the condition can be seen in the table above, that the respondent is dominated by the last level of education i.e. Bachelor Strata One, which is 70 people or 70.00%. For the duration of the work, the respondents are dominated by a relatively new working period of 8-14 years i.e. 41 people or 41.00%. The condition explains that the taxpayer has sufficient financial ability so that they are willing to fulfill their tax obligation in accordance with the prevailing regulations. Finally in the field of work, the respondents are an Entrepreneur that is as many as 58 or 58.00%. The results explain that in general taxpayers have the ability to comply with applicable regulations, as every transaction in the business world (employers) is generally taxed and indicated on their tax report. Table 1. presents the results concerning the respondents 'characteristics.

Table 1. Respondents' characteristics

Characteristics	Frequency (<i>n=100</i>)	Percent
Gender		
Male	58	58,0
Female	42	42,0
Ages		
24 - 30 Years	14	14,0
31 - 37 Years	20	20,0
38 - 44 Years	36	36,0
45 - 51 Years	21	21,0
52 - 58 Years	8	8,0
59 - 65 Years	1	1,0
Marital status		
Single	13	13,0
Married	83	83,0
Separated/divorced/widowed	4	4,0
Educational level		
Senior High School	8	8,0
Diploma	12	12,0
Bachelor degree	70	70,0
Masters programs	10	10,0
Job tenure		
1 - 7 Years	38	38,0
8 - 14 Years	41	41,0
15 - 21 Years	15	15,0
22 - 28 Years	5	5,0
29 - 35 Years	1	1,0
Profession		
Entrepreneur	58	58,0
Civil servants/Army/Police	16	16,0
Private employees	26	26,0

Respondents' responses to the research variables can be shown in the following table:

Table 2. Respondents, Mean Convergent validity

Variables	Measurement	Mean	Convergent validity	
			First	Final
(TA)	The Act (X ₁₁)	3,94	0.74	0.81
	Tax function (X ₁₂)	3,54	0.28	*) < 0,60
	Taxation duties (X ₁₃)	4,13	0.86	0.86
	State financing (X ₁₄)	4,11	0.55	*) < 0,60
	Voluntary (X ₁₅)	3,94	0.78	0.80
	Reporting taxes (X ₁₆)	3,59	0.73	0.74
(ARP)	Service (M ₁₁)	3,66	0.91	0.95
	Consultation (M ₁₂)	3,64	0.92	0.95
	Control (M ₁₃)	3,47	0.61	*) Indicator value < 0,60
(TC)	Understanding of taxation (Y ₁₁)	3,11	0.75	0.75
	Filling in form (Y ₁₂)	3,52	0.87	0.87
	Calculate tax (Y ₁₃)	3,76	0.93	0.93
	Punctuality (Y ₁₄)	3,91	0.86	0.86

*) Unconditional if < 0.60

The average of response on average on the taxpayer awareness variable obtained value of 3.20 which means that the assessment of the respondents to the awareness of taxpayers is good enough; the most important indicator in explaining taxpayer awareness is shown through taxation liabilities with the average value of respondents of 4.13. This result explains that respondents understand their position as citizens and consequently their involvement as citizens in national development. In the final model, the taxpayer awareness variable is measured by four indicators, namely the act, taxation duties, voluntary and reporting taxes which can be used as a measure of taxpayer awareness variable because has a value of $LDF = 0.739 - 0.861 > 0.70$ with $p\text{-value} = <0.05$.

The mean value of account representative employee's performance is 3.59. These results prove that the employee's account representative performance quite enough. The most important dimension in explaining the account representative employee's performance is shown in the dimension service with the average score of respondents of 3.66. These results indicate the high ability of account representative employee's performance in receiving complaints and provide information and other tax services to taxpayers who made the maximum. In the final model, account representative employee's performance are measured by only two dimensions, namely service and consultation which can be used as a measure of account representative employee's performance because they have the same value $LDF = 0.951 > 0.70$ with $p\text{-value} = <0.05$.

The average value of taxpayer compliance variable of 3.58, this result proves that taxpayers have sufficient levels of compliance in settling taxation obligations that are their responsibility. The most important indicator in explaining taxpayer compliance is shown in the timely with the average score of respondents of 3.91, the results indicate that in general taxpayers in reporting and paying taxes, taxpayers do so in a timely manner proved with the obligation of the taxpayer to pay his tax before the specified date or time limit. In the initial model where the four indicators, namely: understanding of taxation, filling in form, calculate tax, and punctuality are still used as a measure of taxpayer compliance variable LDF value = $0.750 - 0.925$ where the value is > 0.70 with $p\text{-value} = <0.05$. The test of composite reliability variables considered to be reliable in explaining the data of the reliability, the test can be seen in the composite reliability and Cronbach's Alpha < 0.60 , for that can be shown in the following table:

Table 3. Latent variable coefficients (composite reliability)

Final Model	(TA)	(ARP)	(TC)	Moderating
R-Squared			0.534	
Adj. R-Squared			0.520	
Composite Reliability	0.879	0.950	0.913	0.966
Cronbach's alpha	0.815	0.894	0.872	0.959
Avr. Var.Extract	0.645	0.904	0.726	0.781
Full Collin. VIF	2.960	6.139	3.065	1.986
Q-Squared			0.654	

Contribution of taxpayers' awareness and account representative employee's performance to taxpayer compliance of 0,520 or 52.00% of the rest of 48.00% is influenced by other variables not analyzed. The results obtained value-relevance predictive of Q-Squared = 0.654 or 65.40%. This means the accuracy or accuracy of this research model can explain the diversity of taxpayer awareness variable to taxpayer compliance in moderation of representative account performance of 65.40%. The remaining 34.70% is explained by other variables not found in

this research model. Therefore the model is said to be good or the model is said to have a good estimation value. In the end the model can be used for hypothesis testing. That is, the value of Q-Squared obtained can be said that the model formed has an accuracy or accuracy of a good model because the value is above 60%.

The value of composite reliability for taxpayer awareness variable is $0,879 > 0,60$ while for performance variable account representative equal to $0,950 > 0,60$, then for taxpayer compliance variable equal to $0,913 > 0,60$ and last one in moderation variable obtained from multiplication between awareness of taxpayers with account representative employee's performance of $0.966 > 0.60$. Furthermore, for the value of Cronbach's Alpha on the taxpayer awareness variable of $0.815 > 0.60$, for account representative employee's performance of $0.894 > 0.60$ while for taxpayer compliance variable obtained Cronbach's Alpha value of $0.872 > 0.60$ and the last on moderation variables obtained from multiplication between taxpayer consciousness with account representative employee's performance equal to $0,959 > 0,60$.

In the test, it is average variance extracted (AVE) proved that taxpayer awareness has AVE value of $0.645 > 0.60$, account representative employee's performance has AVE value of $0.904 > 0.60$, and taxpayer compliance has AVE value of $0.726 > 0.60$, and lastly for moderate variables $AVE = 0.781 > 0.60$ obtained from the root interaction of taxpayer awareness variable with account representative employee's performance. Based on these results, it can be concluded that the overall dimensions or indicators of the three latent variables used in this study, namely taxpayer awareness, account representative employee's performance and taxpayer compliance have a reliable in explaining the variables analyzed including the effect variables interaction between taxpayer awareness with account representative employee's performance. Discriminant validity is assessed from cross loading measurements with constructs. Its can be seen by looking at loading latent constructs, which will predict the indicator better than other constructs. If the construct correlation (> on the left and right sides) then discriminant validity is met.

Table 4. Discriminant Validity

Variable	Dimention / Indicator	Loading factor value to another construct			
		(TA)	(ARP)	(TC)	Moderating
(TA)	X ₁₁	0.81 >	0.64	0.24	-0.67
	X ₁₃	0.86 >	0.57	0.37	-0.44
	X ₁₅	0.81 >	0.53	0.18	-0.35
	X ₁₆	0.74 >	0.67	0.51	-0.69
(ARP)	M ₁₁	0.78	0.95 >	0.70	-0.70
	M ₁₂	0.64	0.95 >	0.76	-0.46
(TC)	Y ₁₁	0.08	0.55	0.75 >	0.081
	Y ₁₂	0.25	0.60	0.87 >	-0.205
	Y ₁₃	0.49	0.78	0.93 >	-0.318
	Y ₁₄	0.49	0.67	0.86 >	-0.493
	M ₁₁ *X ₁₁	-0.73	-0.67	-0.35	> 0.89
Moderating (Interactions)	M ₁₁ *X ₁₃	-0.57	-0.59	-0.33	> 0.95
	M ₁₁ *X ₁₅	-0.50	-0.46	-0.06	> 0.86
	M ₁₁ *X ₁₆	-0.70	-0.63	-0.37	> 0.95
	M ₁₂ *X ₁₁	-0.59	-0.51	-0.29	> 0.73
	M ₁₂ *X ₁₃	-0.50	-0.59	-0.34	> 0.91
	M ₁₂ *X ₁₅	-0.53	-0.41	0.00	> 0.86
	M ₁₂ *X ₁₆	-0.56	-0.45	-0.28	> 0.91

The table 4 showing of the all indicators meets the criteria of discriminant validity. Taxpayer awareness, as measured by four indicators; $X_{11} = 0,806$, $X_{13} = 0.861$, $X_{15} = 0.801$ and $X_{16} = 0.749$, the total of loading value > compared with the loading value on the same line to construct another. The account representative employee's performance can be measured by two dimensional; $M_{11} = 0.951$ and $M_{12} = 0.951$ both have a loading value > compared to the loading values on the same line for the other constructs. The taxpayer compliance can be measured by four dimensional; $Y_{11} = 0.750$, $Y_{12} = 0.868$, $Y_{13} = 0.925$ and $Y_{14} = 0.856$ both have a loading value > compared to the loading values on the same line for the other constructs. The condition is similar to the moderating variable which is the interaction of the taxpayer awareness with account representative employee's performance which is denoted by $M_{11} * X_{11} = 0.890$, $M_{11} * X_{13} = 0.945$, $M_{11} * X_{15} = 0.856$, $M_{11} * X_{16} = 0.948$ and $M_{12} * X_{11} = 0.729$, $M_{12} * X_{13} = 0.915$, $M_{12} * X_{15} = 0.862$, $M_{13} * X_{16} = 0.907$.

Based on the description, it can be concluded that the overall indicator has met the criteria of discriminant validity. The next stage is to evaluate the structural (inner models) which includes test model fit, the path coefficient, and R-Squared. In the model fit test there are 3 test indices, the average path coefficient (APC), average R-squared (ARS) and average variance factor (AVIF) with APC and ARS criteria accepted with p -value < 0, 05 and AVIF < 5 (Mahfud Sholihin and Dwi Ratmono, 2013: 61).

Table 5. Fit Model

Criteria Model	Value	P-value	Remarks
Average path coefficient (APC)	0,300	$P < 0.001$	Fulfilled
Average R-squared (ARS)	0,339	$P < 0.001$	Fulfilled
Average adjusted R-squared (AARS)	0,325	$P < 0.001$	Fulfilled
Average block VIF (AVIF)	1,802 ≤ 5	-	Fulfilled
Average full collinearity VIF (AFVIF)	3,538 ≤ 5	-	Fulfilled

The test results show that models conformity Average path coefficient (APC) has an index of 0.300 with p -value < 0.001. While the Average R-squared (ARS) has an index of 0.339 with the p -value < 0.001. Then for the AVIF value must be < 5 is fulfilled because based on the fit model results obtained AVIF value of 1.802. Similarly in other test criteria, Average block VIF (AVIF) = 1.802 ≤ 5 and Average full collinearity VIF (AFVIF) = 3.538 ≤ 5 . Based on these results, it can be concluded that the analyzed model has met (fit model) or in other words *inner model* is acceptable. The verification of hypothesis can be shown in the following structural model:

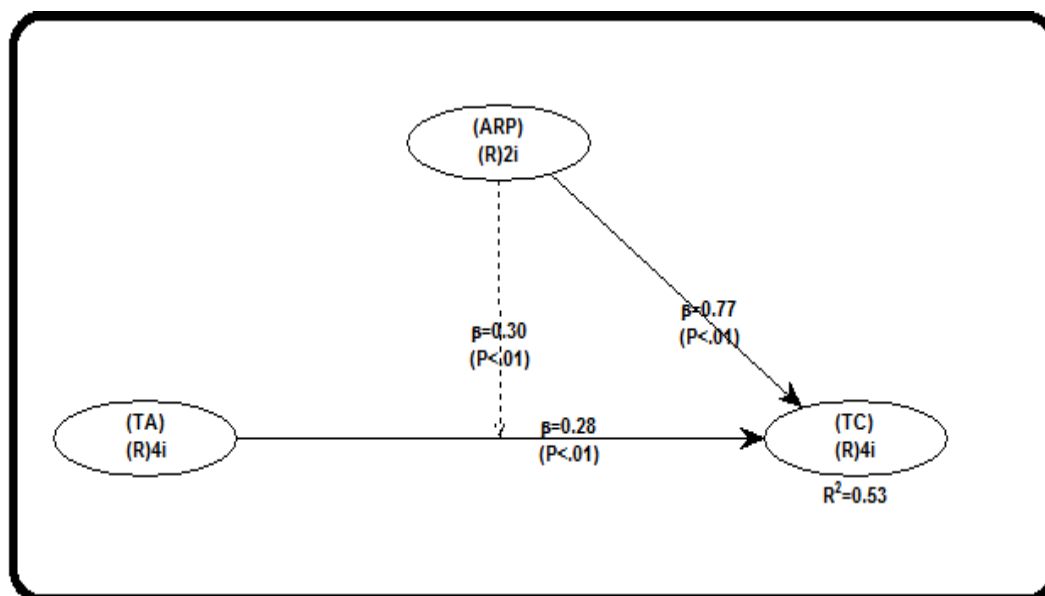


Figure 1. Structural Model

Figure 1. The model of structural equation shows the direction of influence between the variables built in this model that are adapted to the proposed research hypothesis. Explanation of the influence between the variables and the coefficient of path between the variables can be shown in the following table:

Table 6. Estimation and hypothesis testing

Final Model	(TA)		(ARP)		Moderating	
	Path coefficient (effect size)	P-value	Path coefficient (effect size)	P-value	Path coefficient (effect size)	P-value
(TC)	0,276 (0,116)	0,002	0,768 (0,592)	<0,001	0,300 (0,174)	<0,001

Taxpayer’s awareness has a positive and significant impact on taxpayer compliance.

The effect of taxpayer awareness on taxpayer compliance on WarpPLS5.0 program is described in linear form through curve s., where high taxpayer awareness proved able to improve taxpayer compliance. This can be interpreted that if there is an increase in the awareness of taxpayers, it will increase taxpayer compliance of 0.276. R-Squared value can be seen on effect size of 0.116 or 11.60% and the remaining 88.40% influenced by other variables. The coefficient value is a positive sign of 0.276, for that can be shown in the picture below:

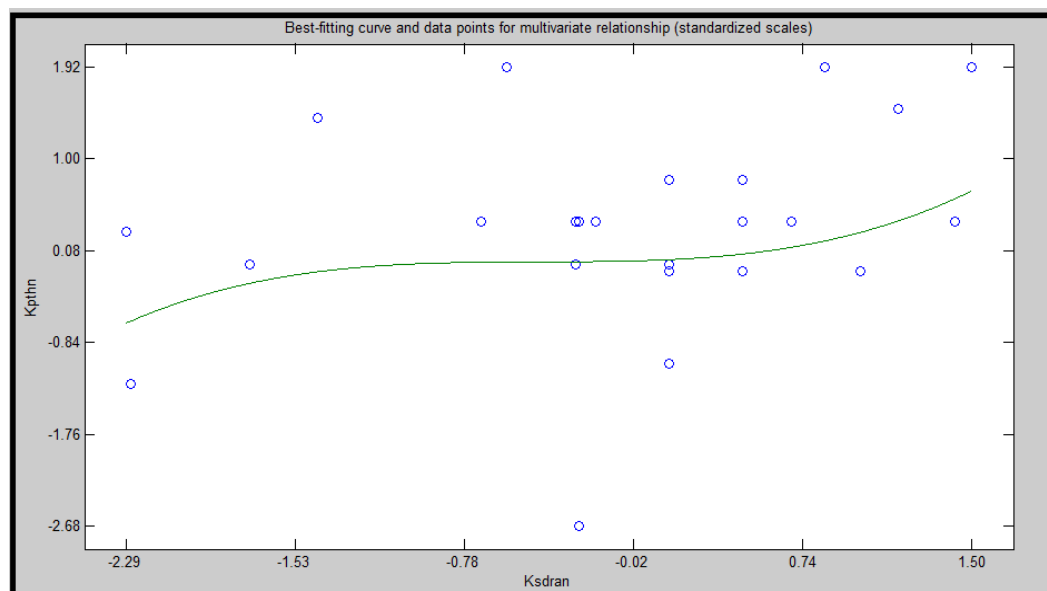


Figure 2. Curve s. linking of awareness on taxpayer compliance

The results of this study provide evidence that the taxpayer awareness have a positive and significant impact on taxpayer compliance this is evidenced by the positive sign coefficient value of 0.276, so it can be interpreted that the higher of taxpayers the awareness can be make the higher level of taxpayer compliance. Then it can also be proved by the probability value of $0.002 < = 0.05$. The results of hypothesis testing (H_1) prove that the higher of taxpayer's awareness then have an impact on the higher level of taxpayer compliance. This means the increase in taxpayer awareness in the direction of real and improvement taxpayer compliance, so the hypothesis that this research is the taxpayers awareness have a positive and significant impact on taxpayer compliance in KPP Pratama North Makassar can be accepted or supported by empirical facts.

Positive and significant influences value are caused because taxpayers have a high tax awareness is evidenced by the fulfillment of tax obligations that are seen as the consequences of citizens and citizen involvement in national development through their obligations as citizens proved able to give a meaningful impact on the high level of compliance compulsory taxes evidenced by the ability of taxpayers to calculate the tax correctly proved by the foresight and obedience and taxpayer accuracy to calculate their tax liabilities correctly. The results of this study support social learning theory (Bandura, 1977), that taxpayers (citizens) will be obedient to pay taxes on time, if through observation and direct experience of the taxpayer, the results of levies the tax has made a real contribution to development in its territory. Taxpayers will be aware to fulfill their obligations thereby impacting taxpayer compliance higher. The results of this study support the findings of some previous researchers (Dewi & Merkusiwati, 2018; Kesumasari & Suardana, 2018; Purba, 2018) that taxation awareness has a significant positive effect on taxpayer compliance. These results are different from the findings of other researchers, that consciousness is not significant effect on taxpayer compliance. This means the taxpayer considers that the obligation in paying taxes has no direct added value to him (Hidayati, 2014; Nugroho et al., 2016; Ndonga, 2018).

Account representative employee's performance has a positive and significant impact on taxpayer compliance

Account representative employee's performance to taxpayer compliance, described in linear form through curve s., where the account representative employee's high performance proved able to improve taxpayer compliance. This can be interpreted that if there is an increase in

account representative employee's performance, it will increase taxpayer compliance of 0.768. R-Squared value can be seen on effect size of 0,592 or equal to 59, 20% and the rest equal to 40, 80% influenced by other variables. The coefficient value is positive sign of 0.768, for it can be proved in the following figure:

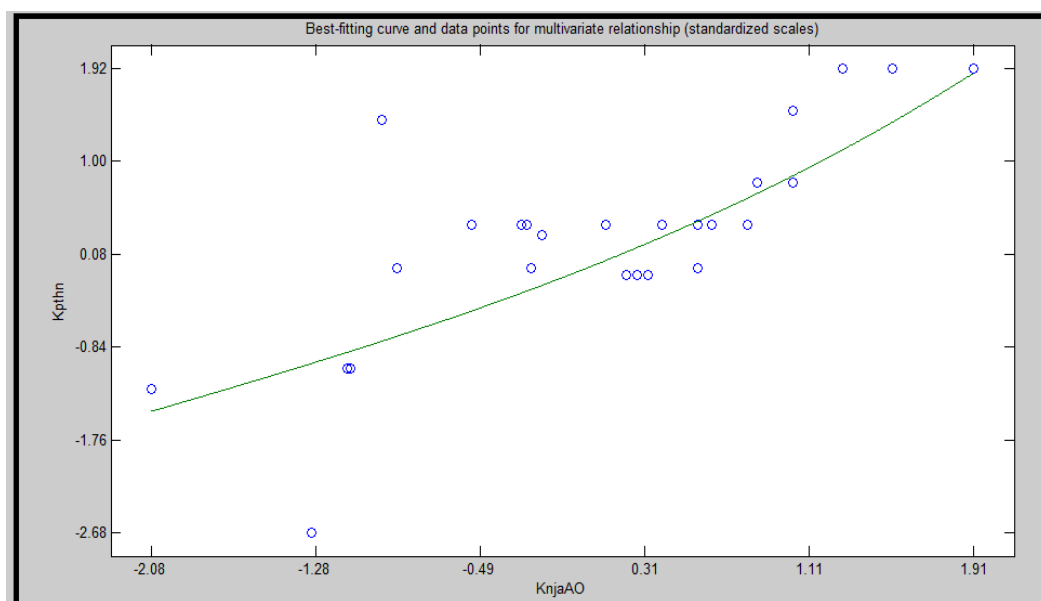


Figure 3 Curve s. Linking of Account representative employee's performance on taxpayer compliance

The results of this study provide evidence that the account representative employee's performance has a positive and significant impact on taxpayer compliance. This is evidenced by the positive sign coefficient value of 0.768, so it can be interpreted that the higher performance generated account representative employee it can be make the higher level of taxpayer compliance. Then it can also be proved by the probability value of $0.001 < \alpha < 0.05$. Hypothesis testing results (H_2) proves that the higher level of account representative employee's performance is proven the higher levels of taxpayer compliance. This means that the account representative employee's performance in the same direction and the real toward the improvement of taxpayer compliance, so that the hypothesis in this study is the account representative employee's performance has a positive and significant impact on taxpayer compliance on KPP Pratama North Makassar can be accepted or supported by empirical facts.

The positive and significant influence is caused because of the high of account representative employee's performance is evidenced by the high quality of service provided by account representative to the taxpayer indicated by the account representative's employee's willingness to receive complaints and provide information and other tax services to taxpayers are done to the maximum increase taxpayer compliance is evidenced by taxpayer compliance in reporting their tax obligations by filling out the tax form that has been prepared, in addition to the tax consultation process conducted account representative employee's performance to the taxpayer proved to improve taxpayer compliance to pay tax on time proved by the taxpayer's obligation to pay the tax before the specified date or time limit. The results support previous research that the account representative employee's performance positive and significant impact on tax compliance (Alfiansyah & Venusita, 2012; Setiawan, 2017; Ulyani, 2017).

The findings of this study rejected the results of research from other researchers, that the account representative employee's performance has a positive and insignificant effect on taxpayer compliance (Muammarsyah, 2011; Ashari et al., 2017). In addition, this study is relevant to the study conducted by Sandi (2010) that the account representative employee's performance characterized by service and supervision has a positive and significant impact on taxpayer compliance, but denied the research findings in other dimensions, i.e. on the dimensions of consultation have a positive and insignificant effect on taxpayer compliance.

Taxpayer awareness has a positive and significant effect on taxpayer compliance: The moderating role of account representative employee's performance.

Linking of taxpayer awareness on taxpayer compliance: The moderating role of account representative employee's performance is represented in linear form through Curve S., where high taxpayer awareness proved able to increase taxpayer compliance with reinforced account representative employee's performance. This can be interpreted that if there is an increase in the taxpayer's awareness, it will increase the taxpayer compliance moderated account representative employee's performance of 0.300. The R-Squared value can be seen on the effect size is a 0.174 or 17.40% and the rest of 82.60% influenced by other variables. The test results of moderating variables provide evidence that taxpayer awareness has a positive and significant impact on taxpayer compliance: The moderating role of account representative employee's performance. This is evidenced by the positive sign coefficient value of 0.300, so it can be interpreted that the high of taxpayer's awareness resulted in high with taxpayers compliance reinforced of account representative employee's performance.

The coefficient value is a positive sign of 0.300, for it can be proved in the following figure:

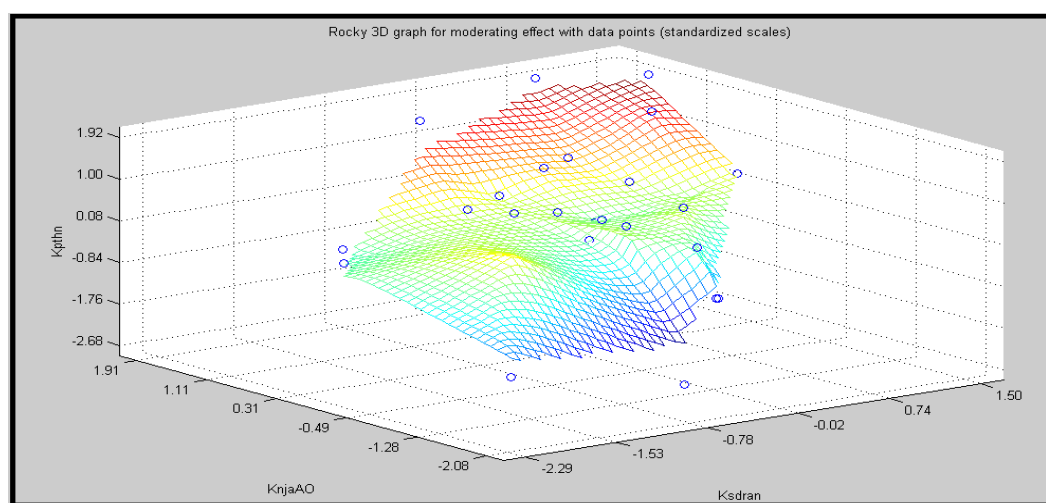


Figure 4. Contributions of account representative employee's performance

Then it can also be proved by the probability value of $0.001 < \alpha = 0.05$. Results of testing the hypothesis (H_3) demonstrate that the higher level of taxpayer's awareness then have an impact on the increasing levels of taxpayer compliance reinforced of account representative employee's performance. This means that the increase in tax payer awareness in the direction of taxpayer compliance is supported by the account representative employee's performance, so the hypothesis in this research is the taxpayer's awareness has a positive and significant impact on taxpayer compliance: The moderating role of account representative employee's performance KPP Pratama North Makassar acceptable or supported by empirical facts.

Positive and significant influences are caused due to the high of taxpayers awareness indicated by the fulfillment of tax obligations that are seen as the involvement of citizens in national

development through their obligations in paying taxes and then there is reinforced by account representative employee's performance which indicated the high quality of services provided to the taxpayer so as to prove capable of providing a meaningful impact on the high level of taxpayer compliance shown through the ability of taxpayers to calculate the tax correctly proved by the foresight and obedience and accuracy of taxpayers to calculate their tax liabilities correctly. The results of this study differ from the findings Research by Prihastanti & Kiswanto (2015) that the taxpayer compliance Rate of the agency against tax revenue is further weakened by the tax audit (account representative employee's performance) as a moderating variable. Then the results of this study are similar to the findings by Kiswara & Jati (2016) that the role of account representative employee's performance has a significant effect on taxpayer compliance.

CONCLUSION AND RECOMMENDATIONS

The contribution of taxpayers' awareness and account representative employee's performance to taxpayer compliance of 0,520 or 52.00% of the rest of 48.00% is influenced by other variables that are not analyzed. The value of predictive of Q-Squared = 0.654 or 65.40%. This means the accuracy or accuracy of this research model can explain the diversity of taxpayer awareness variable to taxpayer compliance in moderation of representative account performance of 65.40%. The remaining 34.70% is explained by other variables not found in this research model.

Taxpayer's awareness has a positive and significant impact on taxpayer compliance. This means the consciousness of the taxpayer in the direction and real to the improvement taxpayer compliance. This is caused because taxpayers have high tax awareness as evidenced by the fulfillment of taxation obligations that are seen as the consequences of citizens and citizen involvement in national development through their obligations as citizens proved able to give a significant impact on the high level of taxpayers compliance proved with the ability of taxpayers to calculate the tax correctly proved with carefulness and obedience and taxpayer accuracy to calculate their tax liabilities correctly.

The account representative employee's performance has a positive and significant impact on taxpayer compliance. This means that the account representative employee's performance the indirection of real and uniform improvement of taxpayer compliance is caused due to high performance is account representative evidenced by the high quality of service provided by account representative to the taxpayer indicated by the account representative's willingness to receive complaints and provide information and tax services other to the taxpayer is done to the maximum thereby improving taxpayer compliance proven with taxpayer compliance to pay tax on time proven with the obligation of taxpayers to pay tax before the date or deadline that has been set.

Taxpayer awareness has a positive and significant effect on taxpayer compliance in moderation of account representative employee's performance. This means that the increase in tax payer awareness toward the improvement of taxpayer compliance reinforced or supported by account representative employee's performance caused by the high level of the taxpayer awareness indicated by the fulfillment of taxation obligation which is seen as the involvement of citizens in national development through their obligation in paying taxes and then there is support (strengthened) account representative employee's performance that indicated the high quality of services provided to taxpayers so as to prove capable of providing a meaningful impact on the high level of taxpayer compliance is shown through the ability of taxpayers to calculate the tax correctly proved by foresight and obedience and accuracy taxpayers to

calculate their tax liabilities correctly. To the KPP Pratama North Makassar is suggested to increase the awareness of the taxpayer through the improvement of the tax function, that the taxpayer has not been fully aware if the tax usage collected from the community will be used to finance the development of the State.

This condition is caused by many facts found by the taxpayer if the taxes they paid during this time are often misused by certain parties (corrupted). Improving the performance of account representative can be done through improvements in tax supervision, that the ability of the taxation apparatus in carrying out supervisory functions because the low (not yet optimal) examination and investigation conducted account representative that affect the performance improvement account representative. Improvement of taxpayer compliance can be done through increased understanding of taxation, that taxpayers have a low tax understanding, evidenced by their low knowledge of the provisions of the law taxation in force Regulation of the Minister of Finance.No.74 / PMK.03 / 2012. To account representative should provide better service in the future which can be done through hospitality in the service and the provision of tax information to the maximum and the acceleration of the process of taxation services. To the advanced researchers are advised to develop this research model through the addition of variables that affect taxpayer compliance and expansion of research areas to obtain unbiased results.

References

- Alfiansyah, F., & Venusita, L. (2012). Influence Account Representative (AR) Against Personal Taxpayer Compliance (KPP Pratama Sidoarjo Utara). *Journal of Accounting UNESA*, 1 (1).
- Arum, HP (2012). The influence of taxpayers' awareness, tax service, and tax sanction on taxpayer compliance of private persons conducting business activities and free employment (study in kpp pratama cilacap region) (Doctoral dissertation, Faculty of Economics and Business).
- Ashari, A., Widodo, US, & Utami, RH (2017). Sunset Polcy Influence. Tax Amnesty, Tax Sanction, E-SPT and Performance Account Representative to tax compliance level. in proceedings of national & international seminars.
- Bandura, A. (1978). Social learning theory of aggression. *Journal of communication*, 28 (3), 12-29.
<https://doi.org/10.1111/j.1460-2466.1978.tb01621.x>
- Dewi, SK, & Merkusiwati, NKLA (2018) Effect of Taxpayer Awareness, Taxation Sanction, E-Filing, and Tax Amnesty Against Taxpayer Reporting Compliance. *E-Journal of Accounting*, 1626-1655.
- Diana, Sari. (2013). *Basic Taxation Concepts*. Bandung: PT Refika Adimata
- Hasanuddin, R., & Sjahrudin, H. (2017). The Structure of Emotional Intelligence, Spiritual Intelligence and Its Relationship with Work Enthusiasm and Auditor Performance. *World Journal of Business and Management*, 3(1), 67. <http://dx.doi.org/10.5296/wjbm.v3i1.11321>
- Herryanto, M., & Toly, AA (2013). Effect of taxpayer awareness, tax dissemination activities, and tax audit on income tax revenue in KPP Pratama Surabaya Sawahan. *Tax & Accounting Review*, 1 (1), 124
- Hidayati, IF (2014). Effect Analysis of Taxpayer Awareness, Knowledge and Understanding About Tax Regulation, Tax System Effectivity, Fiscal Services, and Tax Sanction on Personal Taxpayer Compliance (Case Study at KPP Pratama Surakarta) (Doctoral dissertation, Muhammadiyah University of Surakarta).
- Kesumasari, NKL, & Suardana, KA (2018). Influence Knowledge Taxation, Awareness and Knowledge Tax Amnesty On WPOP Compliance in KPP Pratama Gianyar. *E-Journal of Accounting*, 1503-1529.
- Kiswara, D., & Jati, IK (2016). The Effect of E-Filing Application and the Role of Account Representative Against the Imaging Tax Authorities and Compliance Taxpayers. *E-Journal of Accounting*, 349-377.
- Kock, N. (2011). Using WarpPLS in e-collaboration studies: Mediating effects, control and second order variables, and algorithm choices. *International Journal of e-Collaboration (IJec)*, 7(3), 1-13.
<https://doi.org/10.4018/jec.2011070101>
- Mardiasmo. (2011) *Taxation*. Edition Revisi.Yogyakarta: Publisher Andi.

Muammarsyah, N. (2011). Influence of representative account role, understanding taxpayer tax procedure, and service quality of integrated service place in tax office on taxpayer compliance in fulfilling its tax obligation (case study at eight pratama tax service office in South Jakarta).

Ndona, YR (2018). Analysis of the influence of awareness, tax knowledge and tax amnesty program on taxpayer compliance (Doctoral dissertation, Widya Mandala Catholic University Surabaya).

Nugroho, A., Andini, R., & Raharjo, K. (2016). The Effect of Taxpayer Awareness And Knowledge Taxpayer Taxpayer Compliance Taxpayer In Paying Income Tax (case study at KPP Semarang Candi). *Journal of Accounting*, 2 (2).

Prihastanti, R., & Kiswanto, K. (2015). Compliance rate of corporate taxpayer against tax revenue is moderated by tax audit. *Accounting Analysis Journal*, 4 (1).

Purba, Afrizal. M (2018). The Effect of Taxpayer Awareness, Fiscal Services, Taxpayers and Tax Sanctions Against the Formal Compliance Rate of Individual Taxpayer at Batam Primary Tax Office. *Journal of Accounting Barelang*, 2 (1),

Republic of Indonesia (2009). Law No. 16 of 2009 on General Provisions and Procedure of Taxation

Republic of Indonesia (2012). Regulation of the Minister of Finance No. 162 / PMK.011 / 2012 On Adjustment to the Amount of Non Taxable Income

Republic of Indonesia. (2012). Regulation of the Minister of Finance.No.74 / PMK.03 / 2012. about the criteria of obedient taxpayers.

Republic of Indonesia. (2013). Regulation of the Director General of Tax No. PER-03 / PJ / 2013 About. Guidance Counseling Taxation, Directorate General of Tax

Sandi, NB (2010). Analysis of the influence of consulting services, and account representative oversight of taxpayer compliance: empirical studies at Tangerang and Serpong tax office.

Setiawan, A. (2017). Influence Performance Account Representative, Self Assessment System, and Tax Inspection Against Taxpayer Compliance Level. *Equilibrium: Scientific Journal of Economics*, 12 (1), 77-90.

Sholihin, M., & Ratmono, D. (2013). Analysis of SEM-PLS with WarpPLS 3.0 for Nonlinear Relations in Social and Business Research. Yogyakarta: Andi Publisher.

Trisnayanti, IAI, & Jati, IK (2015). Effect of Self Assessment System, Tax Inspection, and Tax Billing on Value Added Tax (VAT). *E-Journal of Accounting*, 292-310.

Ulfah, S. (2018). Effect of Tax Corruption Perception, Service Quality, Tax Knowledge, Tax Sanction, and Religiosity to Taxpayer Compliance. Faculty of Economics of Islamic University of Indonesia

Ulyani, T.A. (2017). The influence of the taxpayer's perceptions on the application of e-system and account representative to compliance (study at tax office pratama kendari). *Journal of Accounting*, 1 (2).

Waluyo, & Wirawan, B.Ilyas. (2011). Indonesian Taxation, Book One, Edition 10. Jakarta: Publisher Salemba Empat.



Just in time and competitive advantage: understanding their linkages and impact on operational performance

Ramlawati

Lecturer in Management Science,
University of Muslim Indonesia, Indonesia

ABSTRACT

This study aims to analyze the influence of Just in Time on competitive advantage and operational performance. This research was carried out on a manufacturing company in Makassar Industrial Area, a sample of 40 respondents consisting of marketing managers, production managers and financial managers. The results of data analysis using Partial Least Square (PLS) provide evidence that Just in Time has a significant effect on competitive advantage and operational performance

Keywords: Just in time, competitive advantage, operational performance

INTRODUCTION

Makassar Industrial Region (KIMA) is an Industrial Region located north of Makassar City which has a very strategic location because it has very easy access to the Port and to the Airport. Access to Makassar Industrial Region can be via toll roads. Sometime in the future this industrial area will be connected to the trans-Sulawesi railroad roads. Thus, the process of transporting raw materials becomes easier and cheaper. Makassar Industrial Region is also equipped with various supporting facilities, namely water-treatment, third-party services such as electrical energy sources from PT Perusahaan Listrik Negara (PLN) (Persero) and clean water from Regional Water Supply Companies (PDAM) Makassar City and networks telecommunications from PT Telkom Indonesia (Persero). The availability of these supporting facilities is expected to stimulate the interest of entrepreneurs or investors to place their business in the Makassar Industrial Region. In addition, Makassar City is located in the middle of Indonesia, whose territory stretches from Sabang to Merauke, and in the Makassar Strait which is the shipping axis from Australia to the East Asia and Pacific Ocean regions.

The position of Makassar Industrial Region which strategically gives economic value to companies located in Makassar Industrial Region. Transportation facilities and other supporting facilities contribute to the company's business, especially manufacturing companies in the implementation of the Just in Time Production System. On the other hand there has been an awareness of entrepreneurs to adopt the ISO 9001: 2008 Quality Management System and SNI-19-9001: 2008. Through the implementation of a Quality Management System consistently, the quality of output can be improved.

This is a support for companies to have a competitive advantage. In turn, companies can improve their operational performance. Various philosophies and approaches to developing manufacturing and service businesses have been introduced by a number of experts. The Toyota Production System (TPS) in its implementation has several approaches, including Just in Time (JIT) and Total Quality Control (TQC) which is then refined to Total Quality Management (TQM), in addition there are several other approaches, namely Total Preventive Management (TPM), Kaizen and Poka Yoke. All of these approaches in their application in various manufacturing and service companies turned out to yield good results. Empirical evidence shows that just in time (JIT), Supply Chain Management (SCM) and Total Quality

Management (TQM) at the strategic and operational levels contribute positively to the company's performance, commitment to the quality and dynamics of Supply Chain Management is a very factor in improving company performance (Kannan & Tan, 2005).

Application of just in Time and inventory systems provide a strong influence on the efficiency, quality of output and flexibility of small and medium scale manufacturing companies in South Africa (Mazanai, 2012). An interesting result is shown that JIT-purchasing has a direct positive relationship with agile manufacturing. Improved operational performance resulted in an increase in firm performance as a consequence to agile manufacturing is mediated by JIT-purchasing. Agile manufacturing has a direct positive relationship with the company's operational performance and the company's operational performance has a direct positive relationship with the company's marketing performance. In addition, it is also proven that there is a positive relationship between operational performance and the company's financial performance is mediated by marketing performance (Inman et al., 2011). The findings relevant to some of these studies also show similar evidence that compatibility of the JIT, TQM and TPM practices are associated with the implementation of both socially and technically-oriented practices of the three programs (Cua et al., 2001). Some of the findings from previous researchers are the reason for this research, which is whether there is a direct influence of JIT on operational performance and how the role of competitive advantage is as a variable mediated. This is important to do because the intense competition at this time encourages manufacturing companies to be the best so that the company can preserve its existence. Competitive advantage is expected to be obtained through the implementation of JIT. The application of JIT directly or indirectly through competitive advantage is expected to improve the company's operational performance. Operations managers in manufacturing companies are expected to find the right method so that the company has a competitive advantage. This expectation is in line with the views of scholars (Heizer & Render, 2005; Mulia, 2009), that the success of forming a unique and high-superior system compared to competitors can improve the company's capability in operations and marketing so that it can serve all its customers efficiently, consistent and sustainable.

LITERATURE REVIEW

Operational performance

Operational performance as the ability of product makers to find standards of expectations built for customers (Tracey & Vonderembse, 2000). Other scholars say that operational performance is an achievement to measure whether the product produced is in accordance with the product planned (Christiansen et al., 2003). Operational performance refers to measurable aspects of the results of an organization's processes, such as reliability, cycle of production time and inventory turnover. Operational performance in turn affects business performance measures such as market control and customer satisfaction (Voss et al., 1997).

The company's operational performance can be assessed or viewed from two dimensions, namely: dimensions of cost, flexibility and quality of delivery (Brah & Lim, 2006). The cost dimension is measured by five indicators, and the dimensions of flexibility and quality of delivery are measured by three indicators (Carton, 2004; Carton & Hofer, 2006; Venkatraman & Ramanujam, 1986). This operational performance can be measured using measurements such as market share, new product launches, quality, marketing effectiveness, and customer satisfaction. Other scholars identify operational performance from the waste level, productivity, cycle time aspects (Lakhali et al., 2006). Operational performance refers to the measurable aspects of the results of an organization's processes, such as reliability, cycle of

production time and inventory turnover. Operational performance in turn affects business performance measures such as market control and customer satisfaction (Voss et al., 1997).

Competitive advantage

The competitive advantage is an advantage against competitors gained by offering a lower value or to provide a greater benefit because the price is higher (Kotler & Armstrong, 2003). An important factor in creating competitive advantage is an efficiency, innovation, quality, and customer response. Companies that are able to adopt the four basic components of Competitive Advantage will succeed in cost leadership and differentiation, and ultimately gain competitive advantage. These four factors can be explained as: (1) Efficiency, (2) Quality) Innovation, Customer response (Chin & Heng, 2009). There are five dimensions of priority for competitive advantage, namely: (1) Price; (2) Quality; (3) Dependability; (4) Product Flexibility; (5) Volume Flexibility (Hayes & Schmenner, 1978). Competitive advantage of a company can be measured using indicators; price, quality, delivery dependability, product innovation, and time to market (Li et al., 2006).

Just In Time.

Just-in-Time is known as a philosophy for completing products at every instant (Just-in-time) and with a minimum cost that aims to eliminate waste through continuous improvement on all key aspects of the production process including several factors that influence the application of the model and inventory method (Kannan & Tan, 2005). Just-in-time contributes to the company through; (1) reduce the amount of inventory in the process, goods purchased and finished goods; (2) reduce floor area requirements; (3) improve the quality and reduce the wasted goods and which must be reworked, (4) reduce the production time cycle; (5) provide high flexibility to produce various types of goods; (6) smoother production flows, fewer production disruptions caused by quality problems, shorter tide times, jobs with several skills that can help each other and replace other workers when they are unable to attend; (7) increase productivity and use of machinery and equipment; and (8) participation of workers in solving problems (Stevenson, 2002).

Just in Time are defined as a time base marketing pull strategy combined with total process minimization. The purpose of this strategy is the delivery of products and services that are zero defects in the right number at the right time and right as desired by consumers while minimizing the type of waste. Implementation of this strategy reconciles fundamental changes in the way the sales function is implemented, which requires sellers to produce strong alliances with consumers (Germain et al., 1994). The JIT production strategy is applied to all modern industrial systems from engineering (engineering), material ordering from suppliers, material management in industry, manufacturing processes, to distribution of industrial products to customers. "It appears that modern industrial systems are oriented to customer satisfaction by way of integrating the three main components, namely: material supplier (input), manufacturing process (factory process) and customers (customers) as a complete system (Gaspersz, 2005).

The instrument used to measure just-in-time in this study uses: (1) limited number of suppliers, (2) minimum inventory in the factory, (3) factory layout, (4) reduction in set up time, (5) integrated control and (6) flexible labor (Simamora, 2002). JIT-purchasing is understood as a delivery control system and makes quantitative models to compare it with traditional procedures (Chyr et al., 1990; Fazel, 1997; Fazel et al., 1998). Other researchers use broader perspectives and focus on identifying practices that describe JIT-purchasing which aims to transfer the JIT production system into the supply chain (Schonberger & Gilberg 1983; Lee & Ansari, 1985; Fawcett & Birou, 1993; Waters, 1995; Ansari & Modarres, 1988; De Toni &

Nassimbeni, 2000). Therefore, this practice affects not only logistics but also other aspects related to supply relations, such as procedures, selection, design specifications or length of contract (González-Benito & Spring, 2000).

Some other researchers consider Just In Time Purchases as a result of several cooperative principles and advantages of risk sharing between buyers and suppliers (O'Neal, 1987; Leavy, 1994). JIT total system contains three dimensions, namely Just in Time purchase, Just in Time production and Just in Time sales. As expected it was found that Just in Time the total system was positively related to financial results. Correlation matrix shows the same results when Just In Time sales are considered separately Although they do not provide a specific definition of Just In Time sales, they continue to operate (Claycomb et al., 1999). Other researchers' findings provide evidence that the percentage of open-ended single sales made according to JIT questions. They identify this single measurement as a limitation of study and require future research to produce a valid and feasible measurement scale (Germain et al., 1994).

RESEARCH FRAMEWORK

Conceptually the statement of the relationship between research variables is built based on relevant theories and the results of previous research. Theoretical and empirical findings are used as a basis for describing the conceptual framework of research and are used as a basis for deriving the research hypothesis. Competitive Advantage Theory explains that there are four main attributes that make up the environment in which the company competes in such a way, which encourages the creation of competitive advantage (Michael E. Porter, 1990), these four attributes are: (1) production factor conditions, namely the position of a country in a factor production (e.g. skilled labor, infrastructure, and technology) needed to compete in certain industries, (2) demand conditions, namely the nature of domestic demand for certain industrial products or services, (3) related and supporting industries, namely the presence or absence of industry suppliers and related industries that are internationally competitive in the country, and (4) Strategy, structure and competition of companies, namely domestic conditions that determine how companies are formed, organized and managed and the nature of domestic competition. Other scholars explain competitive advantage as everything that is intended to create competitive advantage.

The company is advised to form a unique system and has distinctive advantages compared to its competitors. This is done by submitting the best according to what is expected by consumers efficiently and continuously (Meylianti & Mulia, 2006; Heizer & Render, 2005). There are five objective bases for operational performance that are considered to be applied to all types of operations. Operational performance indicators that can be implemented include quality, speed of delivery, networking, flexibility and cost. This indicator provides support for competition. The application needs to be supported by operating management tools and techniques, such as Kanban System, Statistical Process Control (SPC) and JIT (Slack et al., 2004). All of this equipment focuses on activities that do things better, faster, more efficiently and cheaper (Staughton & Johnston, 2005).

Just in Time is a philosophical concept to produce products that are needed when the customer needs the appropriate amount of needs, as well as a primary quality level. At every stage of the process in system manufacturing carried out in the most economical and efficient way through elimination of waste and process improvement continuously (Gaspersz, 2008) Empirical evidence shows that so is just-in-time (JIT), that in order to face competition, every company is required to always increase competitive advantage, both in the domestic market and in the global market. To increase competitive advantage, many companies apply various

management models, one of which is just-in-time (Ramarapu et al., 1995). Relevant to these results, the findings of other researchers indicate that there is a positive and statistically significant relationship. Implementing a JIT system, competitive advantage can be achieved for the manufacturing company concerned, namely achieving three dimensions of competitive advantage (low production costs, excellent product quality and financial performance the good (Alshbiel & Al-Awaqleh, 2012).

Wider results show that a structural model combines agile manufacturing as a theoretical construct and will be tested. This model includes the main components of JIT (purchasing and JIT-production) as antecedents and operational performance and company performance as a consequence of agile manufacturing Using data collected from production and operations managers working for producers in the United States The model used follows the structural equation methodology. The results show that JIT-purchasing has a direct positive relationship with agile manufacturing while a positive relationship between agile manufacturing is mediated by JIT-purchasing. The results also show that agile manufacturing has a direct positive relationship with the company's operational performance, that the company's operational performance has a direct positive relationship with the company's marketing performance and that a positive relationship between the company's operational performance and the company's financial performance is mediated by the company's marketing performance (Inman et al., 2011). These facts and statements form the basis for the use of hypotheses in this study, so that they are described as follows:

- H₁ : Just in time are more likely to be associated with significant improvements in competitive advantage.
- H₂ : Competitive advantage are more likely to be associated with significant improvements in operational performance
- H₃ : Just in time are more likely to be associated with significant improvements in operational performance
- H₄ : The positive association between just in time and operational performance is mediated through competitive advantage

METHODS

The research is survey type and data were collected using questionnaire, and 40 people (i.e. marketing managers, production managers and financial managers) were selected as sample using simple random sampling. In order to answer the research hypotheses, confirmatory factor analysis (CFA) and structural equation modeling (SEM) using SmartPLS software were utilized

RESULTS

Outer model (measurement model)

The outer model or measurement model is the assessment of the validity and reliability. There are three criteria for assessing the outer model, namely: convergent validity, convergent validity test is used to test whether the indicators used are able to measure latent constructs accurately (Hair et al., 2014). The latent variable indicator is represented by the dimension score that has previously been tested for its validity and reliability. From testing convergent validity with SmartPLS can be seen the value of loading factor for each indicator. Loading factor values are identical to simple correlations between indicator scores and latent variable scores. The cut-off value required is at least 0.7 or t-statistics > 1.96 (Ghozali, 2011). The result of convergent validity indicators of the study are presented in Table 1.

Table 1. Loading factor and composite reability

Variable	Construct / Items	Loading Factor	t-statistics	Composite Reability
Operational performance (KOP)	KOP ₁	0.907	29.969	0.963
	KOP ₂	0.904	37.280	
	KOP ₃	0.886	21.049	
	KOP ₄	0.927	28.599	
	KOP ₅	0.959	122.282	
Competitive advantage (OPT)	KPT ₁	0.965	69.224	0.941
	KPT ₂	0.849	12.639	
	KPT ₃	0.956	106.321	
	KPT ₄	0.846	12.033	
	KPT ₅	0.731	8.972	
Just-in-Time (JIT)	JIT ₁	0.772	13.568	0.917
	JIT ₂	0.817	14.419	
	JIT ₃	0.784	10.883	
	JIT ₄	0.764	11.874	
	JIT ₅	0.861	33.559	
	JIT ₆	0.833	18.861	

The value of Just in Time has a value > 0.70 so that all the indicators that make up the variable in question fulfill convergent validity. For the operational performance variable, the biggest contribution is by Y₂₅ (ability of the company to meet customer needs), and the lowest contribution of its formation is Y₂₃ (adjustment of products with baking needs), on the variable the Competitive Advantage biggest contribution of its formation is Y₁₁ (price advantage) and contribution the lowest formation is given by Y₁₅ (Time to Market), and the Just In Time variable has the largest contribution, X₁₅ (integrated quality control) and the lowest contribution is the formation of X₁₁ (number of suppliers). And it can be seen that the variable t-statistic is just in time, competitive advantage, and operational performance in this study is greater than 2,024. This shows that the indicators are valid.

Discriminant validity

Test Subsequent testing in the partial least square analysis is discriminant validity. An indicator is said to meet discriminant validity if the value of cross loading indicator on the construct is the biggest compared to other constructs. Following are the results of the cross loading output. Discriminant Validity is used to test whether the indicators of a construct are not highly correlated with other construct indicators or at least these indicators are lower correlated with other construct indicators (Hair et al., 2014). Testing discriminant validity by comparing loading with cross-loading

Table 2. Discriminant validity test (cross loadings)

Variable	Indicator	KOP	KPT	JIT
Operational performance (KOP)	KOP ₁	0.907	0.542	0.506
	KOP ₂	0.904	0.454	0.439
	KOP ₃	0.886	0.491	0.409
	KOP ₄	0.927	0.509	0.493
	KOP ₅	0.959	0.631	0.625
Competitive advantage (KPT)	KPT ₁	0.548	0.956	0.706
	KPT ₂	0.504	0.849	0.643
	KPT ₃	0.565	0.965	0.739
	KPT ₄	0.524	0.845	0.656
	KPT ₅	0.365	0.731	0.519
Just-in-Time (JIT)	JIT ₁	0.387	0.617	0.772
	JIT ₂	0.368	0.530	0.817
	JIT ₃	0.425	0.600	0.784
	JIT ₄	0.469	0.522	0.764
	JIT ₅	0.511	0.687	0.861
	JIT ₆	0.471	0.658	0.833

Table 2. Shows that each indicator has a value which is the biggest factor loading on variables that shape when compared with the value of the other variables. Therefore it can be concluded that all empirical indicators used have met discriminant validity criteria when viewed from the results of cross loading.

Reliability analysis

Reliability reflects the consistency of the results of repeated measurements on the same subject. If the results are consistent, then the measuring instrument is considered reliable or reliable. The reliability test as a set of latent variables consistent with measurement, that the high level of reliability means being able to provide reliable measurement results. The criteria for determining the level of reliability according to the level of reliability of a construct reliability in a Structural Equation Model (SEM) are calculated by looking at the composite reliability value, where if the composite reliability value is greater than 0.7 it can be declared reliable (Ghozali, 2011; Sjahrudin, & Sudiro, 2013; Hair et al., 2014). In summary, the latency composite reliability value can be described as follows: operational performance = 0.963, just in time = 0.917 and competitive advantage = 0.941. This means that the indicators support each other to be used as a measure of latent variables (see in table 1).

Inner model (structural model)

Testing the inner model (original sample estimated) is used to test the hypothesis proposed in this study because the hypothesis formulated is reflected in the paths in the model. The results of testing the inner model can be seen in Figure

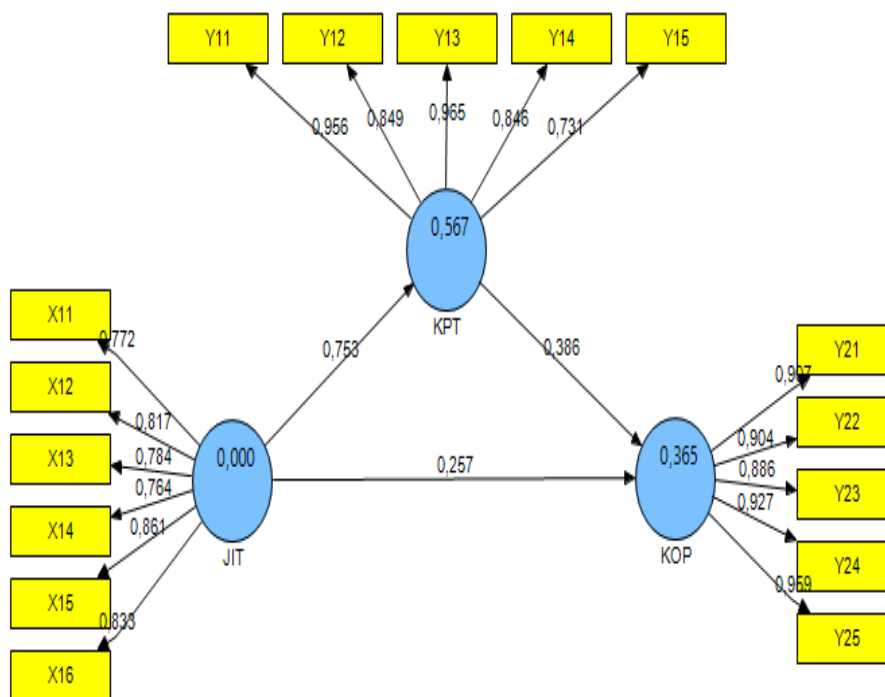


Figure 1. Inner model

Goodness of fit test

This test is intended to determine how much the results of the model are able to explain the variation of the original variable (score) variables. The test was carried out with Stone-Geisser Q Square test. From the inner model it is known that there are two endogenous variables namely Competitive Advantage and Operational Performance so that two determinant coefficients are obtained. The determinant coefficient value for each endogenous variable is as in the following table:

Table 3. R-square

Equations	Exogenous Variable	Endogenous variables	R-square
1.	JIT	KPT	0.566947
		KOP	0.364784

Next based on the coefficient of determination of each dependent variable Q² with the formula:

$$Q^2 = 1 - (1 - R_1^2) (1 - R_2^2)$$

Description:

R₁² = Coefficient of determination (KPT)

R₂² = Coefficient of Determination (KOP)

$$Q^2 = [1 - (1 - 0.566947) (1 - 0.364784)]$$

$$Q^2 = [0,724484753] = 0.72,45\%$$

Based on the coefficient of determination of the two endogenous variables in the model, it can be seen that Stone-Geisser Q Square is 0.72448 or 72.45%. These results indicate that the model has good feasibility because it is able to explain the information contained in the original data of 77.2% while the rest is 27.55%, explained by other variables and error variables. The value of the determination coefficient is high, so the model is worth interpreting.

Hypothesis testing

Research proposes 4 (four) hypotheses, testing hypotheses in the SmartPLS analysis, basically testing the significance of the path coefficients in the model, to conclude whether the research pathway or hypothesis is proven, if the path coefficient value is ≥ 2.024 .

Table 4. Hypothesis Testing of Direct and Indirect

EXV	MV	ENV	DE	IE	TE	P-value >2.024
JIT	→	KPT	<u>0.753</u>	-	<u>0.753</u>	18,148
JIT	→	KPT	<u>0.257</u>	-	<u>0.257</u>	2,055
KPT	→	KOP	<u>0.386</u>	-	<u>0.386</u>	4,139
JIT	→ KPT →	KOP	<u>0.753</u>	<u>0,153</u>	<u>0,906</u>	<u>4,090</u>

Notes:

EXV	:	Exogenous variable	DE	:	Direct effect
MV	:	Mediating variable	IE	:	Indirect effect
ENV	:	Endogenous variable	TE	:	Total effect

Just in time to be associated in competitive advantage

In face of competition globally, every company is required to always increase competitive advantage, both in the domestic market and in the global market. To increase competitive advantage, many companies apply various management models (i.e. Just in Time) (Ramarapu et al., 1995). The results of the descriptive analysis of the variable value (mean) the average score in just in time variables was obtained through an integrated quality control indicator which has the highest value of 4.26, among the five other indicators of just in time variables while the lowest is the level indicator minimal. Based on empirical facts, integrated quality control indicators are shown by not receiving defective components or raw materials from suppliers, suppliers are responsible for components and raw materials before the production process is carried out, and production part employees are responsible for supervision of the products already good if used as a measurement or an indicator of just in time variables so it must be maintained. Just in time, is competitive in competitive advantage. Based on the results of the analysis, the t-statistic value is 18,148. Then for the t-table at the 0.05% error level is = 2.024. Based on these results it can be stated that the value of t-statistics > t-table or 18.148 > 2.024.

This means applying Just in Time positive and significant influence on competitive advantage. Coefficient value with a positive sign explains that if JIT application is improved, the competitive advantage of manufacturing companies will also increase, so the first hypothesis proposed in this study is proven to be accepted or supported by empirical facts. Results Outer Loadings show the same fact that important or dominant factors reflecting just in time variables are statistical control indicators of 0.892 or 89.2% of their roles in reflecting just in time. The results of this study confirm that good in-time is reflected through a variable indicator of statistical quality control. Whereas variable indicators have the smallest contribution in reflecting just in time latent variables, which are minimal inventory levels, it needs serious attention from the management of manufacturing companies in Makassar Industrial Area. The just in time effect on competitive advantage can be proven by the path coefficients value of 0.265 with a positive direction. The positive influence coefficient means that good just in time tends to increase the company's competitive advantage. Besides that, it can also be proved by the value of T Statistics ($|O / \text{STER}| = 2.708956 > 1.96$ (t-critical)).

The test results prove that just in time has a positive and significant effect on the competitive

advantage of manufacturing companies in Makassar Industrial Area. Based on these conditions it can be concluded that just in time changes are positive and real towards increasing the company's competitive advantage so that it can be supported by empirical facts. The indicator that contributes the most to the formation of Just in time variables is an indicator of integrated quality control and skilled labor. This reveals that to increase the support capacity of just in time to competitive advantage and operational performance, companies must produce quality products, through the most efficient and economical way, and on time, that is when the product is needed by consumers. Quality control involves developing a system to ensure that the product is designed and manufactured to meet the requirements of the customers and producers themselves. The results of this study support conceptual stating that Just in time is a comprehensive production system (all parts) and inventory management system where materials and spare parts are purchased and produced as much as needed and at the right time at each stage of production. This is inseparable from the skilled workforce that the company has expertise in operating all production equipment or machines contained in the work line, and equipped with skills, maintenance of production equipment used to be able to carry out maintenance and repair it if it experiences interference (Chen et al., 2006).

The results of this study are in line with statements from several experts that the successful implementation of JIT in a company can improve the quality of products and services produced, reduce operational costs, and increase customer satisfaction (Sakakibara et al., 1997; Golhar & Stamm, 1991). The results of this study are in line with the findings of previous researchers that the application of just in time has a significant effect on competitive advantage (Alshbiel, & Al-Awaqleh, 2012). Just-in-time implementation can provide great benefits to companies in the form of reducing inventory costs, increasing productivity, and better product quality, thus ultimately increasing the company's competitive advantage (Golhar & Stamm, 1991).

Just in time to be associated in operational performance

Just-in-time is the manager's response to the inventory and production control system that is carried out continuously to suppress corporate waste. The results of the descriptive analysis show the empirical condition that the application of the six indicator variables Just-in time, namely the limited number of suppliers, inventory level of control, appropriate delivery of orders, statistical quality control, and employee flexibility are seen as important in explaining just in time variables. Variable indicators that have the highest average (mean) score indicated by the indicator of the number of suppliers with an average score (mean) of 4.30, this condition can be explained that the supplier is responsible for supplying raw materials that are not defective and part employee's production responsibility for production. Just in time are more likely to be associated with significant improvements in operational performance.

Hypothesis testing provides evidence that the value of t-statistic is = 3,853. Then for the t-table value at the 0.05% error level is = 2.024. Thus the value of t-statistics > t-table, or 3,853 > 2,024 is obtained. This means that the application of competitive advantage has a positive and significant effect on operational performance. A positive path coefficient value explains that if the company's competitive advantage is increased, the increase will have an impact on improving the operational performance of the manufacturing company. So that the third hypothesis proposed in this study is proven to be accepted or supported by empirical facts. Outer Loadings results indicate that important or dominant factors reflecting just in time variables are the same indicators as the results of descriptive statistics, namely on the quality control variable indicator with the Outer Loadings value of 0.899, meaning that to produce a quality product with the use of a raw material inventory control system function to minimize

the occurrence of waste can be achieved by increasing the responsibility of suppliers to the supply of raw materials and employee responsibility for the creation of quality products that have a contribution or role of 89.90% in reflecting the just in time variable, but it can also be explained that the lowest contribution is based on factor analysis confirmatory is shown through minimal inventory levels.

Based on the indicators of the indicator managers who need to get serious attention in the management of just in time is a good indicator that is the minimum inventory level so it is very important to be improved. The results of testing the effect of just in time on operational performance can be proven by the Path Coefficients of 0.241 with a positive direction. The positive influence coefficient means that good just in time tends to improve operational performance. Then it can be proved T Statistics ($|O / STERR 1.003955 (t\text{-critical}) > 0.196$). The findings of this study prove that just in time has a positive and significant effect on improving operational performance. The results of testing just in time effect on operational performance based on the value of the Path Coefficients amounting to 0.241 with a positive direction, this is because managers generally agree that there are even some managers who strongly agree if the company purchases parts and raw materials only when the product is ordered and the amount of raw material to be produced is in accordance with the number of orders and the company does not store spare goods in the warehouse as a reflection of the indicator of the minimum inventory level variable. That condition can be concluded that the inventory and production control system carried out continuously has been carried out properly so that the company does not incur unnecessary costs yes (there is no waste of costs).

The poorly resulting consequences of a implemented inventory and production control system and the occurrence of cost waste, have an impact on the company's low ability to reduce production costs (indicators of financial performance variables) and the inability of companies to meet customer / market needs (indicator of operational performance variables). In general, it can be stated that just in time has not been implemented properly, which has an impact on the occurrence of a decrease in the performance of manufacturing companies in the Makassar Industrial Area. This research is in line with the findings of previous researchers that the application of JIT in a company can improve the quality of products and services produced, reduce operational costs, and increase customer satisfaction that affect the company's financial performance (Flynn et al., 1995). This study is relevant to findings that provide evidence that JIT production positively influences efficiency and delivery (Danese et al., 2012).

Competitive advantage to be associated in operational performance.

The creation of a high competitive advantage can be done by creating a special competitive advantage so that companies have a strong bargaining position (bargaining power) in business competition (Porter, 1990). Competitive advantage is more likely to be associated with significant improvements in operational performance. Based on the results of the analysis, the value of t-statistic was 2.055. Then for the t-table value at the 0.05% error level is = 2.024. Thus the value of t-statistics is obtained $> t\text{-table}$ or $2.055 > 2.024$. This means applying Just in Time positive and significant effect on operational performance. Path coefficient value positive sign explains that when applying Just in Time improved, the increase in operational performance will also increase, so that the second hypothesis proposed in this study is proven to be accepted or supported by empirical facts.

Analysis of outer loadings show that important or dominant factors that reflect competitive advantage variables are indicators of price excellence in reflecting competitive advantage. The results of this study confirm that a high competitive advantage is reflected through variable indicators of price excellence. While variable indicators that have the smallest role or

contribution in reflecting the latent variable of competitive advantage is the time to market variable indicator, so it needs serious attention from the management of manufacturing companies in Makassar Industrial Area.

The effect of competitive advantage on operational performance can be proved by the path coefficients value with a positive direction. Positive influence coefficient means that high competitive advantage tends to improve operational performance. Besides that, it can also be proven that the T Statistics value is greater than the critical value. The test results prove that competitive advantage has a positive and significant effect on the performance of manufacturing operations in the Makassar Industrial Area. Based on these conditions it can be concluded that changes in competitive advantage are positive and real towards improving operational performance so that they can be supported by empirical facts. This finding is relevant to the findings of previous scholars that there is a significant relationship between competitive advantage against supply chain performance only accepted at high operational performance but rejected at low operational performance (Chi et al., 2009). In contrast to the results of other studies that competitive advantage does not have a significant effect on the operational performance of small companies, but on large scale companies have a significant effect (Wook, 2006).

Just in time and operational performance is mediated through competitive advantage.

Based on The Sobel's test is to determine the indirect coefficient of influence shown in Table 3. That just in time indirectly has a significant effect on improving operational performance, as well as competitive advantage on operational performance. So it can be concluded that good just in time and high competitive advantage indirectly have a significant effect on increasing operational performance in a high direction. The positive association between just in time and operational performance is mediated through competitive advantage. The test results using Sobel test prove that the value of $t\text{-statistics} > t\text{-table}$ or $3.820 > 2.024$. These results explain that the application of just in time (JIT) has a positive and significant impact on operational performance through competitive advantage. The positive-marked path coefficient explains that competitive advantage is able to act as a mediator variable in analyzing the influence of just in time on the operational performance of manufacturing companies. So that the fourth hypothesis proposed in this study is proven to be accepted or supported by empirical facts.

This statement can be proven through the Sobel test's results of testing the indirect effect of just in time variables on operational performance through mediation of competitive advantage obtained by the path coefficient value of 0.153. That just this time path coefficient value to competitive advantage is 0.753, and the T Statistics ($|O / STERR|$) value is 4.090, 2.024 greater so that it can be said to be significant. So it can be concluded that just in time which is getting better indirectly has a significant effect on operational performance. This means that just this time indirectly influences the operational performance after being mediated by competitive advantage; the supply chain management has a positive and significant influence on the operational performance of the manufacturing companies in Makassar Industrial Estate. This study supports the findings of previous scholars that JIT practices significantly improve operational performance and further competitive advantage can significantly improve operational performance, so it can be concluded that companies that have high performance will be able to achieve competitive advantage (Hadioetomo, 2009).

The results of this study refute the findings of previous researchers that most SMEs in the manufacturing sector do not apply JIT inventory management principles. This further revealed that there were challenges that hampered the application of the JIT principle in the

manufacturing sector SMEs. These challenges include the lack of a trusted supplier network, lack of capital and lack of knowledge about direct financial benefits from the implementation of JIT (Mazanai, 2012; Moori et al., 2013).

CONCLUSIONS

Just-in-time consisting of Number of suppliers, Minimum inventory level, Improvement of factory layout, Reduction of setup time, Integrated quality control, Employee flexibility and significant positive effect on competitive advantage and operational performance in Manufacturing Companies in Industrial Estates Makassar. Competitive Advantage consisting of price determination, product quality, consistency of delivery, product innovation has a positive and significant influence on the operational performance of manufacturing companies in Makassar Industrial Estate. The hypothesis testing shows that there is a positive relationship between just in time and operational performance through competitive advantage. Competitive advantage can mediate positively and significantly on the influence of JIT on operational performance. But if just in time is directly related to operational performance, the results will still have a significant effect as mentioned in the fourth hypothesis. This means that JIT which is better and indirectly can improve operational performance through competitive advantage.

This study provides recommendations to the management of manufacturing companies should improve the customer relationship and share information so that operational performance can be increased in a high direction, but this is inseparable from good just in time management and also cannot be separated from the competitiveness of the company. Finally, for advanced researchers it is expected to develop the results of this study by adding several constructs (variables) or objects of research that have differences in the characteristics of the company. Conduct additional data collection techniques such as interviews with companies with the aim of increasing the number of respondents.

References

- Alshbiel, SO, & Al-Awaqleh, QA (2012). JIT production system and its effect on achieving industrial shareholding companies in Jordan. *Interdisciplinary Journal of Contemporary Research In Business* October, 4 (6).
- Ansari, A., & Modarress, B. (1988). JIT purchasing as a quality and productivity center. *The International Journal of Production Research*, 26 (1), 19-26. <https://www.tandfonline.com/doi/abs/10.1080/00207548808947838>
- Brah, SA, & Ying Lim, H. (2006). The effects of technology and TQM on the performance of logistics companies. *International Journal of Physical Distribution & Logistics Management*, 36 (3), 192-209. <https://doi.org/10.1108/09600030610661796>
- Carton, RB (2004). *Measuring organizational performance: An exploratory study* (Doctoral dissertation, University of Georgia).
- Carton, RB, & Hofer, CW (2006). *Measuring organizational performance: Metrics for entrepreneurship and strategic management research*. Edward Elgar Publishing.
- Chen, YS, James Lin, MJ, & Chang, CH (2006). The influence of intellectual capital on new product development performance-the manufacturing companies of Taiwan as an example. *Total Quality Management and Business Excellence*, 17 (10), 1323-1339. <https://doi.org/10.1080/14783360601058979>
- Chi, T., Kilduff, PP, & Gargeya, VB (2009). Alignment between business environment characteristics, competitive priorities, supply chain structures, and firm business performance. *International Journal of productivity and performance management*, 58 (7), 645-669. <https://doi.org/10.1108/17410400910989467>
- Chin Lin, Y., & Heng Tsai, P. (2009). The impact of a global logistics integration system on localization service and business competitive advantage. *European Business Review*, 21 (5), 418-437. <https://doi.org/10.1108/09555340910986655>

- Christiansen, T., Berry, WL, Bruun, P., & Ward, P. (2003). A mapping of competitive priorities, manufacturing practices, and operational performance in groups of Danish manufacturing companies. *International Journal of Operations & Production Management*, 23 (10), 1163-1183. <https://doi.org/10.1108/01443570310496616>
- Chyr, F., Lin, TM, & Ho, CF (1990). Comparison between just-in-time and EOQ systems. *Engineering Costs and Production Economics*, 18 (3), 233-240. [https://doi.org/10.1016/0167-188X\(90\)90125-2](https://doi.org/10.1016/0167-188X(90)90125-2)
- Claycomb, C., Dröge, C., & Germain, R. (1999). The effect of just-in-time with customers on organizational design and performance. *The International Journal of Logistics Management*, 10 (1), 37-58. <https://doi.org/10.1108/09574099910805923>
- Cua, KO, McKone, KE, & Schroeder, RG (2001). Between implementation relationships of TQM, JIT, and TPM and manufacturing performance. *Journal of operations management*, 19 (6), 675-694. [https://doi.org/10.1016/S0272-6963\(01\)00066-3](https://doi.org/10.1016/S0272-6963(01)00066-3)
- Danese, P., Romano, P., & Bortolotti, T. (2012). JIT production, JIT supply and performance: investigating the moderating effects. *Industrial Management & Data Systems*, 112 (3), 441-465. <https://doi.org/10.1108/02635571211210068>
- De Toni, A., & Nassimbeni, G. (2000). Just-in-time purchasing: an empirical study of operational practices, supplier development and performance. *Omega*, 28 (6), 631-651. [https://doi.org/10.1016/S0305-0483\(00\)00016-5](https://doi.org/10.1016/S0305-0483(00)00016-5)
- F. Hair Jr, J., Sarstedt, M., Hopkins, L., & G. Kuppelwieser, V. (2014). Partial least squares structural equation modeling (PLS-SEM) An emerging tool in business research. *European Business Review*, 26 (2), 106-121. <https://doi.org/10.1108/EBR-10-2013-0128>
- Fawcett, SE, & Birou, LM (1993). Just-in-time sourcing techniques: Current state of adoption. *Production and Inventory Management Journal*, 34 (1), 18.
- Fazel, F. (1997). A comparative analysis of inventory costs of JIT and EOQ purchasing. *International Journal of Physical Distribution & Logistics Management*, 27 (8), 496-504. <https://doi.org/10.1108/09600039710182680>
- Fazel, F., Fischer, KP, & Gilbert, EW (1998). JIT purchasing vs. EOQ with a price discount: An analytical comparison of inventory costs. *International Journal of Production Economics*, 54 (1), 101-109. [https://doi.org/10.1016/S0925-5273\(97\)00130-8](https://doi.org/10.1016/S0925-5273(97)00130-8)
- Flynn, BB, Sakakibara, S., & Schroeder, RG (1995). Relationship between JIT and TQM: practices and performance. *Academy of management Journal*, 38 (5), 1325-1360. <https://doi.org/10.5465/256860>
- Gaspersz, Vincent. (2005). *Integrated Performance Management System Balanced Scorecard With Six Sigma For Business Organizations and Government*. Jakarta: PT Gramedia Pustaka Utama
- Gaspersz, Vincent. (2008). *Lean Six Sigma*. Jakarta: PT Gramedia Pustaka Utama
- Germain, R., Dröge, C., & Daugherty, PJ (1994). The effect of just-in-time selling on organizational structure: an empirical investigation. *Journal of Marketing Research*, 471-483. <https://doi.org/10.2307/3151877>
- Ghozali, I. (2011). *Structural Equation Modeling Alternative Methods with Partial Least Square PLS*.
- Golhar, DY, & Stamm, CL (1991). The just-in-time philosophy: a literature review. *The International Journal of Production Research*, 29 (4), 657-676. <https://doi.org/10.1080/00207549108930094>
- González-Benito, J., & Spring, M. (2000). JIT purchasing in Spanish auto components industry-implementation patterns and perceived benefits. *International Journal of Operations & Production Management*, 20 (9), 1038-1061. <https://doi.org/10.1108/01443570010339145>
- Hadioetomo, H. (2009). Effect of JIT Implementation on Performance and Competitive Advantages of Manufacturing Companies. *ACCOUNTING STUDY*, 4 (2), 104-113.
- Hayes, RH, & Schmenner, RW (1978). How should you organize manufacturing. *Harvard Business Review*, 56 (1), 105-118.
- Heizer, J. & Render, B. (2005). *Flexible Version: Operation Management*, 7th edition, New Jersey: Prentice Hall.
- Inman, RA, Sale, RS, Green Jr, KW, & Whitten, D. (2011). Agile manufacturing: relation to JIT, operational performance and firm performance. *Journal of Operations Management*, 29 (4), 343-355. <https://doi.org/10.1016/j.jom.2010.06.001>
- Kannan, VR, & Tan, KC (2005). Just in time, total quality management, and supply chain management: understanding their linkages and impact on business performance. *Omega*, 33 (2), 153-162. <https://doi.org/10.1016/j.omega.2004.03.012>

- Kotler, Philip & Armstrong Gerry. (2003). *Service Marketing Management*. Salemba Empat: Jakarta
- Lakhal, L., Pasin, F., & Limam, M. (2006). Quality management practices and their impact on performance. *International Journal of Quality & Reliability Management*, 23 (6), 625-646.
<https://doi.org/10.1108/02656710610672461>
- Leavy, B. (1994). Two strategic perspectives on the buyer-supplier relationship. *Production and Inventory Management Journal*, 35 (2), 47.
- Lee, SM, & Ansari, A. (1985). Comparative analysis of Japanese just-in-time purchasing and traditional US purchasing systems. *International Journal of Operations & Production Management*, 5 (4), 5-14.
<https://doi.org/10.1108/eb054744>
- Li, S., Ragu-Nathan, B., Ragu-Nathan, TS, & Rao, SS (2006). The impact of supply chain management practices on competitive advantage and organizational performance. *Omega*, 34 (2), 107-124.
<https://doi.org/10.1016/j.omega.2004.08.002>
- Mazanai, M. (2012). Just-in-time impact (JIT) inventory system on efficiency, quality and flexibility among manufacturing sectors, small and medium enterprises (SMEs) in South Africa. *African Journal of Business Management*, 6 (17), 5786-5791. <https://doi.org/10.5897/AJBM12.148>
- Meylianti, B. & Mulia, F. (2009). Effect of JIT (Just In Time) and TQM (Total Quality Management) Implementation on Delivery Performance in the Automotive Industry in Indonesia. *Journal of Applied and Theory Management | Journal of Theory and Applied Management*, 2 (2).
- Moori, RG, Pescarmona, A., & Kimura, H. (2013). Lean manufacturing and business performance in Brazilian firms. *Journal of Operations and Supply Chain Management*, 6 (1), 91-105.
- O'Neal, CR (1987). The buyer-seller linkage in a just-in-time environment. *Journal of Purchasing and Materials Management*, 23 (1), 7-13. <https://doi.org/10.1111/j.1745-493X.1987.tb00174.x>
- Porter, ME (1990). New global strategies for competitive advantage. *Planning Review*, 18 (3), 4-14.
<https://doi.org/10.1108/eb054287>
- Ramarapu, NK, Mehra, S., & Frolick, MN (1995). A comparative analysis and review of JIT "implementation" research. *International Journal of Operations & production management*, 15 (1), 38-49.
<https://doi.org/10.1108/01443579510077188>
- Sakakibara, S., Flynn, BB, Schroeder, RG, & Morris, WT (1997). The impact of just-in-time manufacturing and its infrastructure on manufacturing performance. *Management Science*, 43 (9), 1246-1257.
<https://doi.org/10.1287/mnsc.43.9.1246>
- Schonberger, RJ, & Gilbert, JP (1983). Just-in-time purchasing: a challenge for US industry. *California Management Review*, 26 (1), 54-68. <https://doi.org/10.2307/41165050>
- Simamora, Bilson. (2002). *Guide to Consumer Behavior Research*. Jakarta: PT Gramedia Pustaka Utama
- Sjahruddin, H., & Sudiro, A. A. (2013). Organizational justice, organizational commitment and trust in manager as predictor of organizational citizenship behavior. *Interdisciplinary J. of contemporary Res. Bus.(IJCRB)*, 4(12), 133-141.
- Slack, N., Lewis, M., & Bates, H. (2004). The two worlds of operations management research and practice: can they meet, should they meet? *International Journal of Operations & Production Management*, 24 (4), 372-387.
- Staughton, R., & Johnston, R. (2005). Operational performance gaps in business relationships. *International Journal of Operations & Production Management*, 25 (4), 320-332.
<https://doi.org/10.1108/01443570510585525>
- Stevenson, J William. (2002). *Operation Management*. NewYork: McGraw Hill
- Tracey, M., & Vonderembse, MA (2000). Building supply chains: a key to enhancing manufacturing performance. *American Journal of Business*, 15 (2), 11-20. <https://doi.org/10.1108/19355181200000007>
- Venkatraman, N., & Ramanujam, V. (1986). Measurement of business performance in research strategies: A comparison of approaches. *Academy of Management Review*, 11 (4), 801-814.
<https://doi.org/10.5465/amr.1986.4283976>
- Voss, CA, Åhlström, P., & Blackmon, K. (1997). Benchmarking and operational performance: some empirical results. *International Journal of Operations & Production Management*, 17 (10), 1046-1058.
<https://doi.org/10.1108/01443579710177059>

Waters-Fuller, N. (1995). Just-in-time purchasing and supply: a review of the literature. *International journal of operations & production management*, 15 (9), 220-236. <https://doi.org/10.1108/01443579510099751>

Wook Kim, S. (2006). The supply chain integration effect on the alignment between corporate competitive capability and supply chain operational capability. *International Journal of Operations & Production Management*, 26 (10), 1084-1107. <https://doi.org/10.1108/01443570610691085>



The Influence of Organizational Learning and Job Characteristic on Organizational Commitment and Employee Performance of Clinical Laboratory, type B Regional General Hospital in East Java

Didik Agus Santoso

Faculty of Economic and Business,
17 Agustus 1945 Surabaya University,
Surabaya, Indonesia

Ida Aju Brahmasari

Faculty of Economic and Business,
17 Agustus 1945 Surabaya University,
Surabaya, Indonesia

Ida Aju Brahmaratih

Faculty of Economic and Business,
17 Agustus 1945 Surabaya University,
Surabaya, Indonesia

ABSTRACT

This study aimed to investigate the influence of organizational learning and job characteristic on organizational commitment and employee performance of Clinical laboratory, type B Regional General Hospital in East Java. This study is a causal explanatory research. The populations are 300 employees and using simple random sampling, 220 respondents were selected. The analysis data with the Structural Equation Modeling (SEM). Organizational learning has significant influence on organizational commitment; organizational learning has significant influence on employee performance, job characteristic has significant influence to organizational commitment, job characteristic has significant influence to employee performance. and organizational commitment has no significant influence on employee performance of Clinical laboratory, type B Regional General Hospital in East Java. The results of this study indicate that our of five hypotheses were accepted, namely: organizational learning and job characteristic on organizational commitment; organizational commitment and job characteristic on employee performance.

Keywords: organizational learning, job characteristic, organizational commitment, employee performance.

INTRODUCTION

Organizational behavior is a field of study that studies the behavioral impacts of individuals, groups, and structures within organizations, with the intent of applying knowledge to improve organizational effectiveness (Robbins SP, Judge TA, 2013: 10). Organizational behavior is a field of study that is interdisciplinary, dedicated to better understand and manage people in the workforce (Keitner R, Kinicki A, 2014: 5). Organizational behavior is the study of what people think, feel, and do in and around the organization (McShane, Von Glinow, 2010: 4).

LITERATURE REVIEW

Employee performance is what individual employees have produced. The other term is human output that can be measured from productivity, absence, and turn over, citizenship, and satisfaction (Robbins SP, Judge TA, 2013: 27). Employee performance is the result of the employee's efforts. Employee performance is measurable behavior, behavior and results, which employees are bound or employed and connected to the organization's goals and contribute to organizational goals. Employee performance can be measured by quantity, quality, efficiency, professional standards, ability, assessment, accuracy, knowledge, and creativity (Kristianto D, Suharnomo, Ratnawati I, 2011: 2).

Clinical laboratory is a health laboratory organization that conducts clinical specimen examination service to get information about health, especially to support disease diagnosis, disease travel monitoring, therapy, disease cure, and prognosis and health restoration. The clinical laboratory conducts examinations in the field of hematology, clinical chemistry, clinical microbiology, clinical parasitology, clinical immunology, and other fields related to the health interests of individuals and communities. This is stated in Permenkes (Regulation of the Minister of Health RI) number 411 of 2010 on Clinical Laboratory.

Permenkes number 56, year 2014 on Hospital Classification and Licensing, mentioned that clinical laboratory service is one of the supporting services that must be owned by all hospitals. Based on Permenkes number 129 of 2008 on Minimum Service Standards Hospital, clinical laboratory services is one of the minimum support services that must be owned by a hospital. Clinical laboratory of the General Hospital of General Hospital (RSUD) class B in East Java is a clinical laboratory located within Type B Regional General Hospital, which belongs to the Regional Government in East Java.

The phenomenon that the pace of development and economic growth at this time, causing the greater demand of society in getting better health services. The reality is that the higher the level of education and welfare of the community, the demand for quality health services is also increasing. Be in accordance with the above, and then the diagnostic services organized by clinical laboratories become increasingly important (Riyono, 2007: 172).

Current facts show that clinical laboratories not only serve to help diagnose and manage patients, but also serve as a means of ensuring the diagnosis of the patient, so. Clinical laboratories in hospitals occupy a central position, so that the responsibility of clinical laboratories is growing, both professional responsibilities (professional responsibilities), technical responsibility (responsibilities) and management responsibilities.

Initial survey conducted at several clinical laboratories of type B Regional General Hospital in East Java, conducted at 4 (four) clinical laboratory of type B Regional General Hospital in East Java, obtained performance data during the period of 2014-2016. Data performance achievement of several clinical laboratories of general hospital type B in East Java, during the period 2014-2016 has not reached the target set. This illustrates that until now the performance of employees in the clinical laboratory of general hospital type B in East Java still needs to be improved again, among others by: enhance organizational learning, job characteristics, and enhance organizational commitment.

Achieving optimal employee performance based on performance target standards set by the organization will be realized if there is a high organizational commitment (Khan MR, Ziaudin,

Ramay MI, 2010: 293). Organizational commitment is the power of a person's identification of an organization and involvement in the organization and its value (Warsi S, Fatima N, Sahibzada SA, 2009: 401). Employees with high organizational commitment are needed in achieving organizational goals and have a greater impact on employment. Organizational commitment affects work convenience, improves work productivity, and enhances the sense of ownership of the organization, resulting in superior employee performance and organizational performance (Boon OK, Arumugam V, 2006: 2). Organizational commitment is required to improve employee performance. Organizational commitment will encourage employee habits that support organizations to work more effectively. Employees with high organizational commitment will be job oriented. Employees feel close to organizations and organizations as a place to meet their personal needs. Employees are willing to exert every effort for the organization and will improve employee performance (Djastuti I, 2010: 6).

Organizational commitment can be achieved if supported by the characteristics of the work that is a design employee work activities are prepared on the basis of the desires and abilities of employees, and know the performance of feedback from the organization on employee performance. Employee performance and employee competence can be improved on condition the organization should be able to improve its organizational learning capacity. Building and developing competencies can only be done through organizational learning, so that the process of acquisition, integration, and application of new and unique knowledge will be run on internal activity through experimentation, improvement effort, and innovation (Resya R, 2008: 5).

Employee performance and employee competency can be improved on the condition that the organization should be able to increase its organizational learning capacity. Building and developing competencies can only be done through organizational learning, so that the process of acquisition, integration, and application of new and unique knowledge will be run on internal activity through experimentation, improvement effort, and innovation (Resya R, 2008: 5)

This study aims to prove and analyze the influence of organizational learning and job characteristics on organizational commitment and employee performance in clinical laboratory of type B Regional General Hospital in East Java.

RESEARCH METHODS

The research method used in this study is causal explanatory research. The population of this research is employees in clinical laboratory of type B Regional General Hospital in East Java of 300 people. The distribution of survey questionnaires is using simple random sampling. The number of samples obtained there are 220 respondents Data analysis techniques using Structural Equation Modeling (SEM) Amos 22.

RESULTS AND DISCUSSIONS

Data in this research is primary data that is quantitative data from respondent, which is contained in questionnaire. Respondents of the object of research in this study consisted of employees at clinical laboratories of general hospital type B in East Java and obtained a sample of 220 people. The population in this research is 300 employees in clinical laboratory of Type B Regional General Hospital in East Java.

The number of samples obtained as many as 220 people has been filled in completely and collect the questionnaire, which consists of employees in clinical laboratories Type B Regional General Hospital in East Java. The samples of 220 researches are all included in the analysis of

the research, with the reasons: 1) the questionnaire of 220 samples has been completed by the respondent and deserve to be included in the research. 2) Statistically will be more meaningful because it has exceeded the minimum sample amount required in this research. 3) The greater the number of samples, of course, the data obtained will be more representative of the studied pupils.

Respondents who have completed and returned the research questionnaire came from 9 (nine) clinical laboratories of Type B Regional General Hospital in East Java. The majority of respondents with the highest number is from the clinic laboratory of RSUD IbnuSina Gresik by 17%, and the lowest of BlambanganBanyuwangi Hospital is 5%. All respondents are employees at the clinical laboratory of Type B Regional General Hospital in East Java, so respondents are very clear on the questions contained in the questionnaire, and can answer it in accordance with the perception of the question. Description of respondents based on the origin of clinical laboratory workshops, can be seen in table 1.

Tabel 1
Description of Respondents Based on the Origin of Workplace Clinical Laboratory

No	Name of hospital	Frequency	Percent (%)
1	RSUD dr. HardjonoPonorogo	23	10%
2	RSUD dr. Soewandhie Surabaya	33	15%
3	RSUD IbnuSina Gresik	37	17%
4	RSUD dr. Soebandijember	26	12%
5	RSUD dr. SudonoMadiun	15	7%
6	RSUD Gambirankota Kediri	25	11%
7	RSUD BlambanganBanyuwangi	11	5%
8	RSUD dr. SlametMartodirjoPamekasan	20	9%
9	RSUD dr. IshakTulungagung	30	14%
	Total Respondent	220	100%

Source: Primary data processed

The respondents' gender consisted of: 69 respondents (31%), while women consisted of 151 respondents (69%). This indicates female sex respondents are more dominant than male gender. This is in accordance with the reality in the field that the majority of employees in clinical laboratories of type B Regional General Hospitals in East Java are women.

In this study, the respondents mostly in the age group 25-40 years (60%) or at the age of adults. This indicates that the respondents taken as the sample are the age group included in the productive age group and are very able to fill out the questionnaire.

Most of the respondents (75%) were those with a Diploma-3 Health Analyst. This shows that the respondents taken as a sample are the group of employees who have been educated, and in accordance with the competence, so that respondents have very understood of the questions contained in the questionnaire and can answer it in accordance with the perception of respondents.

Description of respondents by working period, the percentage of most respondents is those who work ≤ 5 years, and the least percentage is those who work ≥ 21 years.

Validity test conducted in this study using SPSS program, by Pearson product moment correlation method, and the validity test results of the variables in this study. The result of

validity test in this research shows significant, for all indicator or item statement or question. This means that the indicator or question item for each of the variables contained in the questionnaire has met the validity requirements. The result of Pearson product moment correlation in this research, it is known that all items statement / question on questionnaire have a significant correlation at the error rate of <5% (** <0.05), so it can be said that all items of question in this research is valid and can be processed furthermore.

The results of reliability testing with Cronbach Alpha test in this study indicate that all research variables are reliable, because all the alpha coefficient value of each research variable is larger than standardized (0.6), so that each question item on the measurement instrument can used. The value of corrected total correlation items of all question items is greater than 0.3. The tendency and variation of the respondent's answer to the research variables is determined based on the frequency distribution, where the interval value can be determined first to determine the answer category. Given the value scores for each alternative answer for each variable is a minimum of 1 and a maximum of 5, while the variation of indicators for each variable is also different, then the frequency distribution can be categorized as follows:

- 1.00 - 1.80 = Very bad / very unsuitable / very low
- 1.81 - 2.60 = Not good / not appropriate / low
- 2.61 - 3.40 = Good / moderate / neutral
- 3.41 - 4.20 = Good / appropriate / high
- 4.21 - 5.00 = Very good / very appropriate / very high

The results of this study indicate that the average score of respondents' answers to organizational learning variables is good with an average of 4,192. The indicator with the highest average score is teamwork, followed by: dialogue between members, shared vision, thinking system, mental model and lowest is personal skill. This means that the current condition of respondents prioritize teamwork on organizational learning in clinical laboratory of type B Regional General Hospital in East Java, can be seen in table 2.

Tabel 2
Average Scores of Organizational Learning Variables

No	Organizational learning	average	information
1	Using system thinking in completing work.	4,141	good
2	A mental model (an inherent assumption) is required in doing the work.	4,114	good
3	Having personal skills (proficiency) in doing the job.	4,032	good
4	Teamwork is required in completing the work.	4,345	very good
5	The shared vision of sharing is necessary in doing the work	4,191	good
6	Dialogue between members of an organization is required in a job	4,327	very good
	Average Organizational Learning	4,192	good

Source: The results of the descriptive test data is processed

The results of this study indicate that the average score of respondents' answers to job characteristics variable is good with an average of 3.969, can be seen in table 3.

Table 3
Average Characteristics of Work Score

No	job character	average	information
1	Requires a lot of skills in completing the job.	4,032	good
2	Work can be identified by looking at engagement in performing the work.	3,995	good
3	The significance of task (importance) of work affects the organization.	3,995	good
4	Given the autonomy of duty (freedom) in carrying out the work.	3,864	good
5	Get clear feedback from the work done.	3,959	good
	Average Job Characteristics	3,969	good

Source: The results of the descriptive test data is processed

Indicators with the highest average value of work characteristic variables are skill diversity, followed by: job identity, task significance, job feedback, and lowest is task autonomy. This means that the current condition of respondents prioritizes the diversity of skills in the characteristics of the work at clinical laboratories Type B Regional General Hospital in East Java.

The results of this study indicate that the average score of respondents' answers to organizational commitment variable is high with an average of 4,038. The indicator with the highest average score is to comply with all the rules, followed by: proud to be part of the organization, willing to be part of the organization, and the lowest is to work beyond working hours. That is, the respondent's current condition prioritizes compliance with all organizational commitment in the clinic laboratory of Type B Regional General Hospital in East Java, can be seen in table 4.

Table 4
Organizational Commitment Variables

No	Organizational commitment	average	Information
1	Be able to be part in running the mission of this organization.	4,077	high
2	Be able to work beyond working hours for the sake of service.	3,723	high
3	Be able comply with all existing work rules.	4,186	high
4	Proud to be part of this organization.	4,164	high
	Average organizational commitment	4,038	high

Source: The results of the descriptive test data is processed

The results of this study indicate that the average score of respondents' answers to employee performance variables is very high with an average of 4.211, can be seen in table 5.

Table 5
Average Employee Performance Score

No	Employee	Average	Discription
1	Have a good idea about your work	4,291	Very Good
2	Focusing care in working to get good quality work.	4,318	Very Good
3	Produce productivity in the field of tasks.	4,164	Good
4	Can accomplish the timely worker with the maximum results.	4,114	Good
5	Work effectiveness according to established working hours.	4,132	Good
6	Have the ability to work in maintaining work relationships.	4,250	Very Good
	Average employee	4,211	Very Good

Source: The results of the descriptive test data is processed

This research data is processed using SEM statistic test in AMOS 22, before studying the measurement model of each variable in this research, will be analyzed first dimension of indicator that make up each variable. Based on the nature of the numbers, the closer of value of number to the zeros, the smaller the value of number. The amount of regression value that exists between the dimensions with the indicator, or between the variable of the indicator (loading factor) with the construct variable, is as follows:

≤0.40: The relationship is weak

0.41 - 0.55: Moderate relationship

0.56 - 0.69: Strong relationship

≥0.70: The relationship is very strong.

The results of this study indicate that the dominant factors that make up organizational learning are indicators of teamwork, followed by: dialogue between members, shared vision, mental models, thinking systems and personal skills. This means that the future expectation of the respondent will give priority to teamwork on organizational learning in clinical laboratory of type B Regional General Hospital in East Java.

The results of this study indicate that the dominant factors that shape job characteristics are job identity, followed by: task significance, job feedback, and task autonomy and skill diversity. It means that the future expectation of the respondent will give priority to the worker's identity on organizational learning in clinical laboratory of Type B Regional General Hospital in East Java. This indicates that job identity becomes an important part, as the basis for creating policies to create superior performance for employees.

The results of this study indicate that the dominant factors that make up organizational commitment are proud indicators of being part of the organization, followed by: complying with all rules, willing to be part of the organization, and working beyond working hours. This means that the future expectation of the respondents will be more prioritized to be part of the organization organization in clinical laboratory of type B Regional General Hospital in East Java,

The results of this study indicate that the dominant factors that shape employee performance, namely indicators of ability to cooperate, followed by: quality of work, knowledge of work, effectiveness, timeliness and work productivity. It means that the future expectation of the respondent will give priority to the ability to cooperate in maintaining the working relationship in clinical laboratory of Type B Regional General Hospital in East Java.

The model structure is used to describe the causality models of research with tiered relationships. The initial model of research(proposed model) that has been made, analyzed by SEM (structural equation model) with the help of software AMOS 22. Therefore, to meet the more complete relationship between the variables in this study, no modification of the model but only the index modification like seen in figure 1

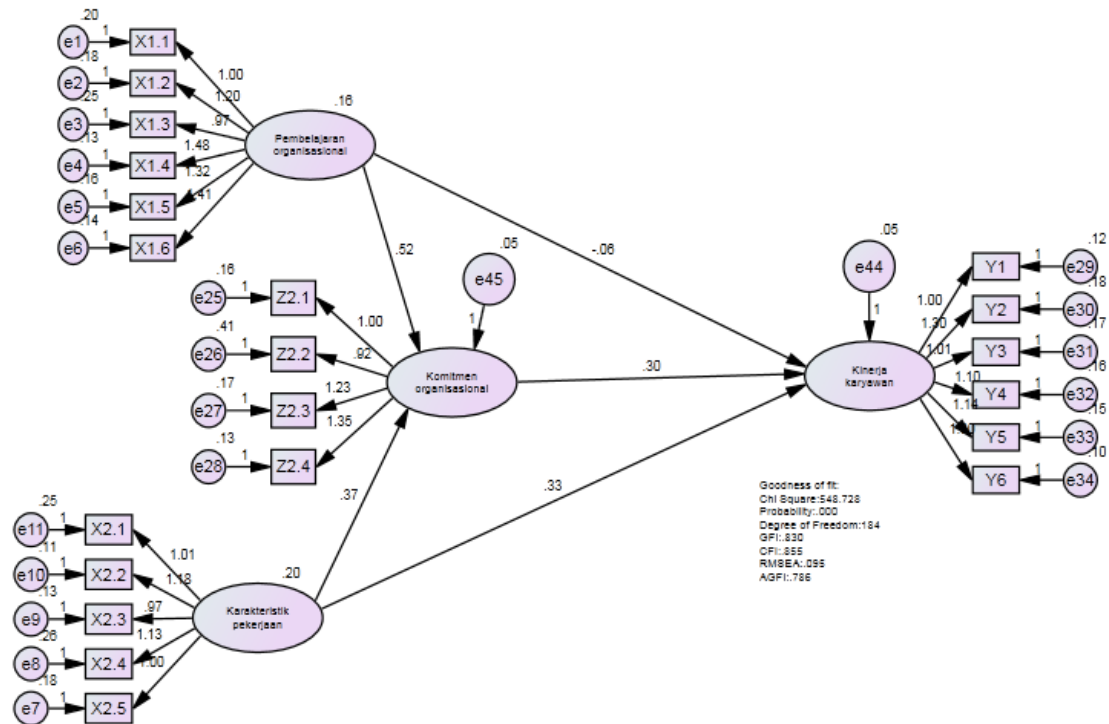


Figure 1
Structural Equation Research Model (Final Model)
 Source: The results of the researchers with SEM Amos 22

This research model can be explained as follows:

- 1) There are 4 (four) latent variables on the model to be tested are: organizational learning (X1), (X2) job characteristics, (Z2) organizational commitment and (Y) employee performance
- 2) Organizational learning is formed by 6 indicators: (X1.1) thinking system, (X1.2) mental model, (X1.3) personal skills, (X1.4) teamwork, (X1.5) together, and (X1.6) dialog between members.
- 3) Job characteristics are formed by 5 indicators: (X2.1) diversity of skills, (X2.2) job identity, (X2.3) task significance, (X2.4) task autonomy, and (X2.5) feedback work.
- 4) Organizational commitment is formed by 4 indicators: (Z2.1) is willing to be part of the organization, (Z2.2) works over hours, (Z2.3) complies with all rules), and (Z2.4) is proud to be part of the organization.
- 5) Employee performance is formed by 6 indicators: (Y1) knowledge of work, (Y2) quality of work, (Y3) work productivity, (Y4) punctuality, (Y5) effectiveness, and (Y6) ability to cooperate.

To test the hypothesis and to know the relation of causality between each variable, tested to the zero hypothesis which states that the regression coefficient between the relation is equal to zero through t test which is prevalent in regression model. Considering the result of the regression test in this study it is known that the critical ratio (CR) value which is identical with the t test in the regression analysis, shows that all regression coefficients are not significantly equal to zero. Therefore the zero hypothesis that the regression weight is equal to zero can be rejected, to accept the alternative hypothesis that each hypothesis about the causality relationship presented in the model is acceptable. The results of the regression test in this study can be seen in table 6.

**Table 6`
Interagency Regression Test Result**

No	Influence between Variables		Estimate	S.E.	C.R.	P	Label	Significance
1	Organizational commitment	←- Organizational learning	.523	.096	5.476	***	par_21	Significant
2	Organizational commitment	<--- Job Characteristics	.368	.080	4.607	***	par_22	Significant
3	Employee performance	<--- Organizational commitment	.305	.121	2.525	.012	par_18	Significant
4	Employee performance	<--- Organizational learning	-.056	.098	-.569	.570	par_19	Not significant
5	Employee performance	<--- Job Characteristics	.326	.086	3.781	***	par_20	Significant

Source: The results of the researchers with SEM Amos 22

The amount of regression between organizational learning variable with organizational commitment is 0,523, CR = 5,476 and p value = 0,000 means: organizational learning variable has significant influence to organizational commitment in clinical laboratory of Type B Regional General Hospital in East Java.

The amount of regression between organizational learning variables with employee performance of -0.056, CR = -0.569 and p = 0,507 means: organizational learning variable has no significant influence on the work performance of clinical laboratories Type B Regional General Hospital in East Java.

Level of regression between job characteristic variable with organizational commitment variable equal to 0,368, value of CR = 4,607 and p = 0,000, meaning: job characteristic variable significantly influence organizational commitment at clinical laboratory of Type B Regional General Hospital in East Java.

The amount of regression between work characteristic variable with employee performance variable equal to 0,326, value of CR = 3,781 and p = 0,000, meaning: job characteristic variable have significant influence to the performance of the worker of clinic of Type B Regional General Hospital in East Java. . .

From the results of the analysis that has been done, then the details of hypothesis test results in this study can be presented in Table 7.

Table 7
Research Hypothesis Test Results

HIPO TESIS	STATEMENT	RESULT
1	Organizational learning has a significant influence on organizational commitment in Clinical Laboratory of Type B Regional General Hospital in East Java.	Accepted
2	Organizational learning has no significant influence on employee performance in Clinical Laboratory of Type B Regional General Hospital in East Java.	Rejected
3	Job characteristics have significant influence on organizational commitment in Clinical Laboratory of Type B Regional General Hospital in East Java.	Accepted
4	Job characteristics have a significant influence on employee performance in Clinical Laboratory of Type B Regional General Hospital in East Java.	Accepted
5	Organizational commitment has a significant influence on employee performance in Clinical Laboratory of Type B Regional General Hospital in East Java.	Accepted

Source: The results of processed researchers

Influence among the most dominant variables is the influence of organizational Learning variables on organizational commitment, where the CR value is the highest. The amount of regression between Organizational learning variables with organizational organizational variables of 0.523, CR = 5.476 and p = 0,000, meaning: Organizational learning variables have a significant influence on organizational commitment. This suggests that organizational learning has the greatest influence on organizational commitment.

CONCLUSIONS AND SUGGESTIONS

This study concludes that there are four out of five accepted hypotheses: organizational learning and job characteristics have a significant influence on organizational commitment; Organizational commitment and job characteristics have a significant influence on employee performance in Type B clinic laboratory in East Java. Influence among the most dominant variable is organizational learning variable has significant influence on organizational commitment in clinical laboratory of type B Regional General Hospital in East Java.

The study recommends that clinical laboratory organizations should pay attention to organizational learning, organizational commitment, to improve employee performance in clinical laboratories.

Reference

- Permenkes RI No. 411 tahun 2010, tentang: Laboratorium Klinik.
- Riyono, 2007. Pengendalian Mutu Laboratorium Kimia Klinik Dilihat dari Aspek Mutu Hasil Analisis Laboratorium. *Jurnal Ekonomi dan Kewirausahaan*, Vol.7(2):172-187.
- Robbins SP, Judge TA, 2013. *Organizational Behavior*. 15th edition, Pearson Education Inc, New Jersey, USA.
- Keitner R, Kinicki A, 2014. *Perilaku Organisasi*. Edisi 9, Penerbit Salemba Empat, Jakarta.
- McShane, Von Glinow, 2010. *Organizational Behavior, Emerging Knowledge and Practice For The Real World*. 5th edition, The McGraw-Hill Companies, New York.
- Kristianto D, Suharnomo, Ratnawati I, 2011. Pengaruh Kepuasan Kerja terhadap Kinerja Karyawan dengan Komitmen Organisasional sebagai Variabel Intervening (Studi pada RSUD Tugurejo Semarang). Universitas Diponegoro, Semarang.
- Khan MR, Ziaudin, Ramay MI, 2010. The Impacts of Organizational Commitment on Employee Job Performance. *European Journal of Social Sciences*, Vol.15(3):292-298

- Warsi S, Fatima N, Sahibzada SA, 2009. Study on Relationship between Organizational Commitment and Its Determinants Among Private Sector Employees of Pakistan. *International Review of Business Research Papers*, Vol.5(3):399-410.
- Boon OK, Arumugam V, 2006. The Influence of Corporate Culture on Organizational Commitment: Case Study of Semiconductor Organization in Malaysia. *Sunway Academic Journal*, Vol.3:99-115.
- Djastuti I, 2010. The Influence of Job Characteristics on Job Satisfaction, Organizational Commitment and Managerial Performance on Construction Companies in Central Java. *Jurnal Management Bisnis*, Vol.3(2):145-166.
- Anwar A, 2009. Pengaruh Komitmen dan Kepuasan Kerja terhadap Kinerja Pegawai pada Instalasi Laboratorium Patologi Klinik Rumah Sakit Dr. Wahidin Sudirohusodo Makasar. Universitas Hasanudin, Makasar.
- Widodo T, 2010. Pengaruh Lingkungan Kerja, Budaya Organisasi, Kepemimpinan terhadap Kinerja, Studi pada Pegawai Kecamatan Sidorejo Kota Salatiga. *Jurnal Among Makarti*, Vol.3(5):14-35.
- Fadli UM, Kartawijaya Y, 2012. Pengaruh Kompetensi Karyawan terhadap Komitmen Kerja pada PT. PLN Persero Rayon Rengasdengklok. *Jurnal Manajemen*, Vol.9(2):577-589.
- Resya R, 2008. Pengaruh Pembelajaran Organisasi Terhadap Kinerja dengan Kompetensi sebagai Mediasi Pada PT. Jasa Marga Cabang Purbaleunyi.
- Aghaei N, 2012. Relationship between Learning Organizational and Organizational Commitment Among Employees of Sport and Youth Head Office of Western Provinces of Iran. *European Journal of Sport and Exercise Science*, Vol.1(3):59-69.
- Brahmasari IA, Suprayetno A, 2008. Pengaruh Motivasi Kerja, Kepemimpinan dan Budaya Organisasi terhadap Kepuasan Kerja Karyawan serta Dampaknya pada Kinerja Perusahaan, Studi Kasus pada PT. Pei Hai International Wiratama Indonesia. *Jurnal Manajemen dan Kewirausahaan*, Vol.10(2):124-135.
- Luthans F, 2011. *Organizational Behavior*. 12th edition, The McGraw-Hill Companies, New York.
- Nanan K, 2013. Influence of Job Characteristics and Job Satisfaction Effect Work Adjustment for Entering Labor Market of New Graduated in Thailand. *International Journal of Business and Social Science*, Vol.4(2):95-103.
- Neuman KD, 2014. The Effect of Job Characteristics on Job Satisfaction in The United States and China. *Journal of Economic and Economic Education Research*, Vol.15(2):121-142.
- Nzioka SK, 2012. The Relationship between Organizational Learning and Performance Improvement in Kenya's Commercial Banks. School of Business, University of Nairobi.
- Rashid ZA, Sambasivan M, Johari J, 2003. The Influence of Corporate Culture And Organizational Commitment on Performance. *Journal of Management Development*, Vol.22(8):708-728.
- Ratna R, 2014. Impact of Learning Organizational on Organizational Performance in Consulting Industry. *International Journal on Global Business Management and Research*, Vol.2(2):1-11.
- Rose RC, 2009. The Effect of Organizational Learning on Organizational Commitment, Job Satisfaction and Work Performance. *The Journal of Applied Business Research*, Vol.25(6):54-66.



Rural Tourism: A Grounded Theory on Limited Stakeholder Advocacy

Angela G. Sebby

Hospitality and Tourism Management,
Western Carolina University, Cullowhee, N.C.

Kenneth Jordan

Hospitality and Tourism Management,
Western Carolina University, Cullowhee, N.C.

ABSTRACT

While many rural areas in the southeast look to tourism to help supplement diminishing financial opportunities due to the decline in manufacturing and farming, many communities still incur obstacles and are unable to sustain a viable tourist destination area. Without entrusting the Destination Marketing Organization (DMO) to identify stakeholders' contributions for the betterment of the community as a destination brand and visitor demands, expectations cannot be met. Working within small-town politics, nativity of the benefits of tourism, and misaligned brand images, the DMOs and stakeholders appear ineffective in marketing the rural area as a destination that fully embodies the culture, history, and natural resources contained within their respective geographic boundaries. Understanding how to build and obtain stakeholders' confidence, a DMO can cultivate strategic relationships through social exchanges and strengthen trust within stakeholder groups. These relationships sustain an all-inclusive brand image for the rural destination area, increasing visitor satisfaction, and stakeholder investment.

Keywords: Destination Marketing Organization, rural tourism, social exchange, stakeholder advocacy, trust

INTRODUCTION

The loss of financially viable opportunities for residents within rural areas has stemmed from a changing economic environment. The proliferation of industrial farming and the downturn of manufacturing facilities over the past fifty years [38] have led to a decline not only in jobs for residents but also in the financial health and viability of local economies. To help stimulate economic potential, rural communities are exploring a wide range of touristic prospects, fostering an interest in new job opportunities and an optimistic fortuity for the declining communities [35]. From farm-to-table events, cultural/heritage site development, and alfresco leisure, rural communities are embracing a wide range of potential touristic opportunities such as agricultural, traditional, and outdoor adventure tourism in an effort to create niche experiences for tourists within their respective areas.

While periodic tourism events augment taxation, provide temporary financial benefits, slightly improved public amenities, and offer temporary job possibilities [27], the fundamental objective for communities is to establish sustainable tourism within their area. When a community utilizes an organization such as a DMO, with the expertise to strategically manage and market the resources available to the locality, this goal can be realized. Discerning the local customs, heritage, and traditions in conjunction with understanding the current infrastructure, available resources, and lodging conditions are much easier to navigate with the assistance of a Destination Marketing Organization (DMO). Through research, networking,

planning, and earmarked funding, DMOs are competent in marketing and managing the brand image for rural areas that encompasses all the available resources to create a prodigious experience for travelers.

Due to a lack of understanding of the benefits and the advantages of rural tourism among the DMOs, Economic Development Organization (EDOs), government offices, and those in the community, economic growth is constrained [6]. External stakeholders lack of trust in the DMO to successfully market and manage the rural area as a tourism destination derives from political motivations and maneuvering, naivety in the benefits of the DMO, government tensions, personal interests, and undefined goals and strategies from the community as a whole [31]. However, social exchanges between tourism stakeholders and the DMO can result in increased information and resource contribution for the community and the ability to effectively and efficiently implement defined strategies to address the desire for a unique touristic experience. Tourism planning and development of the rural area are contingent on strategic alliances, vital to a sustainable rural tourism destination [36]. The formation of visitor gratification and repeat visitation can help establish a sustainable rural destination rooted in the formation of trust in the DMO and its ability to provide deliverable and measurable results for the stakeholders and communities alike.

What is absent from literature is a Grounded Theory study on advocacy for rural tourism, revealing what DMOs and stakeholders consider to be effective in social exchange practices between the parties. Notably relevant in the context of the recent increase in rural tourism, this study is comprised of involved perspectives from DMOs, government officials, industry stakeholders, and residents from six counties in Tennessee that were purposefully sampled. While there have been qualitative studies on tourism, this study acquired in-depth insight on the perceptions of trust in social exchanges between the parties in rural tourism areas to determine and reduce potential impediments to advocacy for sustainability in underdeveloped and resource-poor rural tourism communities.

The aim of this study was to address the following questions:

- 1) What are the recognized benefits to the rural tourism area if DMOs strategically align with its stakeholders?
- 2) What are the stakeholders' perceptions of effectiveness in tourism development if the DMO forms alliances through strategic social exchanges?
- 3) What level does the EDO develop relationships and align with the DMO and local stakeholders to promote tourism?

LITERATURE REVIEW

Rural Tourism Defined

As set forth by Lane [18], rural tourism exists in rural settings that function rurally regarding small businesses, are nature-inspired, and of traditional character. Rural areas must develop naturally with local families, thereby demonstrating the complexity of the setting and its environment, as well as the economy and historical aspects. Likewise, the author states development of rural tourism must maintain the integrity of the area utilized for conservation and sustainability, not urbanization and expansion.

Rural tourism describes tourists traveling to rural destinations to pursue satisfying and pleasurable experiences associated with rural settings, nature, historical heritage, and culture [16, 3]. In these settings, travelers' experiences can consist of farms, natural surroundings, heritage and folklore, traditions and local values, adventures, art and historical sites, leisure, sightseeing, and education [25, 11, 2, 16]. Rural tourism involves activities such as camping,

walking and hiking, driving, farmers' and craft markets, cultural displays and museums, adventure sports and activities, heritage sites and education, and musical events [14].

Objectives of Rural Tourism and Sustainability

According to the OECD [24], the objectives for rural tourism are to (1) establish jobs and sustain them while allowing for further development, (2) preserve and protect the local architecture and environments, (3) support the community, agriculture, and forestry, (4) improve residents' quality of life, (5) create jobs for the disadvantaged and under-employed, and (6) enrich the quality of life for urban visitors. The perpetuation of the rural culture should be a recognized goal for rural tourism planning [3], going beyond the OECD's objectives and compounding success for the destination area [4].

McCool and Martin's [21] research specifies tourism as an alternative means to alleviate economically depressed social or economic levels in rural areas. Economically, tourism directly affects businesses that service the tourist and creates an indirect economic impact on the entire destination area. According to Fleischer & Felsenstein [10], tourism is responsible for generating demand in the rural market and thereby, creates new revenue sources for the rural area and the local government. Tourism's direct impact generates new income and employment, increases taxes, and economically elevates the level of prosperity for the rural residents [8]. For rural areas that are economically declining, rural tourism is a viable solution to improve the residents' quality of life [22], and provides the opportunity to increase waning incomes [7].

In achieving the objectives of rural tourism, destination areas must also consider how to sustain the following goals: conservation of the local culture, protection of the rural environment, and continuing economic development [2,18,19]. Lane [18] clarifies sustainable and prosperous tourism development relies on continuing visitor satisfaction created through the efficient development of the rural destination. A viable tourism area must strategically develop and market the destination area, the hospitality services offered, and the destination-defined attractions, either natural or manmade [38,12]. Furthermore, Wilson et al. [38] explain the development of sustainable rural tourism cannot be achieved without community support.

Sustainable Tourism through Destination Marketing Organizations

The means to sustainable tourism requires comprehending the subtleties between tourism, the community, and those promoting tourism [38]. Lane [18] affirms management of rural tourism must be comprised of leaders with the following skills: analytical, communicative, advocacy, and continuous improvement. Soteriades' [32] research asserts effective collaboration marketing efforts require strong leadership, administrative support, shared vision, goal accomplishment and open communication. Leadership can be achieved by employing a Destination Marketing Organization (DMO) to manage the tourism networks (industry stakeholders, community, government, and visitors) through providing information, coordinating meetings and marketing campaigns, acting as a liaison, and building teams and partnerships [37]. The author also indicates the DMO is the leader for establishing and marketing the destination brand image and coordinating the funding to do so.

Managing the subtleties of tourism, government, and community also requires a different set of soft skills: the strength of vulnerability, the capacity to be humble, disposition to foster relationships to build trust, and the inclination to ask for help. Each of these unconventional soft skills are conditions for building trust in rural tourism. Thibaut and Kelley [33] maintain that trust and commitment abate vulnerability through the development of advocacy. Trust in

the DMO is based upon the mutual effort of the DMO and the tourism stakeholders satisfying tourism objectives with each party fulfilling their obligations [1]. Trust is necessary to lessen the risk and fear of commitments while supporting further advocacy and commitment to the relationship [23,17,15]. When a relationship is more advantageous than the deficiency of the vulnerability incurred from the other party, cooperation ensues.

As trust expands, additional resources and time are devoted to the development of tourism and stakeholder relationships, furthering the disposition of confidence in the DMO's ability to bolster tourism and sustain the tourism area's objectives [20,29]. However, trust is constantly being reassessed as to whether both parties are fulfilling their obligations. Understanding that sustainable tourism development is contingent upon all parties working conjointly, the DMO must possess the inclination to ask for help and collaborate with the public sector. Reducing uncertainty in the DMO's management of the rural tourism area will encourage other participants to be proactive and share resources and information. Robinson and Rousseau [28] argue that deeper relationships are then formed, resulting in increased trust and resource support to effectively market the tourism area. With cohesive tourism planning, development of the tourism destination, and increased urban regeneration, these alliances are important in developing a sustainable rural tourism area [36].

RESEARCH METHODOLOGY

To develop a greater understanding of social exchange and the trust involved in the relationships between DMOs and community stakeholders, a qualitative methodology was selected for this study. Participants disclosed their individual experiences and understanding via one-on-one interviews. According to Hatch [13], multiple realities exist due to different individual perceptions, and in this study, it was found that perceptions of social exchange and trust varied among the different participants. Direct observations of the participants were also conducted during local communities' tourism meetings to allow for an unbiased perspective of the social and professional relationships between the parties, as well as the appearance and management of rural tourism.

Qualitative research allowed a deeper understanding of social exchanges between the DMO and stakeholders in Tennessee's rural tourism communities, while Grounded Theory was used to study the social relationships and group behaviors between the parties involved. It allowed for rich, thick descriptions of the social exchanges that were categorized into concepts and categories, later converted into a working theory of the central phenomenon.

Selection of Rural Counties and Target Population

For the purpose of this study, the definition from the USDA's Economic Research Service Rural-Urban Commuting Areas [34] was utilized. The Tennessee Department of Tourism Development website was utilized to select the counties for this study. Of the ninety-five counties within Tennessee, six counties were chosen. Using the 2014 Economic Impact of Travel on Tennessee Counties report to select the counties for this study, two counties were selected from each region: west, middle, and east Tennessee. The six counties were chosen based on their tax revenue rankings listed in the report. The highest and the lowest ranked counties (derived from the tax revenue rankings) were selected within each of the three geographic regions.

Participants were recruited from tourism-planning meetings in the rural counties, referrals from tourism stakeholders, direct observations by the researchers, and online searches. Direct observations (during county tours and at tourism meetings) were employed to (1) gain a thick description of the county, (2) identify key tourism stakeholders, and (3) to determine non-

participatory stakeholders. Selection was based on the following criterion: involvement in tourism in the given county, assessment of adequate representation in reference to the tourism industry, and willingness to participate and provide quality stakeholder information (likelihood to participate in the study, logistics, and availability). Study participants included: Destination Marketing Organization (DMO) representatives (Chamber of Commerce and/or Convention and Visitor Bureau) and community stakeholders from the Economic Development Organization (EDO), governmental stakeholders (mayor, planner, or board trustee), and local businesses (hospitality, restaurant, or retail business owners/managers).

Data Collection and Interview Process

Data was collected using multiple techniques: observations, interviews, elicited material (emails and questionnaires), websites, documents (newspapers, government reports, organizational information), literature reviews, secondary data (USDA reports, Tennessee Tourism reports, and previous Tennessee rural study by researcher), journals, memos, and field notes.

A criterion sampling strategy-purposeful sampling method was employed for the study. Participants were identified as either active or inactive stakeholders in the development of tourism with numerous years of experience in tourism, economic development, government, or business. Data collection was utilized using informal, unstructured, and open-ended interviews [26] in an effort to bring out feelings, thoughts, and perceptions of the social exchanges and trust with the DMO and other stakeholders [9]. An interview protocol was established with one lead-off question and follow up questions if necessary. The first question related to the DMO and what it does for the stakeholders, the second question related to whether or not the stakeholder trusted the DMO. The final question related to the EDO's involvement in tourism.

Data Analysis

After each interview, rich and thick descriptions were created for the location, participants, and the interview process. Interviews were transcribed and analyzed within twenty-four hours to identify prevailing concepts and necessary for ensuring that proceeding interviews would be representative of theoretical sampling. Using inductive analysis, the analysis involved breaking down the data to identify concepts and develop a core category.

Open coding consisted of field notes, memos, secondary data, observations, and then transcripts of the interviews. Prevailing terms and sentences were highlighted with notes and reflections in the margins. This line by line process compiled 138 significant codes of which were further analyzed for relevancy and discord with other passages. Codes were then segmented, compared, and arranged in categories that were further narrowed and analyzed. This open and axial coding was utilized concurrently throughout the interviews and data collection. Throughout this process, new data was compared to pre-existing codes, new codes to previous codes and categories, and new categories to former categories to be to unite them. This assisted in removing duplications, integrating the grounded theory, and substantiating the main category.

An illustrative model was utilized to identify the main variables relating to the social exchanges, connect the codes, erase gaps in the theory formation, and progress the conceptual analysis. Theoretical integration was then implemented to transform the abstract depiction of the social exchanges into a grounded theory. Studying literature on social exchanges, trust, rural tourism, and alliances, allowed for identifiable theoretical categories to be integrated. A

description and conceptual summary memo were written to allow conversion into a grounded theory.

Quality and validation of Grounded Theory

Methodological congruence was established through the following: researcher's paradigms, stated the purpose of the study, consistent methods, audit trail, rigor, and multiple methods of triangulation. The audit trail was well-defined and encompassed the selection of data, interview protocol, collection techniques, and recordings establishing dependability and confirmation. Credibility was established through triangulation with the diverse participants, personal engagement, multiple data collection techniques, and reflective journaling to reduce biases and pre-dispositions.

RESULTS

The purpose of this study was to gain in-depth knowledge on the perceptions of trust in social exchanges between DMOs and stakeholders in rural tourism areas develop advocacy for rural tourism by exploring the following: recognized benefits, discernment of effectiveness, and awareness of trust. Using the Grounded Theory axial coding paradigm, the results of the questions posed to participants were examined into the following four categories allowing for the context and intervening conditions: Causal condition, central phenomenon, strategy, and consequences. The coding paradigm is listed below in Table 1.

Table 1: Coding Paradigm: Categories and sub-categories [30]

Coding Paradigm	Category	Sub-categories
Causal Conditions	Expanding Social Benefits	<ul style="list-style-type: none"> • Economic growth in the community • Economic development • Social experiences • Revitalizing the community
Phenomenon	Commitment to Change	<ul style="list-style-type: none"> • Unification • Responsible involvement • Passionate
Strategies	Visionary Sustainability	<ul style="list-style-type: none"> • Identify and produce • Vision
Context	Recognition	<ul style="list-style-type: none"> • Value • Credibility • Leverage • The area's magnitude of tourism
Intervening Conditions	Predisposition Toward Tourism Development	<ul style="list-style-type: none"> • Resistance to change • Enlightenment • Communication • Legitimacy • Perception of trust
Consequences	Inclusive Community Identity	<ul style="list-style-type: none"> • Improved relationships • Cooperation and the domino effect • Identity: Present themselves as an inclusive community

Causal Condition: Expanding Social Benefits

It was established that the main causal condition for trust in the DMO is to successfully build tourism in a rural area and foster social exchanges dependent on the social benefits for the stakeholders and the community. All participants identified personal advantages of supporting the DMO's management of tourism, as well as the community's benefits. Economic growth and development, social experience, and revitalization were specified as priorities for the community. Two-thirds of those interviewed stated that the loss of economic opportunities—manufacturing, farming, and a viable talent pool—over the past thirty years had depressed the economy, the community, and the residents. Indicated by five of the six counties, tourism would encourage economic growth in the community, as well as economic development.

Central Phenomenon: Commitment to Change

The data revealed that one's commitment to change encourages trust in social exchanges between DMOs and tourism stakeholders even if there has been previous distrust in the DMOs effectiveness, diverse objectives, and tense relationships. It is grounded in the awareness that for change to take effect, one must support it to receive the benefits, but with committed leadership and support. The subcategories of commitment to change were found to be unification, responsible involvement, and passion for the growth of tourism.

Realizing that aligning with the DMO and other stakeholders obligates one to exchange resources, time, and activities, many in these communities prefer to delay advocacy until they notice the materialization of societal benefits. For those involved in the social exchanges, they recognize that working with the DMO will unifying their efforts, will result in increased personal and societal benefits. One Chamber Director stated, "Right now, it's in their interest to work together and if everybody else is working together versus one person or one entity, then that entity will suffer." Not all of the Tennessee rural tourism towns studied experience the level of involvement and commitment to change they would prefer to encounter. The mayor of one of the lowest ranking tourism area indicated "There's a lot of jealousy, but we know enough to know that we've got to go outside these boundaries." All DMOs stressed the commitment to be selective with alliance partners, even if they are in need. It was emphasized that partners must be unified, steadfast, and decisive in their commitment to change.

Tourism development requires extensive time, effort, and commitment to the alliances. Understanding the influence of tourism in their rural areas, many participants believed it would be advantageous to align with the DMO, partner with other stakeholders, and invest the time and energy into the alliances. All participants indicated they were passionate about their community, culture, and history. This has prompted them to be committed to change, create alliances, and be responsibly involved in the tourism development process resulting in additional tourism generating resources, local business support, and societal benefits for tourist and the community.

Strategy: Visionary Sustainability

Two visible features were identified that encompassed the particular context of recognizing stakeholders' advocacy and their predispositions to tourism development: commitment to a vision and the ability to identify and produce. Five of the six counties had established a straightforward vision for their tourism destination and the communities. Through the DMO's passion for sharing tourism development initiatives with stakeholders, all participants agreed they would support their DMO's master plan. With that, a crucial social exchange between the DMO and stakeholders was noticed; the identification of prospective resources and the government of them for maximum gain for the rural area. It was determined this could be

accomplished through the following subcategories: identifying resources, recognizing the significance of master planning, coordinating services and events, engaging proactively, attracting tourism, and the call to action.

Identifying resources

It was identified in all the rural towns participating, residents take ownership of their communities and are sometimes known to be less receptive to relocated inhabitants and their abilities to identify resources. However, for those communities that were flourishing, the DMO would intercede on behalf of the non-locals to gather support for the initiatives, garnering their trust and support for future initiatives.

Master plans

Although the participants in all counties were involved or aware of a master plan, only four of the counties had developed a written master plan for tourism development in their areas. For those with master plans, they recognized the importance of an internal and external analysis of the area and that producing detailed goals and objectives is essential in identifying opportunities and resources. Some counties were in the development stages of tourism planning with abstract visions, but established detailed objectives offering a prompt return.

Coordination services and events

All stakeholders agreed that collaborating with the DMO on planning, coordinating, and scheduling events and festivals cultivated successful events. Stakeholders from the highest tourism revenue counties mentioned that by using the DMO as a collective tourism source, they were able to schedule events without overlap, thereby increasing visitor count. Strategic coordination of events in rural areas was found to contribute to visitor satisfaction, repeat visitation, and increased tourism.

Proactive

Recognizing that some opportunities are fleeting, rural tourism DMOs and stakeholders stated they must always be proactive. One downtown developer in the third largest tourism area stated, "we've always been proactive, but it ebbs and flows depending what monies we have to do with, like anything else, but you cannot let the opportunities pass you by."

Attracting tourism

Understanding that social exchanges with the DMO and between stakeholders identifies more opportunities and presents more tourism attractions as a collective tourism source, one DMO emphasized "The more you have collectively, the more people you have working together, the bigger the chance that you're going to have somebody captivated here." Through strategic alliances strengthened through consistent and positive social exchanges, DMOs work with their partners to determine the most advantageous way to fulfill the strategy. The mayor/tourism director of the smallest tourism town said regarding tourism events, "This thing may explode on us, but it's okay. We will put them all the way down Main Street, and we put them up side streets. Shut the street down. We'll put them somewhere."

Call to action

Of those interviewed supporting the effectiveness of the DMO in tourism growth and development, all perceived that committing to change and establishing the appropriate strategies would be ineffective without trust, positive social exchanges, and advocacy for rural tourism development. One Chamber Director said, "Don't go home and try to do this, because unless you've got city, county government, unless you've got your chamber, unless you've got the public and private sector working well together, this won't work."

Consequences: Advocacy of DMO and Inclusive Community Identity

The consequences for commitment to change through social exchanges with the DMO in rural tourism areas were found to be favorable for all parties involved, as well as the community as a whole. With increased social exchanges, expanded responsibilities to accommodate growth and development, all participants indicated that trust in the DMO increased and their alliances were reinforced. DMOs believed this reinforced the stakeholders' further commitment to change for the additional societal benefits. In addition to the causal effect—expanding social benefits—three other benefits were realized for the rural area: relationships were improved, cooperation had a domino effect, and communities became inclusive.

Improved relationships

With the continual process of commitment to change, improved relationships among alliance members and with the DMO were realized. All new DMOs reported that early in their careers they realized the importance of building personal relationships with stakeholders was effective in establishing a rapport with stakeholders before building a tourism business relationship. Later in their careers, they realized that long-standing relationships with community members assisted in strategic alliances and furthered their commitment to social exchanges vital in fulfilling the tourism vision for the rural area.

Domino effect

Observed by all participants was the domino effect of cooperation between the DMO, the stakeholders, and consequently, the community. They realize the DMO is critical in nurturing the relationships, continuing the development process, and influential in acquiring resources needed to effectively manage a sustainable tourism destination. Through strategic alliances fostered by the DMO, cooperation has intensified between stakeholders. One hotelier said, "They all cooperate together. They all see the big picture and work together on these programs." Participants also stated that the entire community is encouraged by rural tourism development and "it all feeds down into it," and everyone gains from tourism as it "feeds off to each other."

Inclusivity

A sense of belonging and a destination brand image representative of the rural community was reported by most participants as another motivating factor for commitment to change. For all counties, the DMOs reported that increased tourism has generated additional residents in the rural area: non-locals. Encouraging stakeholders to nurture inclusion and a sense of belonging to non-locals has garnered advocacy for rural tourism growth, inheriting an authentic community feel for all families and residents. Beyond the initial causal effect, stakeholders recognized the additional gain of inclusive community identity as a motivating benefit that propels them to a resolute commitment to change, furthering trust and social exchanges, and thereby increasing one's advocacy for rural tourism. Moreover, counties with further developed tourism programs relay a matureness in the social exchanges and trust between the DMO and stakeholders. One hotelier stated, "We're not only involved in this room. We're involved in this community. There's not one person at this table who's not involved in this community." Another participant emphasized that tourism is expanding in their rural area because it is their identity.

CONCLUSION, LIMITATIONS, AND IMPLICATIONS

Grounded Theory in this study was utilized to focus on the social exchanges between stakeholders and DMOs in rural tourism areas. Identifying social exchanges and perceptions of trust, this study ascertained the social processes needed to expand social benefits for the

community. The research isolated effective strategies and recognized a unique context for each rural area. Finally, the social process clarifies the concepts vital to the processes and the community as a whole.

The findings were analyzed from a theoretical perspective and are considered to have significant relevance in the development of the rural tourism industry. Specifically, the commitment to change is necessary to implement the strategies needed for societal benefits and community identity. *Commitment to change* was determined as the core category of the social process, providing clarification of the overall process. *Commitment to change* responded to these social processes in the following main categories: (1) expanded social benefits, (2) sustainability, (3) recognition, (4) tourism development and (5) an inclusive community identity.

Use of purposeful sampling techniques in grounded theory comes with limitations. First, the generalizability of the study, limited to rural counties and not all counties within the state of Tennessee. Second, the rural tourism alliances were limited to the DMO and the stakeholders. Findings may not be generalizable to rural areas that do not have a DMO or is managed by the local government. Data collection was limited to six rural areas and does not take into consideration areas in the middle of the economic spectrum. The analysis was collected based on individuals' perceptions of other individuals' capabilities. Findings may not be generalizable to areas going through a period of adversity, decline, or in the initial planning stages. Data analysis in grounded theory is used to deconstruct the data, identify the concepts, and subsequently, using the concepts to develop a core category that addresses the totality of the categories [5].

Committing to change depicts the social processes between DMOs and their stakeholders in rural Tennessee tourism areas. Deductively developed through participants' perceptions and experience, grounded theory illustrates how commitment to change is vital social exchanges. Alliance formation with local hospitality/tourism businesses, lack of incentives, or strained relationships can inhibit collaboration among stakeholders. The paradigm also indicates where breakdowns can occur in the process; when the context is not recognized and with stakeholder's predispositions to development.

Practical implications consist of conducting a social process analysis to address each stage to assist DMOs in counteracting the disconnect between stakeholders, DMOs, EDOs, and the community at large. Furthermore, the analysis provides DMOs with the following implications: (1) recognizing the social benefits desired to motivate stakeholders (2) realizing the needs of different alliances to provide support and build trust (3) understanding context will allow DMOs to effectively utilize resources (4) realizing stakeholders' predisposition to tourism development and how they affect the DMO's ability to function within its respective role (5) creation of a master tourism development plan can be improved from an analysis that incorporates social benefits, commitment to change, recognition, and predisposition to tourism development and (6) a DMO can discern the analysis of the consequences of the social process and use them as a motivational tool for stakeholder involvement and ultimately, build trust.

References

- Blau, P. M. (1964). *Exchange and power in social life*. New York: John Wiley.
- Bramwell, B., and Lane, B. (1993). Interpretation and sustainable tourism: the potential and the pitfalls. *Journal of Sustainable Tourism* 1(2), 71-80.

- Butler, R.W. and Hall, C.M. (1998). Tourism and recreation in rural areas: myth and reality. In *Rural Tourism Management: Sustainable Options, Conference Proceedings*, 9-12 Sept 1998. D Hall and L O'Hanlon (ed), Scottish Agricultural College, Auchenvyre, 97-108.
- Clark, G., & Chabrel, M. (2007). Measuring integrated rural tourism. *Tourism Geographies*, 9 (4), 371-386.
- Corbin, J., & Strauss, A. (2008). *Basics of Qualitative Research (3rd ed.): Techniques and Procedures for Developing Grounded Theory*. Thousand Oaks, CA: Sage Publications.
- Destination Marketing Association International. (2015, July 21). Retrieved from <https://destinationsinternational.org>
- Douglas, Norman. & Douglas, Ngaire. & Derrett, Ros. (2001). *Special interest tourism: context and cases*. Milton, Qld: John Wiley & Sons, <http://www.loc.gov/catdir/toc/wiley031/2002510507.html>
- Eadington, W. R., and Smith, V. L. (1992). Introduction: The Emergence of Alternative Forms of Tourism. *Tourism Alternatives, Smith, V. L., and Eadington, W. R. (Eds.)*, Philadelphia, PA: University of Pennsylvania Press, 1-12.
- Fetterman, D.M. (1998). *Ethnography: Step by Step*. (Second Edition). Thousand Oaks, CA: Sage.
- Fleischer, A., & Felsenstein. (2000). Support for rural tourism: Does it make a difference? *Annals of Tourism Research*, 27 (4), 1007-1024.
- Frederick, M. (1993). Rural tourism and economic development. *Economic Development Quarterly*, 7(2), 215-224.
- Gunn, C. (1988). *Vacationscape: Designing Tourist Regions*, 2nd ed. New York: Van Nostrand Reinhold.
- Hatch, J. A. (2002). *Doing qualitative research in education settings*. Albany, NY: SUNY Press.
- Hong, W. (1998). *Rural tourism: a case study of regional planning in Taiwan*. Taipei City, Republic of China on Taiwan: Food & Fertilizer Technology Center.
- Hwang, P., & Burgers, W. (1997). Properties of trust: An analytical view. *Organizational Behavior and Human Decision Processes*, 69, 67-73.
- Jingming, H., & Lihua, L. (2002). A Study on the Conceptions of Rural Tourism. *Journal of Southwest China Normal University (Philosophy & Social Sciences Edition)*, 9.
- Kumar, N. (1996). The power of trust in manufacturer-retailer relationship. *Harvard Business Review*, 74, 92-106.
- Lane, B. (1994). Sustainable Rural Tourism Strategies: A Tool for Development and Conservation, *Journal of Sustainable Tourism*, 2, 12-18.
- Lane, B. (2009). What is rural tourism? *Journal of Sustainable Tourism*, 2 (1-2), 7-21.
- Luhmann, N. (1979) *Trust and Power*. Chichester: Wiley.
- McCool, S. F., & Martin, S. (1994). Community attachment and attitudes toward tourism development. *Journal of Travel Research*, 29-34.
- McIntosh, R.W., & Goeldner, C.R. (1984). *Tourism: Principles, Practices, Philosophies*. New York, N.Y. John Wilay.
- Morgan, R., & Hunt, S. (1994). The commitment-trust theory of relationship marketing. *Journal of Marketing*, 58(3), 20-38.
- The Organisation for Economic Co-operation and Development. (1994). *Tourism strategies and rural development*, OECD accessed 21 July 2015, <<https://www.oecd.org/cfe/tourism/2755218.pdf>>
- Pedford, J. (1996). Seeing is believing: the role of living history in marketing local heritage. *The Marketing of Tradition, T. Brewer (ed.)*, Enfield Lock: Hisarlink Press, 13-20.
- Polkinghorne, D. (1989). Phenomenological research methods. In R. Valle & S. Halling (Eds), *Existential-phenomenological perspectives in psychology* (pp. 3-16). New York: Plenum
- Reeder R., & Brown D. (2005). *Recreation, tourism, and rural well-being (ERR-7)*. Washington, DC: USDA Economic Research Service.
- Robinson S., & Rousseau D. (1994). Violating the psychological contract: Not the exception but the norm. *Journal of Organizational Behavior*, 15, 245-259.
- Rousseau, D., Sitkin, S., Burt, R., & Camerer, C. (1998). Not so different after all: A cross-discipline view of trust. *Journal of Management Review*, 23(3), 393-404.

- Sebby, A.G., (2016). Social exchange between destination marketing organizations and stakeholders in Tennessee's rural counties. PhD diss., University of Tennessee, https://trace.tennessee.edu/utk_graddiss/4163
- Sheehan, L., Ritchie, J., & Hudson, S. (2007). The destination promotion triad: Understanding asymmetric stakeholder independencies among city, hotels, and DMO. *Journal of Travel Research*, 46, 64-74.
- Soteriades, M. (2012). Tourism destination marketing: Approaches improving effectiveness and efficiency. *Journal of Hospitality and Tourism, Technology*, 3(2), 107-120.
- Thibaut, J. W., & Kelley, H. H. (1959). *The social psychology of groups*. Oxford, England: John Wiley.
- United States Department of Agriculture. (2014, November 23). Retrieved from <http://www.rurdev.usda.gov/Home.html>.
- United States Environmental Protection Agency. (2016, April 1). Retrieved from. <https://www.epa.gov/smartgrowth/smart-growth-small-towns-and-rural-communities>.
- Wang, Y. (2008). Collaborative destination marketing: Roles and strategies of convention and visitors bureaus. *Journal of Vacation Marketing*, 14(3), 191-209.
- Wang, Y. (2011). *Destination marketing and management: Theories and applications*, A. Pizam (eds.) CAB International, Wallingford, UK, 1-20.
- Wilson, S., Fesenmaier, D., Fesenmaier, J., & Van Es, J. (2001). Factor for success in rural tourism development. *Journal of Travel Research*, 40(132), 132-138.

The modern pillars of Circular Economy

Agata Matarazzo- Lorenzo Baglio

Department Economics and Business

Univesiy of Catania, Corso Italia 55- 95129- Catania, Italy

ABSTRACT

Relationship between industry and environment is crucial for industrial business performance. Environmental impacts have incrementally increased pressure on industrial businesses. Looking back to the beginning of the industrial revolution, mass production of goods was enabled by new manufacturing methods resulting in products with high availability and low costs. Consequently, due to new consumer societies and staggering growth in industrial activity, emissions to environment, solid waste generation and landfill have become increasingly severe. In addition, due to a growing world population and especially strong middle-class growth the demand for resources is expected to rise rapidly indicating a rising consumption of natural resources. This paper shows the modern concepts of the circular economy and industrial ecology, emphasiyng the benefits of industrial symbiosis.

Keywords: circular economy - industrial ecology -industrial symbiosis and metabolism

INTRODUCTION

. Since planet earth's resources are limited the requirements of exponential economic and population growth cannot be met [1].

Over the last decade growing attention has been paid worldwide to the new concept and development model of Circular Economy, CE, with the aim to provide a better alternative to the dominant economic development model, so called “take, make and dispose” [2-3]. The concept of circularity, especially in terms of closed material loops, is not a concept of novelty originating from recent developments but has been emerging now and then throughout the history.

The concept of a circular economy – currently widely promoted in Asia – has its conceptual roots in industrial ecology, which envisions a form of material symbiosis between otherwise very different companies and production processes. Industrial ecology emphasizes the benefits of recycling residual waste materials and by-products through, for example, the development of complex interlinkages, such as those in the renowned industrial symbiosis projects [4]. However, in more general terms, it promotes resource minimization and the adoption of cleaner technologies [5-6].

Every firm operating in the field of the circular economy should adopt an industrial approach based on resource efficiency and the use and supply of sustainable raw materials, which can be achieved through innovative technologies, innovative methodologies and new business models [7]. This first chapter introduce and explain the main theme which is at the base of the process of extraction and reuse of metals from ashes: the circular economy, whose main concept is to use waste for a certain production cycle as an input for a different production cycle. The reuse and recycling of materials are two of the key features that characterize the concept of the circular economy. The chapter is divided into six paragraphs, the first one introducing better the concept, explaining his importance and newness; in the second one it is better analysed the definition of circular economy thanks to international biography and then all the historical

steps which lead to the actual concept of circular are recalled. Another fundamental term, which is firmly connected with circular economy, and which is widely defined in the fourth chapter, is the one of circular raw material, which is considered to be an input for another production cycle, source of direct or indirect profit. The fifth paragraph is about advantages, which can be either economic, environmental or social, of the concrete application of circular economy's principles. Finally, the sixth paragraph focuses on the future, hypothesizing about next evolution of the concept of circular economy, with the hope of an extension of all the innovative techniques to other firms of the environmental management sector.

IMPORTANCE AND ACTUALITY OF CIRCULAR ECONOMY

The literature on industrial ecology (IE) is concerned at the macro level with bringing the industrial economy and the environment, or the economy and its natural limits, into some form of harmony; at the micro level it is concerned with the identification and analysis of a wide variety of "eco-industrial initiatives" that reduce the energy and resource intensity of industrial activities, largely through converting wastes from one process into inputs to another industrial process [8-9].

There have long been calls from industry for guidance in implementing strategies for sustainable development [10]. The Circular Economy represents the most recent attempt to conceptualize the integration of economic activity and environmental wellbeing in a sustainable way [11]. The concept of a circular has its conceptual roots in industrial ecology, which envisions a form of material symbiosis between otherwise very different companies and production processes. Industrial ecology emphasises the benefits of recycling residual waste materials and by-products through, for example, the development of complex interlinkages, such as those in the renowned industrial symbiosis projects [12]. In the last few years Circular Economy (CE) is receiving increasing attention worldwide as a way to overcome the current production and consumption model based on continuous growth and increasing resource throughput. By promoting the adoption of closing-the-loop production patterns within an economic system CE aims to increase the efficiency of resource use, with special focus on urban and industrial waste, to achieve a better balance and harmony between economy, environment and society [13]. It is widely acknowledged that economic miracles have been achieved at the expense of its natural capital and environment. In order to deal with this problem, the circular economy (CE) has been chosen as a national policy for sustainable development. National laws and regulations have been enacted to facilitate the implementation of CE and national CE demonstration projects have been initiated such that national benchmarking activities could be completed. It incorporates myriad strategies to achieve greater efficiency through economies of systems integration. Partnerships amongst businesses to meet common service, transportation and infrastructure needs are encouraged. The policy potentially adds value to businesses and communities by optimizing the use of energy, materials and community resources [14]. Since planet earth's resources are limited the requirements of exponential economic and population growth cannot be met. In this scenario, it is not only the challenge of environmental pollution that is becoming acute but the challenge of global resource scarcity as well. These circumstances confront manufacturing industry to simultaneously cope with the pressure of environmental regulations, challenges of resource price volatility and risks in resource supply, in addition to their daily business. As individual competitiveness is thereby influenced fundamentally, manufacturing companies find themselves in a progressively uncertain position when it comes to resource supplies.

Increased competition for access to scarce or critical resources has become another major concern for manufacturing industry, in addition to fulfilling obligations on environmental legislation at minimum cost [15]. In order to implement the CE, the 3R principles (Reduction,

Reuse, and Recycle) have been embedded in production and consumption since the flow of materials and energy penetrates in both areas. Reduction refers to minimize the input of primary energy and raw materials through the improvement of production efficiency. As for consumers, a more frugal way of consumption has been encouraged. Reuse suggests using the by-products and wastes from one firm as resources for other firms or industries. It also refers to use products to its maximum capability with frequent maintenance and reclamation to prolong its endurance. Recycle encourages processing the recyclable materials into new products so that the consumption of virgin materials can be reduced. These principles, as parts of the whole process, have different hierarchical importance, with the reduction of resources used as the leading principle within a circular economy system [16]. Governmental organizations as well as business representatives report an increasing pressure on our global resources and the climate due to human activity. The circular economy is viewed as a promising approach to help reduce our global sustainability pressures. The Ellen MacArthur Foundation has helped popularize the move to a circular economy with businesses [17]. Europe and China have adopted Circular Economy principles as part of their future strategies. For example, the European Commission associates the move to a more circular economy with strategies such as: boosting recycling and preventing loss of valuable materials; creating jobs and economic growth; showing how new business models, eco-design and industrial symbiosis can move Europe toward zero-waste; and reducing greenhouse emissions and environmental impacts [15]. Organizations such as the Ellen MacArthur Foundation, working in partnership with the consultants McKinsey, have also championed the potential of the circular economy for EU economies, through a series of reports [18-19] and through the medium of the Circular Economy Platform, a knowledge exchange network which seeks to bring together leading companies, innovators and regions. In academia the concept of the circular economy has gained purchase in a number of fields including sustainability science, environmental studies and a wide swathe of development studies shaped by low-carbon imperatives. It is not hard to see its appeal. The concept appears to decouple economic growth from increasing resource use as well as promoting waste reduction or minimization.

Hence, its use in both practitioner and academic literatures tends to be approbatory, uncritical, descriptive and deeply normative. Given its prominence, it is important that the circular economy be subjected to critique [20].

DEFINITION OF CIRCULAR ECONOMY

The Circular Economy as a concept has its antecedents in broader historical, economic, and ecological fields. Examination of these supports understanding of the subsequent application of the concept in practice. The circular flow of blood around the body was viewed as a useful metaphor for the flow of money through an economy. Of course, in terms of etymology, the word economy (οἰκονομία —household management), comes from the same ancient Greek origin as ecology (οἶκος, house -λογία, study of) meaning study of the household. This makes it all the more fitting that these concepts should come together. Indeed, the Circular Economy has, as its main concern, the management of the economy in such a way as to leave the house undamaged [11].

The term circular economy has both a linguistic and a descriptive meaning [21-22]. Linguistically it is an antonym of a linear economy, defined as converting natural resources into waste, via production. Such production of waste leads to the deterioration of the environment in two ways: by the removal of natural capital from the environment (through mining/unsustainable harvesting) and by the reduction of the value of natural capital caused by pollution from waste. Pollution can also occur at the resource acquisition stage. The term linear economy was brought into popular use by those writing on the Circular Economy and

related concepts. Thus, in many ways, the origin has been deliberately set, in framing the antonym, to promote the term circular economy. By circular, an economy is envisaged as having no net effect on the environment; rather it restores any damage done in resource acquisition, while ensuring little waste is generated throughout the production process and in the life history of the product. The circular economy from the environmental economics perspective is based on a material balance principle [23-24], which implies that all material flows need to be accounted for, although it will be the economic values, not the physical flows, that guide their management.

HISTORICAL EVOLUTION: FROM CIRCULAR ECONOMY TO INDUSTRIAL METABOLISM

As a concept, the circular economy has a longer history. This is located in the allied but distinct fields of ecological and environmental economics. The origin of the term 'Circular Economy' itself is debated and the idea behind a circular economy has existed for a long time. As early as 1848, Hofman, the first President of the Royal Society of Chemistry, stated "...in an ideal chemical factory there is, strictly speaking, no waste but only products. The better a real factory makes use of its waste, the closer it gets to its ideal, the bigger is the profit" [25]. Greyson [26] claims that Kenneth Boulding [27] was the originator of the term when he wrote: "Man must find his place in a cyclical ecological system which is capable of continuous reproduction of material form even though it cannot escape having inputs of energy". The first use of a circular economy concept was in China and occurred in an unreferenced 1998 paper by Zhou [28-29- 30], inspired by German and Swedish loop-closing, and arising from the Industrial Ecology paradigm which models industrial processes using the flow of material and energy through them [31-32]. The inclusion of Sweden is interesting here, as most literature attributes the inspirations as stemming from Germany and Japan [33]. Pearce and Turner (1990) claim that the term 'circular economy' was first used in western literature in the 1980s, to describe a closed system of economy-environment interactions [34]. It was Stahel and Reday-Mulvey [35] who first referred to a closed-loop economy: "I suspect that we have underestimated, even in our spendthrift society, the gains of increased durability" [36].

In the nineteenth century, industrialists had already developed the idea of industrial metabolism, wherein industry operates not as a set of independent inputs and outputs, but as a unified larger 'organism', and waste-is-food [37], both of which would inform Circular Economy thinking. By 1930, industrial symbiosis had appeared in the literature [38-39]. The largest recent sustainable economics movement, Industrial Ecology, IE, brought together these ideas and gathered considerable interest. It emerged in opposition to the current conception that environmental impacts of industrial systems should be studied by keeping separate the source "industrial system" and the receptor of the impacts, "the environment". Industrial Ecology introduced a different perspective by analysing the industrial system and its environment as a joint ecosystem characterized by flows of material, energy and information as well as by provision of resources and services from the Biosphere [40].

Experience suggests that material flow management (MFM) and related analysis tools such as material flow analysis (MFA) and life-cycle assessment (LCA) are good methods. In the 20th century, the MFA concept emerged in various fields of study at different times. It provides a method attractive as a decision-support tool in resource management and waste and environmental management. MFA is defined as the systematic assessment of the flows and stocks of materials within a system defined in space and time; it connects the sources, the pathways, and the intermediate and final sinks of a material, and the results of an MFA can be controlled by a simple material balance comparing all inputs, stocks, and outputs of a process [41-42].

The Circular Economy has been framed in an almost identical way as Industrial Ecology, with three levels of initiatives: At the micro or individual firm level, companies are either required or encouraged to conduct cleaner production, CP, auditing. For heavily polluting enterprises, CP is obligatory and single enterprise, involving a firm-level study of cleaner production, on eco-industrial initiatives at a smelter [43]; at the meso or second level, the main objective is to develop an eco-industrial network that will benefit both regional production systems and environmental protection. Approaches include but are not limited to energy cascading, sharing of local infrastructure, and exchanging by products and recycling wastes; inter-firm clusters at supply chain level, represented by eco-industrial parks (EIPs) and involving industrial symbiosis; finally, entire cities/municipalities, incorporating industrial metabolism [44-45-46-47].

A separate line of thinking began in the early 1970s, inspired by the OPEC oil crisis: Environmental Economics [48-49] with its emphasis very much on economics, sought to examine how the environment could be managed in order to allow economic growth to continue [50]. By the 1980s, frustration with progress led to a second school of thought, Ecological Economics, separating itself and developing a more ecologically centred approach [51]. From this group emerged a third school, who felt that the social aspects of sustainability were not sufficiently recognized. They called it Socioecological Economics [52-53]. The industrial symbiosis field is thus moving from analogies with natural ecosystems and turning to economic sociology and geography accounts of embeddedness for explanatory purchase [54].

In this context industrial metabolism is mentioned as study of material and energy flows through societies and the sources as well as causes of emissions including their connection to human activities [55]. Adjacent to studies of industrial metabolism ecological modernization theory focuses on rather sociological perspectives of industrial and environmental developments, in particular ecological risks that are associated with industrialism [56-57].

SECONDARY RAW MATERIALS

The uniqueness of the Circular Economy comes from two interconnected ideas, the closed-loop economy and 'design to re-design' thinking. The Circular Economy include 'low consumption of energy', 'low emission of pollutants' and 'high efficiency', using it as a generic term for an industrial economy which is, by design or intention, restorative and in which material flows are of two types- those which are biological nutrients, designed to re-enter the biosphere safely, and technical nutrients, which are designed to circulate at high quality without entering the biosphere. The aims are to 'design out' waste, return nutrients, and recycle durables, using renewable energy to power the economy [58]. The use of the word 'restorative' is important, as the Circular Economy is not merely a preventative approach, reducing pollution, but also aims to repair previous damage by designing better systems within the entity of the industry itself. Its concept of redesigning systems of manufacture and service supply focuses on achieving value from such redesign rather than simply improving resource utilization. Feng et al. (2007) [59] describe the Circular Economy as a mode of economic development based on ecological circulation of natural materials, requiring compliance with ecological laws and sound utilization of natural resources to achieve economic development.

Recycling has been a significant part of sustainable practice for many years, and it is fundamental to the Circular Economy. These ideas are further developed in industrial symbiosis, where firms use each other's waste as resources, and in the service economy, where work is done to slow down cycles of use, in order to delay waste output. By increasing longevity of products through better manufacturing and maintenance, the rate of replacement

decreases, and so resource use is reduced. Thus the 'waste-as-food concept', wherein unwanted outputs of one industrial process are used as raw materials in another industrial process, and the three Rs of Reduce, Reuse, and Recycle have become central to the concept of the Circular Economy. So, there is a feedback process of resource —product—renewed resource, and that the ultimate objectives of optimum production, optimized consumption, and minimum waste can be achieved in production [60]; recently, there is a major stress on focus of the Circular Economy is on resource productivity and eco-efficiency improvement, and they adopt the 4R approach: reduce, reuse, recycle, and recover. The Reduction principle aims to minimize the input of primary energy, raw materials and waste through the improvement of efficiency in production (so called eco-efficiency) and consumption processes e.g. introducing better technologies, or more compact and lightweight products, simplified packaging, more efficient household appliances, a simpler lifestyle, etc. [61]. Recycling of waste offers the opportunity to benefit from still usable resources and reduce the quantity of waste that need to be treated and or/disposed of, thus also decreasing the related environmental impact [62-63-64-65]. However, if a company or the society is able to recycle all its waste, it may not be interested in reducing the amount of waste [66]. Although Circular Economy is often identified with the recycling principle, it must be underlined that this may be the least sustainable solution compared to the other CE's principles (Reduction and Reuse) in terms of resource efficiency and profitability [67-68].

In closed-loop supply chains the entire flow of material from suppliers to manufacturers, distributors, retailers and finally consumer is considered (forward supply chain) as well as the reverse flows of used products (reverse supply chain) [69]. In focusing attention on exchanges of by-products and wastes in planned complexes of co-located manufacturing plants, the industrial symbiosis approach to the circular economy is to increase the intensity of localized resource use; literally squeezing more value from the same initial inputs through co-located manufacturing processes. This contrasts with the extended product life approach. Here the circular economy seeks to stretch the economic life of goods and materials by retrieving them from post-production consumer phases. This approach too valorises closing loops but does so by imagining object ends in their design and by seeing ends as beginnings for new objects. Unlike industrial symbiosis, the aim is to re-use or repurpose products at a later date after their consumption [70].

ENVIRONMENTAL AND SOCIAL ADVANTAGES

In industrial ecology, it is implied that a circular economy will be beneficial to society and to the economy as a whole. Benefits will be obtained, not only by minimizing use of the environment as a sink for residuals but – perhaps more importantly – by minimizing the use of virgin materials for economic activity.

Various studies on CE have been conducted during the last decade and it is clear that CE provides a way to ease the tension between economic development and carbon dioxide emission; addresses the urgent pollution and resource scarcity problems; and helps enterprises and industries to improve their competitiveness and remove green barriers in the international trade.

Our review results show that current practices are being carried out at the micro, meso and macro levels simultaneously and cover the areas of production, consumption, and waste management.

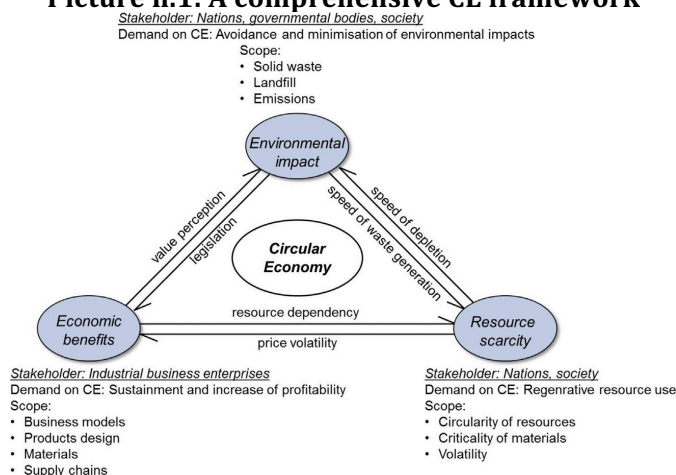
Other supports, from government and non-governmental organizations, help to promote, regulate and monitor the CE implementation.

In the interest of taking the study of ecoindustrial initiatives further and placing those initiatives within an economic and evolutionary setting, there are two criteria in examining the success of each such initiative and its evaluation: It must improve the eco-efficiency of the group of firms as a whole while improving the profit position of at least one firm without damaging the profit position of the others. The first criterion of eco-efficiency has been intensively discussed in the literature [19;71-72], and a number of measurements for eco-efficiency have been developed and applied in previous studies, such as a tangible reduction in material throughput; in energy released; in carbon dioxide released; or in some biological measure, such as basic oxygen demand (BOD) of watercourses [73-74].

The potential economic benefits from this monitoring and improvement system include more efficient materials and energy use, increased revenues from the sale of “wastes”, cost savings from lowered insurance costs and reduced environmental penalties and increased competitive capacity. The potential environmental benefits include the conservation of natural resources (especially non-renewable resources such as water, fossil fuels and minerals), reduced environmental impact through efficient energy and material use and less waste discharge, avoidance of toxic materials, extended life cycle of landfill sites, and recovery of local ecosystem [75]. The potential social benefits include improved social relations between industrial sectors and local societies, more employment opportunities from new recycling businesses, improved public environmental awareness and public health level [76-77].

Social innovations that allow for community involvement, wider public education, and broader media coverage are essential to the success of an initiative that applies the CE concept [78]. Further, without knowledge resources (i.e. information), stakeholders either “do not know how to respond to recycling pressure or may employ tactics that do not effectively reduce their waste” [79-80-81]. Also, successful implementation of the CE concept requires that the stakeholders have a clear idea of the potential economic benefits, social disparities, waste reduction, reduced environmental burden, and reuse of materials [82-83-84-85-86]. Specific value chains, material flows, and products need to be assessed to show the value of applying the CE concept [87].

Picture n.1: A comprehensive CE framework



Source: [88].

Even if research shows that the comprehensive CE perspectives of resource scarcity, environmental impact and economic benefits are covered two major results can be highlighted (picture n. 1).

FUTURE PILLARS OF CIRCULAR ECONOMY

In order to adopt the CE as future economic model, immense efforts are required to perfect the existing measures as well as to deploy a wider range of policies to overcome these challenges. The government needs to continue its support for the major technologies necessary for the CE. This requires that the government accurately identifies key technological areas and projects in line with current and long-term requirements for the economy and supports research efforts in the field of energy savings, alternatives, and recycling, and eventually boosts the nation's capacity in proprietary technological innovation through R&D investment at both enterprise and academic levels. In order to improve public awareness and participation, activities related to the CE concept such as TV promotions, newsletters, achievement exhibitions and workshops should be carried out

periodically. Such initiatives can provide platforms at which experiences from different parts of the world and from different institutions could be objectively reviewed. Moreover, enterprises could strengthen their mutual understanding and friendship through information exchanges, which will be the solid foundation for further collaboration on promoting the CE.

Improvements regarding the enforceability of legislation as well as the management system within the government are also impressive. It calls for a reform in judicial management mechanisms, a more transparent monitoring and auditing mechanism. On the other hand, the government should seek standardized methods for data collection, calculation and submission procedures so as to ensure a more accurate assessment of CE's development [89]. It may be necessary to re-evaluate how the circular economy should actually be defined. The following definition is suggested: The Circular Economy is an economic model wherein planning, resourcing, procurement, production and reprocessing are designed and managed, as both process and output, to maximize ecosystem functioning and human well-being. Humans, their activities and their environment are all loci on the one circle, thus a circular economy recognizes this relationship. A circular economy involves entire networks of production, and there is a diffusion of responsibility throughout these networks, with the producer and consumer not remaining ethically neutral. The implications of re-aligning economic and management practice with properly formulated ecological and social models can only contribute positively to the development of ethical and sustainable business practice.

The perspectives of CE are huge and appealing. An overall increase of knowledge of theoretical and practical framework of circular economy, CE, as well as the monitoring of the presently existing projects at the different levels are fundamental for advancing CE progresses in worldwide. The most important aspect, i.e. the one that still seems to need improvement, is the knowledge and awareness of European producers and consumers, because of the important role devoted to producers and consumers responsibility in European policies. CE efficiency and environmental protection would become crucial factors to orient policies for the transition to new production and consumption patterns, capable to delay the descent and allow a smoother transition to different and more environmentally sound lifestyles and socio-economic dynamics.

To facilitate the evolution of eco-industrial initiatives, countries seem to need both a topdown approach and a bottom-up approach. The former is ensured by institutional arrangements, such as regulatory requirements set in place by the Circular Economy Promotion Law and by the Circular Economy Pilot Demonstrations program and the Eco-industrial Park program established by various government agencies [22].

CONCLUSIONS

A sustainable future for the human race will demand system-based thinking that involves, in equal measure, society, environment, and economics. It is the re-knitting together of these pillars of sustainability that must happen if we are to rediscover a balanced existence with the rest of the biosphere. Of the three pillars of sustainability (social, economic, and environmental) it is the former that is least expanded in most of the conceptualizations and applications of the Circular Economy, and yet the social, with an emphasis on intra and inter-generational equity is underpinned by ethical concepts, just as much as the environmental, in relation to the moral imperative of business to sustain the natural environment.

The Circular Economy is an economic model wherein planning, resourcing, procurement, production and reprocessing are designed and managed, as both process and output, to maximize ecosystem functioning and human well-being. Humans, their activities and their environment are all loci on the one circle, thus a circular economy recognizes this relationship. A circular economy involves entire networks of production, and there is a diffusion of responsibility throughout these networks, with the producer and consumer not remaining ethically neutral. Future research should begin to incorporate the latest ecological knowledge into our understanding of naturalistic economical models and systems, without silencing the social and human dimension. This may require significant reexamination of much of current theory, and lead to new practice. The implications of re-aligning economic and management practice with properly formulated ecological and social models can only contribute positively to the development of ethical and sustainable business practice [11].

The establishment of a future trajectory for a circular economy will require that this approach be extended so that the broader issue of sustainability can be addressed more comprehensively. Whereas external effects relate mainly to the present generations, the sustainability issue implies a need to address the future generations as well when the implications of the environmental pressures are quantified [91].

To address these and other sustainability issues, the concept of the Circular Economy while not entirely new has recently gained importance on the agendas of policymakers [92] and also become an important field of academic research with a steep increase in the number of articles and journals covering this topic during the last decade. Companies are also increasingly aware of the opportunities promised by the Circular Economy and have started to realize its value potential for themselves and their stakeholders [75].

Despite the concept's importance for academia, policymakers, and companies, the conceptual relationship between the Circular Economy and sustainability is not clear. This has potential detrimental implications for the advancement of sustainability science and the diffusion of practices based on these concepts. Therefore, this research aims to contribute to conceptual clarity by investigating the similarities, differences, and relationships between both concepts in theory [93].

References

- IMOJAH W.- MCMAHON, C.- HAMMOND G. & NEWMAN G., *Development of robust design-for-remanufacturing guidelines to further the aims of sustainable development*, in "Robotics and Computer-Integrated Manufacturing", n.23(6), 2007, pp. 712-719.
- NESS D., *Sustainable urban infrastructure in China: towards a factor 10 improvement in resource productivity through integrated infrastructure system*, in "International Journal Sustainable. Developmen-. World Ecoligal", n. 15, 2008, pp.288-301.

TUKKER A.- CHARTER M.- VEZZOLI C.- STO E.- MUNCH ANDERSEN M. (Eds.), *System Innovation for Sustainability. Perspectives on Radical Change to Sustainable Consumption and Production*. Greenleaf Publishing, Sheffield, UK, 2008.

JACOBSEN N.B. *Industrial symbiosis in Kalundborg Denmark: a quantitative assessment of economic and environmental aspects*, in "Journal Industrial Ecological", n. 10 (1-2), 2006, pp. 239-256.

ANDERSEN M. S., *Evaluation of the cleaner technology program, environmental review no. 14*. Environmental Protection Agency, 1997, Copenhagen, Denmark.

ANDERSEN M.S., *Governance by green taxes: implementing clean water policies in Europe 1970-1990*, in "Environmental Economics Policy Study" n.1, 1992, pp.39-63.

BAGLIO L.- FICHERA A.- RUSSO G.- AMARA G. - LOMBARDO E., *DEFINITION OF PRICE IN CIRCULAR RAW MATERIALS IN THE DISPOSAL OF HAZARDOUS INDUSTRIAL WASTE*, in "Procedia Environmental Science, Engineering and Management", n. 4 (1), 2017, pp. 1-58.

MATHEWS J. A.- TAN H., *Progress Toward a Circular Economy in China The Drivers (and Inhibitors) of Eco-industrial Initiative*, in "Journal of Industrial Ecology", Vol. 15, N. 3, 2011, pp. 435-457.

VAN DER VORST, R., *Developing sustainable products and services*, in "Journal of Cleaner Production", n. 11 (8), 2003, pp. 883-895.

TUKKER A., *Product services for a resource-efficient and circular economy: a review*, in "Journal of Cleaner Production", n. 97, 2015, pp. 76-91.

MURRAY A.- SKENE K.- HAYNES K., *The Circular Economy: An Interdisciplinary Exploration of the Concept and Application in a Global Context*, in "Journal of Business Ethics", 2017, n. 140, pp. 369-380.

SKOU ANDERSEN M., *An introductory note on the environmental economics of the circular economy*, in "Sustainable Science", n. 2, 2007, , pp. 133-140.

GHISELLINI P. - CIALANI C., ULGIATI S., *A review on circular economy: the expected transition to a balanced interplay of environmental and economic systems*, in "Journal of Cleaner Production", n. 114, 2016, pp.11-32.

GENG, Y. - CÔTE, R., *Scavengers and decomposers in an eco-industrial park.*, in "International Journal of Sustainable Development and World Ecology", n. 9 (4), 2002, pp.333-340.

GERTLER, N., *Industrial ecosystems: Developing sustainable industrial structures. Master's thesis*, MIT, 1995, Boston, <http://dspace.mit.edu/bitstream/handle/1721.1/11556/33822653>.

LIEDER M.- RASHID A., *Towards circular economy implementation: a comprehensive review in context of manufacturing industry*, in "Journal of Cleaner Production", n. 115, 2016, pp. 36-51.

ELLEN MACARTHUR FOUNDATION, *Economic and business rationale for a circular economy*, in "Towards the Circular Economy", 2012, vol. 1.

ELLEN MACARTHUR FOUNDATION, *Opportunities for the consumer goods sector*, in "Towards the Circular Economy", 2013, vol. 2.

ELLEN MACARTHUR FOUNDATION, *Accelerating the scale-up across global supply chains*, in "Towards the Circular Economy", 2014, vol. 3.

GREGSON N. - CRANG M.- FULLER S.- HOLMES H., *Interrogating the circular economy: the moral economy of resource recovery in the EU Economy and Society*, Vol. 44 N. 2, 2015, pp. 218-243.

CHERTOW, M. R., & LOMBARDI, D. R., *Quantifying economic and environmental benefits of collocated firms*, in "Environmental Science and Technology", n. 39, 2005, pp. 6535-6541.

LAYBOURN, P. & LOMBARDI, R., *Industrial symbiosis in European policy: Overview of recent progress*. In "Journal of Industrial Ecology", n. 16 (1), 2012, pp.11-12.

JELINSKI L. W.- GRAEDLER T. A.- LAUDISE R. A.-MCCALL D. W.- PATEL, C. K. N., *Industrial ecology: concepts and approaches*, in "Proceedings of the National Academy of Sciences", n. 89, 1992, pp. 793-797.

KNEESE, A.V.- AYRES, R. U. - D'ARGE, R. C., *Economics and the environment. A materials balance approach*, 1970, Johns Hopkins Press, Baltimore, USA.

LANCASTER, M., *Principles of sustainable and green chemistry*, in CLARK J. - MACQUARRIE D. (EDS.), *Handbook of green chemistry and technology*, 2002, Oxford: Blackwell, UK, pp. 10-27.

- GREYSON J., *An economic instrument for zero waste, economic growth and sustainability*, in "Journal of Cleaner Production", n. 15, 2007, pp. 1382–1390.
- BOULDING, K. E., *The economics of coming spaceship earth*, In H. Jarret (Ed.), *Environmental quality in a growing economy*, 1966, Baltimore, MD, John Hopkins University Press.
- LIU, Q.- LI, H.-M.- ZUO, X.-L.- ZHANG, F.- WANG, L., *A survey and analysis on public awareness and performance for promoting circular economy in China: A case study from Tianjin*, in "Journal of Cleaner Production", n.17, 2009, pp. 265–270.
- YUAN Z.- MORIGUICHI, Y., *The circular economy: a new development strategy in China*, in "Journal of Industrial Ecology", n. 10, 2006, pp. 4–8.
- ZHOU K.- BONET FERNANDEZ D.- WAN C.- DENIS A.- JUILLARD G.-M., *A study on circular economy implementation in China*, Working Papers, n. 312, 2014, Paris: IPAG Business School p. 13.
- RØPKE I., *Trends in the development of ecological economics from the late 1980s to the early 2000s*, in "Ecological Economics", n. 48, 2005, pp. 262–290.
- CHERTOW, M. R., *Industrial symbiosis: Literature and taxonomy*, in "Annual Review of Energy and the Environment", n.25, 2000, pp. 313–337.
- FISCHER-KOWALSKI, M.- HABERL, H., *Sustainable development: Socio-economic metabolism and colonization of nature*, in "International Social Science Journal", n.50, 1998, pp. 573–587.
- PEARCE D. W. -TURNER R. K., *Economics of natural resources and the environment*, 1990, Hemel Hempstead, Herts: Harvester Wheatsheaf.
- STAHEL W. R. - REDAY-MULVEY G., *Jobs for tomorrow: The potential for substituting manpower for energy*. Brussels, 1976, European Commission: DG Manpower.
- JARRET H. (Ed.), *Environmental quality in a growing economy*, 1966, Baltimore, MD: John Hopkins University Press.
- SIMMONDS, P. L., *Undeveloped substances: or, hints for enterprise in neglected fields*. 1862, London: Robert Hardwicke.
- NAKAJIMA, N. *A vision of industrial ecology: State-of-the-art practices for a circular and service-based economy*. In "Bulletin of Science Technology Society", n. 20, 2000, pp. 154–169.
- PARKINS, E., *The geography of American geographers*, in "The Journal of Geography", n. 33(9), 1930, pp. 229-234.
- ERKMAN S., *Industrial ecology: an historical view*, in "Journal of Cleaner Production", n. 5, 1997, pp. 1-10.
- HECK P. *Material flow analysis and material flow management. Consulting Report for the World Bank Project on Policies for Promotion of a Circular Economy in China*, 2006, The World Bank, Beijing, pp 20–21.
- REN YONG J, *The circular economy in China*, in "Mater Cycles Waste Manag", n. 9, 2007, pp.121–129.
- YUAN Z. W. - SHI L., *Improving enterprise competitive advantage with industrial symbiosis: Case study of a smeltery in China*, in "Journal of Cleaner Production", n. 17, 2009, pp.1295–1302.
- CHERTOW M. R. - LOMBARDI, D. R. (). *Quantifying economic and environmental benefits of collocated firms*, in "Environmental Science and Technology", n. 39, 2005, pp.6535–6541.
- ZHANG B.- BI J. -FAN Z. Y.- YUAN, Z. W., - GE, J. J., *Ecoefficiency analysis of industrial system in China: A data envelopment analysis approach*. In "Ecological Economics", n. 68, 2008, pp. 306–316.
- ZHANG H.- HARA K.- YABAR H- YAMAGUCHI Y.- UWASU, M., - MORIOKA T., *Comparative analysis of socio-economic and environmental performances for Chinese EIPs: Case studies in Baotou, Suzhou, and Shanghai*. In "Sustainability Science", n. 4, 2009, pp. 263– 279.
- ZHANG L.-YUAN Z.- BI, J.- ZHANG, B., - LIU, B., *Ecoindustrial parks: National pilot practices in China*, in "Journal of Cleaner Production", n. 18, 2010, pp. 504–509.
- CROPPER M. L. - OATES W. E. (). *Environmental Economics: A survey*, in "Journal of Economic Literature", n. 30, 1992, pp.675–740.
- DORFMAN R., *Some concepts from welfare economics in* DORFMAN R.- DORFMAN N. S. (Eds.), *Economics of the environment: Selected readings*, 1993, New York, NY: W.W. Norton, pp. 79–96.
- MURRAY J. W., *The oceans*. In BUTCHER S. S. - CHARLSON R. J. - ORIANI R. J. - WOLFE G. V. (Eds.), *Global biogeochemical cycles*, 1992, San Diego, CA: Academic Press, pp. 176–211.

- DALY H. E., - FARLEY J., *Ecological economics: Principles and applications*. 2004, Washington, DC: Island Press.
- JACOBS M., *What is socio-ecological economics?*, in "Ecological Economics Bulletin", n. 1, 1996, pp.14–16.
- CAMERON J. I., *Applying socio-ecological economics: A case study of contingent valuation and integrated catchment management*, in "Ecological Economics", n. 23, 1997, pp. 155–165.
- CHERTOW M.- EHRENFELD J., *Toward a Theory of Industrial Symbiosis*, in "Journal of Industrial Ecology", n. 16 (1), 2012, pp. 13-27.
- AYRES R.U.- SIMONIS, U.E., *Industrial Metabolism: Restructuring for Sustainable Development*. 1994, The United Nations University.
- MURPHY J.- GOULDSON, A., *Environmental policy and industrial innovation: integrating environment and economy through ecological modernization*, in "Geoforum", n. 31 (1), 2000, pp. 33-44.
- BOCKEN N. M. P.- DE PAUW I.- BAKKER C - BRAM VAN DER C., *Product design and business model strategies for a circular economy*, in "Journal of Industrial and Production Engineering", Vol. 33 No. 5, 2016, pp. 308–320.
- UNEP., *Circular Economy: An alternative for economic development*, 2006, Paris: UNEP DTIE.
- FENG Z.- YAN, N., *Putting a circular economy into practice in China*, in "Sustainable Sciences", n. 2, 2007, pp. 95-101.
- HU J.- XAIO Z.- DENG, W.- WANG M.- MA, S., *Ecological utilization of leather tannery waste with circular economy model*, in "Journal of Cleaner Production", n. 19, 2011, pp. 221–228.
- SHI, H., CHERTOW, M. & SONG, Y., *Developing country experience with ecoindustrial parks: A case study of the Tianjin economic technological development area in China*. Journal of Cleaner Production, n. 18(3), 2010, pp. 191–199.
- CAGNO E.- TRUCCO P.- TARDINI L., *Cleaner production and profitability: analysis of 134 industrial pollution prevention (P2) project reports*, in "Journal of Cleaner Production", n. 13, 2005, pp. 593-605.
- ZHU D., *Background, pattern and policy of China for developing circular economy*. In "Chinese Journal Population Resource and Environmental", n. 6 (4), 2008, pp. 3-8.
- LAZAREVIC D.- Aoustin E.- BUCLET N.- BRANDT, N., *Plastic waste management in the context of a European recycling society: comparing results and uncertainties in a life cycle perspective*, in "Resources Conservation and Recycling", n. 55, 2012, pp. 246-259.
- BIRAT J. P., *Life cycle assessment, resource efficiency and recycling*, in "Metallic Resources Technologies ", N. 112 (206), 2015, pp.1-24.
- GWEHENBERGER G.- ERLER, B.- SCHNITZER H., *A Multi e Strategy Approach to Zero Emissions. Article Presented at Technology Foresight Summit*, 2003, Budapest 27-29 March 2003.
- STAHEL W.R., *Policy for material efficiency e sustainable taxation as a departure from a throwaway society*, in "Philosophical Transactions of the Royal Society", n. 371,2013, pp. 201- 207.
- STAHEL W.R., *Reuse Is the Key to the Circular Economy*, 2014.
- SOUZA G.C., *Closed loop Supply chains: a critical review, and future research* in "Decision Sciences", n. 44 (1), 2013, pp.7-38.
- N. GREGSON- M. CRANG- S. FULLER H., *Holmes Interrogating the circular economy: the moral economy of resource recovery*, in "EU Economy and Society", Vol. 44, N. May 2015, pp. 218–243.
- EHRENFELD J. R., *Eco-efficiency: Philosophy, theory and tools*, in "Journal of Industrial Ecology", n. 9(4), 2005, pp. 6–8.
- HUPPES G. - ISHIKAWA M., *A framework for quantified eco-efficiency analysis*, in "Journal of Industrial Ecology", n. 9 (4), 2005, pp. 25–41.
- KEELING R. F.- NAJJAR, R. P.- BENDER, M. L.- TANS, P. P., *What atmospheric oxygen measurements can tell us about the global carbon cycle*, in "Global Biogeochemical Cycles", n. 7, 1993pp. 37–67.
- KORHONEN, J. - SN`AKIN J. P., *Analysing the evolution of industrial ecosystems: Concepts and application*, In "Ecological Economics", n. 52, 2005, pp. 169- 186.
- PARK J.- SARKIS J.- WU Z.H., *Creating integrated business and environmental value within the context of China's circular economy and ecological modernization*, in "Journal of Cleaner Production", n. 18, 2010, pp.1494-1501.

- GENG Y.- FU J. SARKIS J. XUE B., *Towards a national circular economy indicator system in China: an evaluation and critical analysis*, in "Journal of Cleaner Production", n. 23, 2012, pp. 216-224.
- SU B.-HESHMATI A.- GENG Y.- YU X., *A review of the circular economy in China: moving from rhetoric to implementation*, in "Journal of Cleaner Production", n. 42, 2013, pp. 215-227.
- SELMAN P., *A sideways look at Local Agenda 21*, in "Journal of Environmental Policy Plan", n. 2(1), 2000, pp. 39-53.
- HEERES R.R.- VERMEULEN W.J.- DE WALLE F.B., *Eco-industrial park initiatives in the USA and the Netherlands: first lessons*, in "Journal of Cleaner Production", n. 12(8), 2004, pp. 985-95.
- LOWE E., *Eco-industrial park handbook for asian developing countries*, 2001, Oakland, CA: Indigo Development.
- SIMPSON D. *Institutional pressure and waste reduction: the role of investments in waste reduction resources*, in "International Journal of Production Economics", n. 139 (1), 2012, pp. 330-9.
- ASHTON W. *Understanding the organization of industrial ecosystems*, in "Journal of Industrial Ecology", n. 12(1), 2008, pp. 34-51.
- CHERTOW M.R.- ASHTON W.S.- ESPINOSA J.C., *Industrial symbiosis in Puerto Rico: environmentally related agglomeration economies*. In *Regional Studies*, 42(10), 2008, pp. 1299-312.
- ZHANG Y.- ZHENG H.- YANG Z.- LIU G.- SU M., *Analysis of the industrial metabolic processes for sulfur in the Lubei (Shandong Province, China) eco-industrial park*, in "Journal of Cleaner Production", n.96, 2015, pp. 126-38.
- WEN Z.- MENG X., *Quantitative assessment of industrial symbiosis for the promotion of circular economy: a case study of the printed circuit boards industry in China's Suzhou New District*, in "Journal of Cleaner Production", n. 90, 2015, pp. 211-219.
- DESPEISSE M.- KISHITA Y.- NAKANO M.- BARWOOD M., *Towards a Circular Economy for End-of-Life Vehicles: a Comparative Study UK-Japan*, in *Procedia CIRP* 2015, n. 29, pp. 668-73.
- WINANS K.- KENDALL A.- DENG H., *The history and current applications of the circular economy concept*, in "Renewable and Sustainable Energy Reviews", n. 68, 2017, pp. 825-833.
- RØPKE, I., *The early history of modern ecological economics*, in "Ecological Economics", n. 50, 2004, pp. 293-314.
- WCED, *Our common future*. Oxford: Oxford University Press, 1987.
- MIRATA, M. & EMTAIRAH, T., *Industrial symbiosis networks and the contribution of environmental innovation: The case of the Landskrona industrial symbiosis programme*, in "Journal of Cleaner Production", n. 13, 2005, pp. 993-1002.
- BRENNAN G.- TENNANT M.- BLOMSMA, F... *Business and production solutions: closing the loop in*. In: Kopnina, H.- Shoreman-Ouimet E. (Eds.), 2015, Sustainability: Key Issues. EarthScan. Routledge, pp. 219-239.
- GEISSDOERFER M. - SAVAGET P.- BOCKEN N. M.P. - HULTINK J. E., *The Circular Economy e A new sustainability paradigm?*, in "Journal of Cleaner Production", n. 143, 2017, pp.757-768.



The Seemingly Tripod of Strategic Stability of the Middle East: An Exploratory Political-Economic Review & Analysis

Reza G. Hamzaee, Ph.D.

BOG-Distinguished Professor of Economics
Department of Economics, Political Science, and Sociology
Missouri Western State University
4525 Downs Drive, St. Joseph, MO 64507

ABSTRACT

The world's stabilization policy in the Middle East has consistently failed through the U.S.-Israeli biases, a growth of extremism in all fronts, including Israeli government, and unexceptionally supported by the U.S. government, some Palestinian leading segments, and other regional powers' intervention. Moreover, to a large extent, because of all that fiasco and imbalanced treatment of the more independent nations, Islamist terrorism has been growing and added to all already-existing turbulences and instabilities. It is proposed in this exploratory research that as long as the currently growing biases, motivated by the political interest and hegemony-seeking approaches, pushed by bullying aggressions and suppressions, are pursued there is no visibility of any reliable success. The real resolution would only be imaginable through some genuinely impartial, moral, and ethical incentives targeting at an enhancement of the regional sustainability, and human support. To make things even more blurry, the current U.S. government's general vision and strategic goals, both internally and externally, are clearly identified through a noticeable trajectory, as boding a clear and even bigger fiasco more than ever. The world, at its most desirable setting, would surely need a restructured substitute for the currently standing United Nations, through a progressive and fair organizational re-engineering, in which the American lobbyist approach to governance is entirely abandoned and an impartiality principle would replace the currently governing realities, which have been in place for ages. The United Nation's efficacy has been nothing but a dream for years, regardless of tens of resolutions passed against Israeli aggression and violations of the United Nations' rules and regulations. The main focus of this research is on Iran, one of the regional super powers that should have been brought into the proposed common forces of stability and regional growth, despite all the controversial issues and its strategic intentions, as envisioned through some western governments' eyes.

INTRODUCTION

There has been a continuous concern as well as great challenges about some sound foreign policy that would ultimately lead to some sustainable stability in many regions of the world, including the turbulent Middle East, consisting of the 18 countries of Israel, Iran, Syria, Saudi Arabia, Turkey, Egypt, United Arab Emirates, Iraq, Lebanon, State of Palestine, Qatar, Yemen, Jordan, Bahrain, Oman, Kuwait, and Cyprus.

Many policy advisors, experts, and academicians have dedicated some noticeable amounts of their resources in exploration of some corresponding solutions to the ever-growing controversies and deeper socio-economic wounds. An example for the politicians and experts is Tony Blair of the UK (2017), serving as Prime Minister of the United Kingdom for the longest period (1997-2007) in the UK's modern time. He has been serving as the special envoy of the Quartet, consisting of United Nations, European Union, the U.S., and Russia, in 2007-2015. He has traveled to Israel more than 178 times after his departure from his UK's PM position through 2017. He has been a strong advocate of state of Israel at all times. His continual efforts

for promoting peace between Israel and the Palestinians are recorded. In summary, he has offered - what he calls - new ways and approaches in his recommendations. He has offered three basic principles: "The first is that the security of the state of Israel is not just an Israeli interest or, indeed, an American interest. It is a global interest for the security of all the nations of the world." (p. 1)

Blair's second principle then is narrowed down on a necessary and sustainable relationship between Israel and Arab nations, in which some collective strong commitment to a departure from both Shia extremism (led by a non-Arab country of Iran) and Sunni extremism, from the Muslim Brotherhood all the way through ISIS and other groups. On that Sunni segment of Islamic extremism, he failed to openly mention Saudi Arabia. That segment has been in fact led by Saudi Arabia and some had also dominated in Egypt and even in Turkey to some extent. He highlighted a need for subscription to mutual respect for religious tolerance, mutual security, and economic conditions. He proposes, perhaps as a third principle, that the Middle Eastern conflicts and instabilities would not come to a real end unless the problem of Palestinians is appropriately tackled and resolved. He proposes that the prerequisite for a sustainable stability and peace between Palestinians and Israel is a two-state solution and a real collective respect for religious tolerance. His distinct approach includes a set of appropriate conditions as a stable foundation for peace, as opposed to establishing peace as a prerequisite for better conditions.

Despite the seemingly decency of those efforts in bringing peace to the region, one may wonder why it has not succeeded after years of hard work. I am proposing that one can identify the strong biases towards the state of Israel by both U.S. and U.K., and then more loss of trust in Palestinian side, and generally, the Arab as well as Iranian sides of the equation, each in their own different ways. Iranian government (siding with Palestinians) cannot trust the already declared biases for - and unconditional commitment to - the state of Israel and pronouncing their biases against Palestinians, Iran, Egypt, and Turkey by those who would like to play the role of "peace making". Impartiality and not bullying attitudes of any mediators would be an absolute necessity for achieving any relative success.

Blair (2017) has consistently recommended that major world powers would do better in stabilizing the world and more specifically, the Middle East, by relying primarily on the active roles of the major countries of the region in taking charge. Obviously, that notion would not be purely implemented, given the political dimension and divisions of the world. The focus of this research is on the Middle East and then Iran. According to the late Chinese leader, Mao Zedong, if the third world war should ever be a reality, it would be mainly caused by the Middle Eastern tensions and the ongoing instability.

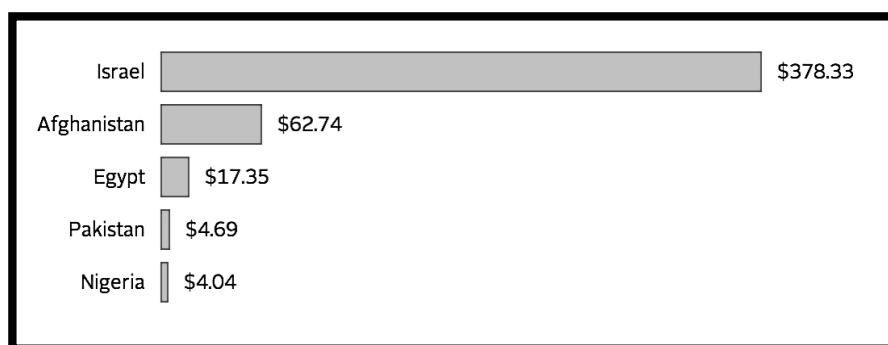


Figure 1. Fiscal Year 2015 - U.S. Foreign Aid per Capita

Table 1: The 2016 Estimated Most US Foreign Aid

1. Israel	\$3.10 billion
2. Afghanistan	\$1.51 billion
3. Egypt	\$1.46 billion
4. Jordan	\$1.00 billion
5. Pakistan	\$803.8 million
6. Kenya	\$630.3 million
7. Nigeria	\$607.5 million
8. Tanzania	\$590.6 million
9. Ukraine	\$513.5 million
10. Uganda	\$469.1 million

Source: ForeignAssistance.gov

Numbers were included in the President's FY 2016

What is missed, partially if not entirely, by many policymakers and international organizations is a new fact about the rapidly growing Islamic ideology and the growing challenges that need to be encountered most delicately and in a sound strategic planning for a sustainable as well as balanced promotion of peace and stability. The divisions are already wide and most destructive, followed by violence, crime, and terrorism.

Table 2: Regional Distribution of Muslims (2017)

Latin America/ Caribbean: 840,000	North America: 3,480,000
Europe: 43,470,000	Sub-Saharan Africa: 248,420,000
Middle East/ North Africa: 370,070,000	Asia Pacific: 986,420,000

Table 3: Top 12 Countries with the Largest Muslim Populations (2017)

Pakistan 176.2 million	Indonesia: 209.1 million
Bangladesh 134.4 million	India: 167.4 million
Egypt: 77 million	Nigeria: 77.3 million
Turkey: 71.3 million	Iran: 73.6 million
Algeria 34.7 million	Sudan: 39 million
Iraq: 31.2 million	Morocco: 31.9 million

Source: 1. <https://www.thoughtco.com/worlds-muslim-population-2004480>

2. Nations of the World, Grey House Publishing, 2018

3. PEW Research Center

Are the world's major powers getting smarter in dealing with the changing realities of the world? Is it still a winning strategy to continue to advocate the same failed foreign policy of the 19th and 20th centuries, in which the super powers' legitimate or illegitimate interests were the prerequisite for any major policy adoption? Are we still assuming that violence and terrorism are just random events and not preventable? Unfortunately, the trajectory of what major powers have been doing would bode some growing, not diminishing, terrifying turbulences, as inevitable consequences of short-sighted policies. Though, there are some individuals of major influences, such as Gates, Warren Buffets, etc., who have shifted their attentions to a global health and development. That movement needs to be supported and innovated by the major nations of the world for their sustainable stability, if nothing else, before it is too late. Western countries' faces are changing with no exception, and that is primarily due to the concentration of prosperity in those nations along with the varying birth rates in various countries. New long-term prosperity plans for empowering humanity are needed more than ever, without any regards and biases towards one or the other races, religious denominations, gender, national origins, etc. All one has to do is to just refer to the demographic research for a better

understanding of the globalization's challenges. Extremism is most likely the byproduct of long-lasting wrong policies.

Referring to many sources in Global Research (2016), or the historian William Blum (*Rogue State: A Guide to the World's Only Superpower*, 2018), one would see how the U.S., as "the World's Only Superpower" has contributed to the historically growing turbulences around the world in protecting its own "self-interest". Ironically all that has been unexceptionally done under a declared defense of democracy and "human rights". William Blum (2018) summarizes his article and a book with a challenging thought-stimulating statement that:

It is a scandal in contemporary international law, don't forget, that while "wanton destruction of towns, cities and villages" is a war crime of long standing, the bombing of cities from airplanes goes not only unpunished but virtually unaccused. Air bombardment is state terrorism, the terrorism of the rich. It has burned up and blasted apart more innocents in the past six decades than have all the anti-state terrorists who ever lived. (p.1)

Also, "A terrorist is someone who has a bomb but doesn't have an air force." (p.1). He offers the following counts of the countries that U.S. has bombed more than once in several cases. He stresses that: "Moreover, Washington does not apply the term "weapons of mass destruction" to other weapons the US has regularly used, such as depleted uranium and cluster bombs, which can be, and often are, highly indiscriminate."

Table 4: The List of Countries that U.S. Has Bombed

1. Korea and China 1950-53 (Korean War)
2. Guatemala 1954
3. Indonesia 1958
4. Cuba 1959-1961
5. Guatemala 1960
6. Congo 1964
7. Laos 1964-73
8. Vietnam 1961-73
9. Cambodia 1969-70
10. Guatemala 1967-69
11. Grenada 1983
12. Lebanon 1983, 1984
13. (both Lebanese and Syrian targets)
14. Libya 1986
15. El Salvador 1980s
16. Nicaragua 1980s
17. Iran 1987
18. Panama 1989
19. Iraq 1991 (Persian Gulf War)
20. Kuwait 1991
21. Somalia 1993
22. Bosnia 1994, 1995
23. Sudan 1998
24. Afghanistan 1998
25. Yugoslavia 1999
26. Yemen 2002
27. Iraq 1991-2003 (US/UK on regular basis)
28. Iraq 2003-2015
29. Afghanistan 2001-2015
30. Pakistan 2007-2015
31. Somalia 2007-8, 2011
32. Yemen 2009, 2011
33. Libya 2011, 2015
34. Syria 2014-2015

<https://www.globalresearch.ca/united-states-bombings-of-other-countries-americas-bombing-list/5533371>

According to a 2017 study, by an investigative historian, Eric Zuesse, entitled: "August 09, 2017 Polls: U.S. Is 'The Greatest Threat to Peace in the World Today.'" That was based on the results of a PEW Research Center's polling of 30 countries that were first surveyed in 2013 and again in 2017. The main question of the survey was: "Do you think that the United States' power and influence are a major threat, a minor threat, or not a threat to (each of the 30 surveyed countries)?" and the same question was presented on China, and then on Russia. The results are summarized below in Table 5:

Table 5: Major Threat to the World's Peace

Country	Ranking: 2017
USA	35%
Russia	31%
China	31%

Main Source: Strategic Cultural Foundation, August 2017

I would propose that a country, with the aforementioned records of performance and strong biases towards Israel, can hardly serve as a unifying leader in a genuine effort to secure peace and stability in the Middle East, and probably most other places. There is a strong need for a new approach, sponsored by most other free nations, including the U.S., who are able to recognize the current loss of trust in the leadership of the governing institutions. This loss of trust is more reflected in the polling given to the public than foreign policy experts.

According to Bruce Stokes (April 13, 2018), given all the recent developments in the world, in a global attitude survey (Spring 2017) and another one run in 2018, there were more pessimism about democracy among the U.S. foreign policy experts than those in the European countries. American foreign policy experts have also demonstrated more pessimism than their European counterparts when it comes to trusting in their country's national government. About 42% of U.S. experts and 61% of European counterparts did indicate that they trust their government to do what is right for the country. The percentages of the public's adherence view in both groups on democracy were identical, just 46%. However, American Public were happier (51%) than the European public (46%) with the government's job in doing what is right for the country.

Table 6: A Survey of Perceived Democracy and Government Performances

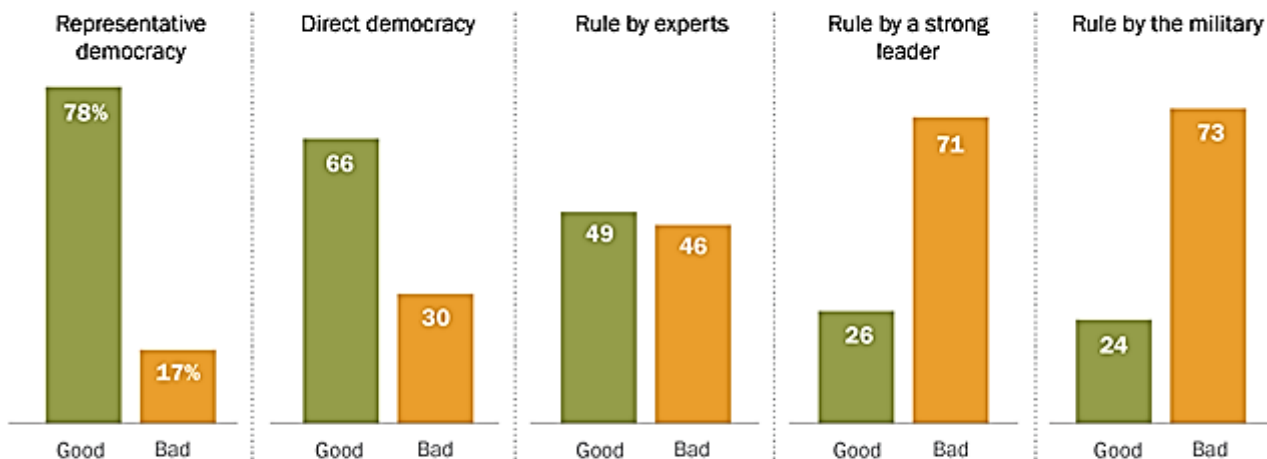
	Satisfied with democracy	Trust in government (a lot and/or somewhat) for doing right for the country
American Foreign Policy Experts	27%	42%
American Public	46%	51%
European Foreign Policy Expert	64%	61%
European Public	46%	46%

Source: PEW Research Center (Spring 2017): Respondents included 237 Europeans and 110 Americans.

Tabulated by Reza G. Hamzaee

In another world-wide survey, PEW Research Center reports a clear and distinct preference for representative and direct democracy than any other forms, as is demonstrated in the following Table. Ruling by a strong leader, or military turned out to be the two worst of all choices with a "Bad" ranking of 71% and 73%, accordingly.

WORLD-WIDE SUPPORT FOR REPRESENTATIVE AND DIRECT DEMOCRACY



Note: Percentages are global medians based on 38 countries. Full question wordings for political systems: Representative democracy, "A democratic system where representatives elected by citizens decide what becomes law"; Direct democracy, "A democratic system where citizens, not elected officials, vote directly on major national issues to decide what becomes law"; Rule by experts, "Experts, not elected officials, make decisions according to what they think is best for the country"; Rule by a strong leader, "A system in which a strong leader can make decisions without interference from parliament or the courts"; Rule by the military, "The military rules the country."

Source: Spring 2017 Global Attitudes Survey. Q29a-e.

PEW RESEARCH CENTER

Figure 3. Surveyed World-Wide Support for Democracy
 Source: Fact Tank - Our Lives in Numbers. PEW Research Center
<http://www.pewresearch.org/fact-tank/>

In addition to all other socio-economic challenges encountered by many Western countries, the growth of Islam has strongly concerned the governments' policies. Another less than appropriate policy in treating the restructuring of many non-Muslim societies could lead to some run-away controversies with immeasurable consequences. As exhibited below, the growing number of Muslims, e.g., in the U.S. and Germany are well documented. According to The Wall Street Journal (May 17, 2018, p. A3), "Births per 1,000 women reached an all-time U.S. low in 2017" at 60.2, which is 6.02 percent, which is obviously not the same thing as the birth rate.

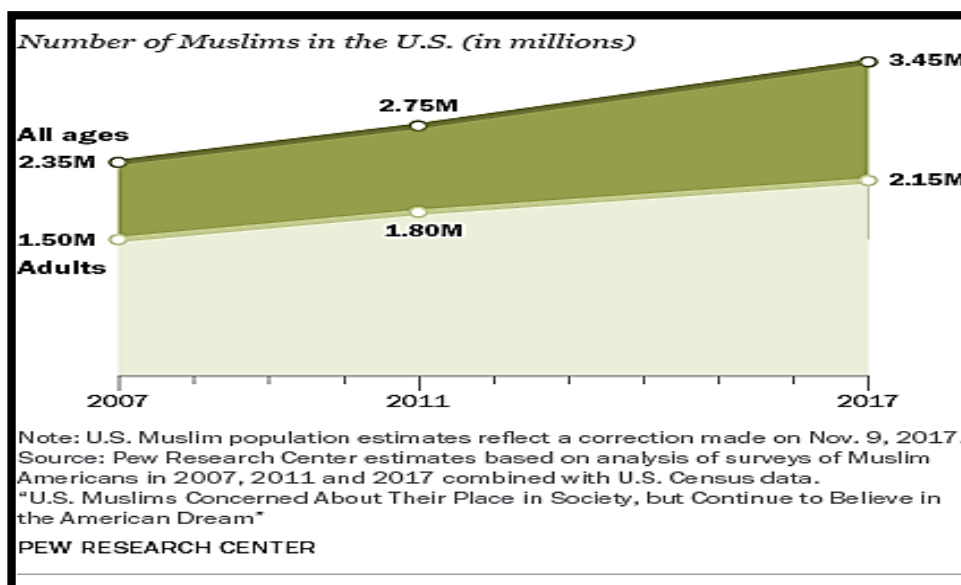
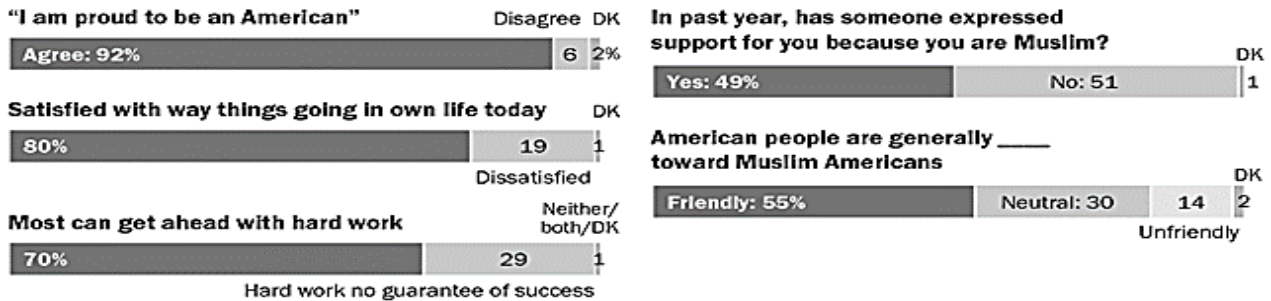


Figure 4. Continual Growth of Number of Muslims in the U.S.

Despite some tangible negative aura created against the U.S. Muslims, it was reported by a 2017 study conducted by PEW Research Institute, as is summarized in Figure 5, that nine-in-ten U.S. Muslims have expressed their sense of pride in being American.

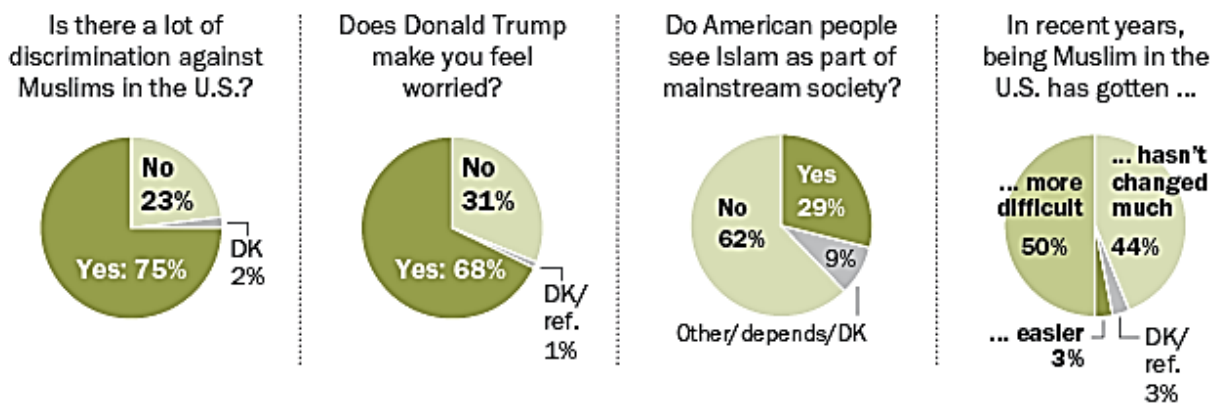
Nine-in-ten U.S. Muslims proud to be American



Note: Figures may not add to 100% due to rounding.
 Source: Survey conducted Jan. 23-May 2, 2017.
 "U.S. Muslims Concerned About Their Place in Society, but Continue to Believe in the American Dream"
 PEW RESEARCH CENTER

Figure 5. Ninety Percent of US Muslims are Proud to Be American

Source: <http://www.pewresearch.org/fact-tank/2017/08/09/muslims-and-islam-key-findings-in-the-u-s-and-around-the-world/>



Source: Survey conducted Jan. 23-May 2, 2017.

Figure 6. US Muslims are Concerned about Their Place in Society

Source: PEW Research Center: <http://www.pewresearch.org/fact-tank/2017/08/09/muslims-and-islam-key-findings-in-the-u-s-and-around-the-world/>

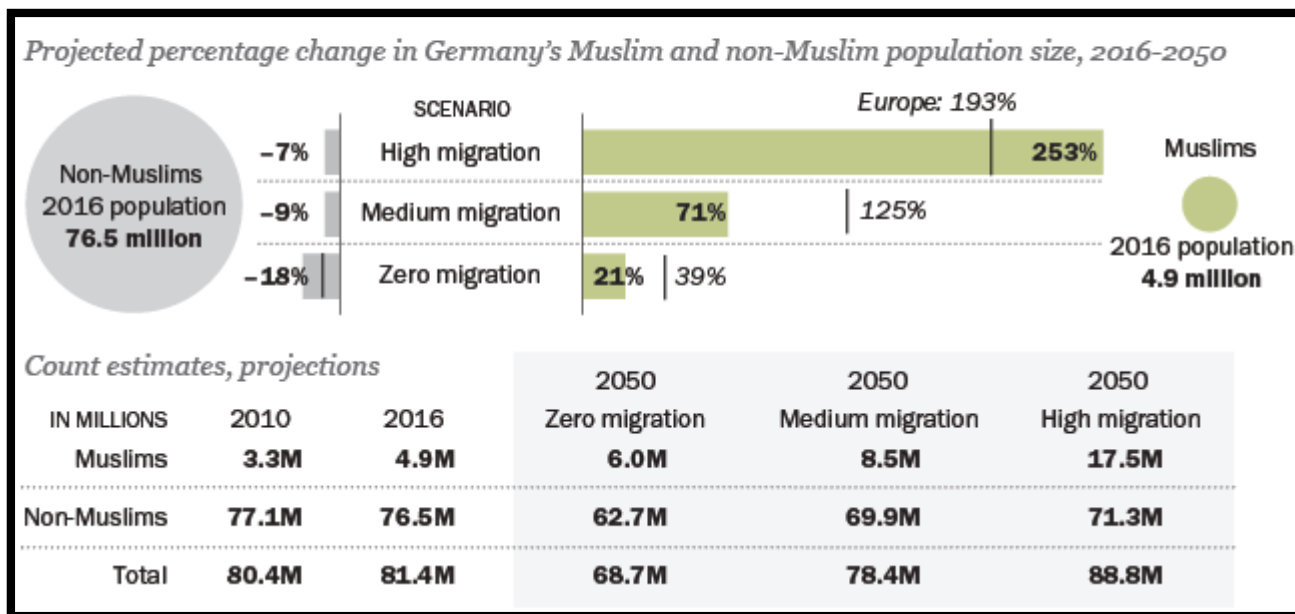


Figure 7. Germany's non-Muslim Population Decline and Muslim Population Growth

The support for democracy and religious freedom among Muslim nations, as summarized in the following table, has been growing.

Table 7: Widespread Support for Democracy and Religious Freedom

Region	Prefer democracy over strong leader**	Say religious freedom is a good thing**
Sub-Saharan Africa*	72	94
Southeast Asia	64	93
Southern-Eastern Europe	58	95
Middle East-North Africa	55	85
Central Asia	52	92
South Asia	45	97

*Data for all countries except Niger from "Tolerance and Tension: Islam and Christianity in Sub-Saharan Africa."
 **Medians show Muslims who say non-Muslims in their country are very free to practice their religion and consider this a good thing.

PEW RESEARCH CENTER Q10, Q11 and Q14.

Source: PEW Research Center, August 30, 2013

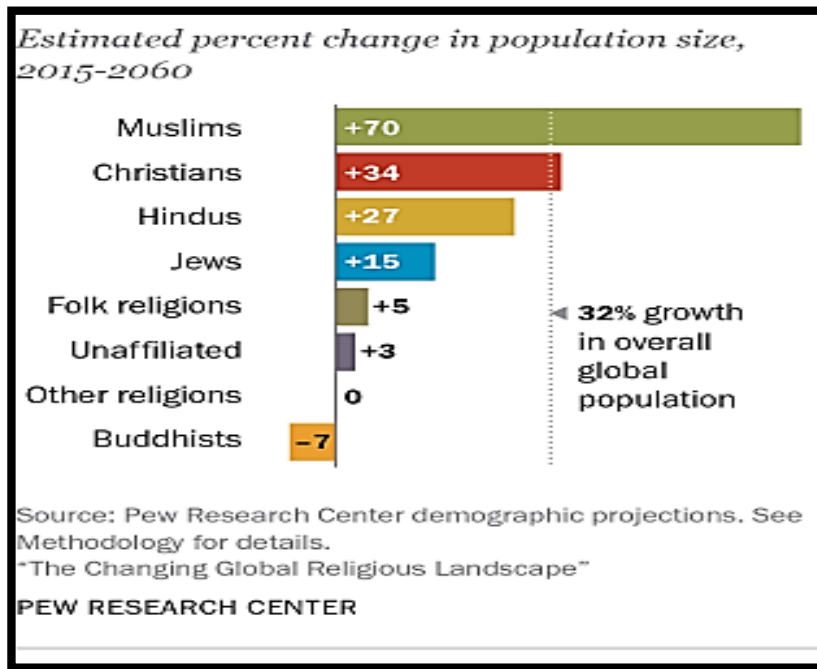


Figure 6. Fastest-Growing Major Religion
Source: Bill Chappell, April 2, 2015

According to Bill Chappell (April 2, 2015) "World's Muslim population will surpass Christians this century", Copyright 2015 NPR. <http://www.npr.org/>.

Table 8: Countries That Will No Longer Have a Christian Majority In 2050

	MAJORITY RELIGION 2010	% OF POPULATION 2010	MAJORITY/LARGEST RELIGION 2050	% OF POPULATION 2050
Australia	Christians	67.3%	Christians	47.0%
United Kingdom	Christians	64.3	Christians	45.4
Benin	Christians	53.0	Christians	48.5
France	Christians	63.0	Unaffiliated	44.1
Republic of Macedonia	Christians	59.3	Muslims	56.2
New Zealand	Christians	57.0	Unaffiliated	45.1
Bosnia-Herzegovina	Christians	52.3	Muslims	49.4
Netherlands	Christians	50.6	Unaffiliated	49.1

Source: The Future of World Religions: Population Growth Projections, 2010-2050
PEW RESEARCH CENTER

Source: PEW Research Center, and Bill Chappell (April 2, 2015)
Also available at: <http://www.npr.org/>

Focusing on the destructive elements of major power's self-serving intervention, one could lose hope in achieving any real success for peace and stability in the region. Despite the expected destructive intervention by President Trump in the Western agreement with Iran, the global community, including many American people, has been supportive of Iranian

government's compliance with the nuclear agreement that has been carefully watched, inspected, and confirmed by the international community. Iran needs to stay within the limits that have been acceptable to the world and the majority of the American people as well as government, especially the Democrats, and push intelligently the Trump camp to a more isolation than they are already suffering from. Iran needs to keep earning the global support of its well calculated compliance with what the world is currently expecting. Obviously, there will be all the needed time in the future to plan strategically in bringing Iranians into a fair, respectful, and a comprehensive treatment similar to what other states in the region have been enjoying with respect to the sensitive nuclear energy and/or weapons. The responsibilities alongside a sense of security must be equally shouldered and enjoyed by all (or the main) regional states, not just one or two.

Moreover, despite the religious sensitivity of region, the U.S. policy on the Middle East has been more obscured than ever. Treatment of Turkey, Egypt, and Israel, altogether, has been conducive to no better, but much worse adverse conditions against a real coordination and sustainable coexistence among the nations of the region. I am strongly recommending that, if Tony Blair's doctrine has to gain any legitimacy, at a minimum, Turkey and Egypt must be also recognized and incorporated into the strategic architecture of the regional peace, stability foundation, and the mainstay of regional prosperity. This would bring more of the regional players into the equation and discount the conflicting roles of biased outsiders from the regional peace process.

Table 9: Demography of Islam

Country Name	Total Population	% of Muslims	Number of Muslims	Percentage of Shia to Muslims	Number of Shia
Afghanistan	22664136	100	22664136	15	3399620
Azerbaijan	7676953	93.4	7170274	80	5736219
Bahrain	590042	100	590042	65	383527
India	952107694	14	133295077	2-Oct	13329507
Iran	66094264	99	65433321	70	45803324
Iraq	21422292	97	20779623	65 - 30	13506755
Kuwait	1950047	89	1735542	30	520662
Lebanon	3776317	70	2643422	65	1718224
Oman	2186548	100	382000	2	7640
Pakistan	129275660	97	125397390	15 - 2	18809608
Qatar	547761	100	547761	15	82164
Saudi Arabia	19409058	100	19409058	5	970452
Syria	15608648	90	14047783	15 - 9	2107167
Turkey	62484478	99.8	62359509	6	3741570
United Arab Emirates	3057337	96	2935044	15	440256
Yemen	13483178	99	13348346	15	2002251

Source: PEW Research Center, various dates of census were reported

A Country of Focus, Iran, and Recommended Objectives:

Iranian government is at a very critical stage in planning for its economic viability and growth, while putting in balance both internal and external objectives. I propose the following urgent objectives:

1. Maximizing Iranian economic performance and serving the urgent needs of the economy for further sustainable growth, employment, and prosperity through effective economic policies conducive to low inflation, facilitating easier and smoother business operations.

The excessive youth unemployment rates close to 30% would bode turbulence in the Iranian socioeconomic environment. The youth and the elderly are both under excessive economic pressures. Officially, this would place them within the poverty lines. A great component of the citizens in other age groups are also adversely affected by the unpleasant economic conditions resulted from a non-homogeneous dissemination of the fruits of the recent improvement in economic growth, followed by some reductions and/or eliminations of some of the comprehensive sanctions against Iranian people.

2. Just like the rest of the world, Iranians need to focus on a long-term strategy for beyond the 4-year period, and more in coordination with the international community, including some equitable expectations of other nations with no loss of focus on what was agreed with Obama's government. Donald Trump's positions are politically immature and not either respected or supported by any domestic or international majorities of stakeholders. He is not even given any meaningful support by several Republicans in the US Congress on many other important issues. Iran needs to maintain its currently ongoing agreement with the U.S. and the rest of the major nations, and count on Europe's support most seriously. In that well-calculate approach, Trump's new bullish and excessively suppressive pressures would be an isolated and consequently, defeated act in its failure to attract any sustainable international unification for imposing inequitable sanctions against the hard-working Iranian people.
3. Iran needs to focus on a strategic goal of national strength through infrastructural investment, the most vital and lucrative component of which would be investment in the nation's rich human capital.
4. Iranian government must dedicate a great operational force to an urgently effective planning for saving the retirees from an undeserving poverty, in which retirees are currently trapped. Domestically, Iranian government is challenged by a devastating economic deterioration, encountered by many families, despite some economic growth and declining inflation rates. It is mind boggling that almost all retirees, who have spent their main sources of active lives, invested education, and dedicated labor force and ultimately their existence, are reportedly living below the poverty lines, as defined by governmental agencies. This is a brutal fact, signaling an ugly abandonment of the elderly by the government. Recent news from Iran have been encouraging, and hopefully a fundamental indexing budgetary policy will be adopted.
5. In the long run and after some relatively more stable circumstances are created, if ever, and the current storms of foreign affairs are tamed, it would be mandatory for any Iranian government to call for at least a regional re-assessment of the state of nuclear weaponry and demand for either creation of stability and balance among all regional states, including - but not limited to - Israel, Pakistan, and India or trying most effectively and objectively to gain an international respect and green lights for its legitimate and logically-based development of defensive nuclear power. Iran must not be trapped into a potentially indefensible nuclear position, while Israeli aggressions in the region are unexceptionally ignored and even supported by the U.S. government, as recorded at the United Nations' Security Council.

No country in the world has ever been comparable with Israel in being the target of as many condemning resolutions, issued by the United Nations. In his "Rogue State: Israeli Violations of U.N. Security Council Resolutions", published by Foreign Policy Journal, on January 27, 2010, Jeremy R. Hammond reported through a detailed list of 79 resolutions "directly critical of Israel for its violations of U.N. Security Council resolutions, the U.N. Charter, the Geneva Conventions, international terrorism, or other violations of international law." He started with Resolution 57

(Sep. 18, 1948) and ended his 79-item list with Resolution 1860 (Jan. 8, 2009). For the entire article, review: <https://www.foreignpolicyjournal.com/2010/01/27/rogue-state-israeli-violations-of-u-n-security-council-resolutions/>.

As a secondary reference, according to Wikipedia, the free Encyclopedia, https://en.wikipedia.org/wiki/List_of_United_Nations_resolutions_concerning_Israel :

As of 2013, Israel had been condemned in 45 resolutions by United Nations Human Rights Council. Since its creation in 2006—the Council had resolved almost more resolutions condemning Israel than on the rest of the world combined. The 45 resolutions comprised almost half (45.9%) of all country-specific resolutions passed by the Council, not counting those under Agenda Item 10 (countries requiring technical assistance).

Also, in the same piece, you'll find:

The United Nations General Assembly has adopted a number of resolutions saying that the strategic relationship with the United States encourages Israel to pursue aggressive and expansionist policies and practices.

It is well known to all nations and those with a genuine concern and a clear conscience that such strongly biased support by the U.S. will never be effectively transformed into a real and sustainable stability in the Middle East. So, a responsible and logical question to be addressed to the global community, has been why so much of wastes of the US tax payers should be dedicated to a bullying state for “stabilizing” the Middle East? That question has begged a logical answer for decades.

Current Iranian Realities:

All other sensitive policy issues and challenges aside, the relatively popular moderate government has worked hard in the recent years to bring the country into an international community's more optimistic perspective, mainly in the context of keeping nuclear limitations in line with their communicated expectations. Donald Trump's tougher suppressive limitations have not been acceptable to the rest of the world, a great majority of the Americans within the political process and policy makers, and needless to say, to Iranians for the good reasons. What Trump is doing in his treatment of Iran, has been an extension to his other deteriorating policies with expected adverse effects even on the majority of Americans. Eventually, he would fail in both grounds, unless he begins soon to understand what a genuine and fair contribution would mean to the American nation as well as the rest of the world. His illegitimately boasting attitudes on his less than ethical real-estate bullying and suppressive approaches of the past are universally perceived to be detrimental to both domestic as well as international image of the U.S. The increasing U.S. credibility and prestige in the international community, gradually earned under Obama's leadership, could not be declined further in just one year and more to come, as demonstrated by any available & reliable indicators. Iranian government needs to stay on the same path that brought the economy to a much more sustainable growth and relative prosperity within a rather short period of time after some of the devastating economic sanctions were either eased up or removed totally.

Iranian government will strategically be more successful and hopefully popular through a genuinely reliable and sustainable planning for domestic democratic policies as well as some comprehensive compliance with the international community, without waiving any of its legitimate rights and leverage in the long run. Some tactical compromises are always fruitfully successful in order to eventually earn a long-term recognition and listening ears for its equitable and legitimate claims of better treatments, as compared to those enjoyed by other

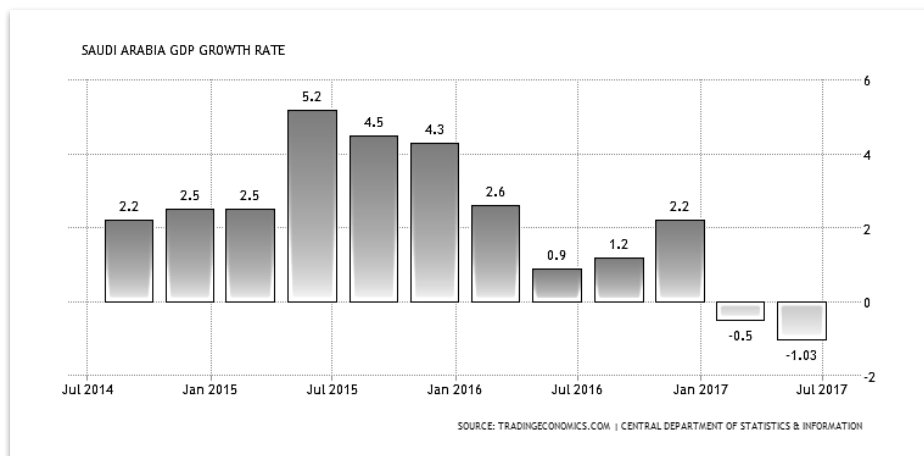
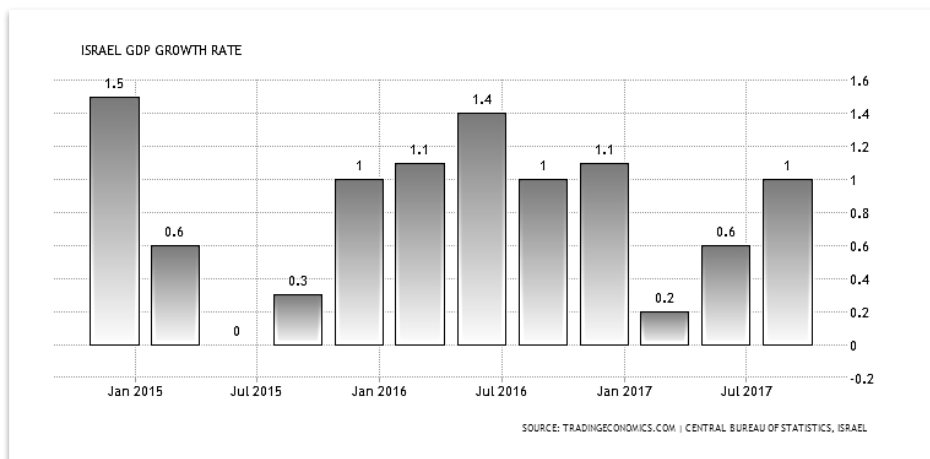
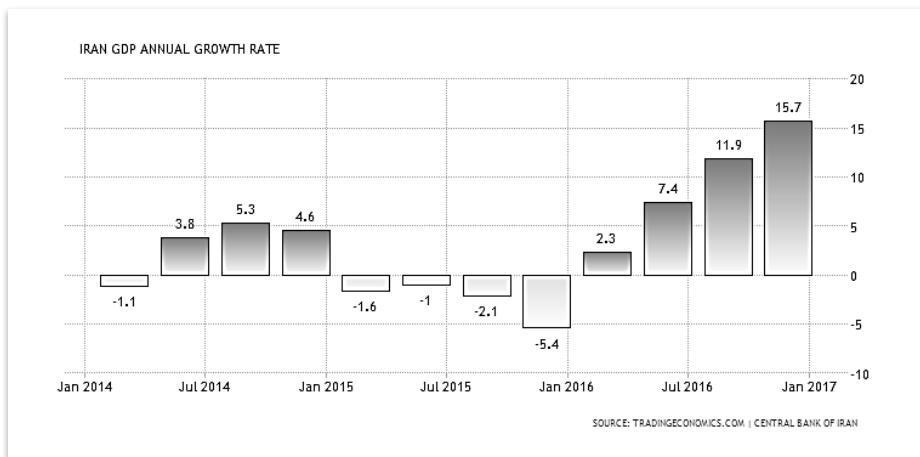
countries of the region, such as Israel, Saudi Arabia, etc.

Any real and durable regional stability is not just implemented by force and sanctions in the long run. Iran, Israel, Saudi Arabia, Turkey, Egypt, and other nations of the region would all win and succeed to live in much more collective prosperity and peace, should some equitable foundations for religious and political tolerance be established through a few cohesive well-calculated apolitical approaches. Power brokers, like U.S., would have no constructive role but just some heavily self-interested motives and political investment, which have consistently demolished any foundation for a real hope for a regional stability and peace. Alternatively, the author proposes that the United Nations through a general session must assign an international commission, cautiously established through selection or election of individual members, who are globally well known to be unbiased and apolitical in their assigned services. The committee needs to be meeting and working full time within some to be written by-laws. In its primary provisional phases, the commitments from the regional states and other big powers, such as the quartet nations, must be carefully discussed and earned.

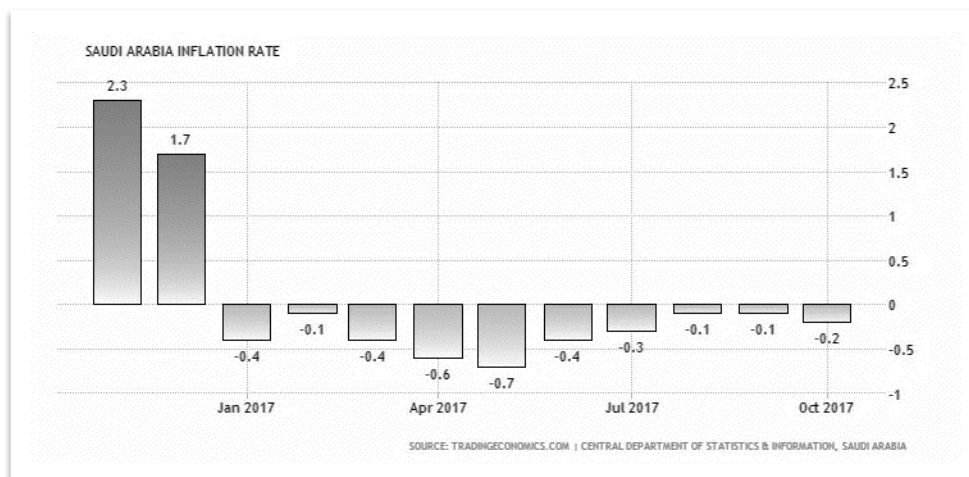
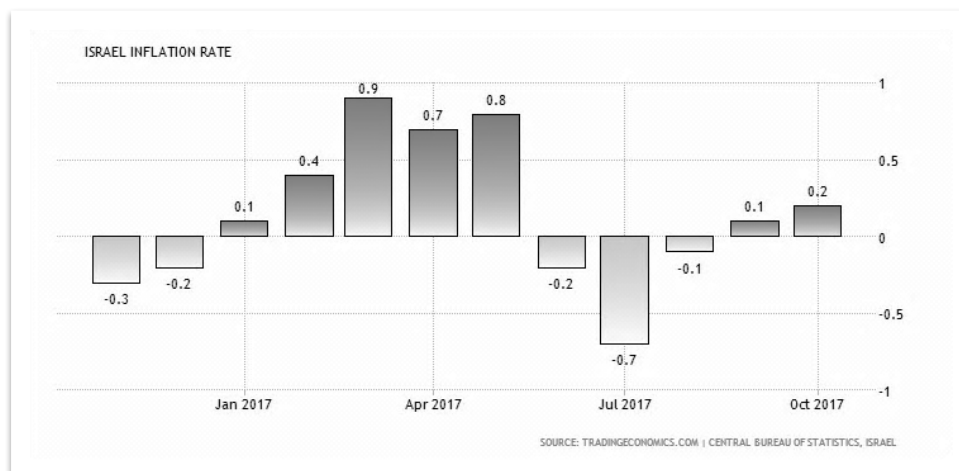
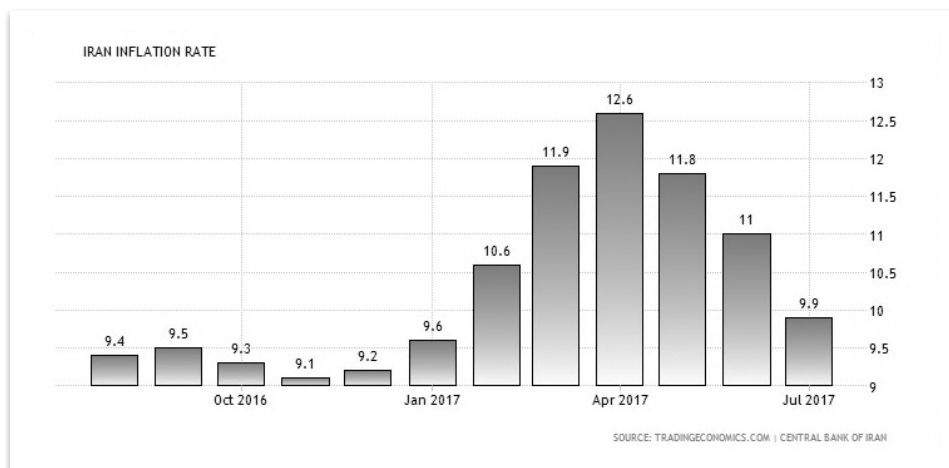
Current Iranian, Israeli, and Saudi Economic Perspectives

The annual economic growth of Iran was reported to be at 15.7%, as measured in the last quarter, December 2016, compared to the previous quarter, which was 11.9%. This growth was expected to be even higher all along 2017. The similar economic indicators for Israel and Saudi Arabia have been about 1% and 2.2%, respectively.

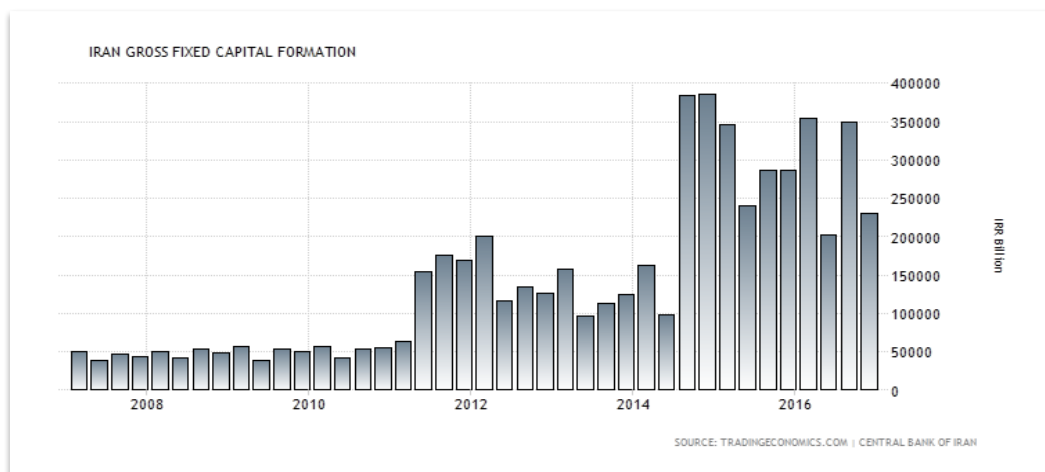
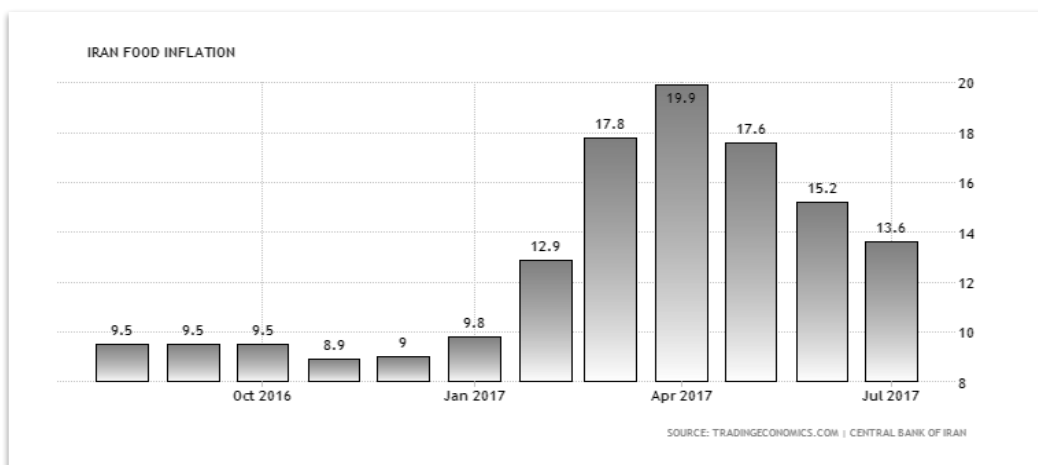
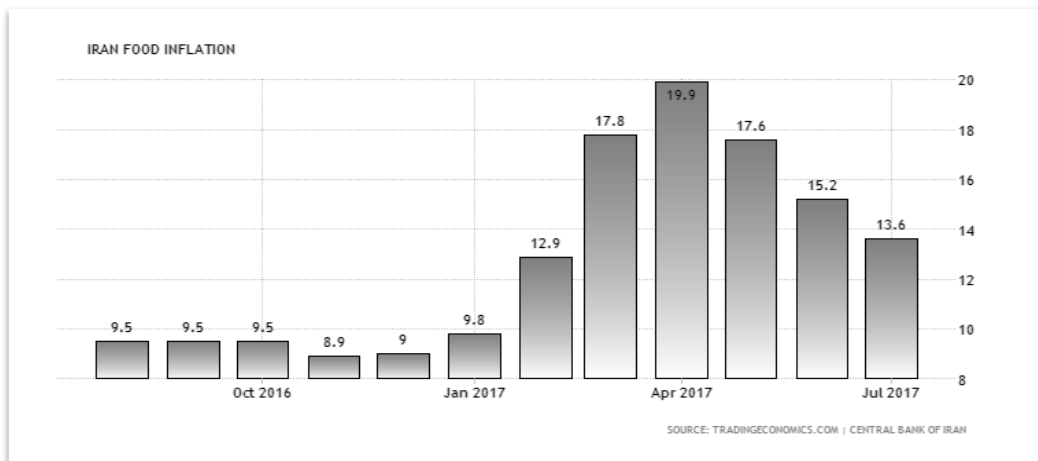
Although the recent inflation rates in Iran have been still too high at 9.9% (reported in July 2017), the monthly falling rate since April 2017 has been promising. Iranian capital formation and infrastructural investment must be even more than what it has recently been. The similar inflation measures for Israel and Saudi Arabia in the same month have been more of minor deflation of - 0.7% and - 0.3%. The Iranian high inflation rates have been recognized to be primarily due to a less growth of aggregate supply than aggregate demand, as caused by many months of economic and financial sanctions, imposed by the world against Iran. When food inflation is concerned, the figures were even worse.



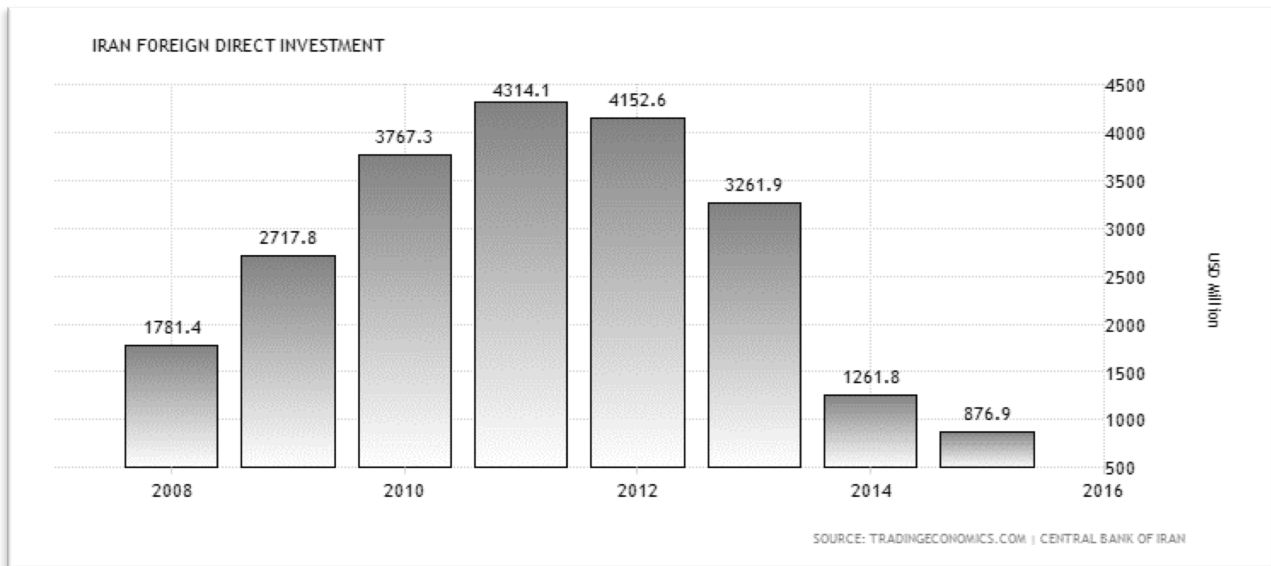
Source: <https://tradingeconomics.com/indicators>



Source: <https://tradingeconomics.com/indicators>



Although in recent years, Iran has achieved a higher level of invested and capital formation, it needs to invest much more in its infrastructure and economic foundation than primarily in military development



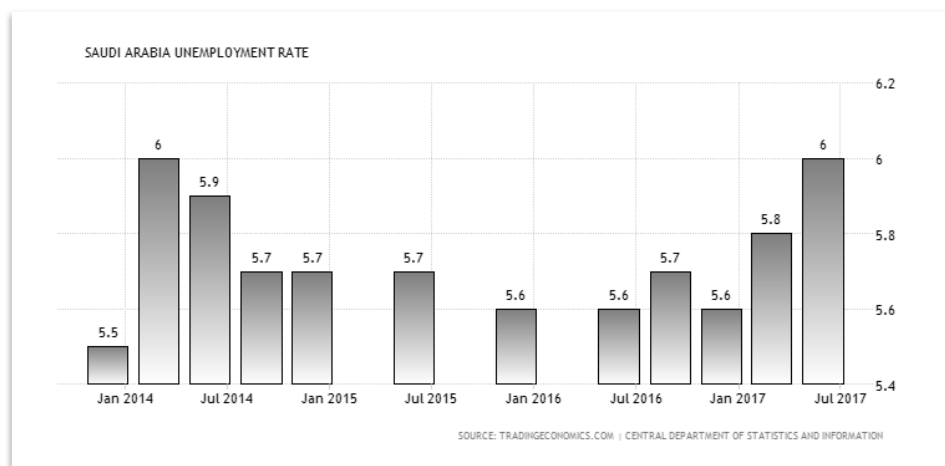
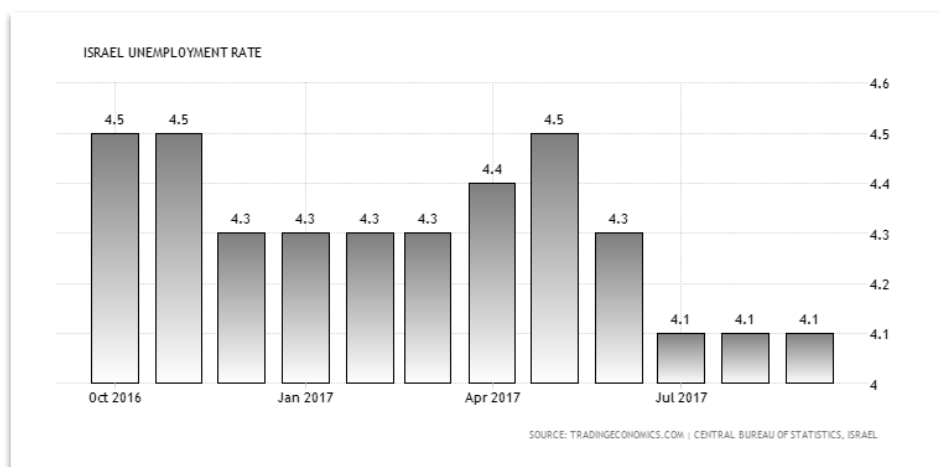
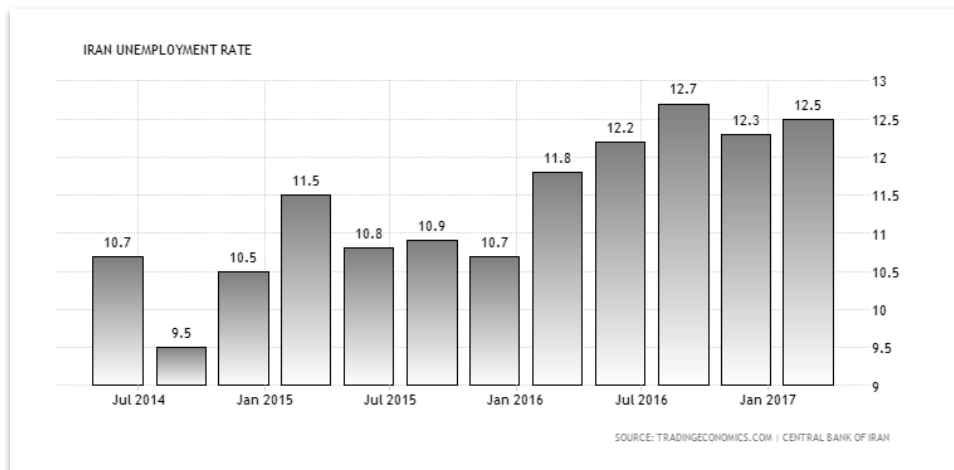
and foreign assistance, given its poor performance in meeting domestic needs, and improving the standard of living for millions of its citizens.



Source: <https://tradingeconomics.com/indicators>



The best evidence of this fact is the high rates of unemployment, and even more so, when youth unemployment rates (30% or so) have been reported to be devastating. It is an emergent situation for the Iranian government to save its own people from the economic hardship that they have been experiencing for many years. Unemployment figures for Israel and Saudi Arabia were 4.3% and 5.6% to 5.7% in the same period, January 2017.

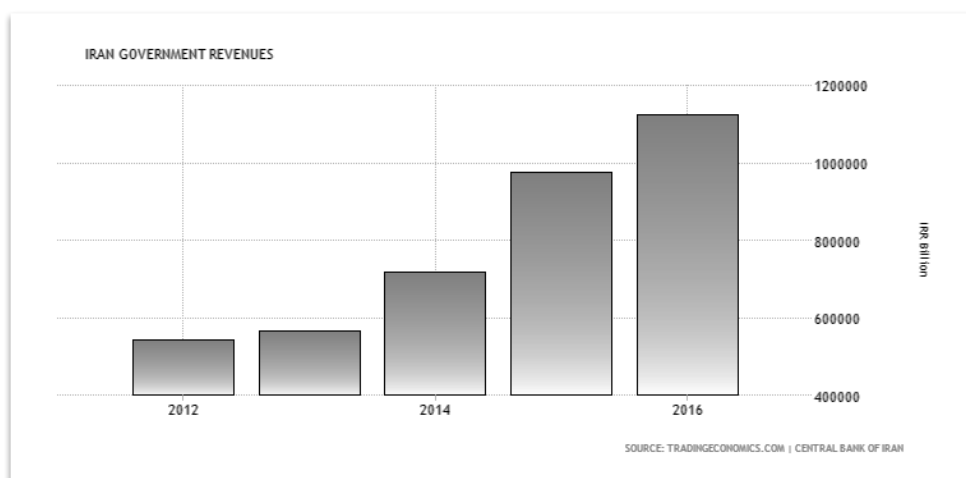
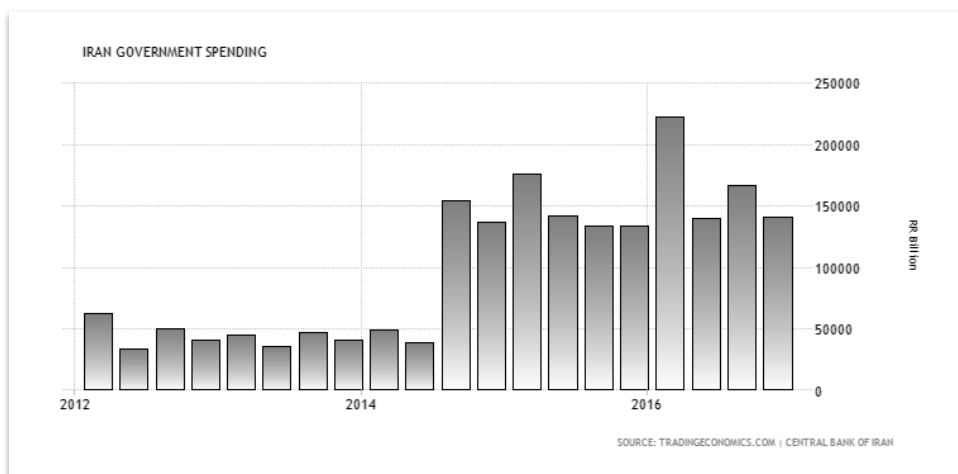


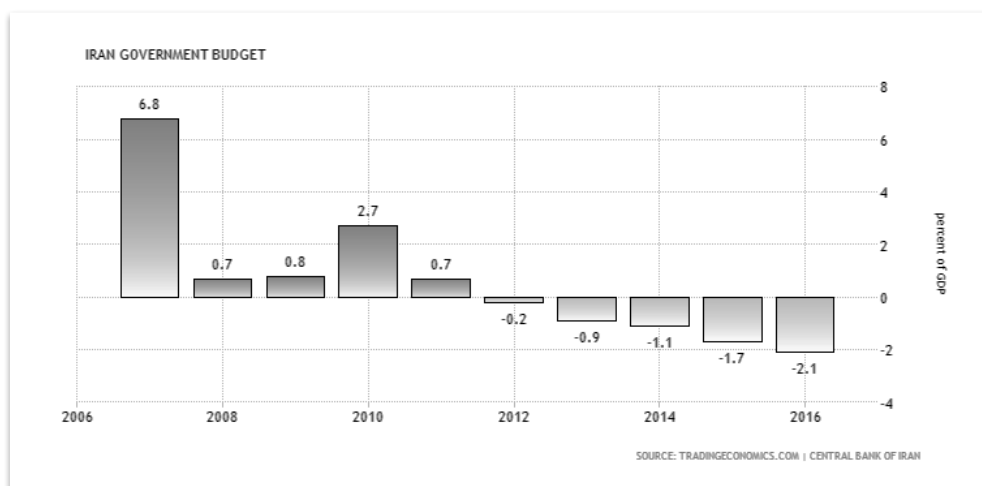
Source: <https://tradingeconomics.com/indicators>

Again, younger generation is under brutal economic pressure. As is clear from the following figure, the average youth unemployment rates prevailing in 2016: 3rd, 4th quarters and 2017: 1st quarter, have been about 30%. Through tax rewarding policies granted to businesses which effectively create new jobs, government can gradually reverse that ominous picture. Empirical evidence has repeatedly proven the bitter fact that such poor job conditions in any country would result in more crime, violence, and even terrorism.



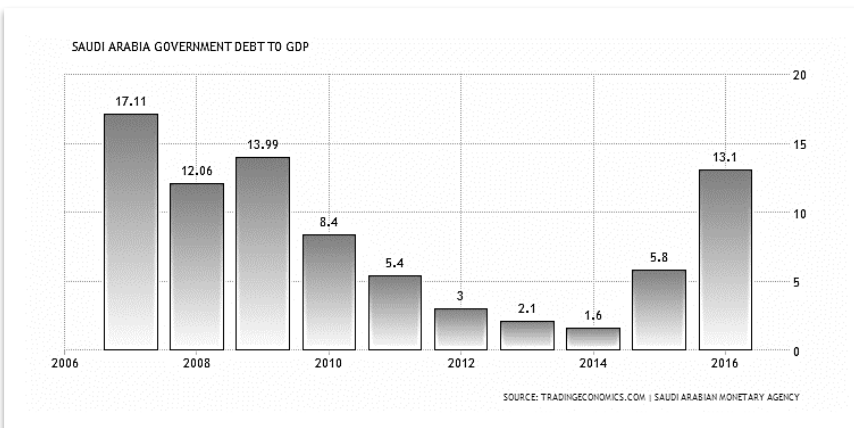
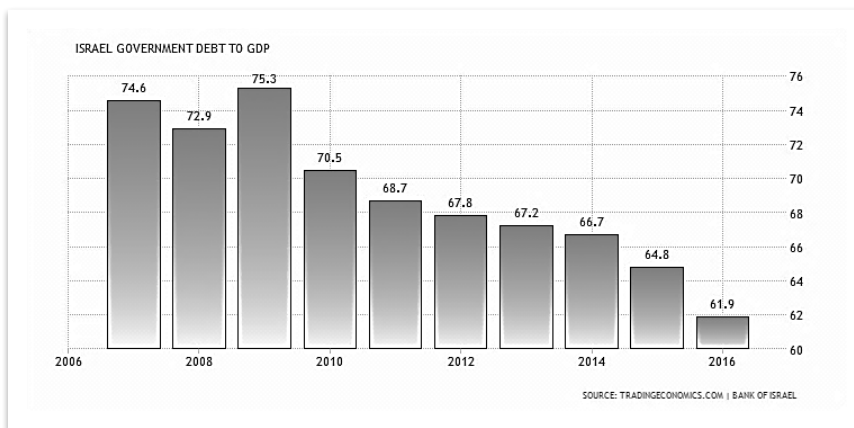
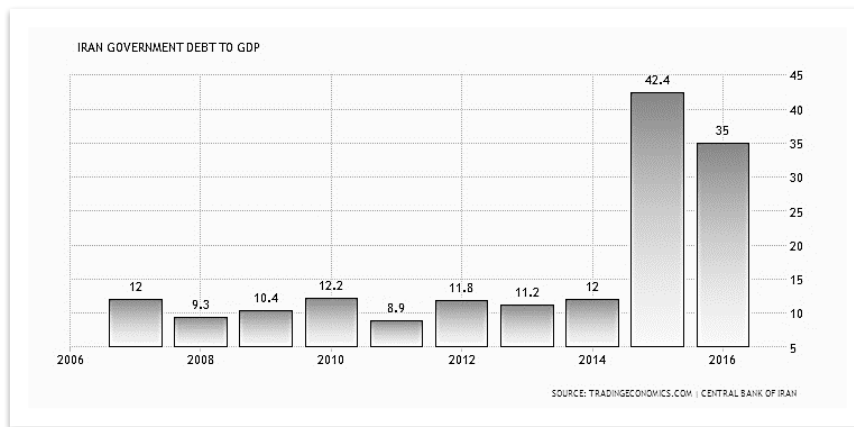
Another solution is a sustainable fiscal efficiency that has been absent in Iran for a long time. Government’s budget deficits and its Deficit spending are both necessary in expanding the economy, given that there are some organizations with some designated responsibilities that are only a tiny fraction of those of the government, but forcefully compete with the government in acquiring as much of the nation’s wealth and budget as they can. How else can a government commit itself to fiscal efficiency? Correcting the long-lasting tax loopholes in Iran and the flat (hence, more discriminatory) tax policies affecting the affluent more favorably, could bring about some considerable income sources for the government.





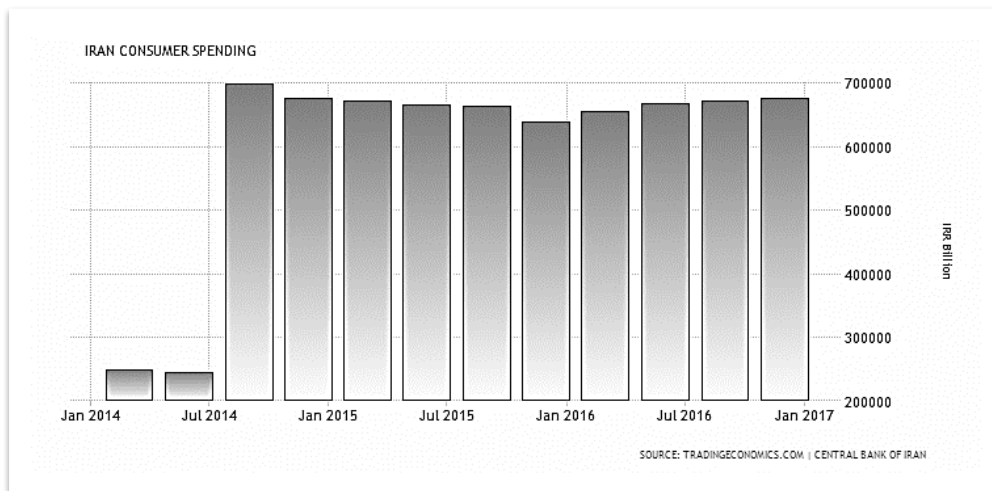
The continuous government budget deficits in years (see above figure) would surely cause a cumulative growth in government's debt, as is reported in the following figure. Government's debt has been 42.4% and 35% of the Gross Domestic Product (GDP) in the last two years. Meanwhile, one of the biggest rivaling organizations in Iran has continued to enjoy big budgets and earnings all along, while carrying no or minimal responsibility in promoting the national economy and the nation's prosperity. That has to be changed, if responsibilities and authorities should grow in a paralleled fashion.

The same government debt indicators for Israel and Saudis were 61.9% and 13.1%, respectively for the same year of 2016. In the case of Israel, though too high, the continuously declining trend from 75.3% in 2009 (the end of the Great Recession) to 61.9% has been impressive. However, the Saudis have gone through some familiar pattern of high military expenditures and growing foreign assistance (similar to Iranians) to other regional allies in, e.g., Yemen and other places.

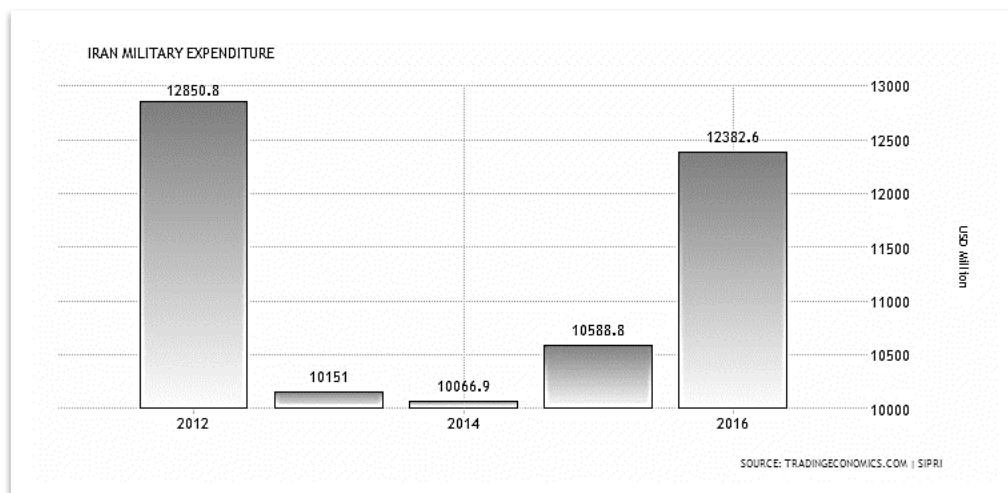


Source: <https://tradingeconomics.com/saudi-arabia/indicators>

In the following figure, it is clear that Iranian Consumer spending has been quite stable for the 3-year period of 2014-2017.



As exhibited in the following two figures, Iran’s military expenses, as measured in the US dollars, have been recently very high and growing. It is unfortunate that the military’s budget has had to be in competition with the national welfare and sustainability.



SAUDI ARABIA SUNNIS SUPERPOWER

Saudi Arabia has been struggling hard to be recognized as the most powerful leader of the Sunni Muslims of the region and/or the world, and as such, there have been growing conflicts with Islamic Republic of Iran, which is more or less recognized as one of the superpowers in the Middle East, leading Shiite Muslims of the region and the world. Moreover, Egypt and Turkey, influenced by the world politics as well as those of their own domestic controversies, are not in any harmony with the Saudis. The current U.S. policy in providing mega lift to the Saudi-Israeli alliance would soon deepen not only the internal societal gap and divisions within the Saudi Arabian nation, but the deterioration of its relationship with other regional states.

Table 10: The Three-Month U.S. – Saudi Arabian Trade in Goods (2018)

Month	Exports	Imports	Balance
January 2018	802.4	1,485.6	-683.1
February 2018	1,011.2	1,290.8	-279.7
March 2018	1,541.7	1,593.1	-51.4
TOTAL 2018	3,355.3	4,369.5	-1,014.2

NOTE: All figures are in millions of U.S. dollars on a nominal basis, not seasonally adjusted unless otherwise specified. Details may not equal totals due to rounding. Table reflects only those months for which there was trade.

Source: The United States Census Bureau: Foreign Trade. Also available at: <https://www.census.gov/foreign-trade/balance/c5081.html>



Source: <https://tradingeconomics.com/saudi-arabia/indicators>

ISRAEL

Table 11: Israel's Economic Indicators

Overview	Last	Reference	Previous	Range	Frequency
GDP Growth Rate	1 %	Sep/17	0.6	-1.1 : 4.3	Quarterly
Unemployment Rate	4.1 %	Sep/17	4.1	4.1 : 11.4	Monthly
Inflation Rate	0.2 %	Oct/17	0.1	-2.74 : 486	Monthly
Interest Rate	0.1 %	Oct/17	0.1	0.1 : 17	Daily
Balance of Trade	-2297 USD Million	Oct/17	-1313	-2334 : 114	Monthly
Government Debt to GDP	61.9 %	Dec/16	64.8	61.9 : 96.7	Yearly

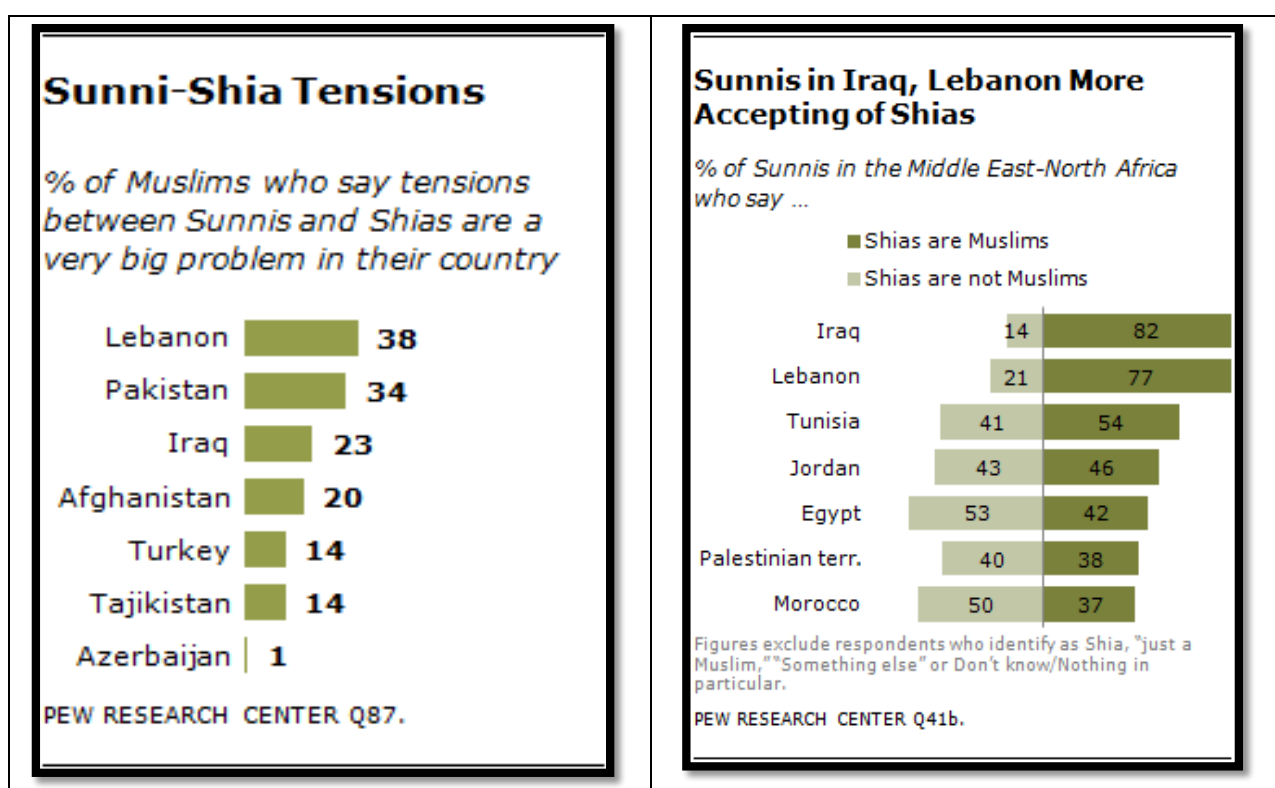
Source: <https://tradingeconomics.com/israel/indicators>

Table 12: The Three-Month U.S. – Israeli Trade in Goods (2018)

Month	Exports	Imports	Balance
January 2018	1,021.9	1,788.4	-766.5
February 2018	1,275.8	1,504.4	-228.6
March 2018	1,223.0	2,045.4	-822.4
TOTAL 2018	3,520.7	5,338.2	-1,817.5

NOTE: All figures are in millions of U.S. dollars on a nominal basis, not seasonally adjusted unless otherwise specified. Details may not equal totals due to rounding. Table reflects only those months for which there was trade.

Source: The United States Census Bureau: Foreign Trade. Also available at: <https://www.census.gov/foreign-trade/balance/c5081.html>



Source: PEW Research Center, 2012

Reference: <http://www.pewforum.org/2012/08/09/the-worlds-muslims-unity-and-diversity-executive-summary/>

Comparative Economic Perspectives: Five Focused Major Middle Eastern Countries

In an effort to provide a comparative perspective - as recent as accessible - the various economic indicators of five major Middle Eastern countries are tabulated and organized by the author into Tables 13-15.

Table 13: The Five Countries' Economic Data: levels and Ratios of 5-country Averages

Economic Indicators	Unemployment Rate	Inflation Rate	Interest Rate	Balance of Trade	Government Debt	Currency	GDP
Israel	4	0	0	-2069	62	4	319
Saudi Arabia	6	3	2	33749	13	4	646
Egypt	11	14	17	-3626	92	18	336
Turkey	10	10	8	-5761	28	4	858
Iran	12	9	18	10726	35	37819	393
5-Country Average	9	7	9	6604	46	7570	510
Iran/5CA	1.37731	1.26582	1.99557	1.6242	0.75889	4.99617	0.76998
Israel/5CA	0.43981	0.02693	0.01109	-0.3133	1.34215	0.00047	0.625
SA/5CA	0.6713	0.39052	0.24945	5.11054	0.28404	0.0005	1.26567
Turkey/5CA	1.2037	1.37759	0.88692	-0.87237	0.61362	0.00054	1.68103
Egypt/5CA	1.30787	1.93913	1.85698	-0.54907	2.0013	0.00233	0.65831

Table 14: The Five Countries' Economic Data: levels and Ratios of 5-country Averages

Economic Indicators	GDP per capita	GDP per capita PPP	Employed Persons	Population
Israel	33783	32613	3847000	9
Saudi Arabia	21395	50458	11641000	33
Egypt	2724	10319	25963000	93
Turkey	14071	23679	28288000	81
Iran	5758	18498	23331168	81
5-Country Average	15546	27113	18614034	59
Iran/5CA	0.37038	0.68225	1.25342	1.36688
Israel/5CA	2.17307	1.20284	0.20667	0.14885
SA/5CA	1.37622	1.861	0.62539	0.55097
Turkey/5CA	0.90511	0.87333	1.51971	1.36536
Egypt/5CA	0.17522	0.38059	1.39481	1.56794

Economic Indicators	Food Inflation	Interest Rate	Balance of Trade	Exports	Imports
Israel	-1	0	-2069	4756	6825
Saudi Arabia	7	2	33749	63134	29384
Egypt	13	17	-3626	2146	5773
Turkey	10	8	-5761	13176	18936
Iran	12	18	10726	44278	33552
5-Country Average	8	9	6604	25498	18894
Iran/5CA	1.418	1.99557	1.6242	1.73653	1.7758
Israel/5CA	-0.1233	0.01109	-0.3133	0.18653	0.36122
SA/5CA	0.80148	0.24945	5.11054	2.47603	1.55521
Turkey/5CA	1.27867	0.88692	-0.87237	0.51675	1.00222
Egypt/5CA	1.62515	1.85698	-0.54907	0.08416	0.30555

Ease of Doing Business	Steel Production	Sales Tax Rate	Economic Indicators
54	300	17	Israel
92	385	5	Saudi Arabia
128	583	14	Egypt
60	2998	18	Turkey
124	2120	9	Iran
92	1277	13	5-Country Average
1.35371	1.65988	0.71429	Iran/5CA
0.58952	0.23489	1.34921	Israel/5CA
1.00437	0.30144	0.39683	SA/5CA
0.65502	2.34732	1.42857	Turkey/5CA
1.39738	0.45647	1.11111	Egypt/5CA

Iran, after Saudi Arabia, offers the lowest sales-tax environment, and after Turkey, has the highest ranking in steel production. In terms of ease of doing business, as well as food inflation rates, Iran is the second worst after Egypt. Once inflation rates are relatively higher in Iran, it won't be ironic to see the worst record within the five countries for nominal interest rates.

When it comes to international trade, Iran is much bigger than the other countries. Iran's imports are of the highest ranking. Its exports are second largest, after Saudis. The fact that Saudis have not been economically sanctioned and have historically been the OPEC biggest oil sellers, it won't be a surprise nor in any contradiction with the Western elaborate policy in empowering the latter against the former by all means. Given the well-established biases of Trump's policies, as an extension to its unconditional alliance with Israel, Iran would find soon an optimal strategic policy movement towards more friendly and less biased tendencies of Europe, China, Japan, South Korea and other regional nations for its trade and economic cooperation. Iranian government has never trusted the U.S. sincerity in promoting peace and regional stability, and Donald Trump has championed himself in ruination of any leftover sluggishly growing optimism that Barak Obama was successfully planting in Iranian-American political and economic relationship.

Observing Trump's immature commitment to reversing whatever Obama had done, with no regards to conventional wisdom and the strategic extent of losses both inside the U.S. and externally, almost anywhere in the world, any leader of average intelligence would set aside the U.S., as an accountable partner, entirely and focus on development of more sustainable relationship with leaders of higher political and intellectual maturity, who do not run the world like a real estate business, in which no ethical principles would matter. Obviously, inside the U.S. Democratic Party, there are some who would understand the strategic significance of the Iranian role in sustainability of the turbulent Middle East. That would be a better time for Iran only temporarily to cultivate more sustainable relationship with the U.S before another bullying government would take over.

Another strategic move for any country like Iran, facing the well-united alliance of Israel-U.S.-Saudis, is to restructure its foreign currency reserves to a minimum dollar and maximum euro reserve basis. This would help the improvement of trade conditions with the European countries even more than otherwise. Meanwhile, applying the real estate marketing strategies, would make it more urgent to minimize the upcoming potential losses for the U.S. that would be soon a big gain for other more sophisticated and wiser countries. None of that would ever be reliable if Iranian government could not stand up to its people's normal expectations. Law and order, real not superficial justice, more infrastructural investment, higher economic growth, more jobs, more investment in R&D and higher education, and less suppression of civil rights are the main fabric to be tightly and strongly woven to stand against any foreign aggression, including what Israeli government has been imposing on Iran and other Middle Eastern nations. Genuine respects for international law as well as a firm commitment to Iranian people's welfare, as a preliminary condition for anything else, including any (hopefully, secondary) commitment to other foreign countries, would bring Iran into the front row for economic cooperation and development.

The current Iranian government has demonstrated some real desire and intension in promoting integrity and accountability, as most critically observed by many nations and experts. However, the power structure within the government is the main impediment for its efficacy and success. As discussed in previous pages, the main beneficiaries of Iran's temporary economic growth after a relief from the devastating sanctions were clearly the military and the

military-related factions and industries. It is yet clear from Table 15 that Iran relative to the five major countries had the second lowest military expenditures after Egypt.

Table 15: The Five Countries' Competitiveness, Corruption Ranks: levels and Ratios of 5-country Averages

Competitiveness Index	Competitiveness Rank	Corruption Index	Corruption Rank	Economic Indicators		
5	16	62	32	Israel		
5	30	49	57	Saudi Arabia		
4	100	32	117	Egypt		
4	53	40	81	Turkey		
4	69	30	130	Iran		
5	54	43	83	5-Country Average		
0.93929	1.28731	0.70423	1.55875	Iran/5CA		
1.16806	0.29851	1.4554	0.38369	Israel/5CA		
1.06247	0.5597	1.15023	0.68345	SA/5CA		
0.97228	0.98881	0.93897	0.97122	Turkey/5CA		
0.8579	1.86567	0.75117	1.40288	Egypt/5CA		
Government Debt to GDP	Government Budget	Credit Rating	Military Expenditure	Industrial Production	Car Production	Economic Indicators
62	-2	76	17800	6	0	Israel
13	-9	86	61358	1	0	Saudi Arabia
92	-10	28	5357	11	0	Egypt
28	-1	44	14974	12	141372	Turkey
35	-2	15	12383	5	958335	Iran
46	-5	50	22374	7	219941	5-Country Average
0.75889	0.43659	0.30133	0.55345	0.7604	4.35723	Iran/5CA
1.34215	0.44699	1.52049	0.79555	0.81779	0	Israel/5CA
0.28404	1.85031	1.73262	2.74233	0.1076	0	SA/5CA
0.61362	0.22869	0.89313	0.66925	1.72166	0.64277	Turkey/5CA
2.0013	2.03742	0.55243	0.23943	1.59254	0	Egypt/5CA
Current Account	Currt Acct to GDP	Crude Oil Production	FDI	Terrorism Index	Economic Indicators	
2635	4	0	25050	5	Israel	
7834	-4	9935	264	6	Saudi Arabia	
-1785	-6	588	2950	7	Egypt	
-7096	-4	50	12300	8	Turkey	
7441	6	3810	877	4	Iran	
1806	-1	2877	8288	6	5-Country Average	
4.12061	-9.84375	1.32449	0.10581	0.63375	Iran/5CA	
1.45919	-6.40625	0.00014	3.02237	0.86437	Israel/5CA	
4.33824	6.09375	3.45376	0.03185	0.99248	SA/5CA	
-3.92956	5.9375	0.01721	1.48404	1.28459	Turkey/5CA	
-0.98848	9.21875	0.20441	0.35593	1.2248	Egypt/5CA	

Saudis and Israelis spent most in their military. That's why some have justified Iran's recent heavy military expenditures. Also, as revealed in Table 15, the relative stance of Iran in combating corruption, as compared to the five focused countries, is the weakest and worst. Iran's world-wide ranking is 130, which is extremely discouraging to know that this nation of almost 2,600 years of civilization, has been ranked worse than 129 other sovereign nations. On the same issue, several research works, such as Hamzaee (2008) found that "the law and order" variable has been one of the major influential factors in explaining nations' economic prosperity.

CONCLUSION: A PROPOSED SET OF GLOBAL POLICY

Given the historical failure of world organizations, such as the United Nations, in securing peace and stability in the real sense, the global community is at an urgent juncture. There is a need for better management and control of the currently explosive forces of violence, dissatisfaction, and devastating frustration of citizens with organized violations of nations' peace and prosperity either by their own local states or bullying foreign powers.

There is a need for most dynamic and sustainable efforts even through try and error, where human intelligence can be refocused on righteous directions against power hunger and for conscientious movement in creating peace and societal health in most advanced as well as least advanced nations of the world. The effort in this piece of work is just a meager share for this author to join many in offering some thoughts and resolutions through brain storming, communicating on common concerns in exploring better ways than what power brokers have trapped us for ages, and come up with more globally united grass-root movements that would bring about more harmony and resolutions in confronting the growing challenges with the growing populations.

The ethical crises in American politics and many other "free" societies would magnify the depth of what cannot be expected of those at the top of leadership of this world. United Nations, funded mainly by the richest nations, has no genuine power in serving its own purpose, though most noble. Funds for results are released, when the decency of the results are also controlled and redefined by the political interests of the main fund donors.

I am inviting other researchers, academicians, human rights activists, and decent politicians of the world to join this ongoing movement in exploring a real freedom, in which humanity is the strategic target of protection and promotion. I am not assuming any authority, whatsoever in pushing a good agenda. I am just frustrated and threatened enough by the trajectory of the historical performance records of the conventional leadership of the world. Hence, in my own meager share, I would like to start a communication, and the following propositions.

What Could Be Done?

1. Establishment of a new world-wide peace-keeping institution, similar to - but essentially more effective than - the United Nations. Just as an example, it would be The Global Harmony Foundation (GHF), or anything else to that extent. This would serve as a harmony, peace, and prosperity insurance foundation, with the following tentative provisions:
 - New bylaws are mandatory to be diligently worked on and no specific country's lobbyist approach would be acceptable that would result in their unilateral control of the world's policies.
 - Free elected individuals from various nations would be representatives of their nations. No government would influence the elections, except for their protection of the election process, and individual rights of electing and being appropriately considered for election.
 - Countries' domestic tax systems would create some appropriate individual and business tax credits in favor of a new substituting tax liabilities for funding the GHF. Each country needs to provide an annual membership premium that would amount to the same fraction of their national government tax revenues.
 - All members would sign to sponsor the rules, laws, and directions of the GHF, exactly as their national systems of law and order would govern internally.

- A GHF International Court, overseeing and ruling the international performances and interactions of the nations of the world.
2. A world-wide provisional task force to study and propose specific steps towards establishment of a world-wide nuclear regulation agency overseeing, ruling and regulating nuclear – related activities of all the nations of the world. No nations should be treated differently than the others. Let's not forget that the biggest nuclear warfare in the world belongs to the U.S., and even worse, the only state, which has ever used nuclear bomb against another nation in the most devastating way is the U.S.
 3. The Middle Eastern perilous conflicts and long-lasting turbulences must not be resolved by any but the regional states through an independent and impartial organization, such as my proposed CHF, only as an example.
 4. Each major region of the world, such as the Middle East, should establish a local chapter of the world-wide organization, CHF to bring the region's nations into a unity, coordination, and coordination for enhancement of their potential economic infrastructures, societal, legal, and environmental advances.
 5. Each country must allocate a certain percentage of its GDP to the CHF membership dues. It can be, e.g., 1% of their GDP equally across the board. No country would have any heavier influence, rights, or privileges more than the others.
 6. More R&D budgets and research and diligence would be applied towards establishment of bylaws, regulations, military power, elections, etc., of the proposed CHF.
 7. I also propose that this list must be extended to more specific items to be proposed by other researchers, policymakers, experts of currently standing United Nations, humanitarians, and peace-promoting groups and organizations.

References

Adamy, Janet. (May 17, 2018). "Births Hit Lowest Number Since 1987." *The Wall Street Journal*, p. A3.

Blair, Tony. (2017). "We Need a New Way Forward for Middle East Peace." Tony Blair Institute for Global Change. A Speech-Interview at AIPAC 2017,

<https://institute.global/index.php/insight/middle-east/we-need-new-way-forward-middle-east-peace>

Blum, William. (March 6, 2018). *Rogue State: A Guide to the World's Only Superpower*. Grey House Publishing, Millerton, NY 12546.

Global Research. (June 29, 2016). "Global Research: <https://www.globalresearch.ca/united-states-bombings-of-other-countries-americas-bombing-list/5533371>

Chappell, Bill. (April 2, 2015). "World's Muslim population will surpass Christians this century."

"PEW Research Center. Copyright: NPR. <http://www.npr.org/>

Hammond, Jeremy R. (January 27, 2010). "Rogue State: Israeli Violations of U.N. Security Council Resolutions," *Foreign Policy Journal*.

Hamzaee, Reza G. and Erfani, G. Rod. (2008). "Economics of Freedom: An Empirical Analysis," *The Journal of Business & Economics Research (JBER)*.

Hamzaee, Reza G. (January-February 2001). "A Civil Society's Criteria: Our Country's Records on Economic, Civil, and Political Freedom are Worrisome," *Iran Economics*, No. 24, pp. 19-21.

Horschig, Doreen. (April 17, 2017). "Could Iran Emerge as the Middle East Superpower?" <http://www.worldpress.org/article.cfm/iran-next-middle-east-superpower>

Nations of the World. (2018). Grey House Publishing, Millerton, NY 12546.

Stokes, Bruce (April 13, 2018). "U.S. foreign policy experts are more pessimistic about democracy than their European counterparts." Fact Tank - Our Lives in Numbers. PEW Research Center.

<http://www.pewforum.org/2013/04/30/the-worlds-muslims-religion-politics-society-overview/>

Source: <http://www.pewforum.org/2013/04/30/the-worlds-muslims-religion-politics-society-overview/>

Polling and Analysis

Zuesse, Eric. (2017). "August 09, 2017 Polls: U.S. Is 'The Greatest Threat to Peace in the World Today.'" Strategic Culture Foundation. Global Research.

A Foresight on Perceived Supervisor Support, Job Conditions, Gender Differences and Perceived Organizational Support

Ghadeer Mohamed Badr EIDin Aboul-Ela

Future University in Egypt

Faculty of Commerce and Business Administration. Egypt

ABSTRACT

The purpose of this research is to analyse the effect of perceived supervisor support, job conditions and gender differences on perceived organization support. Previous literature was explored, and accordingly research hypotheses were posed. Employees working in the call centres of the multinational mobile communication organizations were selected as the sample of the study. Interviews with Key personnel along with experts Human Resources professors were held prior to distributing the questionnaires with the objective of exploring the selected domain characteristics. Research questionnaire was developed using previously published, sound and reliable scales to measure the selected constructs. A total number of 700 self-administered questionnaires were distributed in Cairo and Giza governorates. Statistical analysis was conducted and the results showed a positive relationship between perceived supervisor support and perceived organization support, job conditions and perceived organization support and that females possessed higher levels of felt organization support compared to males. The discussion of results, managerial implications, and research limitations were explored based on the research findings.

Key Words: perceived supervisor support, job conditions, perceived organization support, gender differences

INTRODUCTION

EMPLOYEE – EMPLOYER relationship is the cornerstone of success. Employers strive to create, develop and maintain empowered human resources. Conveying a sense of appreciation and gestures of valuing employees is the magic spell that fosters the readiness towards improved relationships inside the workplace. Signals of respect conveyed to employees, pay and promotion help to support the idea of lifting up employees' spirit and momentum towards the organization. Efficient utilization of human resources potentials and capabilities is the path to competitive advantage [1]. The norm of reciprocity as addressed by [2] creates a sense of obligation, as employees feel the urge to return back support. Levinson [3] mentioned that employees who are the agents of the organization must feel the sense of legal, emotional, moral and financial obligations from their organizations. The treatment that the employee receives is the carving of his willingness to reciprocate his efforts with the workplace. Social exchange theory as addressed by Blau [4] explained that individuals get into relationships that are beneficial to their success. Moreover, Blau [4] further emphasized the significance of employees' motivation to promote mutual obligations. According to organization support theories, employees' readiness to exert additional contributions is derived by the organizational ability to recognize performance as well as the consideration of the socio-emotional needs [5]. The judgement of support is likely to be affected by the repetition and trueness of praise offerings and approval [4].

The origin of perceived organization support stems from the idea of social relationships. Employees become willing to exchange based on a set of offerings granted by the organization. Such offerings are both tangible/intangible, which could be expressed through monetary and

symbolic forms. Eisenberger, *the father of perceived organization support*, emphasized that there are a variety of obligations that should be fulfilled from an organization to assure proper communication of support to employees. These obligations include organization reaction to employees' sickness, future mistakes, the support granted by superiors to direct reporters [5]; rewards, pay, rank and job enrichment [6]. The support offerings to employees require continuous review to secure sustainable favourable outcomes [7].

Perceived organization support is a research interest to organizational behaviour scholars. In spite of, the extensive literature and the various claims to endorse perceived organization support significance, there is still limited research among its antecedents specifically in Egyptian domain. Up to the best knowledge of the researcher few studies looked at the direct relationship with perceived organization support and its antecedents. Moreover, most of the previous research considered the mediating role of the perceived organization support with a little attention to the direct relationships among antecedents and outcomes. Thus, the objective of this research is to contribute to the growing stream of perceived organization support literature and to expand the comprehension of how the selected antecedents namely; perceived supervisor support, job conditions and gender differences affect it directly in the Egyptian context.

Perceived Organization Support

Organization support theory is the root base that perceived organization support flourished from as explained by [5, 8, and 9]; who further emphasized that social exchange theory as explained by [4] is the building base of employer-employee reciprocal relationship. In his original conceptualization [5] explained perceived organization support as the perceptual impression that is formulated in the mind-sets' of employees about their organizations' care and support. This perspective infers a set of employees' feelings of perception about the organizational care, help, respect, cooperation and recognition of contribution. Gouldner [2] endorses the idea of employees' returning (UN) favourable treatment with the organization based on the norm of reciprocity. Gouldner [2] further mentioned that the increased feelings of organization support generate a set of inner positive motivational readiness towards the organization. Cropanzo and Mitchell [10] discussed perceived organization support as the quality of exchange between the organization and its' employees. Erdogan and Enders [11] expressed perceived organization support as the extent to which an employee would believe that the organization is willing to support and value his contribution.

Exchange of resources within work has been classified into two categories. Firstly, economic resources which are tangible in nature such as salaries, rewards, and bonus. Secondly, socio-emotional resources like; recognition, encouragement, motivation, and empowerment [12]. Muse and Stamper [13] pointed out two distinct sub-dimensions of perceived organization support; caring about employees' performance and caring about employees' well-being. They argued that failure to fulfil both sub-dimensions may lead to misperception of perceived organization support. Woo [14] thinks that perceived organization support encompass three sub-dimensions; support from the organization, support from the supervisor, and support from co-workers. Similarly, Ning [15] proposed two main sub-dimensions of perceived organization support namely; perceived job support (all job related support aspects) and perceived life support (organizational support to employees' personal life issues and interaction).

Extending the approach of social exchange theory among employee-employer relationship is the base idea of perceived organization support. Employees do not see reality; rather they tend

to see their own explanation of reality. This entails extra-steps towards improved increased set of offerings. The researcher argues that organizations are bounded by sets of limited resources to utilize and offer when it comes to monetary offerings like pay raise, and fringe benefits. On the other hand, the intangible set of socio-emotional offerings rely basically on the empathy of the relationship between the employee and his/her direct supervisor in addition to, organization culture and the likeliness to create a bond of care across the board. The controversial dilemma is the ability to maintain such exchange offerings during challenges such as downsizing activities, and work redesign [16] from the organization and to sustain them [17].

Several antecedents have been explored in relation to perceived organization support. Perceived supervisor support was identified as one of the significant constructs that affect the level of felt support [18, 8, and 19]. Other scholars found that perceived organization support mediates the relationship between perceived supervisor support and work outcomes like organization commitment [20] as well as supportive leadership behaviour [21]. Organizational rewards contribute positively to fostering perceived organization support as it helps to increase the level of felt support [9]. Stajkovic and Luthans [22] endorsed the idea that a blended mix of recognition with organizational rewards is likely to generate strong levels of felt perceived organization support. Human resources practices support the creation of pleasant working conditions and environment which in return elevate the sense of support [23, 24]. Job conditions were found to have a positive relation with perceived organization support [25, 24]. Additionally, autonomy and freedom to act and take decisions are positively related to perceived organization support [17]. Moreover, organizational tenure, promotions and employee developmental practices had a positive effect on perceived organization support [26].

Perceived organization support is expected to generate desired job attitudes and behaviours among employees as explained in [5] who discussed several benefits of perceived organization support as; increased esteem, social identity and extra-role behaviour. Previous studies endorsed that perceived organization support is positively related to procedural justice regarding the fairness of enforcing procedures and the usage of resources [27], organization affective commitment, effort – reward expectancies [28], employee engagement [29], job performance [30, 23], felt obligations and in-role performance [31] organization based self-esteem [32] and intrinsic tasks [33]. Furthermore, Lamm, Tosti-Kharas and King [34] reported perceived organization support to be positively related to corporate social responsibility and sustainability. Conversely, perceived organization support was found to be negatively related to absenteeism [28, 5], intention to leave [31, 35, 36 and 26], tardiness [37], job stress, burnout, work-family conflict and emotional exhaustion [23, 38]. Organization size has been investigated in relationship to perceived organization support. Dekker and Barling [39] argued that employees tend to feel low levels of appreciation and support in large sized organizations compared to small sized organizations. This was attributed to the lack of personalized interaction between the organization and the employees as a result of the increased headcount.

Perceived Supervisor Support

Organization support theory considers perceived supervisor support as an integrative dimension of perceived organization support [40]. Perceived supervisor support has been explored as one of the significant constructs that affect the level of felt perceived organization support [18, 8]. It is the representation of organizational care and value of employees' contributions [18]. Levinson [3] suggested that employees see the reciprocal exchange relationship through their supervisors who are considered as organization's agents. Supervisors are the organizational interface of the organization as they are a symbol of

personification of organizational support [8]. Employees tend to see their supervisors as the agents who act on behalf of the organization. Perceived supervisor support is a mirror reflection and clue of how employees view their organizational support and recognition [41, 40]. Kurtessis and colleagues [23] explained that employees form a complex set of human attributes, traits, emotions and intentions towards non-human entities through the interpretation of their supervisor acts and behavioural patterns. Previous literature revealed that direct supervisors possess a strong influence on employees' viewpoint about the organization [42, 43]. Nevertheless, the quality of offerings and granted support remain reluctant on the level of trust between employees and supervisors [44]. The researcher defines perceived supervisor support as the dynamic, interactive emotional bond that reflects to the employee the organizational support care and momentum.

Job Conditions

Job conditions comprise a variety of sub-dimensions; actions and influential variables that affect the employee [45]. Brenner [46] disputed that job conditions are usually among the driving force of empowering and motivating employees towards improved performance and work practices. The researcher defines job conditions as an interrelated set of offerings granted from the organization to the employee. Furthermore, Opperman [47] expresses the working environment and conditions from three different perspectives. Firstly, the technical environment which includes the infrastructure and, the technological job requirements. Secondly, the human environment which comprises co-workers, supervisors and, relational interactions of the job. Third, the organizational environment that encompasses all the practices related to the facilitation and encouragement of knowledge sharing practices. Besides, Eisenberger and his colleagues [24] suggested several factors that constitute the job conditions construct including; pay, training, promotions, task variety, stress, workloads, and schedules. Furthermore, Armeli and fellows [48] added that the organization usually hold the controlling ropes on how to create and promote a set of favourable job conditions across the board.

RESEARCH METHODOLOGY

This section of the paper will address the study sector, procedure, common method bias, research objectives and the development research hypotheses.

The study Sector

The selected sector is the mobile industry in Egypt. There are three multinational organizations operating with relatively common business processes and operations. Multinational organizations were selected because they tend to practice contemporary management approaches and they care about the well-being of their employees. The selected sample for the research was the employees working in the call centres of these organizations. Employees working in the call centres relatively share common educational background, and demographic characteristics. Through the review of the business processes within the selected organizations it was noted that they have adopted several practices to support their employees for example; flexible work schedules, company nurseries for the children, team building sessions, vacation plan and supportive feedback sessions. According, to the secondary data obtained from the selected organizations the total number of employees working for the call centres is 4600 employees.

Procedure

A self-administered questionnaire was developed based on the previously published and reliable scales. Due to the inability to reach all the population; 700 questionnaires were

distributed among the call centre employees on the basis of random sampling technique. A total of 600 questionnaires were returned complete and valid with a response rate of 85.7%. This was adopted via emails through the Human Resources departments of the selected organizations. Informative meetings with the Human Resources designated parties were conducted to explain the purpose of the research as well as to gain a better insight about the working conditions, salary schemes, career path, and compensation offerings. Procedural remedies as explained by Podsakoff, Mackenzie, & Podsakoff [49] and Podsakoff, MacKenzie, Lee & Podsakoff [50] stating on the questionnaire the purpose of the survey, improving item wording, assuring the anonymity of the participants and that all the gathered data will be treated confidentially were followed in an attempt to reduce common bias.

Research Measures

The researcher relied on valid and sound published scales in measuring the research constructs. Perceived organization support was assessed by [5] original scale, with Cronbach Alpha 0.970, which encompassed a set of 36-items. The reason for choosing this scale is that it is a composite scale and would serve the purpose of the research. Sample items "The organization values my contribution to its well-being/The organization fails to notice my little performance". Reverse scoring items were kept without any changes in an attempt to reduce *Extreme Response Bias*. Most of the previous research studies [51, 18] measure perceived supervisor support using 3-item scale that was addressed by [8]. This is a common practice of researchers where the perceived organization support scale is used replacing the word organization with the word supervisor for these three selected items. The researcher used a set of 15-items that were derived from the original 36-item perceived organization support scale developed by [5]. The 15 selected items were chosen after semi-structured interviews with the human resources departments' heads of the selected organizations as well as formal interviews with three Human Resources Professors in Cairo University. In order to reduce apprehension all the items were positively stated. A list of the 15 selected questions is attached at the end of the research. Job conditions were measured by [24] 18-items scale. In the original conceptualization of Eisenberger and his colleagues [24] focused on two broad categories namely; organization highly controlled job conditions and organization low controlled job conditions. Sample items comprised "Work schedule / Low stress and pressure". All the constructs were addressed on 7-point likert scale.

Research Objectives

The literature review was explored and the research objectives were developed as follows:

1. Analysing the effect of perceived supervisor support on perceived organization support.
2. Analysing the effect of job conditions on perceived organization support.
3. Analysing the differences held among males and females with respect to perceived organization support.

Research Hypotheses

Eisenberger and his fellows [5] asserted that employees relate and integrate the conduct practices received from their supervisors to formulate the general perception about the organization. Up to the best knowledge of the researcher few studies focused on the direct relationship between perceived supervisor support and perceived organization support specifically in the Egyptian context. Organization support theory revealed a positive relation whereby; perceived supervisor support was identified as an antecedent of perceived organization support [52, 53, 54, and 19]. Based on these findings; the first hypothesis is posed as:

H1: It is expected that perceived supervisor support will have a positive effect on perceived organization support.

Job conditions are viewed as one of the significant antecedents in relation to perceived organization support. There is a controversial view about its' impact on perceived organization support. Eisenberger and colleagues [24] argued that job conditions should have the weakest effect among all the perceived organization support antecedents. They further explained their viewpoint to the fact that job conditions are always governed by general organizational policies, and regulations. Accordingly, minimum involvement of implementation would affect the level of perceived organizational support. On the other side, other scholars reported that job conditions contribute significantly and positively to the level of perceived organization support [55, 9, and 25].The researcher agrees with the view point of the positive effect among the variables. In view of that, the second hypothesis is developed as:

H2: It is expected that job conditions will have a positive effect on perceived organization support.

Gender differences were also studied by several scholars to identify the differences in the level of perceived organization support among females and males. Most of the studies up to the best knowledge of the researcher showed no relation or a low significant difference among females and males [56, 36, 57, and 58]. Accordingly, the third hypothesis is addressed as:

H3: It is expected that there will be no differences among females and males with regard to the level of perceived organization support.

STATISTICAL ANALYSIS AND RESULTS

The following section will present the statistical analysis of the research hypotheses.

The researcher conducted a pilot study on a number of 50 employees to check the validity and reliability of the research measures. The following Table (1) shows the results of the reliability and validity for the research variables

Table (1): Reliability and Validity for Research Variables

Variable	Cronbach Alpha Coefficient
Perceived Supervisor Support	0.973
Job Conditions	0.978
Perceived Organization Support	0.99

The above results show that all the research measures are valid and could be used for the purpose of the study.

Demographic Characteristics of the Sample

As presented in Table (2), the demographic characteristics; most of the participants are males, aged 20 till 30 represent (47.7%) of the sample size, the majority of the participants are single (46.7%), and 94.2% are university graduates.

Table (2): The demographic characteristics of the selected sample

Demographic Variables	Frequency	%
Gender		
Male	394	65.7
Female	206	34.3
Age Groups		
20-	286	47.7
30-	215	35.8
40-48	99	16.5
Marital Status		
Single	280	46.7
Married	219	36.5
Divorced	52	8.7
Widow	49	8.2
Education Level		
University Graduate	565	94.2
Post Graduate Studies	35	5.8

Factor Analysis Results - Perceived Supervisor Support

As identified within the research scales that perceived supervisor support construct was developed based on interviews with key human resources personnel as well as university professor. In order to comply with ex-post procedural remedies; confirmatory factor analysis was conducted. The following table shows the results of the factor analysis for the fifteen items.

Table (3): Results of Factor Analysis - Perceived Supervisor Support

#	Item	Factor Loading
1	My supervisor always appreciates my extra efforts	0.801
2	My supervisor would understand a long absence due to my illness	0.87
3	My supervisor never ignores my complaints	0.865
4	Help is available from my supervisor when I have problems	0.881
5	My supervisor cares about my well-being	0.837
6	My supervisor always understands my absence due to a personal problem	0.871
7	My supervisor would forgive an honest mistake on my part	0.866
8	My supervisor never fails to notice my little performance	0.874
9	My supervisor cares about my general satisfaction at work	0.868
10	My supervisor shows strong concern for me	0.904
11	If I decided to quit, my supervisor would try to persuade me to stay	0.868
12	My supervisor cares about my opinions	0.856
13	My supervisor takes pride in my accomplishments at work	0.924
14	My supervisor would understand if I were unable to finish a task on time	0.852
15	My supervisor tries to make my job as interesting as possible	0.879
Eigen Value		11.306
% of Variance		75.38

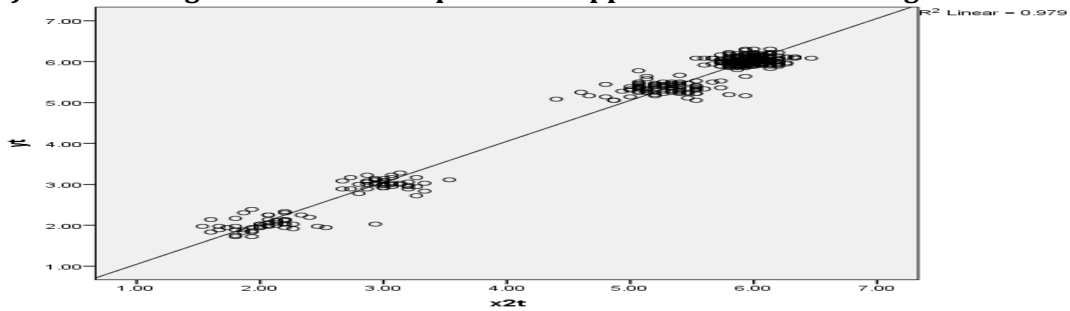
The results as shown in Table (3) using Orthogonal Rotation indicate that the statements are valid and reliable to be used for the study with 75.38 percentage of variance.

Hypothesis Number One:

H1: It is expected that perceived supervisor support will have a positive effect on perceived organization support.

Simple linear regression was used and the following Scatter diagram shows the mathematical relationship

Figure (1): Scatter Diagram Perceived Supervisor Support and Perceived Organization Support



X2t: Perceived Supervisor Support

Yt: Perceived Organization Support

The previous figure (1) shows a positive, linear relation between perceived supervisor support and perceived organization support.

Model Test

Table (4): Results of Simple Linear Regression

Estimated Parameters	Model Test for perceived supervisor support (X2t) and Perceived Organization Support (Yt)
	$Y_t = 0.045 + 1.002X_{2t}$ (1.380) (165.694**)
	F-Ratio = 27454.414** , D.f=(1,598)
	R² = 97.9%, S.E = 0.188

** : Denote the values of F-ratio and T-Test significant at 0.01 level of significance

The results as presented in Table (4) indicate a strong, significant and positive relationship between perceived supervisor support and perceived organization support with R²=97.9%

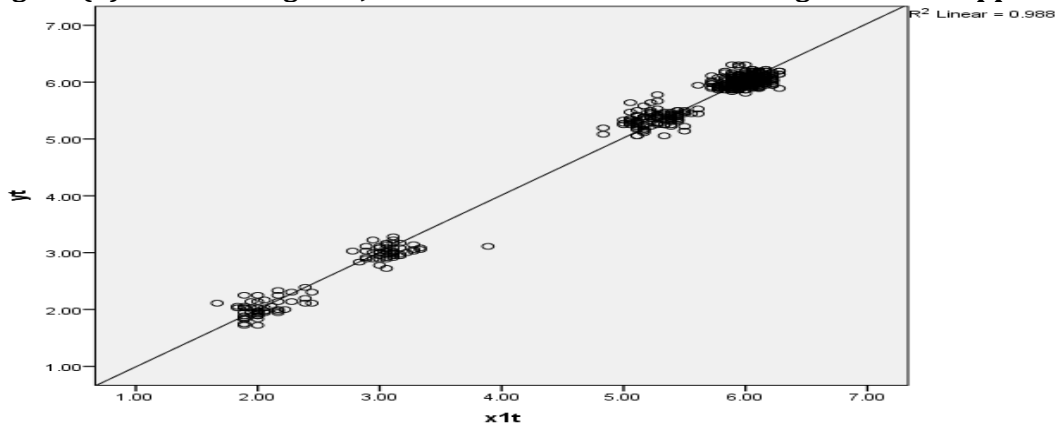
According to the above analysis, hypothesis number one can be accepted

Hypothesis Number Two:

H2: It is expected that job conditions will have a positive effect on perceived organization support.

Simple linear regression was used and the following Scatter diagram shows the mathematical relationship

Figure (2): Scatter Diagram Job Conditions and Perceived Organization Support



X1t: Job Conditions

Yt: Perceived Organization Support

The previous figure (1) shows a positive, linear relation between job conditions and perceived organization support.

Model Test

Table (5): Results of Simple Linear Regression Test

Estimated Parameters	Model Test for Job Conditions (X1t) and Perceived Organization Support (Yt)
	Yt = -0.015 + 1.007X1t (-0.599) (219.811**)
	F-Ratio = 48316.751** , D.f=(1,598)
	R² = 98.8%, S.E = 0.142

** : Denote the values of F-ratio and T-Test significant at 0.01 level of significance

The results as presented in Table (5) suggest a strong, significant and positive relationship between job conditions and perceived organization support with R²=98.8%

Based on the above analysis, hypothesis number two can be accepted

Summary of Spearman Correlation between perceived supervisor support and perceived organization support

Results of the spearman correlation between the perceived supervisor support and perceived organization support are presented in the following table (6) as shown below. The items indicated in numbers are available in the Annex of this research for both variables.

Table (6) Spearman Correlation

Perceived Organization Support Items	1		2		3	
	Perceived Supervisor Support Items	Correlation Coefficient	Perceived Supervisor Support Items	Correlation Coefficient	Perceived Supervisor Support Items	Correlation Coefficient
1	1	0.703	12	0.647		
2	1	0.643	2	0.581		
3	3	0.634	14	0.596		
4	13	0.598				
7	7	0.582	14	0.606		
9	12	0.598				
14	13	0.58				
18	4	0.86				
26	13	0.592				
28	1	0.646	12	0.76	13	0.581
29	13	0.692	14	0.602		
30	14	0.651				

Results as presented in Table (6) show that the fifteen proposed items for perceived supervisor support as per the factor analysis results can be used to measure the construct. Conversely, the items numbered (1, 2, 3, 4, 7, 12, 13, and 14) are the items that appeared to be highly correlated to perceived organization support.

Hypothesis Number Three

H3: It is expected that there will be no differences among females and males with regard to the level of perceived organization support.

Table (7): Gender differences and Perceived Organization Support

Gender	Mean	Standard Error	Confidence Interval for mean with 95%
Males	5.261	0.073	(5.118, 5.404)
Females	5.503	0.062	(5.379, 5.627)
T-Val=2.526, d.f= (578), Sig=0.012, p<0.05			

The results as shown in Table (7) indicate that there is a difference in the level of perceived organization support in favour of females. The mean value of females is 5.503 compared to only 5.261 for males.

DISCUSSION

Perceived organization support is merely dependent on the employee's perception of the organizational socio-emotional support. Employees who possess high level of perceived organization support view the organization as a care provider and become willing to engage deliberately into extra-role behaviour.

The aim of this research was to analyse the effect of perceived supervisor support and job conditions on perceived organization support. It also investigated the gender differences with regard to the level of felt support. Through the review of literature, research hypotheses were

posed. Valid and sound research measures were used to measure the research variables. Questionnaires were distributed among the call centre employees working in the multi-national mobile organizations in Cairo, Egypt.

Results revealed a strong, positive significant effect of perceived supervisor support on perceived organization support. This finding is in alignment with [52, 53, 54, and 19]. Employees need to feel confident enough about the organization support offerings to them as well as to their inner aspirations. The only direct interface that disseminates the organization corporate support strategy is the employee's direct supervisor. A supportive supervisor grants employees the necessary extrinsic motivation to perform more efficiently. Besides, a supportive supervisor is usually aware of the power of praise, care and encouragement practices which create a mutual affectionate bond. Employees need to trust their supervisors, feel that they are backed up by the supervisors' acts of kindness and support. Respect, showing empathy, and offering supportive feedback can only be personalized in the identity of the supervisor. The organization might have the optimal supportive plans nevertheless, lacks the appropriate supervisor support. This leads to drastic failure as the implementation of the supportive strategies is reluctant on the supervisor's ability to do so. Hence, supervisors remain the support givers on behalf of the organization across the path.

This research proposed based on previous literature findings as well as direct one to one interviews with Human Resources Experts and Human Resources professors a set of fifteen-items to measure the perceived supervisor support construct. This is contrary to all the previous studies that focused on a three-item scale [59, 18]. The findings inferred that the proposed scale is valid and reliable to measure perceived supervisor support. Conversely, only eight items reported a significant relationship with perceived organization support. These set of eight- items address supervisor's appreciation of extra efforts, understanding of absence due to illness, considering employees' complains, helping employees throughout problems, forgiving honest mistakes, caring about opinions, praising accomplishments, and understanding delays in meeting deadlines. An insight on these set of items suggest that perceived supervisor support is the interface of the organization support. Moreover, these items integrate exchange of care, offering support during problems, as well as understanding employees' needs. Furthermore, the significant items address the main notion of offering supervisor support to be reluctant on showing empathy and sharing care with direct reporters/subordinates.

Research results also suggested a positive effect of job conditions in relation to perceived organization support. This result agrees with the findings of [55, 9, and 25]. Although job conditions are tied to previously identified rules and organizational policies prior to employability nevertheless, they tend to influence employees to a great extent. Job conditions represent the essential hygiene factors for performing tasks with ease. They act as the fundamental ground that forester employee's ability within the organization. The work-conditions factors create a sense of tangible care and support in the minds of employees. Additionally, employees interpret the physical setup as well as the conditions they operate and the flexibility as a form of disseminated support possessed from the organization. Job conditions are the symbolic notion of granted support to employees. They identify, integrate and attribute the organizational attempts to recognize work - life satisfaction. Moreover, this conveys all the acts of support offerings with regard to respect, open communication, and well-being.

Furthermore, results suggested a significant difference among males and females in the level of perceived organization support. Females possessed a higher level of felt support compared to

males. This result contradicts with [56, 36, 57, and 58] who found weak differences among males and females. This could be explained by the emotional culture of the Egyptian community where females are more emotionally affected by support offerings compared to males. Females tend to be more inspired by the idea of support especially in the Eastern communities like, Egypt. Support, gestures of appreciation and encouragement all compose the emotional support attributes that females seek within the workplace. Conversely, males tend to seek instrumental and materialistic support. This kind of support is usually expressed in monetary and tangible forms which is not the notion of organizational support in most of the cases. As such females are likely to enjoy the level of socio-emotional support and to acknowledge in its various forms compared to males who seek instrumental, measurable support offerings.

MANAGERIAL IMPLICATIONS

Based on the interviews held with Human Resources Experts in the three organizations, the one-to-one meeting with the Human Resources professors as well as the statistical analysis of the gathered data; the following implications are posed:

1. Developing a corporate organization support strategy in accordance with the organizational vision, mission and corporate strategy.
2. Senior management and key decision makers' involvement in the development and execution of the organizational support strategy is a crucial for the success of the strategy.
3. Promoting a culture of self-worth and emotional symbolism. This endorses the potential willingness of employees to perform better.
4. Adopting quality time, one-to-one support sessions would facilitate the dissemination of the socio-emotional care.
5. Joint support from the organization and the supervisor is critical. This conveys collective supportive acts and improves the employees' readiness towards positive job attitudes.
6. Training supervisors on acquiring the essential skills related to better ways of offering feedback and corrective actions as well as showing care and support to their direct reporters.
7. Following open communication policy with employees in an attempt to lessen their concerns and worries.
8. Concise job conditions are one of the cornerstones that show materialistic and tangible support offerings.
9. Fostering a positive work environment provides a sense of empowerment and helps employees to sustain an ongoing vision of corporate support.
10. Support the employees' well-being through creating a work-life balance perspective. This transforms their views into more spiritual pursuit of confidence and enhances their feelings of organizational support.
11. Adopt positive reinforcement acts would help in creating a supportive notion across the board.
12. Act of kindness, simple verbal recognition, and rewards will help in spurring a natural feeling of valuable support to employees.
13. Consider various support forms taking into account gender differences. Males tend to seek instrumental/materialistic support while, females will be more in favour of socio-emotional support.

RESEARCH LIMITATIONS AND FUTURE STUDIES

Due to the time and cost constraints; the researcher focused on Cairo and Giza governorates. It is recommended that other geographical district as well as other industry sectors with the Egyptian domain to help in the generalization of the current results. Future research should extend to measure the validity and reliability of the proposed perceived supervisor support scale. Moreover, other antecedent variables in relation to perceived organizations could be considered. Longitudinal studies could also be conducted as they support analysing the support pattern over time.

CONCLUSION

This research study analysed the effect of perceived supervisor support, job conditions and gender differences on perceived organization support. Through the review of literature the research gap was identified as well as the hypotheses of the research. Self-administered questionnaires were developed and distributed among the employees working in the call centres of the multinational mobile industry in Egypt. Results, revealed a positive effect of perceived support and job conditions on perceived organization support. While, gender reported significant differences showing females to enjoy a higher level of felt support compared to males. Discussion of the results as well as managerial implications was addressed.

ANNEX

Perceived Supervisor Support

#	Item
1	My supervisor always appreciates my extra efforts
2	My supervisor would understand a long absence due to my illness
3	My supervisor never ignores my complaints
4	Help is available from my supervisor when I have problems
5	My supervisor cares about my well-being
6	My supervisor always understands my absence due to a personal problem
7	My supervisor would forgive an honest mistake on my part
8	My supervisor never fails to notice my little performance
9	My supervisor cares about my general satisfaction at work
10	My supervisor shows strong concern for me
11	If I decided to quit, my supervisor would try to persuade me to stay
12	My supervisor cares about my opinions
13	My supervisor takes pride in my accomplishments at work
14	My supervisor would understand if I were unable to finish a task on time
15	My supervisor tries to make my job as interesting as possible

Job Conditions

1	Time for personal life
2	Opportunity for challenging tasks
3	Training opportunities
4	Physical working conditions
5	Relationship with supervisors
6	Job security
7	Freedom to adopt own approach to job
8	Relationship with coworkers
9	Fringe benefits
10	Opportunity to make contribution to organization's success
11	Opportunity for high earnings
12	Recognition for good work
13	Work schedule
14	Opportunity for advancement
15	Variety and adventure
16	Opportunity to work in prestigious organization
17	Opportunity to help others
18	Low stress and pressure

Perceived Organization Support

1	The organization values my contribution to its well-being
2	If the organization could hire someone to replace me at a lower salary it would do so
3	The organization fails to appreciate any extra efforts from me
4	The organization strongly considers my goals and values
5	The organization would understand a long absence due to my illness
6	The organization would ignore any complaint from me
7	The organization disregards my best interests when it makes decisions that affect me
8	Help is available from the organization when I have problems
9	The organization cares about my well-being
10	The organization is willing to extend itself to help me to perform to the best of my ability
11	The organization would fail to understand my absence due to a personal problem
12	If the organization found a more efficient way to get my job done they would replace me
13	The organization would forgive an honest mistake on my part
14	It would only take a small decrease in my performance for the organization to want to replace me
15	The organization feels that there is little to be gained for employing me till the rest of my career
16	The organization provides me little opportunity to move up the rank
17	Even if I did the best possible, the organization would fail to notice
18	The organization would grant a reasonable request for a change in my working conditions
19	If I were laid off, the organization would prefer to hire someone rather than take me back
20	The organization is willing to help me when I need a special favour
21	The organization cares about my general satisfaction at work
22	If given the opportunity, the organization would take advantage of me
23	The organization shows very little concern for me
24	If I decided to quit the organization would try to persuade me to stay
25	The organization cares about my opinions
26	The organization feels that hiring me was a definite mistake
27	The organization takes pride in my accomplishments at work
28	The organization cares more about making a profit than about me
29	The organization would understand if I were unable to finish a task on time
30	If the organization earned a greater profit it would consider increasing my salary
31	The organization feels that anyone could perform my job as well as I do
32	The organization is unconcerned about paying me what I deserve
33	The organization wishes to give me the best possible job for which I am qualified
34	If my job were eliminated, the organization would prefer to lay me off rather than transferring me to a new job
35	The organization tries to make my job as interesting as possible
36	My supervisors are proud that I am part of this organization

References

- Singh, A. K., & Singh, A. P. (2010). Role of Stress and Organizational Support in Predicting Organizational Citizenship Behavior. *IUP Journal of Organizational Behavior*, 9(4), 7 – 25.
- Gouldner, A. W. (1960). The norm of reciprocity: A preliminary statement. *American sociological review*, 161-178. DOI: 10.2307/2092623
- Levinson, H. (1965). Reciprocation: The relationship between man and organization. *Administrative science quarterly*, 370-390. DOI: 10.2307/2391032
- Blau, Peter Michael. *Exchange and power in social life*. Transaction Publishers, 1964.
- Eisenberger, R., Huntington, R., Hutchison, S., & Sowa, D. (1986). Perceived organizational support. *Journal of Applied psychology*, 71(3), 500 - 507
- Brinberg, D., & Castell, P. (1982). A resource exchange theory approach to interpersonal interactions: A test of Foa's theory. *Journal of Personality and Social Psychology*, 43(2), 260 – 269 Doi. <http://org/10.1037/0022-3514.43.2.260>
- Krishnan, J., & Mary, V. S. (2012). Perceived organizational support—an overview on its antecedents and consequences. *International Journal of Multidisciplinary Research*, 2(4), 2-3.
- Eisenberger, R., Stinglhamber, F., Vandenberghe, C., Sucharski, I. L., & Rhoades, L. (2002). Perceived supervisor support: Contributions to perceived organizational support and employee retention. *Journal of applied psychology*, 87(3), 565 – 573. <http://dx.doi.org/10.1037/0021-9010.87.3.565>
- Shore, L. M., & Shore, T. H. (1995). Perceived organizational support and organizational justice. *Organizational politics, justice, and support*. In R. Cropanzano & K.M Kacmar (Eds.), *Organizational politics, justice, and support: Managing the social climate of the workplace*, 149-164. CT: Quorum Press.
- Cropanzano, R., & Mitchell, M. S. (2005). Social exchange theory: An interdisciplinary review. *Journal of management*, 31(6), 874-900.
- Erdogan, B., & Enders, J. (2007). Support from the top: Supervisors' perceived organizational support as a moderator of leader-member exchange to satisfaction and performance relationships. *Journal of applied psychology*, 92(2), 321. – 330. <http://dx.doi.org/10.1037/0021-9010.92.2.321>
- Neves, P., & Champion, S. (2015). Core self-evaluations and workplace deviance: The role of resources and self-regulation. *European Management Journal*, 33(5), 381-391. <https://doi.org/10.1016/j.emj.2015.06.001>
- Muse, L. A., & Stamper, C. L. (2007). Perceived organizational support: Evidence for a mediated association with work performance. *Journal of Managerial Issues*, 517-535.
- Woo, B. (2009). *Cultural effects on work attitudes and behaviors: the case of American and Korean fitness employees* (Doctoral dissertation, The Ohio State University).
- Ning, Y. (2010). Research on two dimensional structure model of employee organization support. *China management science*, 8, 567 – 571
- Muchinsky, R. (1997). *Organizational Behavior* (5th ed). New York: HarperCollins.
- Eisenberger, R., Rhoades, L., & Cameron, J. (1999). Does pay for performance increase or decrease perceived self-determination and intrinsic motivation?. *Journal of personality and social psychology*, 77(5), 1026 – 1040. <http://dx.doi.org/10.1037/0022-3514.77.5.1026>
- Kottke, J. L., & Sharafinski, C. E. (1988). Measuring perceived supervisory and organizational support. *Educational and psychological Measurement*, 48(4), 1075-1079. <http://dx.doi.org/10.1177/0013164488484024>
- Shanock, L. R., & Eisenberger, R. (2006). When supervisors feel supported: Relationships with subordinates' perceived supervisor support, perceived organizational support, and performance. *Journal of Applied psychology*, 91(3), 689 - 695. <http://dx.doi.org/10.1037/0021-9010.91.3.689>
- Breaux, K. T. (2004). The effect of program commitment on the degree of participative congruence and managerial performance in a budgeting setting.
- Krause, G. A. (2004). The secular decline in presidential domestic policy making: An organizational perspective. *Presidential Studies Quarterly*, 34(4), 779-792.
- Stajkovic, A. D., & Luthans, F. (2001). Differential effects of incentive motivators on work performance. *Academy of management journal*, 44(3), 580-590. doi: 10.2307/3069372

- Kurtessis, J. N., Eisenberger, R., Ford, M. T., Buffardi, L. C., Stewart, K. A., & Adis, C. S. (2017). Perceived organizational support: A meta-analytic evaluation of organizational support theory. *Journal of Management*, 43(6), 1854-1884. <https://doi.org/10.1177/0149206315575554>
- Eisenberger, R., Cummings, J., Armeli, S., & Lynch, P. (1997). Perceived organizational support, discretionary treatment, and job satisfaction. *Journal of applied psychology*, 82(5), 812 – 820. <http://dx.doi.org/10.1037/0021-9010.82.5.812>
- Mohamed, A. S., & Ali, M. (2015). The influence of perceived organizational support on employees' job performance. *International Journal of Scientific and Research Publications*, 5(4), 1-6.
- Wayne, S. J., Shore, L. M., & Liden, R. C. (1997). Perceived organizational support and leader-member exchange: A social exchange perspective. *Academy of Management journal*, 40(1), 82-111. doi: 10.2307/257021
- Greenberg, J. (1990). Organizational justice: Yesterday, today, and tomorrow. *Journal of management*, 16(2), 399-432. <https://doi.org/10.1177/014920639001600208>
- Eisenberger, R., Fasolo, P., & Davis-LaMastro, V. (1990). Perceived organizational support and employee diligence, commitment, and innovation. *Journal of applied psychology*, 75(1), 51 – 59. <http://dx.doi.org/10.1037/0021-9010.75.1.51>
- Gillet, N., Huart, I., Colombat, P., & Fouquereau, E. (2013). Perceived organizational support, motivation, and engagement among police officers. *Professional Psychology: Research and Practice*, 44(1), 46 - 55. <http://dx.doi.org/10.1037/a0030066>
- Eisenberger, R., Lynch, P., Aselage, J., & Rohdieck, S. (2004). Who takes the most revenge? Individual differences in negative reciprocity norm endorsement. *Personality and Social Psychology Bulletin*, 30(6), 787-799. <https://doi.org/10.1177/0146167204264047>
- Arshadi, N. (2011). The relationships of perceived organizational support (POS) with organizational commitment, in-role performance, and turnover intention: Mediating role of felt obligation. *Procedia-Social and Behavioral Sciences*, 30, 1103-1108. <https://doi.org/10.1016/j.sbspro.2011.10.215>
- Arshadi, N., & Hayavi, G. (2013). The effect of perceived organizational support on affective commitment and job performance: mediating role of OBSE. *Procedia-Social and Behavioral Sciences*, 84, 739-743. <https://doi.org/10.1016/j.sbspro.2013.06.637>
- Eisenberger, R., & Stinglhamber, F. (2011). *Perceived organizational support: Fostering enthusiastic and productive employees*. Washington, DC, US: American Psychological Association.
- Lamm, E., Tosti-Kharas, J., & King, C. E. (2015). Empowering employee sustainability: Perceived organizational support toward the environment. *Journal of Business Ethics*, 128(1), 207-220. <https://doi.org/10.1007/s10551-014-2093-z>
- Dawley, D., Houghton, J. D., & Bucklew, N. S. (2010). Perceived organizational support and turnover intention: The mediating effects of personal sacrifice and job fit. *The Journal of Social Psychology*, 150(3), 238-257. <https://doi.org/10.1080/00224540903365463>
- Guzzo, R. A., Noonan, K. A., & Elron, E. (1994). Expatriate managers and the psychological contract. *Journal of Applied psychology*, 79(4), 617 – 626. <http://dx.doi.org/10.1037/0021-9010.79.4.617>
- Allen, D. G., Shore, L. M., & Griffeth, R. W. (2003). The role of perceived organizational support and supportive human resource practices in the turnover process. *Journal of management*, 29(1), 99-118. [https://doi.org/10.1016/S0149-2063\(02\)00222-2](https://doi.org/10.1016/S0149-2063(02)00222-2)
- Spielberger, C. D., Vagg, P. R., & Wasala, C. F. (2003). Occupational stress: Job pressures and lack of support. In J.C. Quick, J. Campbell, & L.E. Tetrick (Eds.), *Handbook of Occupational health psychology*: 185 – 200. Washington, DC: American Psychological Association
- Dekker, I., & Barling, J. (1995). Workforce size and work-related role stress. *Work & Stress*, 9(1), 45-54. <https://doi.org/10.1080/02678379508251584>
- Stinglhamber, F., & Vandenberghe, C. (2003). Organizations and supervisors as sources of support and targets of commitment: A longitudinal study. *Journal of Organizational Behavior*, 24(3), 251-270. doi:10.1002/job.192
- Maertz, C. P., Griffeth, R. W., Campbell, N. S., & Allen, D. G. (2007). The effects of perceived organizational support and perceived supervisor support on employee turnover. *Journal of Organizational Behavior*, 28(8), 1059-1075. doi:10.1002/job.472

- Perry, S. J., Witt, L. A., Penney, L. M., & Atwater, L. (2010). The downside of goal-focused leadership: The role of personality in subordinate exhaustion. *Journal of Applied Psychology, 95*(6), 1145 – 1153. <http://dx.doi.org/10.1037/a0020538>
- Rosen, C. C., Harris, K. J., & Kacmar, K. M. (2011). LMX, context perceptions, and performance: An uncertainty management perspective. *Journal of Management, 37*(3), 819-838. <https://doi.org/10.1177/0149206310365727>
- Dirks, K. T., & Ferrin, D. L. (2002). Trust in leadership: meta-analytic findings and implications for research and practice. *Journal of applied psychology, 87*(4), 611. – 628. <http://dx.doi.org/10.1037/0021-9010.87.4.611>
- Kohun, S. (1992). Business environment. *Ibadan: University Press Kyko OC (2005). Instrumentation: Know Yourself and Others Longman Dictionary of Contemporary English (2003) 3rd editions: Harloa Pearson Educational Limited.*
- Brenner, M. H., Andreeva, E., Theorell, T., Goldberg, M., Westerlund, H., Leineweber, C. & Bonnaud, S. (2014). Organizational downsizing and depressive symptoms in the European recession: the experience of workers in France, Hungary, Sweden and the United Kingdom. *PLoS one, 9*(5), e97063.
- Opperman C. S. (2002). *Tropical business issues*. Partner Price Water House Coopers. International Business Review.
- Armeli, S., Eisenberger, R., Fasolo, P., & Lynch, P. (1998). Perceived organizational support and police performance: The moderating influence of socioemotional needs. *Journal of applied psychology, 83*(2), 288 – 297. <http://dx.doi.org/10.1037/0021-9010.83.2.288>
- Podsakoff, P. M., MacKenzie, S. B., & Podsakoff, N. P. (2012). Sources of method bias in social science research and recommendations on how to control it. *Annual review of psychology, 63*, 539-569. <https://doi.org/10.1146/annurev-psych-120710-100452>
- Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of applied psychology, 88*(5), 879 – 903. <http://dx.doi.org/10.1037/0021-9010.88.5.879>
- Rhoades, L., Eisenberger, R., & Armeli, S. (2001). Affective commitment to the organization: The contribution of perceived organizational support. *Journal of applied psychology, 86*(5), 825 – 836. Doi: <http://dx.doi.org/10.1037//0021-9010.86.5.825>
- Hutchison, S. (1997). A path model of perceived organizational support. *Journal of Social Behavior and Personality, 12*(1), 159 – 174. <https://doi.org/10.1177/0149206305279602>
- Yoon, J., Han, N. C., & Seo, Y. J. (1996). Sense of control among hospital employees: An assessment of choice process, empowerment, and buffering hypotheses. *Journal of Applied Social Psychology, 26*(8), 686-716. <http://dx.doi.org/10.1111/j.1559-1816.1996.tb02739>
- Yoon, J., & Lim, J. C. (1999). Organizational support in the workplace: The case of Korean hospital employees. *Human relations, 52*(7), 923-945.
- Guzzo, R. A., Fink, A. A., King, E., Tonidandel, S., & Landis, R. S. (2015). Big data recommendations for industrial-organizational psychology. *Industrial and Organizational Psychology, 8*(4), 491-508. I don't know if it is the correct reference I suggest to recheck the publication date.
- Daly, C. L. (1999). *Explaining the extra-role behavior of part-time and full-time workers: A matter of support?(work behavior, citizenship behavior)* (Doctoral dissertation, ProQuest Information & Learning).
- Welchans, T. D. (1996). The effects of telecommuting and communication media on perceived value congruence, organizational support and job satisfaction, *Doctoral dissertation, The Ohio State University, Columbus.*
- Witt, L. A., & Hellman, C. (1992). Effects of subordinate feedback to the supervisor and participation in decision-making in the prediction of organizational support (FAA-AM Publication No. 92-13, pp. 1-7). *Washington, DC: Federal Aviation Administration, Office of Aviation Medicine.*
- Rhoades, L., & Eisenberger, R. (2002). Perceived organizational support: a review of the literature. *Journal of applied psychology, 87*(4), 698 – 714. <http://dx.doi.org/10.1037/0021-9010.87.4.698>

What attributes do existing web blog need?

Yu-Ling Lin

Professor, Department of Business Administration
National Chin-Yi University of Technology

Hong-Wen Lin

Assistant Professor, Department of International Trade,
Chinese Culture University

Yu-Ting Hung

Student, Department of Business Administration
National Chin-Yi University of Technology

ABSTRACT

Blog is an on online diary which is a personal record through webpages which includes the functions of automatic exchange, immediate updating, casual posting, and link exchange. People not only can type posts and upload their pictures to their web albums but also record their daily life with the web space instead of writing in the diary. However, the blog which users want is provided with the functions and attributes or the final value which users want and will pursue while using their blogs. Both of these are research questions which need to be further discussed. Thus, this research adopts means-end chains as the theoretical basis and uses attributes-consequences-values as the interview structure which deeply investigates the needs of blog users. The research results showed that users think according to the sequence, important attributes of Blogs are *blog writing, photo album, personalization, special functions, discussion/messages/reply*. Hierarchical value map is further drawn to explain above attributes according to the interview result. This research aims on understanding of blog users' use factor and needs and expect that the research results can assist dealers of blog platforms to continuously develop and improve functions and the quality of platforms to provide blog platforms which meet users' need more.

Keywords: Web blog, Means-end chains, Laddering, Attributes, Consequences, Values

INTRODUCTION

The sustainable development of the Internet prompts transmission of information to be fast and convenient. The time which people use internet is more, and besides, their daily life is getting inseparable with Internet. Web allows the Internet to become richer and its sound, graphics, images, web multimedia program players, and other components let websites become more diversified. Internet is provided with features of interactive communication, recreation, and entertainment which allows more and more people take part in discussions, write their blogs, and upload their photos to web albums on the internet. People record their daily life with the web space instead of writing in the diary. Although Facebook has already become a platform in which most people record their daily life, blogs still provide us with an indelible existing value.

The blog is a technology platform which is easy to use and supports the users to present their personalized features. Whether they are posts, pictures, photos, music, or even movies, blog content can be diversified through the technology platform provided by the hosting of blog. As a result, users have plenty of time to browse the Internet, and it has also changed the lifestyle of many people.

This research is based on the “Means-end chains” theory that is often used in the marketing field to explore consumer demand to interview people who have experience of using blogs deeply, try to understand the attributes, consequences, and values that users consider when users are using blogs. This is done through the drawing of the historical value map (HVM) to construct the attributes-consequences-values architecture and then analyze the users’ needs. The results of this research can help the hosting of blogs to develop and design blog functions that are more in line with the users’ needs, thereby satisfying the final value of the users’ desires.

THEORETICAL FRAMEWORK

Web blog

The Blog is the abbreviation of web log, which refers to the visitor’s log file recorded by the web server. Its function is to know the server traffic and visitors’ activities. The Blog refers to the personal records presented by the web as a medium. The Blog is an online personal diary, and the authors manage the information according to the rules by themselves. The Blog is a media in the center of authors to emphasize the absorption of information and the attitude of sharing life and symbolizes the values and beliefs of authors. Whether it is the trend of the times, media reports or the catalysis of online activities, the use rate of blogs has increased, and make “interaction, participation, sharing” become the main feature of the Blog’s segment communication in the future.

Means-end chains theory

Olson and Reynolds (2001) proposed that the purpose of the Means-end chains is to understand the reasons for the users’ decisions through interviews, and to explain the users’ behavior by the links between the elements. Gutman (1982) showed that Means are activities or things that people engage in, and Ends are states of value such as happiness, safety, achievement, and so on. The Means-end chains model is to explore how users choose through goods or services to achieve the final states of desires, and is also a simple structure of links attributes, consequences, and values.

The three main elements that make up the “Means-end chains” analysis logic are attributes, consequences, and values, and the feeling of the positive result can be called consumer benefits (Reynolds & Whitlark, 1995). Olson and Peter (1993) believed that the “meaning of attributes” of the Means-end chains is given by the users’ cognitions. It is equivalent to what consequences and values of the Blog technology platform mentioned in this research can bring. In other words, the attributes of the Blog technology platform are regarded as a method to achieve the purpose, which may be a kind of consequence.

METHODOLOGY

Reynolds and Gutman (1988) proposed that laddering is the most common method of use for building “attributes-consequences-values” structures. Laddering advocates that consumers themselves have no direct relationships with product attributes, results and values, namely, there is no specific method and purpose in the minds of consumers. Therefore, how to guide consumers to link the attributes of products, results and values which are respected for in the heart of consumers, then to complete the structure of the means-end chains is the main purpose of laddering. Laddering uses one-to-one interview techniques deeply to discover the “attributes-consequences-values” link architecture in the heart of consumers. And as such, the study adopted purposive sampling and open call for the selection of 50 blog users for the in-depth interviews. The samples falling between the ages of 16–30.

After Laddering, in order to simplify and analyze the content of the interview to extract

important information, it needs to analyze and quantify the individual respondents through data analysis. This research used content analysis to further analyze the consumer ladder which obtained from the interview. The respondents' answers are classified by coding to determine the level of abstraction to which the answers belong, and are finally presented in the "attributes, consequences, and values" classification method. With 12 attributes, 11 consequences and 8 values, the study features a total of 31 elements (as shown in Table 1).

The Implication matrix summarizes and quantifies the link relationships mentioned in all interviews and it is also the basis of drawing HVM. The rows and columns of the Implication matrix represent the elements of each attributes, consequences, and values, while the numbers within the matrix represent the times of links between the elements. The Implication matrix aggregates the times of links between all the elements and processes the construct of the HVM with the quantitative data in the matrix (Reynolds & Gutman, 1988), to express the respondent's demand for the Blog. In this research, input from 50 respondents formed a total of 541 value ladders (on average 10.82 ladder per respondent) and a total of 1,283 chains (on average 25.66 chains per respondent) (implication matrix as shown in Table 2). And this research used cutoff value = 12 as the rendering standard for HVM (HVM of blog users as shown in Figure 1).

Table 1. Item codes of web blog.

<i>Elements</i>	<i>Item</i>	<i>Citation</i>	
		<i>Frequency</i>	<i>Percentage (%)</i>
<i>Attributes</i>	A01 <i>Reputation/Popularity</i>	23	4.25
	A02 <i>Word of Mouth</i>	24	4.44
	A03 <i>Free File Hosting</i>	10	1.85
	A04 <i>Blog Writing</i>	157	29.02
	A05 <i>Photo Album</i>	79	14.6
	A06 <i>Discussion/Message/Reply</i>	45	8.32
	A07 <i>Privacy Right</i>	40	7.39
	A08 <i>Special Function</i>	57	10.54
	A09 <i>Personalization</i>	57	10.54
	A10 <i>Upload a Video</i>	9	1.66
	A11 <i>User Interface</i>	38	7.02
	A12 <i>New Function Expected</i>	2	0.37
<i>Consequences</i>	C01 <i>Cluster</i>	176	23.72
	C02 <i>Economy</i>	9	1.21
	C03 <i>Easy</i>	15	2.02
	C04 <i>Browse/Search Information</i>	31	4.18
	C05 <i>Increase Knowledge</i>	31	4.18
	C06 <i>Data Backup/ Security</i>	42	5.66
	C07 <i>Convenience</i>	124	16.71
	C08 <i>Entertainment</i>	44	5.93
	C09 <i>Commemoration</i>	38	5.12
	C10 <i>Share/Record</i>	140	18.87
	C11 <i>Independence</i>	92	12.40
<i>Values</i>	V01 <i>Security</i>	41	7.58
	V02 <i>Sense of Accomplishment</i>	33	6.10
	V03 <i>Fun and Enjoyment of Life</i>	30	5.55
	V04 <i>Warm Relationships with Others</i>	62	11.46
	V05 <i>Self-fulfillment</i>	4	0.74
	V06 <i>Happiness/Joy/Fun</i>	229	42.33
	V07 <i>Satisfaction</i>	124	22.92
	V08 <i>Yearning</i>	18	3.33

Table 2. Implications matrix of web blog.

	C01	C02	C03	C04	C05	C06	C07	C08	C09	C10	C11	V01	V02	V03	V04	V05	V06	V07	V08	Total
A01	11					1	6	3		1	1									23
A02	11				1		5	5		1	1									24
A03		4					3		1	2										10
A04	25	1		16	2	1	28	5	7	69	3									157
A05	8			7		7	6	6	10	30	5									79
A06	35	1					7	1				1								45
A07						23	1					16								40
A08	14						22	9		2	10									57
A09	1						3	6		7	40									57
A10				1					1	1	6									9
A11	3	1	2			2	23	1		2	4									38
A12		1					1													2
C01					3		7	3		4	2	1	5	3	55		79	14		176
C02							1										5	3		9
C03									1			1		1			9	3		15
C04	4				12			1		1				3			6	4		31
C05										1	1		3	1		1	10	14		31
C06							3		1	1	1	30	1				3	2		42
C07	12	1	3	4	9	1		1	1	8	3	2	1	3	1		29	45		124
C08	6			3	2		2			2	2			6	1		11	9		44
C09						1								2			13	4	18	38
C10	42		7				5	1	16		2		6	4	5	1	37	14		140
C11	4		3		2	6	1	1		3		7	17	7		2	27	12		92
Total	176	9	15	31	31	42	124	44	38	140	92	41	33	30	62	4	229	124	18	1,283

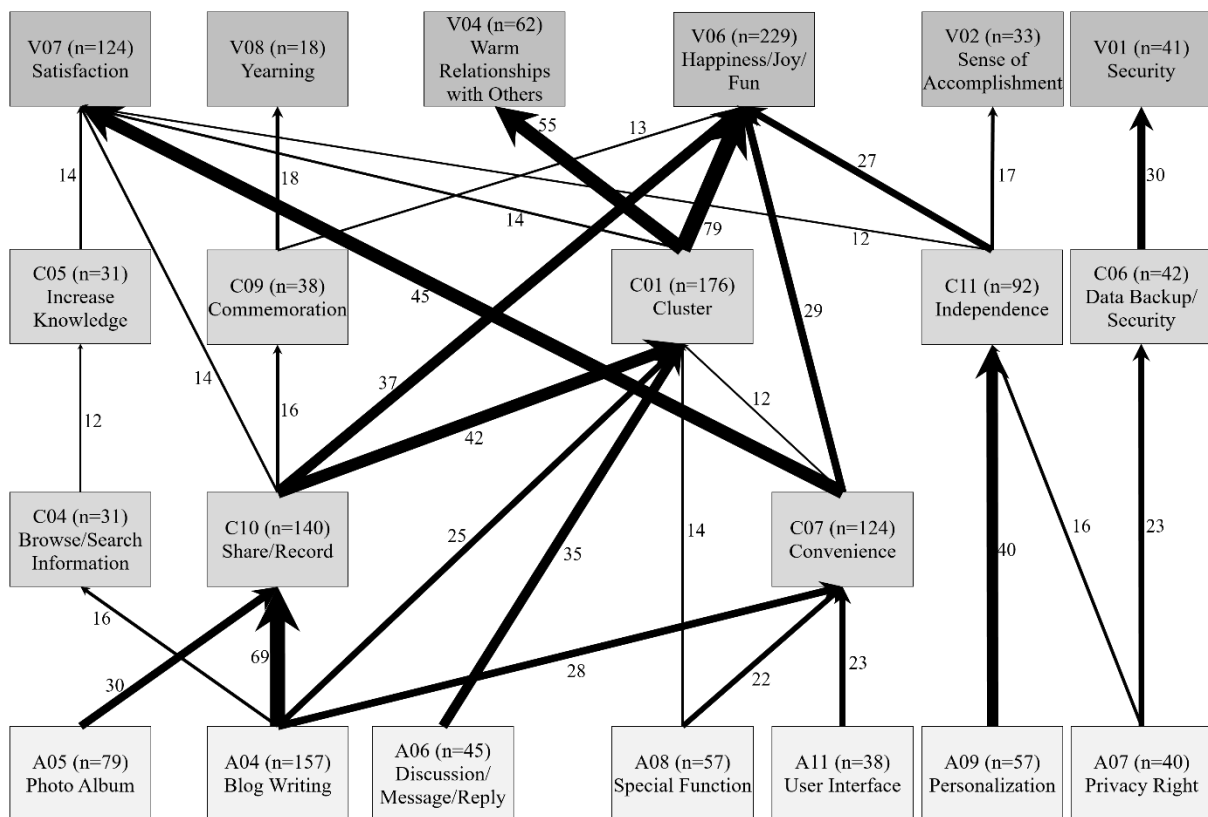


Figure 1. HVM of blog users (Cut-off level = 12)

RESULTS AND DISCUSSIONS

Link of the “Attributes-Consequences”

Blog Writing → Share/Record & Convenience

Blog writing is a website that is managed by personals and posts new articles, images, or videos on irregular dates. This is the most important demand attribute that the respondent recognized when choosing a blog (has mentioned 157 times). ***Blog writing*** allows users to record what happens in their daily lives, just like a diary, and to express their personal emotions. Not only can share the author’s happy things with friends, but also can vent your dissatisfaction, depression or anger in your life on the Blog. For users, ***blog writing*** not only records personal life, but also shares personal feelings with friends. In addition, for people with special expertise or interests, you can share your knowledge and skills by writing a blog and discuss with internet friends or friends. There are also several blog search engines used to search content of blog, such as Bloglines, BlogScope and Technorati. Provides information about popular searches and tags used to categorize content of blog, increasing the ***convenience*** for users to browse and search for information.

Personalization → Independence

Personalization means that the background themes style, layout presentation, music and other functions of the blog can be modified according to personal preferences, making the blog more attractive. Many users want to pursue personal characteristics and ***independence***. They can change with the user's feeling and preference, and the personal blog will be unique by the ***personalization*** function.

Discussion/ Message/Reply → Cluster

The attribute function of ***Discussion/Message/Reply*** communicates or contacts with contacts through texts and emoji. This feature allows users to interact with the outside world more than just individuals. It is also not limited by time and space and sends messages anytime and anywhere; making Blog a communication channel between many enterprises and people, or a platform for contact between friends, and through this kind of communication can also increase the results of ***cluster***.

Photo Album → Share/Record

The ***photo album*** refers to the blog user uploading the image files to the blog with the network, and the image files can be personal/group photos, travel photos, and so on. Users can not only record footprints of their own life, but also share photos with friends or a wide range of Internet users. In addition, users can save photos in the album of the blog and they can also be used for their future memories.

Special Function → Convenience & Cluster

Special function includes the syntax of the blog, the constellation calendar; the cluster of good friends related to the group activities, which came to my house, the link of good friends, co-authors; pin the posts related to the blog management, classification of the posts and other functions. Whether it is recording life or expressing feelings, it is possible to make the user feel more convenience while operating the blog through special functions, which not only makes it more ***convenience***, but also triggers the topic of friends and further produces the result of ***cluster***.

Link of the “Consequences-Consequences”

Share/Record → Cluster

The development of the Internet has changed the style of the traditional writing diary. People have recorded their own lives on their own blogs numerously, expressed their feelings, and

even shared personal creations. Blogs are not only channels for recording personal life and feelings, but they also break through geographical and spatial restrictions, so that friends from all over the world can know about the current situation from the posts or photos shared by users and increase the interaction between them. Even with the blog to expand the personal living sphere, and then create a **cluster** effect.

Browse/Search Information → Increase Knowledge

Many Internet users use blogs to search and browse information which they prefer to know, such as travel information, financial knowledge, and personal creations. Enrich personal knowledge by browsing the relevant experience provided by blog users. Therefore, the Blog has become one of the sources of information for users to obtain information.

Link of the “Consequences-Values”

Cluster → Happiness/Joy/Fun

Blog is one of the channels for network users to communicate with each other. Through blogs they can care for their friends and get in touch with each other in order to gain spiritual comfort to create a feeling of **happiness/joy/fun**.

Cluster → Warm Relationships with Others

A Blog is an extension of many people's real-life relationships. Users can use the blog to have a bridge of communication with friends. Friends can also use the blog to know the user's current situation and increase interaction with each other. Or use the blog to get to know new friends and expand their circles of society, and then start **warm relationships with others**.

Convenience → Satisfaction

The hosting of a blog provides a highly **convenience** and user-friendly design that allows users to easily and conveniently use or modify the information of posts on the blog. Or save time by entering the blog of others through a simple user interface, and these designs of high **convenience satisfaction** the users' psychologies of pursuing convenience, speed and simplicity.

CONCLUSIONS AND IMPLICATIONS

The Blog is a platform that emphasizes the absorption of information and the attitude of sharing life and symbolizes the values and beliefs of authors; meanwhile, it is a media in the center of authors. In this research, it used Laddering for interviews deeply from the perspective of user needs, used content analysis to simplify the interview content and compiled into an Implication matrix. Finally, HVM was drawn to present the “attributes-consequences-values” structure.

The results of the research showed that users can record and share their lives, creations and express emotions on the blog. Therefore, blog writing is one of the most important factors in their choice of blog. In addition, through the Internet you can break the spatial constraints, and then shorten the distance between friends, caring for each other through the blog, increasing the interaction between each other, also with the blog you can expand your personal living sphere, and then create a **cluster** effect. In addition, due to the development of the Internet, users can browse other people's blogs on the Internet. Through the functions of posts publish and response on the blog, you can express your opinions and concerns in the post, so that users can feel the care of friends through these words, and then get spiritual comfort to accrue a feeling of **Happiness/Joy/Fun**. The research also found that respondents did not generate **warm relationships with others** from **Share/Record**, but rather easier generated links with **Enjoy life** and **Satisfaction**. In addition, respondents would not feel a **sense of**

accomplishment by ***increase knowledge***, but instead generated a link with ***Satisfaction***.

In the design suggestions of the Blog platform, this research suggests that platform operators should design and provide users with a more user-friendly interface based on the concept of User-centered design, for example, the user can change the background style of his blog more independence, providing a creative space for personal features. In addition, when the hosting of blog provides new features, they can set up pop-up windows to inform them of new features after users log-in and set up a trial period to allow users to give comments into the feedback system from the trial experience for continuing improvements by the hosting of blogs to make the blog platform more in line with the needs of users thus increasing the competitiveness of the blog industry.

Reference

Gutman, J. (1982). A means-end chain model based on consumer categorization processes. *Journal of Marketing*, 46, 60-71.

Olson, J. C., & Peter, J. P. (1993). *Consumer behavior and marketing strategy*. Homewood, IL: Irwin.

Olson, J. C., & Reynolds, T. J. (2001). *"The means-end approach to understanding consumer decision making", understanding consumer decision making: The means-end approach to marketing and advertising strategy*. Lawrence Erlbaum Associates, publishers.

Reynolds, T. J., & Gutman, J. (1988). Laddering theory, method, analysis and interpretation. *Journal of Advertising Research*, 28(1), 11-31.

Reynolds, T., & Whitlark, D. (1995). Applying laddering data to communications strategy and advertising practice. *Journal of Advertising Research*, 35, 9-16.

Environmental Concern and Purchase Intention of Electric Vehicles in the Eastern part of China

Ngqabutho Moyo

School of Business

Management Science and Engineering

Jiangsu Normal University, 101 Shanghai Road,

Tongshan New District, Xuzhou, Jiangsu.

People's Republic of China.

ABSTRACT

The main objective of this research was to examine the effects of environmental concern on the purchase intention of electric vehicles in the eastern part of China. The research adopted a qualitative approach to elicit data from a sample of 86 participants living in Beijing. Stratified random sampling was used as a sampling technique for these participants. The research findings indicate that environmental concern plays a significant influential role in the purchase decision of electric vehicles. The findings reflect that consumers who are environmentally concerned are more willing to purchase electrical vehicles as a means to protect their environment from air pollution. Several types of environmental concern or value orientations and their effects on the purchase decision of electric vehicles were also examined. Egoistic, social-altruistic and biospheric values were identified as the most influential value orientations in the purchase intention of electric vehicles. Apart from environmental concern and its value orientations, the study also found out that the purchase decision of electric vehicles is also affected by factors such as government incentives or subsidies on electric cars, reference group or peer group influence, driving range, possible top speed, cost of the vehicle itself, battery capacity, battery life, and charging time, appearance, charging stations, vehicle performance, maintenance costs and vehicle safety, lack of choice in vehicles, lack of electric vehicle infrastructure and potential increases in electric rates. It is therefore recommended that these factors are addressed in order to enhance the attractiveness of electric vehicles. More importantly, environmental concern has to be reinforced through campaigns which are focused on raising awareness on the issue of environmental sustainability.

Keywords: Environmental concern, value orientations, purchase intention, electric vehicles

INTRODUCTION

Environmental concern has gained a wide space in both business and academia due to an increase in carbon dioxide emissions and air pollution [Sergio Silva Braga Junior et al, 45]. Over the past decades, China has experienced a severe increase in air pollution due to the growth and expansion of vehicle holdings among its citizens [Tianwen, 51]. Most vehicles that are owned by the citizens of China are using conventional diesel and petrol combustion engine, mainly responsible for excessive carbon dioxide emissions [Schulte et al, 42]. In the whole world, transportation industry is ranked second as the chief source of carbon dioxide emissions after electric power [IEA. World Energy Outlook, 27].

Data from China Association of Automobile Manufacturers entails that in Beijing, haze particles consist of 15.7% industry emissions, 16.3% dust, 16.7% coal and 22.2% vehicle emissions [Lou et al, 35]. Based on this statistics, transportation industry in China is indeed leading in terms of carbon dioxide emissions and air pollution. This is posing a serious threat to the general public health and the environment at large [Lou et al, 35]. For instance, it is now causing premature

deaths, low infant weight, and increased respiratory symptoms or bronchitis [Xu, Wang and Niu, 55].

According to Rezvani et al [41], the introduction of electric vehicles is one of the major developments that have been effected to address key environmental problems which are resulting from carbon monoxide emissions, and is being acknowledged as a leading resolution to the problem of depending on fossil fuels that have been increasing air pollution due to the amount of carbon dioxide emissions which are causing environmental issues [Rezvani et al, 41]. Echoing this view, Du and Ouyang [14] are of the notion that the establishment and development of New Energy Vehicles (NEV) in China plays a significant role in curbing the problem of carbon dioxide emissions, and they express that this development is considered as an ideal technological invention for solving problems related to air pollution.

According to Lou et al [35], the governments in the Capital Economic Circle, that is; Hebei, Beijing and Tianjin, are working hard to promote the use and adoption of NEV. For instance, through drafting and applying policies that encourage the adoption of NEVs, the government of China has created an environment that encourages the use of environment-friendly automobile, and as a result, NEVs such as electric vehicles have been developed in a large scale [Lou et al, 35]. In conjunction with this analysis, Du and Ouyang [14] noted that by the year 2015, China had climbed up to the top to become the leading Plug-in Electric Vehicle (PEV) market in the whole world. As such, the development and expansion of NEV in China cannot be underestimated. An increased concern on air pollution due to the alarming rate of carbon dioxide emissions has thus enhanced the necessity of the adoption of environment-friendly automobiles in China.

Green transportation has therefore evolved as an important field of research due to its significance in addressing environmental problems. Many researchers such as Rezvani et al, [41]; Lou et al, [35]; and Zhang et al, [57], have explored the area of green transportation, and some even linked it to consumer behaviour, for example Yusof et al, [56]. However, although such research has been done, little or no attention has been directed specifically towards determining the effects of environmental concern on the purchase intention of electric vehicles, particularly in the eastern part of China. This research was therefore seeking to fill this identified gap. Moreover, the study was seeking to establish a strong link between environmental concern and purchase intention of electric vehicles in general, and to also identify other factors apart from environmental concern, affecting the purchase intention of electric vehicles.

Environmental Concern and its effects on Purchase Intention

Environmental concern refers to an attitude towards facts, or an assessment of one's own behaviour, or other people's behaviour with all the consequences for a given environment [Weigel, 52; Ajzen, 1; Sjoberg, 46; Takala, 50]. Environmental concern is also defined as the level to which people are informed and they are aware of environmental problems and commit themselves to solve them and or show willingness to overcome them [Dunlap and Jones, 16]. According to Lee [33], environmental concern refers to consumers' affective assessment, and is linked to purchase intention. Hence environmental concern plays a key influential role in determining consumers' purchase intention of environmental friendly products. This is echoed by Newton et al [38], as they reiterate that environmental concern is often conceptualised as a direct or immediate factor predicting the environmental purchase intentions and it plays a significant role in motivating consumers to purchase environmentally friendly products.

Several studies have reflected that many consumers would be interested in purchasing products which mainly protect their environment [Yusof et al, 56]. Echoing this analysis, Kim and Damhorst [31] reveal that consumers with responsible feeling for their environment will buy green products in order to protect their environment from air pollution. Fransson and Garling [20] articulates that environmental concern refers to a specific attitude that directly affect intentions, or more broadly to a general attitude. According to Helm et al [26], there are different types of environmental concern, also known as value orientations.

Value Orientations and their effects on Purchase Intention

According to Stern [47], there are four different types of value orientations. The first value orientation reflects a specific way of thinking, namely; the New Environmental Paradigm (NEP) [Dunlap and Van Liere, 15]. On the second value orientation, Fransson and Garling [20] depict that environmental concern is associated with anthropocentric altruism. Anthropocentric altruism entails that people are motivated to care about their environment mainly because they are of the view that a polluted environment would pose a serious threat to their health [Fransson and Garling, 20]. Hence environmental concern plays a pivotal role in creating pro-environmental citizens. Based on the idea of anthropocentric altruism, concern is mainly centered on the well-being of the people themselves rather than the environment itself [Fransson and Garling, 20; Dunlap and Van Liere, 15; Black et al., 8]. On the third value orientation, Fransson and Garling [20] entails that environmental concern expresses self-interest. In support of this notion, Baldassare and Katz [5] articulates that an environmentally responsible behaviour is usually reinforced by perceived personal threats which are caused by environmental issues such as air pollution. The fourth value orientation entails that environmental concern is related to some deeper cause such as post-materialistic values and religious beliefs (Stern, 1996).

Based on social dilemma research, value orientations such as proselves or noncooperators and prosocials or cooperators are identified [Joireman et al., 29, Garling et al., 24]. This is echoed by De Groot and Steg [12]; they noted that people who possess proself value orientation tend to focus on achieving outcomes for themselves, whereas people with prosocial value orientation focus on achieving outcomes for other people. Studies on environmental significant behaviour reflects that individuals who seek to achieve collective or prosocials values possess stronger pro-environmental behaviour and are willing to obtain different types of environmental significant behaviour than individuals who possess proself values [De Groot and Steg, 12]. For Gardner and Stern [23], environmental concern encompasses ecocentric value orientation, which entails that people are concerned about the ecosystem for its own sake. In addition, De Groot and Steg [12] articulates that an ecocentric value or ethic entails that the ecosystem is made up of critical components that have an intrinsic value and they deserve moral consideration. In explaining environmental concern within the framework of environmental ethics, De Groot and Steg [12] presented what they call homocentric, or anthropocentric ethic, which entails that the social good should be maximized, while human evil on the other hand, minimized.

Based on the socio-cognitive theory of environmental concern, Schultz [43] expresses that people are motivated by different reasons for their concern for the environment, and these reasons include egoistic, social-altruistic and biospheric values. According to Helm et al [26], egoistic involves concern for oneself, one's health or life. Social-altruistic encompasses concern for others, future generations or country, and then biospheric value on the other hand includes concern for plants and animals, and nature in general (Helm et al, [26]. Hence environmental concern encompasses a lot of values that determine individual behaviours towards their environments.

In conjunction with the above analysis, De Groot and Steg [12] suggest that egoistic value orientation resides in people who specifically consider costs and benefits of environmental social behaviour for themselves. In this regard, when the perceived benefits surpass the perceived costs, people with egoistic value orientation will be characterized by an environmentally friendly intention and vice versa. The decision to behave pro-environmentally or not, for people possessing social-altruistic value orientation is based on the perceived benefits and costs for other people [De Groot and Steg, 12]. For people with biospheric value orientation, the decision to behave pro-environmentally or not is based on the perceived benefits or costs for the biosphere or ecosystem as a whole [De Groot and Steg, 12]. Since people are motivated by different reasons such as egoistic, social-altruistic and biospheric values, to be concerned about their environment [Schultz, 43], this study was focused on examining how environmental concern in its broad sense, affect the purchase decision of electric vehicles particularly in the eastern part of China.

Purchase Intention in relation to Environmental Concern

According to Chan [10], purchase intention for environment friendly products can be understood as consumers' behaviour for any given kind of eco-friendly product to express and reflect their environmental concern. Intention is described by Ajzen [2] as an indicator of the extent to which people want to accept a certain behaviour, and the number of attempts they are making to implement a specific behaviour. According to Nik Abdul Rashid [39], purchase intention for environmental friendly products is also understood as the likelihood and preparedness to prefer to buy a product which is eco-friendly. Many scholars are sharing the same sentiment that consumers who are concerned about their environment are highly motivated to purchase environment friendly products (for example; Yusof et al, 56; Manaktola and Jauhari, 36; Ali et al., 3; Kim and Damhorst, 31, Straughan and Roberts, 49).

According to Newton et al [38], environmental concern is an immediate factor affecting environmental purchase intentions. This conceptualization assumes that consumers who are concerned about their environment attain an environmental purchase intention. Hence environmental concern enables environmentally concerned consumers to possess a pro-environmental behaviour when making their purchase decisions. Furthermore, Newton et al [38] are of the view that this conceptualization entails that consumers who become concerned about their environment will automatically know where to find products or services which are environmentally friendly. Although to some extent environmental concern may not directly affect environmental purchase intention, it can influence consumers to gain knowledge about the environmental outcomes related to their purchase decisions [Newton et al, 38].

THEORETICAL FRAMEWORK

This research was guided by the Hines model which was coined by Hines et al. in 1987. The Hines model is based on the outcome of the meta-analysis of 128 studies which were reported since 1970. The model entails that intention is closely linked to the actual behaviour. This is strongly related to the theory of planned behaviour (TPB) [Fishbein and Ajzen, 19; Ajzen, 2] For instance in TPB, intention strength is regarded as the cause of behaviour. Thus, a positive or negative attitude behind the behaviour, perceived control over the behaviour and a subjective norm to implement the behaviour are causes of intention [Fransson and Garling, 20]. Many researchers in the field of consumer behaviour and environmental domain have acknowledged these conceptualizations to advance the idea that environmental concern directly affects environmental purchase intentions, for example Newton et al [38].

Relying on the meta-analysis work, Hines et al (1987) expresses that intention is closely related to knowledge, skill and personality [Fransson and Garling, 20]. According to Fransson and Garling [20], knowledge in this case is divided into two parts, that is; knowledge of the existence of the problem, related to environmental concern, and knowledge of the behavioural strategies, together with their effectiveness. According to the Hines model, skill refers to the capability to execute such knowledge towards notable problems [Fransson and Garling, 20]. Based on the model, an individual must also seek to do the right thing, and according to Fransson and Garling [20], this desire is believed to be fueled by attitude, personality responsibility and perceived locus of control. As contained in this model, a person who possess an internal locus of control, the necessary skill, a positive attitude towards the environment, personal responsibility and a responsible environmental behaviour, is likely to engage in a pro-environmental and responsible behaviour (Fransson and Garling, 1999). This research is thus acknowledging that a positive attitude, personal responsibility and an internal locus of control will motivate consumers to purchase environmental friendly products, such as electrical vehicles in this case, in order to protect their environment as part of showing concern. However, it is important to also acknowledge that there are other factors that may affect responsible or pro-environmental behaviours. This is also echoed and appreciated by Fransson and Garling [20], as they give examples of these situational factors, such as social pressure, economic constraints, and opportunities to make alternative behaviours.

METHODOLOGY

A research methodology is a larger research design that is followed by a researcher when carrying out a research [Bailey, 4]. It can therefore be contextualized as the overall plan or guideline that directs the researcher from the first step up to the end. This research adopted a qualitative approach, and primary data was collected from eighty six participants living in Beijing. Stratified random sampling was used as a sampling technique for these participants. The main instruments used to collect data were interviews and questionnaires.

FINDINGS AND DISCUSSIONS

Demographic Data

Out of eighty six respondents who participated in this research, fifty one were males hence reflecting 59%, while thirty five were females, and thereby indicating 41%. The majority of these respondents were youth, falling between the age range of 18-24, and most of them were university students. Adult respondents were within the age range of 40-55, and most of them were owning cars, while some of them were working in the transport industry as taxi operators.

Environmental Concern and its effects on Purchase Intention

Sixty seven respondents had an appreciation and understanding of environmental concern. They also expressed love and care for their environment. When asked to share their views about the meaning of environmental concern, one of the respondents indicated that *“environmental concern means taking great care of our environment so that it can be safe and protected from threats such as air pollution.”* In conjunction with this view, another respondent highlighted that *“environment concern refers to making great efforts towards ensuring the protection of our environment from any possible threat.”* Giving an example, the same participant pointed out that *“people who are concerned about their environment are responsible enough when it comes to their environment, and they will choose to consume environmentally friendly products as part of ensuring the sustainability of their environment.”* This is supported by Yusof et al [56] who earlier noted that many consumers would be willing to buy products which primarily protect their environment. Hence such consumers are said to be attaching and showing a good care to their environment and are very much concerned about its

sustainability.

Another respondent contextualized environmental concern as *“being responsible and taking great care of our environment in order to ensure its sustainability.”* The same respondent expressed that *“people who care about their environment will exhibit a pro-environmental behaviour, and as a matter of fact, because we are surrounded by and live in our environment, taking good care of our environment simply means taking great care of ourselves, especially our health.”* This was also acknowledged by eight respondents who suggested that every member of their society should be concerned about their environment, protect it and ensure its sustainability by developing a culture of pro-environmental behaviour. One of the concerned respondents expressed that *“it is high time that people should become responsible, for instance, members of our society can show concern about our environment through adopting new energy vehicles such as electric cars in order to avoid excessive carbon dioxide emissions.”* This was supported by another respondent who stated that every environmentally concerned societal member has a key role to play in ensuring environmental sustainability. This is echoed by Ellen et al [17] as they suggest that environmental concern and a belief that individuals can make a difference plays a significant role in fueling an environmentally conscious behaviour.

One of the respondents was highly concerned about the current environmental situation in his city, highlighting that *“it is disturbing to note that the air that we are currently breathing is highly polluted by carbon dioxide emissions, especially from vehicles since many people in this city are owning and driving cars that are powered by conventional diesel and petrol fuel combustion engines.”* He added that *“it is high time as people who are concerned about, and responsible for our environment to adopt new technological developments such as electrical vehicles so as to ensure our protection.”* This is a clear cut that people who are concerned about their environment are very much aware of the threats that come with environmental negligence, and they are willing to solve any problem that threatens their environment. This is supported by Dunlap and Jones [16] as they view environmental concern as the level to which people are well informed and aware of environmental problems affecting their environment and make efforts to solve them and or show willingness to contribute to their solution.

China is indeed suffering from environmental problems such as air pollution, especially in its highly populated eastern cities. This is backed by Lou et al [35], as they reiterate that the current environment of Beijing contains haze particles that consists of dust, industry emissions, coal, and vehicle emissions as the leading contributor to air pollution. When asked about the main sources of environmental pollution, thirty seven respondents shared the same sentiment that transportation industry in their city is contributing a lot to air pollution. One of them pointed out that *“it is much better nowadays because there are new energy vehicles that have been introduced, otherwise conventional diesel and petrol engine powered vehicles were highly polluting the air through excessive carbon dioxide emissions.”* The same respondent suggested that the government of China should come up with drastic measures that ensure the full adoption of new energy vehicles such as electric vehicles.

When asked if they are aware of any government initiatives towards reducing air pollution emanating from the transport industry, seven respondents appreciated the efforts that are being made by the government of China in protecting their environment. China is indeed working hard to ensure protection of its environment. This is backed by Fryxell and Lo [21]; they state that China has indeed committed itself in developing projects that are aimed at protecting its environment ever since the introduction of Environmental Protection Law in 1979. According to Ou, Lin, Wu, Zheng, Lyu, Przesmitzki, and He [40], the government of China

under the “Ten Cities, Thousand Vehicles” NEV Project, is offering subsidies for electrical vehicles and other environmental friendly automobiles purchases, hence making them attractive and affordable to buy.

In conjunction with the above analysis, three respondents mentioned that the government of the People’s Republic of China is working hard towards ensuring the full adoption of new energy vehicles in order to run away from the old model that contributes to air pollution. One of these respondents added that, *“for instance, our government is issuing incentives and subsidies for purchase of electrical vehicles. As a result, this makes such vehicles look attractive, and because of that, I was motivated to buy mine.”* This forms a clear cut that some consumers are motivated by attached benefits such as government subsidies and incentives, to purchase electrical vehicles, not necessarily because they are environmentally concerned. However environmental concern is having a strong influence on the purchase decision of electrical vehicles.

Value Orientations and their effects on Purchase Intention

Fransson and Garling [20] propounded the view that some people care about their environment simply because they believe that a polluted environment would cause a serious threat to their health, and this type of concern is viewed as anthropocentric altruism. This is in relation with egoistic value identified and explained by Helm et al [26] as concern for one’s health or life. Accordingly, thirty eight respondents that were interviewed applauded the idea of full adoption of electrical vehicles, uttering that they were worried about their health because of the excessive carbon dioxide emissions that are increasing the rate of air pollution. One of these respondents indicated that *“it is the duty of every member of our society to show concern for our environment. After all, it belongs to us, and this means we have to keep it safe for our own health.”* Another respondent pointed out that *“I care about my environment simply because I am totally afraid of the consequences that may rise, such as air borne diseases that may affect us if we do not implement an environmentally sustainable behaviour.”*

In conjunction with the above analysis, another respondent indicated that *“I would therefore encourage all the citizens of China to adopt electrical vehicles as one of the major developments that can be adopted towards protecting our environment since transportation industry is leading in terms of air pollution. This will also contribute to the protection of our health from air borne diseases.”* In China, air pollution is indeed causing a serious threat to the health of the public. As mentioned earlier on, Xu et al [55] discovered that an increasing rate of air pollution in China had started causing premature deaths. Hence environmental concern has to be explored effectively in order to encourage the protection of the environment.

Based on the Value-Belief-Norm (VBN) theory which was formulated by Stern and Dietz [48], Helm et al [26] articulates that the attitudes that people possess about environmental issues are determined by; the value that they place on themselves, and that forms part of egoistic value as already discussed above; the value that they place on other people, and that is central to social-altruistic value; and or the value that they place on plants and animals, and that is under biospheric values. In accordance with this analysis, some respondents stated that people should also consider others and every living creature when it comes to environmental issues. In the context of transportation industry, one of the respondents expressed that, *“as a reflection that I care about my environment for everyone’s sake and for every living creature, I would prefer to drive an environment friendly automobile, such as an electric vehicle over a diesel or petrol combustion engine. Diesel or petrol combustion engine releases a lot of carbon dioxide which causes air pollution.”* Another responded emotionally expressed that *“our society could be a better place if every individual could show concern for our environment by executing a pro-*

environmental behaviour.” As noted earlier on, De Groot and Steg [12] unearthed what they call homocentric, or anthropocentric ethic, which implies that the social good should be maximized, while human evil minimized. One of the concerned respondents reiterated that every citizen of China should engage in an environmentally sustainable behaviour in order to protect the environment from global warming and climate change. The same respondent made emphasis on the adoption of electrical vehicles, stating that it is one of the major developments which are aimed at reducing carbon dioxide emissions. Hence he encouraged that it should be embraced.

Purchase Intention in relation to Environmental Concern

All the respondents pointed out that they know an electric vehicle, stating that it is a vehicle that is powered by a battery which is rechargeable. This is supported by Lai, Liu, Sun, Zhang and Xu [32] as they describe a full electric vehicle as a vehicle that is an all-electric drivetrain powered by a battery that can be recharged from electricity supply. Schuitema et al [44] indicate that electrical vehicles are divided into hybrid electric vehicles and fully electric vehicles. According to Graham-Rowe et al [25], electric vehicles have been around for a very long time. The former generation of electric vehicles were classically small cars requiring a lot of hours to recharge, and with a limited range, for example 100km [Graham-Rowe et al, 25]. The current model of electric vehicles is however having an attractive appearance, it comes in different sizes and can now reach up to 250km in range [Graham-Rowe et al, 25].

Having been asked if they currently own or they have owned an electric vehicle before, sixty five respondents said no. Weiss et al [53] indicated that the sales of electric vehicles are still low, but by the year 2035 approximately 145 million full electric vehicles will have been produced worldwide. The sales volume of electrical vehicles in China is indeed growing to contribute towards the worldwide forecasted 145 million electric vehicles by the year 2035 statistics as stated by Weiss et al [53]. By the end of the year 2017, China sold 468 000 electrical vehicles [Zheng et al, 58]. Interesting to note is that the citizens of China have different motivations behind the purchase and adoption of electrical vehicles and they consider many factors during the purchase decision.

One of the respondents expressed that *“neither do I own or have ever owned an electric vehicle, I would love to purchase it simply because it does not emit carbon dioxide which is harmful to the environment.”* This was echoed by another respondent who articulated that *“I would buy an electric vehicle simply because it does not contribute to environmental pollution.”* Another respondent stated that *“when buying a car, I first of all think about its benefits and drawbacks to me, people around me and the environment at large.”* One of the respondents who owns an electric vehicle indicated that *“I believe the adoption of electric vehicles should be embraced by every member of our society in order to protect our environment from air pollution, hence as an environmentally concerned individual, I bought my electric vehicle as part of contributing to environmental sustainability.”* To be precise, many respondents were very much concerned about their environment and they acknowledged the adoption of electrical vehicles as the way forward in dealing with environmental pollution. This is in line with Delang and Cheng’s [13] survey in Hong Kong which unearthed that people are motivated by the environmental benefits of electric vehicles but not necessarily social and or economic benefits. As such, when buying a vehicle, people who are concerned about their environment would think about factors such as carbon dioxide emissions and their effects the environment [Ziegler, 59; Nayum et al, 37].

However, when buying an electric vehicle, people also consider the cost of the vehicle itself [Liu and Santos, 34; Ziegler, 59; Carley et al, 9; Jensen et al, 28] In accordance with this analysis, twenty nine respondents were satisfied with the cost of an electrical vehicle in China, highlighting that it is affordable and attractive due to the intervention of their government with subsidies. It should be acknowledged that government incentives such as subsidies also play a key role in influencing the purchase decision [Gallagher and Muehlegger, 22; Berensteanuand and Li, 7]. One of the respondents expounded that *“we so much thank the government of China for promoting the sales of electrical vehicles through issuing subsidies to every electrical vehicle that is being purchased. This will in turn yield positive results in as far as promoting the adoption of electrical vehicles is concerned, hence adding value to environmental protection.”* Another respondent said that *“I prefer to buy an electric vehicle simply because it is very cheap and affordable as compared to a diesel or petrol combustion engine.”* Although environmental concern plays a pivotal role in influencing the purchase decision of electric vehicles, it should be acknowledged that there are other factors which are also influential.

Purchase intention of electric vehicles is also influenced by other factors such as battery capacity, battery life, battery stations and charging time [Liu and Santos, 34; Jensen et al, 28, Carley et al, 9]. In addition to that, consumers also consider other factors such as appearance, charging stations, driving range, possible top speed, vehicle performance, maintenance costs and vehicle safety [Carley et al, 9; Jensen et al, 2013; Zhang et al, 57]. One of the respondents said *“the disadvantage with electric vehicles is that they depend of batteries whose capacity, life and charging time may cause inconveniences. So I do not think I will ever buy an electric vehicle based on those factors.”* In the same context, another respondent expressed concern on the maintenance costs and vehicle performance, indicating that *“electrical vehicles are associated with poor performance and high maintenance costs.”* All the respondents were very much concerned about the driving range, possible top speed and charging time. One of the respondents was worried about the charging infrastructure, expressing that *“a lot should be done in as far as the charging infrastructure is concerned.”* In line with these responses, EPRI [18] came across barriers such as lack of choice in vehicles, lack of electric vehicle infrastructure and potential increases in electric rates as affecting the purchase intention of electrical vehicles. A survey carried out by Tan et al (2014) found out that purchasing behaviours are affected by charge inconvenience, cost, psychological factors and short battery range.

A research on alternative fuel vehicles which was conducted by Zhang et al [57] indicates that opinions of peers also affect the purchase decision. Reference group and peer group have a significant influence on the behaviours of members of the group. According to William and Hickey [54], a reference group or peer group is any group that is used by members of the group as a standard when evaluating themselves and their own behaviours as a group. This was indeed discovered in this research as four respondents pointed out that the decision to purchase their electric vehicles were inspired by the fact that their friends were already owners of electric vehicles and they did not complain of any serious problem. One of these respondents said that *“I was encouraged to buy an electric vehicle by one of my friends who owns an electric vehicle, advising me that it is our duty to ensure maximum care for our environment.”* Banerjee [6] pointed out that the main purpose of a peer group is to ensure that members of that group are guided by the common values and beliefs that govern the characteristics of their group life. As such, it was also discovered that a peer group can encourage its group members to adopt a pro-environmental behaviour.

CONTRIBUTION TO NEW KNOWLEDGE

This research will contribute immensely to new knowledge in the sense that it establishes a

direct link between environmental concern and purchase intention of electric vehicles, particularly in the eastern part of China. Moreover, the study further explored several types of value orientations and reflects their effects on the purchase decision of electric vehicles. To be clear, such an approach has never been adopted before. Apart from environmental concern, this research also reflects that there are other factors affecting the purchase intention of electrical vehicles such as battery capacity, battery life, government incentives or subsidies on electric cars and reference group or peer group influence among others that have been discussed, within the eastern region of China. Based on this research, readers shall therefore be able to appreciate a wide range of factors affecting the purchase decision of electric vehicles within the above mentioned region, hence making it easy for future research.

CONCLUSION

The core objective of this research was to examine the effects of environmental concern on the purchase intention of electric vehicles in the eastern part of China. Stratified random sampling was used as a sampling technique for a sample of 86 participants in Beijing. The research adopted a qualitative approach to elicit primary data from the respondents. Based on the research findings, environmental concern plays a key influential role in the purchase decision of electric vehicles. According to this study, consumers who are environmentally concerned exert pro-environmental behaviour and they are more willing to buy electrical vehicles as a way of protecting their environment from pollution. The study also looked at several types of environmental concern or value orientations as contextualized in literature review. This research also explored effects of value orientations on the purchase decision of electric vehicles in the eastern region of China. Some of the environmental values that were discussed include egoistic, social-altruistic and biospheric values. These value orientations were identified as the most influential value orientations in the purchase decisions of electric vehicles in China. However, apart from environmental concern and its value orientations, the study also unearthed that the purchase intention of electric vehicles is also affected by other factors such as battery capacity, battery life, government incentives or subsidies on electric cars, reference group or peer group influence, possible top speed, cost of the vehicle itself, driving range, battery stations and charging time. In addition, some of the factors which were identified include vehicle performance, maintenance costs, appearance, charging stations, lack of electric vehicle infrastructure and vehicle safety, lack of choice in vehicles, and potential increases in electric rates. As part of recommendation, the government of China should educate its citizens about the importance of keeping the environment safe from any possible threats such as air pollution. This can be done through campaigns which are focused on raising awareness about environmental sustainability. Moreover, it is also recommended that all the negative factors related to features of an electric vehicle that have been identified such as vehicle performance, maintenance costs and charging infrastructure, are addressed in order to enhance the attractiveness of an electric vehicle.

Reference

- Ajzen, I., (1989) Attitude structure and behaviour. In Fransson, N., and Garling, T (1999) *Environmental Concern: Conceptual Definitions, Measurement Methods, and Research Findings*: Journal of Environmental Psychology, 19, 369-382.
- Ajzen, I., (1991). *The theory of planned behaviour*. *Organizational Behaviour and Human Decision Process*, 50, 179-211.
- Ali, A., Khan, A. A., and Ahmed, I., (2011). *Determinants of Pakistani consumers' green purchase behaviour: Some insights from a developing country*. *International Journal of Business and Social Science*, 2 (3) 217-226.
- Bailey, C. A (2007) *A Guide to Qualitative Field Research, 2nd Ed*, Thousand Oaks, California, Pine Forge Press/Sage.

- Baldassare, M., and Katz, C., (1992). *The personal threat of environmental problems as predictor of environmental practices*. Environment and Behaviour, 24, 602-616. In Fransson, N., and Garling, T (1999) Environmental Concern: Conceptual Definitions, Measurement Methods, and Research Findings: Journal of Environmental Psychology. 19, 369-382.
- Banerjee, S., (2016). *Moderating effect of peer group environment on consumer predisposition towards premium promotions: A study on young urban consumers in India*. IIMB Management Review, 28, 225-234.
- Berensteauand, A., and Li, S., (2011). *Gasoline price, government support and the demand for hybrid vehicles*. Int. Econ. Rev, 52, 161-182.
- Black, J. S., Stern, P. C., and Elworth, J. T., (1985). *Personal and contextual influences on household energy adaptations*. Journal of Applied Psychology, 70, 3-21. In Fransson, N., and Garling, T (1999) Environmental Concern: Conceptual Definitions, Measurement Methods, and Research Findings: Journal of Environmental Psychology. 19, 369-382.
- Carley, S., Krause, R. M., Lane, B. W., Graham, J. D., (2013). *Intent to purchase a plug-in electric vehicle: A survey of early impressions in large US cities*. Transp. Res, 18, 39-45.
- Chan, R. Y., (2001). *Determinants of Chinese consumers' green purchase behaviour*. Psychology and Marketing, 18 (4) 389-413.
- Chen, H. S., Chen C. Y., Chen, H.K., and Hsieh, T (2012) *A Study of Relationships among Green Consumption Attitude, Perceived Risk, Perceived Value toward Hydrogen-Electric Motorcycle Purchase Intention*. AASRI Procedia 2, 163-168.
- De Groot, I. M., and Steg, L., (2007). *Value Orientations and Environmental Beliefs in Five Countries: Validity of an Instrument to measure Egoistic, Altruistic and Biospheric Value Orientations*. SAGE Publications.
- Delang, C. O., and Cheng, W. T. (2013). *Hong Kong people's attitudes towards electric cars*. Int. J. Electr. Hybrid Veh, 5, 15-27.
- Du, J., and Ouyang, D., (2016). *Progress of Chinese electric vehicles industrialization in 2015: A review*. Applied Energy 188, 529-546.
- Dunlap, R. E., and Van Liere, K. D., (1978). *The 'new environmental paradigm.'* Journal of Environmental Education, 9, 10-19. In Fransson, N., and Garling, T (1999) Environmental Concern: Conceptual Definitions, Measurement Methods, and Research Findings: Journal of Environmental Psychology. 19, 369-382.
- Dunlap, R., and Jones, R., (2002) *Environmental concern: conceptual and measurement issues*. In Helm, S. V., Pollitt, A., Barnett, M. A., Curran, M. A., and Craig, Z. R., (2018) Differentiating environmental concern in the context of psychological adaptation to climate change. Global Environmental Change, 48, 158-167.
- Ellen, P. S., Wiener, J. L., and Cobb-Walgren, C., (1991). *The role perceived consumer effectiveness in motivating environmentally conscious behaviours*. J. Public Policy Mark, 10, 102-117.
- EPRI. (2010). *Characterizing Consumers' Interest in and Infrastructure Expectations for Electric Vehicles: Research Design and Survey Results; Report No. 1021285*; Electric Power Research Institute: Palo Alto, CA, USA.
- Fishbein, M., and Ajzen, I., (1975). *Belief, attitude, intention, and behaviour: An introduction to theory and research*. Reading MA: Addison-Wesley. In Fransson, N., and Garling, T., (1999) Environmental Concern: Conceptual Definitions, Measurement Methods, and Research Findings: Journal of Environmental Psychology. 19, 369-382.
- Fransson, N., and Garling, T., (1999) *Environmental Concern: Conceptual Definitions, Measurement Methods, and Research Findings*: Journal of Environmental Psychology. 19, 369-382.
- Fryxell, G. E., and Lo, C. W. H., (2003). *The influence of environmental knowledge and values on managerial behaviours on behalf of the environment: An empirical examination of managers in China*. Journal of Business Ethics, 46, 45-69.
- Gallagher, K. S., and Muehlegger, E., (2011). *Giving green to get green? Incentives and consumer adoption of hybrid vehicle technology*. J. Environ. Econ. Manag, 61, 1-15. In Lai, I. K. W., Liu, Y., Sun, X., Zhang, H., and Xu W., (2015). Factors Influencing the Behavioural Intention towards Full Electric Vehicles: An Empirical Study in Macau. Sustainability, 7, 12564-12585.
- Gardner, G.T., and Stern, P. C., (1996) *Environmental problems and human behaviour*. Needham Heights, MA: Allyn and Bacon. In Fransson, N., and Garling, T (1999) Environmental Concern: Conceptual Definitions, Measurement Methods, and Research Findings: Journal of Environmental Psychology. 19, 369-382.

- Garling, T., Fujii, S., Garling, A., and Jakobsson, C., (2003). *Moderating effects of social value orientation on determinants of proenvironmental behaviour intention*. *Journal of Environmental Psychology*, 23, 1-9.
- Graham-Rowe, E., Gardner, B., Abraham, C., Skippon, S., Dittmar, H., Hutchins, R., and Stannard, J (2012). *Mainstream consumers driving plug-in battery-electric and plug-in hybrid electric cars: A qualitative analysis of responses and evaluations*. *Transp. Res.* 46, 140-153.
- Helm, S. V., Pollitt, A., Barnett, M. A., Curran, M. A., and Craig, Z. R., (2018) *Differentiating environmental concern in the context of psychological adaptation to climate change*. *Global Environmental Change*, 48, 158-167.
- IEA. World Energy Outlook (2006) *International Energy Agency*: Paris, France.
- Jensen, A. F., Cherchi, E., and Mabit, S.L., (2013). *On the stability of preferences and attitudes before and after experiencing an electric vehicle*. *Transp. Res. D*, 25, 24-32.
- Joireman, J. A., Lasane, T. P., Richards, D., and Solaimani, S., (2001). *Integrating social value orientation and the consideration of future consequences within the extended norm activation model of proenvironmental behaviour*. *British Journal of Social Psychology*, 40, 133-155.
- Joshi, Y., and Rahman, Z., (2012) *Factors Affecting Green Purchase Behaviour and Future Research Directions*. *International Strategic Management Review* 3, 128-143.
- Kim, H., and Damhorst, M. R., (1998). *Environmental concern and apparel consumption*. *Clothing and Textiles Research Journal*, 16 (3) 126-133.
- Lai, I. K. W., Liu, Y., Sun, X., Zhang, H., and Xu W., (2015). *Factors Influencing the Behavioural Intention towards Full Electric Vehicles: An Empirical Study in Macau*. *Sustainability*, 7, 12564-12585.
- Lee, K., (2008). *Opportunities for green marketing: Young consumers*. *Marketing Intelligence and Planning*, 26, 573-586.
- Liu, J., and Santos, G., (2015). *The plug-in hybrid electric vehicles potential for urban transport in China: The role of energy sources and utility factors*. *Int. J. Sustain. Transp*, 9, 145-157.
- Lou, Y., Wang, W., and Yang, X (2017) *Customers' attitude on new energy vehicles' policies and policy impact on customers' purchase intention*. *Energy Procedia* 105, 2187-2193.
- Manaktola, K., and Jauhari, V., (2007). *Exploring consumer attitude and behaviour towards green practices in the lodging industry in India*. *International Journal of Contemporary Hospitality Management*, 19 (5) 364-377.
- Nayum, A., Klockner, C. A., and Prugsamat, S., (2013) *Influences of car type class and carbon dioxide emission levels on purchases of new cars: A retrospective analysis of car purchases in Norway*. *Transp, Res*, 48, 96-108.
- Newton, J. D., Tsarenko, Y., Ferraro, C., and Sands, S., (2015). *Environmental concern and environmental purchase intentions: The mediating role of learning strategy*. *Journal of Business Research*, 68, 1974-1981.
- Nik Abdul Rashid, N. R., (2009). *Awareness of eco-label in Malaysia's green marketing initiative*. *International Journal of Business and Management*, 4 (8) 132-141.
- Ou, S., Lin, Z., Wu, Z., Zheng, J., Lyu, R., Przesmitzki, S., and He X., (2017). *A Study of China's Explosive Growth in the Plug-in Electric Vehicle Market*. Oak Ridge, US Department of Energy. TN 37831-6283.
- Rezvani, Z., Jansson, J., and Bodin, J., (2015). *Advances in consumer electric vehicle adoption research: A review and research agenda*. *Transport Research Part D*, 34, 122-136.
- Schulte, I., Hart, D., van der Vost, R (2004) *Issues affecting the acceptance of hydrogen fuel*. *Int. J. Hydrog. Energy*, 29, 677-685.
- Schultz, P., (2000). *New environmental theories: empathizing with nature: the effects of perspective taking on concern for environmental issues*. *J. Soc. Issues* 56, 391-406.
- Schuitema, G., Anable, J., Skippon, S., and Kinnear, N., (2013). *The role of instrumental, hedonic and symbolic attributes in the intention to adopt electric vehicles*. *Transp. Res.* 48, 39-49.
- Sergio Silva Braga Junior, Dirceu da Silva, Gabriel and Waleska Reali de Oliveira Braga (2015) *The Effects of Environmental Concern on Purchase of Green Products in Retail*: *Procedia – Social and Behavioural Sciences* 170, 99 – 108.
- Sjoberg, L., (1989) *Global change and human action: Psychological perspectives*. *International Social Science Journal*, 121, 414-432.

- Stern, P. C., (1992). *Psychological dimensions of global environmental change*. Annual Review of Psychology, 43, 269-302.
- Stern, P. C., and Dietz, T., (1994). *The value basis of environmental concern*. Journal of Social Issues, 50, 65-84. In Fransson, N., and Garling, T (1999) *Environmental Concern: Conceptual Definitions, Measurement Methods, and Research Findings*: Journal of Environmental Psychology. 19, 369-382.
- Straughan, R. D., and Roberts, J. A., 1999). *Environmental segmentation alternatives: a look at green consumer behaviour in the millennium*. Journal of Consumer Marketing, 16 (6), 558-578.
- Takala, M., (1991) *Environmental awareness and human activity*. International Journal of Psychology, 26, 585-597.
- Tianwen, L., (2010) *Electric Vehicle Industry Overview in China*. Battery World, 5(1), 8-9.
- Weigel, R. H., (1983) *Environmental attitudes and the prediction of behaviour*. In Fransson, N., and Garling, T (1999) *Environmental Concern: Conceptual Definitions, Measurement Methods, and Research Findings*: Journal of Environmental Psychology. 19, 369-382.
- Weiss, M., Patel, M. K., Junginger, M., Perujo, A., Bonnel, P., and van Grootveld, G (2012). *On the electrification of road transport – Learning rates and price forecasts for hybrid-electric and battery-electric vehicles*. Energy Policy, 48, 374-393.
- William, T., and Hickey, J., (2005). *Society in focus*. Rowman and Littlefield Publishers. In Banerjee, S., (2016). *Moderating effect of peer group environment on consumer predisposition towards premium promotions: A study on young urban consumers in India*. IIMB Management Review, 28, 225-234.
- Xu, X., Wang, L., and Niu, T., (2002). *Air pollution and its Health Effects in Beijing*. Wiley Online Library, Ecosystem Health / Volume 4, Issue 4.
- Yusof, J. M., Singh, G. K., and Razak, R. A., (2013). *Purchase Intention of Environment-Friendly Automobile*. Procedia. Social and Behavioural Sciences, 85, 400-410.
- Zhang, Q., Ou, X., Yan, X., and Zhang, X., (2017). *Electric Vehicle Market Penetration and Impacts on Energy Consumption and CO2 Emission in the Future: Beijing Case*. Energies, 10, 228; doi: 10.3390/en10020228.
- Zheng, X., Lin, H., Liu, Z., Li, D., Llopis-Albert, C., and Zeng, S., (2018). *Manufacturing Decisions and Government Subsidies for Electric Vehicles in China: A maximal Social Welfare Perspective*. Sustainability, 10, 672.
- Ziegler, A., (2012). *Individual characteristics and stated preferences for alternative energy sources and propulsion technologies in vehicles: A discrete choice analysis for Germany*. Transp. Res, 46, 1372-1385.



Impact Of Dividend Policy On The Value Of Firms

Innocent Augustine Nwaorgu (Ph.D)

Department of Accounting, College of Management sciences,
Michael Okpara University of Agriculture Umudike. Umuahi, Abia state.

Jennifer Nkeiruka Uzoegbu (Msc)

Department of Accountancy. Faculty of Social and management sciences,
University of Mkar, Gboko. Benue state.

ABSTRACT

This study empirically investigates the impact of dividend policy on the value of firms for a sample of twelve (12) consumer and manufacturing companies listed on the Nigerian Stock Exchange (NSE). The study was carried out for a period of 10 years (2007-2016). The empirical estimation is based on the 'Bird in Hand Dividend Theory' supported by Fairchild (2010) and employed Random Effect Regression to analyze 120 observations. The results tend to support the theory of Miller and Modigliani (1961) which suggests that dividends are irrelevant to firm value for firms listed on the Nigerian Stock Exchange (NSE). Hence, from the empirical findings, the study concludes by agreeing with most of the dividend irrelevant proponents that dividend does not matter to corporate value. The study therefore carefully recommends that managers must review the opinions of their core investors in deciding dividend policy that meets with their expectations.

INTRODUCTION

The idea that dividend policy is an important attribute of corporate finance and its practical implications for many firms and stakeholders (investors, managers, lenders) is not a novel issue. It is a known strategy that firms which are performing well and generating more income have different channels into which they invest such generated income for better use. This can be linked to the residual theory of dividend which describes a common tendency for managers to reinvest the profit of the firm due to the clientele effect accompanied by great pressure on companies to pay dividends.

In today's world we find out that the harder we look at the dividend picture the more it seems like a puzzle, a dilemma or a mystery with pieces that just do not fit together" Black, (1976). However, after so much research on dividend policy in corporate finance and accounting studies, three core beliefs became very evident. To the right of this argument, there are some researchers who believe that the value of the firm will significantly increase when dividend payout ratio is increased (known as conservative group). While to the left of this argument, there is a radical group who believes that the value of the firm will significantly reduce due to the increase in the dividend payout ratio. And, in between these sides, there are some theorist who believed that the payout policy makes no significant difference, and are also known as Miller and Modigliani (MM) (1961) Myers & Majluf, (1984). The irrelevance of the dividend decision in the world without taxes, transaction cost or other market fault have been hypothetically supported in a seminar paper illustrated by Miller & Modigliani, 1961.

Corporate organizations, beverages and breweries firms inclusive are faced with the problem of whether to increase, decrease, or employ zero percentage of their earnings as dividends vis - a- vis financing future investments projects. This challenge is borne out of the desire to satisfy various needs of shareholders. Due to the fact of having to deal with competing interests of

various shareholders, the kind of dividend policy adopted could either bring about a positive or negative effect on the value of the firm since managers are unable to forecast with certainty the extent that the policy will affect the value of their firms.

Several factors affect firm's dividend policy, which includes: legal constraints, contractual constraints, firm's growth prospects, owner considerations, and market considerations Gitman & Zutter, (2012). On the other hand, dividend policy significantly affects firm's ability to raise funds and consequently its value. Conventional wisdom affirms that a dividend policy that is well managed has an impact on firm's share price and shareholders' wealth Inyiama, Okwo & Inyiama, (2015).

However, despite the fact that so much studies that have been carried out on the subject of dividend policy which include Arnott and Asness (2003); Farsio et al (2004) and Nissim and Ziv (2001) the issue on dividend policy remains an unresolved issue in corporate finance. Several theories have been advanced to explain the relevance of dividend policies as it relates to firm value, but there has not been a universal agreement Stulz, (2000); Pandey, (2003); DeAngelo et al., (2006). Also in the light of this subject, only few studies have employed varying forms of dividend financial ratios in testing its relationship with firm value. Such ratios include but not limited to: Dividend Yield, Dividend Increase, Dividend Decrease, and Dividend Coverage.

Furthermore, it will be remarkable to note that most of the studies on the impact of dividend policy on firm value have been conducted in developed economies. There are very scanty studies which have been done in developing/ emerging economies (especially in Nigeria), as a result creating a huge knowledge gap. It is against this backdrop that the researcher seeks to find out the impact of dividend payout policy on the value of the firm. In this study, the value of the firm is proxy by Tobin Q which has been scarcely employed in issues relating to dividend policy among academic researchers in Nigeria. Furthermore, existing studies have been particular about financial sectors of the economy whose attributes and operations are significantly different. But this study is being directed towards the subsectors of breweries and beverages companies listed on the Nigerian Stock Exchange.

The strategy of this research work is effective to capital costs and payment of corporate profits. The selection of a mode of capital financing structure, such as circulation of new equity will help managers find out which internal financing structure is most viable for improving shareholders value. In the optimization of corporate dividend policy decisions, it is very important to understand the various sources of finances and cost in order to make decisions on maximizing corporate value and shareholder's equity.

Against the backdrop of shareholders' wealth maximization and the bird in hand theory, this study will develop a further understanding of dividend policy in Nigeria, through empirical analysis of the relationship between corporate dividend policy as it impacts firm value, especially at this instance of the present economic recovery era. In addition, the study will provide an extension of the currently available tests in corporate dividend policy through choosing samples of listed firms in an emerging market. Also insightful recommendations on how the significance of dividend policy in Nigeria can be optimized to increase stakeholders' confidence and boost the maximization of wealth will be addressed.

LITERATURE REVIEW

Dividend Policy

Dividend policy of a firm becomes the choice of financial strategy when investment decisions

are taken as given. However, it is also imperative to know whether the firm will go for internal or external source of financing for its investment project. Dividend policies appears differently for different countries because of different tax policies, rules, regulations and different institutions and capital markets which suggest that a number of internal factors would possibly influence dividend policy decisions of a firm Zameer et al, (2013). These factors are but not limited to investor's preference, earnings, investment opportunities; annual vs. target capital structure, flotation costs, signaling, stability, Government policies and taxation. In the presence of asymmetric information, signaling is one of the crucial factors that influence the market. Dividends may convey very vital information about the company, more so that it suggests the possibility of its influence on the stock market. Paying large dividends reduces risk and thus influence stock price Gordon, (1963) and is a proxy for future earnings Baskin, (1989).

Dividends have been seen differently by different writers. According to Arthur and Sheffrin, (2003) they are payments by a corporation to its shareholder members; it forms part of corporate profits that are paid out to shareholders. In the light of this, we can say that when a corporation earns a profit or surplus, that money can be put to two uses: it can either be re-invested in the business, or it can be distributed to shareholders. Research studies such as that of De Cesari, Espenlaub, (2001); Simkovic, (2009) supports two ways to distribute cash to shareholders which includes: share repurchases or dividends. They posit that managers avoid reduction in dividend because of the sticky signal it sends to the investors and shareholders. Odia and Ogiedu (2013) view it as a tip of an iceberg of future failure even while it remains a hallmark of incompetent management Baskin, (1989).

Abor and Bokpin (2010) noted that current and past years' profits are important factors in influencing dividend payments. Firms which continually post good profits are in a better position to pay dividends to their shareholders. On the contrary, companies that perform poorly over many years are unable to sustain dividend payments to their shareholders Ajanthan, (2013).

As noted by Kapoor, (2009), dividend policy indicates the disbursement policy, which directors follow in making decisions of the pattern as well as size of cash supply to stockholders over a particular time. Dividend policy is a company's policy focusing on paying out salaries as dividend against retaining them for reinvestment in the company. But it is referred to be the portion of profit between expenditures to stockholders as well as reinvestment in the company Lashgari & Ahmadi, (2014). Dividend policy as described by Aduda & Kimathi, (2011) is the strategy of action accepted by the company's managements every time there is a choice to be made. While, Emeni & Ogbulu (2015) posit that the main concern of corporate dividend policy decision is the knowledge of how much income can be paid as dividend by the company and how much could be reserved for future investments.

Firm Value

Value entails the quality that solidifies something wanted or advantageous; the amount of cash desired to acquire something; or what ought to be given, done, or experienced to get something Oladele, (2013). Therefore, a company's value will then be described as all the values of its monetary rights. Such that the business value is based on the continuous concern or anticipation in the current value of all the predictable future cash flows to be produced by its assets, reduced at the corporation's weighted regular cost of wealth Chowdhury & Chowdhury, (2010).

Pandey (2005) argues that the value of the company is the total value of all its monetary securities. The money streams received by the required claims should add up to the entire cash

flow that its assets produce. In a diverse situation where the company's profits vary, the problem of exploiting value becomes rather more complex. Value may be predicated on the dividends streams that the stockholder will receive during the entire firm's life, discounted back to the present time Parkinson & Waweru (2010). Oladele, (2013) submits that companies exist in the market to make worth for their stockholders hence; creation of value can be described as the upsurge in the monetary worth of stockholders, as measured by proportion of marketplace value of stocks to the book value of stocks, produced by the presentation of a company.

Empirical Review

Whether dividend policy affects firm's value or not has been presented by several studies in different perspective. A survey study conducted by Farrelly, Baker, and Edelman (1986) concludes that managers view dividend policy as having a positive relationship with firm's value. Gordon and Shapiro (1956) Linter (1956), Walter (1963) and Fairchild (2010) supported this theory, while some theories opposed this view and suggested that dividend payout negatively influence firm's value. Linter (1956) indicated that dividend amount is determined by firm's current year earnings and its previous year's earning. This proposition is confirmed by Matthias et al. (2008) who studied Nigerian banks and found that dividend amount is decided on the basis of current year's profit and past year's profit.

Investigating dividend policy of Saudi Arabian firms Al-Ajmi and Abo Hussain (2011) identified lagged dividend payments, profitability, cash flows and lifecycle as determinants of dividend payments and supported Linter's (1956) model. They found significant relationship between dividend amount and current as well as previous profitability. The study of Raymond et al (2017) in a comparative study of Nigerian listed companies, suggest that telecommunication firms in Nigeria are more profitable with higher dividend cover than commercial banks.

The empirical study of Christopher, et al, (2009) showed that stock prices could be determined by micro and macro economic factors which include: Book Value of the Firm, Dividend Per Share, Earnings Per Share, Price- Earnings Ratio and Dividend Cover.

Whited (1992) and Vogt (1994) find that the relationship between investment and dividend policy could be negative which implies that an increase in investment opportunities will result in a decrease in dividend payment and vice versa. This same assumption is supported by the findings of La Porter et al. (2000) who argues that the relationship between investment and dividend policy will depend on the quality of shareholder protection provided by the country where the firms operate.

The empirical findings of Gugler and Yurtoglu (2003) confirm the work of Lang and Litzenberger's (1989). From their results in a sample from the German market, they find a larger price drop after dividend decreases for firms having poor investment opportunities compared to other firms.

However, Yoon and Starks (1995) employing a larger sample than Lang and Litzenberger (1989) find evidence against the free cash flow hypothesis in the US market. Their descriptive analysis show that for dividend increases, firms with value less than unity are smaller, have a higher dividend change and exhibit a higher dividend yield. They posit that the stronger price appreciation after dividend increases of firms with firm value less than unity is due to the characteristics of these firms.

Among other authors, Bajaj and Vijh (1990) argued that the stock price reaction following an

unexpected dividend change should be more pronounced in firms with high dividend yields if and only if the investors in those firms have a preference for stocks with a high yield. This phenomenon is referred to as “clientele effect”.

Baskin (1989) employed panel data analysis to find out the effects of dividends on stock volatility of 2344 US firms for the period 1967-1986. The finding reports a strong correlation between dividend yield and securities price volatility while Al Masum (2014) found that dividend yield has a significant negative correlation with share price. The empirical result of Woolridge (1983) show a significant increase (decrease) in common stock return following the unexpected dividend increase (decrease) announcements. Amihud and Murgia (2001) reported that the average excess return (AER) of stock prices is positive for dividend increase and negative for dividend decrease.

The findings of Hashemijoo (2012) who investigate the impact of dividend policy on share price volatility in the Malaysian Stock Exchange depicted that there is a negative significant relationship between both dividend yield and payout ratio with share price volatility.

Following the study of Perretti (2013) on the propensity of change in dividend amount for ARD firms of USA the result show that firm size, growth opportunities and earned/contributed capital mix are significant determinants of changes in dividend policy in a multivariate logit regression. The analysis show that if firm’s total capital comprises of a high proportion of earned capital, the probability of paying dividends will increase. Also the result further show that ADR firms that possesses high opportunities to grow, have low probability of paying regular dividends while firms that are more profitable, keep their dividend amount smooth. Furthermore, firm size, profitability, and earned/contributed capital mix have positive relationship while the variable of growth opportunity has negative association with dividend change.

Saeed et al. (2014) explored the determinants of dividend payouts of financial sector of firms listed at Karachi Stock Exchange of Pakistan. The study established a negative relationship between dividend payouts with firm’s size. As firm size increases, its payout declines. They found positive but insignificant relationship between firm’s liquidity and its payout ratio. The result showed a positive relationship between firm’s cash flow and dividend payouts.

Travlos, (2001) used samples from an emerging market in favor of the dividend signaling hypothesis. They studied a sample of 41 announcements of cash dividend increase and 39 announcements of stock dividends for firms quoted on the Cyprus Stock Exchange over the period of 1985 to 1995, and examined market reaction to the announcement effects of cash dividend increases and stock dividends. Their finding suggests positive and significant abnormal returns for both cash dividend increases and stock dividend announcements and showing consistency with the signaling hypothesis.

Furthermore, Denis et al (1994) investigated a sample of 5992 dividend increases and 785 dividend decreases between 1962 and 1988. They investigated the relationship between dividend yield and firm value, and observed the relationship to be negative. They argued that this negative relationship is attributable to a negative correlation between dividend yield and firm value, suggesting that the market perceived this as a signal that overinvestment problems may have been reduced. Also, Denis et al. (2010) examined the level of capital spending for low and high Value firms in relation to changes in dividend. They observed that $Q < 1$ firms increased their investments following dividend increases and decreased them following dividend decreases. However, this result contradicts the overinvestment hypothesis.

Theoretical Framework

This study is based on the 'Bird in the Hand Theory' developed by John Lintner 1962 and Myron Gordon, 1963. The essence of this theory is that stockholders are risk averse and prefer current dividends due to their lower level of risk as compared to future dividends. Dividend payments reduce investor uncertainty and thereby increase stock value. This theory is based on the logic that 'what is available at present is preferable to what may be available in the future'. Investors would prefer to have a sure dividend now rather than a promised dividend in the future (even if the promised dividend is larger). Hence dividend policy is relevant and does affect the share price of a firm. Bird in hand is referred as dividends while bush is capital gains. This theory refers that it is better to distribute dividends rather than keeping cash reserves. Increase in dividend payouts increases firm value. As firm declares high dividend, cost of capital reduces, and ultimately share value increases. Fairchild (2010) supported this theory. The study follows the hypothesis of a significant relationship between dividend policy and firm value.

Dividend policy has been one of the most focused research area in finance. According to Ooi, (2001) a lot of research work has been done all over the world about dividend policy, but still it is a puzzle in finance. However, many researchers have presented theories and factors that determine dividend policy but till date no single rule can govern dividend policy as various factors have been seen to influence dividend decisions of a firm. This research issues may be dated back to the work of Linter (1956), Miller and Modigliani (1961).

Overall, the subject of dividend policy and its impact on firm's value have been viewed from three main conflicting theories. The first theory proposes that dividend payout has positive impact on firm's value which is referred to as the Bird in Hand Theory. While another theory supports that dividend payout has an inverse relationship with firm's value (The Tax-Preference Theory). The third major proponents of dividend theory propose that dividend decisions have no impact on firm's value viewed as the 'Dividend Irrelevance Theory'. Other theories such as signaling theory, clientele effect and agency cost make dividend decisions a puzzle.

Prior to the work of Miller and Modigliani (1961) it was believed that dividend payout is directly related to firm's value but against this school of thought, Miller and Modigliani (1961) believed dividend irrelevance theory. According to this theory, investors lack interest for dividends and capital gains. According to them, dividends have no impact on firm's value either on stock price or on cost of capital. Miller and Modigliani posited that the value of a firm is evaluated through its earning and its investments not through dividend decisions.

Tax preference theory suggests that investors prefer low dividend payout for the growth of a firm. Considering double taxation factor, low dividend payout is preferred because it will increase stock price and lower cost of capital. Low dividend payout in other words maximizes firm's value. Tax preference theory opposes bird in hand theory and suggested that decrease in dividend payouts increase firm's value.

METHODOLOGY

Research Design

Research design is "the structuring of investigation aimed at identifying variables and their relationships to one another" Asika, (2008). The research study focuses on the impact of dividend policy on firm value in Nigeria. For the purpose of this study, the ex-post factor (correlation) research design was adopted. A correlation research design determines whether two variables are related, which implies that an increase or decrease in one variable

corresponds to an increase or decrease in the other variable. Correlation research design was considered adequate and appropriate for this study because it can describe the statistical relationship between independent variables of the study and the dependent variable. However, firm size, firm age and firm leverage were used as control variables in this research work.

Population of Research Study

According to Asika (2008), a population is made up of all conceivable elements, subjects or observations relating to a particular phenomenon of interest to the researcher. It is expedient to know the nature of the population so as to aid the choice of sampling technique. The study population consists of all consumer and manufacturing listed firms quoted on the Nigerian Stock Exchange as at 31st December 2016. The study covered a period of ten years (2007-2016).

Sample Size and Sampling Technique

In taking into account the nature of the population, the study employed a simple random sampling technique and based on two filter criteria to arrive at the final sample for the study. Consumer and conglomerate companies that do not meet nor conform to the filter criteria below were eliminated.

1. All the sampled companies must make available their annual report of ten (10) years under study i.e. 2007-2016.
2. All Consumer and conglomerate firms listed in the sample must be quoted on the Nigerian Stock Exchange before year 2007

Following this strategy, the final sample size results to twelve (12) Consumer and Conglomerate companies which includes; 7up Nigeria Plc, Cadbury Nigeria Plc, Champion Breweries, Guinness Nigeria Plc, International Breweries Plc, Nascon Allied Plc, Nestle Nigeria Plc, Nigerian Breweries Plc, Pz Cusson, Tiger Branded Plc, UAC of Nigeria Plc, and Uniliver Nigeria Plc.

Data Source

This study employed secondary sources of data collection. The data were obtained from the annual reports and accounts of the sample companies and Nigerian Stock Exchange (NSE) Fact Book in order to achieve the objectives of the study. This is due to the fact that corporate annual reports of listed companies were readily available and easily accessible. However, the final compilation was done by MachameRatios.

Model Specification

A multiple regression model was used to analyze the data using Stata Version 13. Analysis was done using Pearson correlation to measure the association between the independent variables. Panel Least Square Regression technique was used to test the relationship between the various forms of dividend policies employed by listed Consumer and Conglomerate companies in Nigeria. The study adopted the following regression models:

$$Y_1 = \alpha_0 + \alpha_1\beta_1 + \alpha_2\beta_2 + \alpha_3\beta_3 + \alpha_4\beta_4 + \mu_t \dots \dots \dots (1)$$

$$Y_2 = Y_0 + Y_1\beta_1 + Y_2\beta_2 + Y_3\beta_3 + Y_4\beta_4 + Z_t \dots \dots \dots (2)$$

$$Y_3 = \chi_0 + \chi_1\beta_1 + \chi_2\beta_2 + \chi_3\beta_3 + \chi_4\beta_4 + y_t \dots \dots \dots (3)$$

$$Y_4 = Z_0 + Z_1\beta_1 + Z_2\beta_2 + Z_3\beta_3 + Z_4\beta_4 + q_t \dots \dots \dots (4)$$

Where: Y_1, Y_2, \dots, Y_4 = Firm Value (tobinq),

$\alpha_0, \gamma_0, \chi_0, Z_0$ = Intercept for model 1, 2, 3, 4 respectively

$\alpha_1, \gamma_1, \chi_1, Z_1$ = Coefficient estimate for independent variable of interest (Dividend Coverage, Dividend Yield, Dividend Increase, and Dividend Decrease)

β_1 = Independent variable of interest (Dividend Coverage, Dividend Yield, Dividend Increase, and Dividend Decrease respectively)

$\alpha_2, \gamma_2, \chi_2, Z_2, \eta_2$ = Coefficient estimate for control variable of firm size for models 1.....4

β_2 = Control variable of firm size

$\alpha_3, \gamma_3, \chi_3, Z_3$ = Coefficient estimate for control variable of firm Leverage for models 1.....4

$\alpha_4, \gamma_4, \chi_4, Z_4$ = Coefficient estimate for control variable of firm Leverage for models 1.....4

μ_t, Z_t, y_t and q_t = Prediction error.

Method of Data Analysis

To verify the effects of dividend policy on firm value we carried out a number of formal empirical tests. The research strategy is as follows. Using listed companies' data obtained from its annual reports deposited at the Nigerian Stock Exchange for year 2007-2016 we constructed a balanced panel. The study adopted Panel Least Square Regression technique to find coefficients that will be used to determine both impacts of variables under study. We used random and fixed effects estimation techniques, which allowed us to control for unobserved individual (firm-specific) effects. We employed Hausman test to establish if fixed or random effects specification was preferable. All the techniques mentioned above were employed to find coefficient estimates for the relationship between firm's value and its dividend policy in Nigeria.

Operationalization of Research Variables

Variable	Specification	Measurement
Tobin q	Tobinq	Market value divided by book value of the sampled companies
Dividend Coverage	divcov	Earnings per share divide by dividend per share.
Dividend Yield	divy	Annual dividend divided by Current Stock Price
Dividend Increase	divinc	Measured as Dummy such that if firm increase dividend = '1' otherwise = 0
Firm Size	fsize	Natural log of the total assets which was measured as a control variable and employed as a control variable
Leverage	flev	Total liabilities / Total assets and employed as a control variable
Firm Age	fage	Difference between the year of listing on the stock exchange and current year of study and employed as a control variable.

Author Compilation 2018

DESCRIPTION AND EMPIRICAL RESULT

Data Presentation

The study analyses the relationship between dividend policy and firm value employing data samples from consumer and manufacturing listed companies from the Nigerian Stock Exchange for the periods of 2017 – 2016. In finding the possible firm's specific characteristics and exogenous factors that would influence firm's value, some analysis such as: Descriptive Statistics, Correlation Matrix, and Panel Least Square Regression analysis were conducted. The results obtained from these analyses are presented as follows.

TABLE 4.1 Descriptive Statistics

. summarize tobinq cdp divy divcov divinc divdecr fleve fsize fage, separator (0)

Variable	Obs	Mean	Std. Dev.	Min	Max
tobinq	112	3.543571	4.411291	.72	43.01
cdp	112	47.26384	50.70797	-155.37	253.4
divy	112	2.640893	2.748568	0	15.01
divcov	112	18.65366	153.3595	-68.12	1577.29
divinc	112	.3660714	.4838944	0	1
fleve	112	64.88161	32.13977	17.51	224.11
fsize	112	7.600179	.5332207	5.51	8.56
fage	112	31.28571	11.61812	1	51

Author Computation 2018

The statistics descriptive statistics above shows that cash dividend was not paid by some companies during the period of analysis. The companies include International Breweries Plc, Nascon Allied Plc, Pz Cusson Plc and Uniliver Plc during the period of analysis. The average dividend payout is N47.20 during the period of analysis. This can be said to be fair and commendable for the Nigerian Stock Exchange. Dividend yield ratio has a mean of 2.64 with a standard deviation of 2.74, indicates a consistent dividend distribution of the company and less risky. However, the highest payout for the period of analysis is 253.40 and was paid by Nestle Plc in year 2016. This could be indicative of a good business outlook for the year 2007. The descriptive statistics result show that the oldest firm in our sample is Guinness Nigeria Plc whose age is fifty-one (51) and Tiger branded company is revealed to be the youngest company at the time of this analysis. Dividend yield which is a financial ratio that shows how a company pays out in dividend every year in relation to its share price had an average value of N2.64kobo and a minimum value of N0.00kobo of which the later indicates that some companies in the sample did not pay dividend at some point during the period of analysis. The statistics table shows that on the average most of the companies in the sample increased its cash dividend payout by 36kobo.

TABLE 4.2 Tests for Data Normality

Skewness/Kurtosis tests for Normality

Variable	Obs	Pr (Skewness)	Pr (Kurtosis)	adj chi2 (2)	joint Prob>chi2
tobinq	112	0.0000	0.0000	12.12	0.0000
cdp	112	0.0396	0.0001	15.30	0.0005
divy	112	0.0000	0.0002	33.21	0.0000
divcov	112	0.0000	0.0000	14.11	0.0000
divinc	112	0.0163	0.0000	12.17	0.0000
fleve	112	0.0000	0.0000	54.84	0.0000
fsize	112	0.0000	0.0002	29.09	0.0000
fage	112	0.0006	0.6885	10.37	0.0056

Author Computation 2018

The test for normality of data show that all the variables under consideration are normally distributed at 1% level of significance except for the variables of dividend policy (cdp) and firm age (fage) which showed significance at 5% hence the possibilities and consequences of data outlier is eliminated.

In testing for the cause-effect relationship between the dependent and independent variables in the models of cash dividend, dividend yield, dividend coverage, and dividend increase, the two widely used panel data regression estimation techniques (fixed effect and random effect) were adopted. The table above presents the two panel data estimation techniques results. The results revealed difference in the magnitude of the coefficients, signs and the number of significant and insignificant variables. The estimation of the fixed effect panel regression was based on the assumption of no correlation between the error term and explanatory variables, while that of the random effect, considers that the error term and explanatory variables are correlated. In selecting from the two panel regression estimation results, the Hausman test was conducted and the test is based on the null hypotheses that the random effect model is preferred to fixed effect model. A look at the p-value of the Hausman test in all four models of 0.000 implies that we should reject the alternative hypothesis. This implies that we should adopt the random effect panel regression results in drawing our conclusion and recommendations. This also implies that the random effect results tend to be more appealing statistically when compared to the fixed effect.

Table 4.3 Panel Ordinary Least Square Regression Analysis

Var.	Model 1		Var.	Model 2		Var.	Model 3		Var.	Model 4	
	F- Effects	R- Effects		F- Effects	R- Effects		F- Effects	R- Effects		F- Effects	R- Effects
Cdp	0.005 (0.660) {0.510}	0.010 (1.340) {0.179}	divy	-0.404 (-2.720) {0.008}	-0.279 (-1.810) {0.071}	divcov	-0.000 (-0.160) {0.870}	-0.001 (-0.470) {0.641}	divinc	-0.475 (-0.700) {0.484}	-0.526 (-0.740) {0.459}
Flev	-0.040 (-3.560) {0.001}	-0.022 (-1.690) {0.091}	flev	-0.046 (-3.880) {0.000}	-0.029 (-2.300) {0.022}	flev	-0.044 (-3.540) {0.001}	-0.027 (-2.060) {0.040}	flev	-0.044 (-3.600) {0.001}	-0.028 (-2.110) {0.035}
Fsize	-14.255 (-9.630) {0.000}	-7.749 (-6.730) {0.000}	fsize	-14.731 (-10.240) {0.000}	-8.755 (-7.370) {0.000}	fsize	-14.227 (-9.600) {0.000}	-8.584 (-7.150) {0.000}	fsize	-14.214 (-9.620) {0.000}	-8.573 (-7.160) {0.000}
Fage	0.623 (4.490) {0.000}	0.125 (2.120) {0.034}	fage	0.703 (5.28) {0.000}	0.195 (2.590) {0.003}	fage	0.639 (4.650) {0.000}	0.175 (2.660) {0.008}	fage	0.629 (4.590) {0.000}	0.176 (2.680) {0.007}
Cons	94.865 (10.020) {0.000}	59.397 (7.020) {0.000}	cons	99.581 (10.610) {0.000}	66.540 (7.690) {0.000}	cons	94.525 (9.970) {0.000}	64.955 (7.430) {0.000}	cons	94.939 (10.020) {0.000}	66.071 (7.460) {0.000}
R-Sq	0.508	0.451	R-Sq	0.541	0.488	R-Sq	0.506	0.462	R-Sq	0.508	0.467
AdjR-Sq	0.109	0.217	AdjR	0.107	0.208	AdjR-	0.105	0.197	Adj R-	0.108	0.199
F Stat	24.76	49.50	F Stat	28.27	59.58	F Stat	24.56	54.65	F Stat	24.79	55.12
Prob. F	0.000	0.000	Prob. F	0.000	0.000	Prob.	0.000	0.000	Prob.	0.000	0.000
Hausman 0.000			Hausman 0.000			Hausman 0.000			Hausman 0.000		

Authors Computation 2018

MODEL 1 (DIVIDEND POLICY)

The adjusted R Squared of the panel regression model is 0.21 indicating that 21% of the changes in firm value as defined by tobin q is explained by the changes in its examined explanatory variables. The wald chi² statistics (49.50) and its p-value (0.000) show that the dividend policy panel random regression model is generally significant and well specified. This implies that the model passed the overall significance test at the 1% level. In addition to the above, the specific findings from each explanatory variable from the random effect panel regression models are provided as followings:

The random panel effect model presented above show that only the variables of firm age (fage) (coef. 0.125 P >/t/ 0.034) and firm size (fsize) (coef. -7.749 P >/t/ 0.034) passed the statistical significance test at 1% and 5% respectively. From the regression result the variable of firm leverage showed a negative and insignificant relationship with firm value. This suggests that

the capital structure of the sampled firms is inversely related to firm value but is statistically insignificant. The key variable of cash dividend policy showed a positive but insignificant relationship with the dependent variable of firm value. (Coef.0.010 $P > /t/ 0.179$) suggesting that a unit increase in cash dividend pay will lead to 0.010 increase in firm value of the sampled companies in Nigeria. However, this relationship should not be taken with keen interest since it is statistically insignificant even at 10% level. This result is in accordance with the findings of Adelegun (2003), Nyamugnre (2015) but negates the findings of Hashemijoo (2015), Miko and Kamardin (2015) M'rabet and Boujjat (2015) and Ozuomba (2016). Based on the forgoing result we accept the null hypothesis of no significant relationship between dividend policy and firm value among listed consumer and conglomerate companies in Nigeria.

MODEL 2 (DIVIDEND YIELD)

The adjusted R Squared of the panel regression model is 0.197 indicating that about 20% of the changes in firm value as defined by tobin q is explained by the changes in its examined explanatory variables. The wald chi² statistics (54.65) and its p-value (0.000) show that the dividend policy panel random regression model is generally significant and well specified. This implies that the model passed the overall significance test at the 1% level. In addition to the above, the specific findings from each explanatory variable from the random effect panel regression models are provided as followings:

The random panel effect model presented above show that only the variables of firm age (fage) (coef. 0.195 $P = /t/ 0.003$) and firm size (fsize) (coef. -8.755 $P = /t/ 0.000$) and firm leverage flev (coef. -0,029 $P = 0.002$) passed the statistical significance test at 5%, 1% and 5% respectively. From the regression result the variable of firm leverage showed a negative and significant relationship with firm value. This suggests that the capital structure of the sampled firms is inversely related to firm value and it is statistically significant. In this model the key variable of dividend yield showed a negative but insignificant relationship with the dependent variable of firm value. (Coef.0.028 $P > /t/ 0.071$) suggesting that a unit increase in dividend yield will lead to 0.279 decrease in firm value of the sampled companies in Nigeria. A negative coefficient means that the independent variable is moving in an opposite direction such that if dividend yield goes up, the variable of firm value is more likely to drop. Thus, high valued firms cannot maintain positive dividend yield hence may not be able to disburse cash in the form of dividends. The negative relationship is consistent with the study of Denis et al (1994) whose findings suggested a negative correlation between dividend yield and firm value. This significance is tested at 1 percent level of significance. This ratio that measures how much cash flow an investor receives for each naira invested in an equity position did not conform to the empirical finding of Hashemijoo (2012). The impact of firm size is significant at 1 percent, but has a negative slope. The negative coefficient indicates that, the larger the firm, the more likely that shareholders value will shrink. Based on the forgoing result we carefully accept the null hypothesis of no significant relationship between dividend yield and firm value among listed consumer and conglomerate companies in Nigeria.

MODEL 3 (DIVIDEND COVERAGE)

The adjusted R Squared of the panel regression model is 0.197 indicating that about 20% of the changes in firm value as defined by tobin q is explained by the changes in its examined explanatory variables. The wald chi² statistics (54.65) and its p-value (0.000) show that the dividend policy panel random regression model is generally significant and well specified. This implies that the model passed the overall significance test at the 1% level. In addition to the above, the specific findings from each explanatory variable from the random effect panel regression models are provided as followings:

The random panel effect model presented above show that only the variables of firm age (fage) (coef. 0.175 $P = /t/ 0.008$) and firm size (fsize) (coef. -8.584 $P = /t/ 0.000$) and firm leverage

flev (coef. -0.027 P = 0.040) passed the statistical significance test at 5%, 1% and 5% respectively. From the regression result the variable of firm leverage showed a negative and significant relationship with firm value. This suggests that the capital structure of the sampled firms is indirectly related to firm value and it is statistically significant. In this model the key variable of dividend coverage showed a negative but insignificant relationship with the dependent variable of firm value. (Coef. -0.001 P > /t/ 0.641) suggesting that a unit increase in dividend coverage will lead to 0.001 decrease in firm value of the sampled companies in Nigeria. A negative coefficient shows that the dependent variable is moving in an opposite direction such that when dividend coverage goes up, the variable of firm value is more likely to drop. This significance is tested at 5 percent level, revealing that dividend coverage have no significant impact on dividend yield. This finding did not conform to the empirical finding of Christopher (2009), Hoot & Johnson (2016), Hinks & Gregory (2013). The impact of firm size is significant at 1 percent, but has a negative slope. The negative coefficient suggests that, the larger the firm, the more likely that shareholders value will shrink. Based on the forgoing result we carefully accept the null hypothesis of no significant relationship between dividend coverage and firm value among listed consumer and conglomerate companies in Nigeria.

MODEL 4 (DIVIDEND INCREASE)

The adjusted R Squared of the panel regression model is 0.199 indicating that about 20% of the changes in firm value as defined by tobin q is explained by the changes in its examined explanatory variables. The wald chi² statistics (55.12) and its p-value (0.000) show that the dividend policy panel random regression model is generally significant and well specified. This implies that the model passed the overall significance test at the 1% level. In addition to the above, the specific findings from each explanatory variable from the random effect panel regression models are provided as followings:

The random panel effect model presented above show that only the variables of firm age (fage) (coef. 0.176 P = /t/ 0.007) and firm size (fsize) (coef. -8.57 P = /t/ 0.000) and firm leverage (flev) (coef. -0.028 P = 0.035) passed the statistical significance test at 5%, 1% and 5% respectively. From the regression result the variable of firm leverage showed a negative and significant relationship with shareholders' value. This suggests that the capital structure of the sampled firms is not directly related to firm value and it is statistically significant. In this model the key variable of dividend increase showed a negative insignificant relationship with the dependent variable of firm value. (Coef. -0.526 P > /t/ 0.459) suggesting that policies that increases cash dividend among listed companies in Nigeria, produces a 0.526 decrease in firm value. This significance is tested at 5 percent level of significance, revealing that dividend increase have no significant impact on stock price. This finding did not support the result of Al-Yahyaee et al. (2011) who conducted the research on Omani listed firms and suggested that announcements of increases in cash dividends result in a significant positive share price reaction, while decreases of cash dividends have a negative effect on share price. The impact of firm size is significant at 1 percent, but has a negative slope. The negative coefficient suggests that, the larger the firm, the more likely that share price will shrink. Based on the forgoing result we carefully accept the null hypothesis of no significant relationship between dividend increase and firm value among listed consumer and conglomerate companies in Nigeria.

SUMMARY AND CONCLUSION

This study focused on the relationship between dividend policy and firm value. The study adopted multiple regression models to examine the impact of various dividend policies component on the value of the firm. Findings revealed that policy components such as dividend yield, dividend coverage and dividend increase showed insignificant negative relationship with shareholders' value. This finding suggest that increasing the magnitudes of these factors have not yielded positive improvements on firm value/shareholders wealth among consumer and

manufacturing firms in Nigeria during the period of analysis. Instead, these variables showed a negative relationship with firm value. However, the analysis revealed that the relationship is insignificant hence may not be sufficient enough for policy recommendations.

The positive relationship between dividend policy and firm value is an indication that company seeks to please its shareholders by paying more dividend rather than improving their capital gain or plough back most of its earnings as retained earnings. Unfortunately, this policy as adopted by consumer and manufacturing sector in Nigeria has remained insignificant in improving the value of the firm that may have been reflected through its stock price. This study thus confirms the assertion by Black (1976) and the Miller and Modigliani (1961) dividend irrelevance theory that the harder we look at the dividend picture; the more it seems like a puzzle, with pieces that just don't fit together. Hence, the findings of the present study thus agree with most of the dividend irrelevant proponents that views dividend policy as irrelevant to firm value.

From the foregoing, the author carefully recommends that managers among listed consumer and manufacturing companies should adopt dividend policies that suit their investors' needs. They should review the opinions of their core investors in deciding dividend policy that meets with the expectations of its shareholders. By introducing new varied dividend policies, firm value can be maximized. The preference of shareholders towards income and investment should be understood and the dividend policies should be framed accordingly, for such shareholders. This strategy could assist these companies to gain both the benefit of increased shareholders satisfaction on one hand and increased firm value on the other hand, while also savings for future business expansion and capital gains. This in turn, will promote the growth and profitability of the consumer and manufacturing industries in Nigeria.

Reference

- Abor, J. and Bokpin, G. A. (2010) Investment opportunities, corporate finance, and dividend payout policy: Evidence from emerging markets. *Studies in Economics and Finance*, 27 (3): 180 – 194.
- Aduda, J. O. & Kimathi, H. (2011) The Applicability of the Constant Dividend Model for Companies Listed at the Nairobi Stock Exchange. *Journal of Financial Studies & Research*, 6, 1-38
- Ajanthan A., (2013). The relationship between dividend payout and firm profitability: A study of listed hotels and restaurant companies in Sri Lanka. *International Journal of Scientific and Research Publications*, 3 (6), 1
- Al Masum, A. (2014), Dividend policy and its impact on stock price a study on commercial banks listed in Dhaka Stock Exchange. *Disclosure of Economics and Business*, 3(1), 9-17
- Al-Ajmi, J., and Hussain, H., 2011 Corporate dividend decisions: evidence from Saudi Arabia. *J. Risk Finance*. 11(1): 41-56.
- Al-Ajmi, J., and Hussain, H., 2011 Corporate dividend decisions: evidence from Saudi Arabia. *J. Risk Finance*. 11(1): 41-56.
- Allen, F., and Michaely, R., 2003 "Payout policy", in Consratinides, *Handbook of Economics*, Elsevier, Amsterdam, pp: 337-429.
- Amihud, Y., & Murgia, M. (1997) Dividends, Taxes and Signaling: Evidence from Germany *Journal of Finance*, 52, 397-408.
- Arnott, R.D., and Asness, S., 2003. Surprise! Higher dividends= higher earnings growth. *J. Financial Analysts*. 70-87.
- Arthur, S. & Sheffrin, M. (2003) *Economics: Principles in action* Upper Saddle River, New Jersey: Pearson Prentice Hall.
- Asika, N., 2008. *Research Methodology in the Behavioural Sciences* Longman Nigeria Limited, Lagos, Nigeria
- Bajaj, M., & Vijh, A. M. (1990) Dividend clientele and the information content of dividend changes *Journal of Financial Economics*, 26, 193 – 219.

- Baker, M., Wurgler, J. (2004), A catering theory of dividends *The Journal of Finance*, 59(3), 1125-1165
- Baskin, J. (1989), Dividend policy and the volatility of common stocks *The Journal of Portfolio Management*, 15(3), 19-25
- Bhattacharya, S. "Imperfect information, Dividend policy, and 'the bird in the hand fallacy,'" *Bell Journal of Economics* 10, 1979, p. 259-270
- Black, F. (1976). The dividend Puzzle *Journal of Portfolio Management*, 2, (4), 5-8
- Brav, A., Graham, J.R., Harvey, C.R., and Michaely, R., 2005. Payout policy in the 21st century *J. Financial Economics*, 77(3): 483-527.
- Christopher, S.R.O, Rufus, A.I and Jimoh, E.O (2009) "Determinants of equity prices in prices in the stock market" *International Research Journal of finance and Economics*, Euro journals publishing inc Vol 43(78-84).
- De Cesari, A, Espenlaub, S., Khurshed, A. & Simkovic, M. (2010) The effects of ownership and stock liquidity on the timing of repurchase transactions. www.wikipedia.org
- DeAngelo, H., DeAngelo, L., & Stulz, R. (2006) Dividend Policy and the earned/contributed capital mix: a test of the life-cycle theory. *Journal of Financial Economics*, 81, 227-254.
- DeAngelo, H., DeAngelo, L., and Stulz, R.M., 2006. Dividend policy and the earned/contributed capital mix: a test of the life-cycle theory. *J. Financial Economics*. 81(2) : 227-254
- Denis, D., D. Denis, and A. Sarin, 1994, "The Information Content of Dividend Changes: Cash Flow Signaling, Overinvestment, and Dividend Clientele," *Journal of Financial and Quantitative Analysis* (December), 576 - 592.
- Easterbrook, F.H., (1984) "Two Agency-Cost Explanations of Dividends", *American Economic Economics*, Vol. 24, 1989, pp. 181 - 191
- Fairchild, Richard. 2010. Dividend policy, signaling and free cash flow: an integrated approach. *J. Managerial Finance*, 36(2) 94-413.
- Fama, E., and French, K., 2001. Disappearing dividends: changing firm characteristics or lower propensity to pay? *J. Financial Economics* 60: 3-43.
- Farrelly, G.E., Baker, H.K., and Edelman, R.B., 1986. Corporate Dividends: Views of the Policy-makers. *Akron Business and Economic Review*, 17(4): 62-74.
- Farsio, F., Geary, A., & Moser, J. (2004) The relationship between dividends and earnings *Journal for Economic Educators*, 4(4), 1 - 5
- Gitman, L. and Zutter, C. (2012) *Principles of Managerial Finance*, 13th Edition Upper Saddle River, NJ: Prentice Hall.
- Gordon, M. J. (1962). *The investment, Financing and Valuation of Corporation* Irwin: McGraw Hill Co.
- Gordon, Myron J., Eli, Shapiro. 1956. Capital Equipment Analysis: The Required Rate of profit. *J. Management science*, 3: 102-110.
- Gordon, Myron J., Eli, Shapiro. 1956. Capital Equipment Analysis: The Required Rate of profit. *J. Management science*, 3: 102-110.
- Gugler, K., B. Yurtoglu (2003), "Corporate governance and dividend payout policy in Germany", working paper University of Vienna
- Hashemiyoo, A., (2012). The impact of initiating dividend payments on shareholders' wealth *Journal of business* 12 (8), 77-96
- Hughes, J.P., 2008. R & D and Dividend Payments as Determinants of Corporate Value in the UK *Intl. J. Managerial.*, 4(1): 79-91.
- Inyama, E. C., Okwo, M. I. & Inyama, O. I. (2015) Dividend Payout Policy Determinants of Selected Listed Brewery Firms in Nigeria: A Meta-Analysis (2000-2013). *European Journal of Business, Economics and Accountancy*, 3(3), 101-118
- Jensen, M. C. (1986). Agency Costs of Free Cash Flow, Corporate Finance and Takeovers *The American Economic Reveiw*, 76(2), 323-329.
- John, K., and Williams, J., 1985 Dividends, dilution and taxes: A signaling equilibrium. *J. Finance.*, 40: 1053- 1070

- Kapoor, S. (2009) *Impact of dividend policy on shareholders' value* (Synopsis of thesis to be submitted in partial fulfillment of the requirement of the degree of doctor of philosophy). Jaypee Institute of Information Technology, Noida
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A., Vishny, R.W. (2000), Agency problems and dividend policies around the world. *The Journal of Finance*, 55(1), 1-33.
- Lang, L.H.P. and Litzenberger, R.H., "Dividend Announcements", *The Journal of Financial*
- Li, W., and Lie E., 2006 Dividend changes and catering incentives *J. Financial Economics*, 80(2), 293-308. Matthias, A. Nnadi., and Meg, Akpomi., 2008. The effect of taxes on Dividend Policy of Banks in Nigeria *Intl. Research J.Finance and Economics*, 19:48-55.
- Lintner, John, "Distribution of incomes of corporations among dividends retained earnings and taxes", *American Economic Review*, 46, May 1956, p. 97-113
- Litzenberger, R. H., & Ramaswamy, K. (1989) The Effects of Personal Taxes and Dividends on Capital Asset Prices. *Journal of Financial Economics*, 7, 163-195.
- Matthias, A. Nnadi., and Meg, Akpomi., 2008. The effect of taxes on Dividend Policy of Banks in Nigeria *Intl. Research J.Finance and Economics*, 19 :48-55.
- Miller, M. H. & Rock, K. (1985) Dividend Policy under Asymmetric Information. *Journal of Finance*, 40, 1031-1051.
- Modigliani, F. & Miller, M. (1961) Dividend Policy, Growth, and the Valuation of Shares *The Journal of Business*, 34(4), 411-428.
- Nissim, D. & Ziv, D. (2001) Dividend changes and future profitability *Journal of Finance*, 56 (6), 2111–2133
- Odia, J. O. & Ogiedu, K.O. (2013) The effect of corporate taxes on dividend policy of banks in Nigeria *Research Journal of Finance and Accounting*, 4 (5), 138-144
- Oladele, K. O. (2013). The Determinants of Value Creation in the Nigerian Banking Industry: Panel Evidence. *International Journal of Business and Social Science*, 4(3), 89 – 101
- Ooi, T.L.J., 2001. Dividend payout characteristics of UK property companies *J. Real Estate Portfolio Management*, 7(2): 133-42.
- Pandey, I. (2005). *Financial Management* New Delhi: Vikas Publishing House
- Pandey, I. M. (2003) Corporate dividend policy and behaviour the Malaysian Evidence *Asian Academy of Management Journal*, 8(1), 17 – 32.
- Parkinson, J. M. & Waweru, N. M. (2010) Paying Dividends by Kenyan Companies *Savings and Development*, 1, 35-51
- Pereeti, Gizelle F., Allen, Marcus T., and Weeks, Shelton, H., 2013. Determinants of dividend policies for ADR firms *J. Managerial Finance*, 39(12): 1155 -1168. Review, Vol. 74, No. 4, pp: 650-9.
- Saeed, R., Riaz, A., Lodhi, R.N., Munir, M., and Iqbal, A. 2014 Determinants of Dividend Payouts in Financial Sector of Pakistan *Journal of Basic and Applied Scientific Research* 4(2): 33-42
- Sharma, S. (2011) Determinants of equity share prices in India. *Journal of Arts, Science & Commerce*, 2 (4), 1-10
- Simkovic, M. (2009) *The Effect of Enhanced Disclosure on Open Market Stock Repurchases*. 6 Berkeley Bus. L.J
- Stulz, R. M. (2000). Merton Miller and modern finance *Financial Management*, 29(4), 119–131. Travlos, N., Trigeorgis, L., & Vafeas, N. (2001) Shareholder wealth effects of dividend policy changes in an emerging stock market *Multinational Finance Journal*, 5(2), 87 – 112
- Taslim M. W. (2013). Effect of Enterprise Risk Management Implementation on Firm Value of Companies Listed at Nairobi Securities Exchange. *International Journal of Business & Law Research*, 1(1), 65-76
- Travlos, N., Trigeorgis, L. & Vafeas, N. (2001) Shareholders' Wealth Effects of Dividend Policy Changes in an Emerging Stock Market: The Case of Cyprus. *Multinational Finance Journal* 5, 87-112.
- Vogt, S.C., 1994, "The Cash Flow/Investment Relationship: Evidence from US Manufacturing Firms," *Financial Management* (Summer) 3-20.
- Walter, J. (1963). Dividend Policy: It's Influence on the Value of the Enterprise. *Journal of Finance*, 18 (2), 280-291.
- Woolridge, J.R. (1983), Dividend changes and security prices. *The Journal of Finance*, 38(5), 1607-1615.

Yoon, P.S. and Starks, L.T., (1995) "Signaling, investment opportunities, and dividend announcements", *Review of Financial Studies*, Vol. 8, 1995, pp. 995 – 1018

Zaman, Sumaiya., 2013. Determinants of Dividend Policy of A Private Commercial Bank in Bangladesh: Which is The Strongest, Profitability, Growth or Size? Proceedings of 9th Asian Business Research Conference, 20-21.



Influence of Intrinsic and Extrinsic Characteristics of Detergents on Preferences of Female Employees of Selected Public Universities in Nigeria

Niyi Israel Akeke

Department of Business Administration,
Ekiti State University, Ado-Ekiti

Maureen Obi Mukolu

Department of Banking and Finance,
Federal Polytechnic, Ado-Ekiti

ABSTRACT

This study examined the influence of intrinsic and extrinsic characteristics of detergents on consumer preferences of female employee consumers. The study was carried out in Federal, and State universities located in Osun, Ogun, Lagos, Ondo, Oyo and Ekiti States of Southwest Nigeria. A total of 888 female employees in the selected institutions were sampled using two-stage sampling technique. Data were collected using a structured questionnaire. The data collected covered information on specific attributes and characteristics of detergents. Data collected was analysed using descriptive statistics, discrete choice model. Results showed that functional value of detergents and risk of use was the intrinsic characteristics of detergents influencing consumer preferences among female employees in public institutions. Extrinsic characteristics influencing consumer preference were price. The study concluded that consumer preference for detergents among female employees in selected public institutions in Southwest Nigeria is determined by hosts of factors which include brand, quality, intrinsic and extrinsic characteristics of detergents. It was thus recommended that business managers should link up with manufacturers of detergents to pay greater attention to intrinsic and extrinsic values of their products. Finally managers should enhance trust and reduce perceptions of risk associated with using available brands by promoting the quality and reliability of their retail brands.

Keywords: Intrinsic, Extrinsic, Preferences, Public Universities

INTRODUCTION

Over the years different approaches have emerged on factors that determine consumer preference. Consumer preference is a set of attitude that characterize the patterns of consumer choices. Apart from the essential internal factors which are recognized as influencing consumers' preference, there are a number of external situational context that affect consumer choices too. According to Walter (1970), the consumer is simultaneously influenced by his choice of products and by some attributes such as price, quality, packaging, sales promotion and quality, which influence a brand preference of a product. People may seek the benefit that a product provides rather than the products itself and consumers may consider the available alternative from the vantage point of the usage context which they experience or the specific application they are considering. Most of these factors have been categorized as intrinsic and extrinsic determinants of preference for products.

Existing studies have shown that consumers are not always able to accurately evaluate the characteristic intrinsic and extrinsic cues before making a buying decision, and in some cases even in a post purchase evaluation (Alba, 2000; Kardes, Kim & Lim, 2001). In some situations,

actual product attributes are discounted in favour of extrinsic cues believed by consumers to be more reliable than their own opinions (Kardes, Cronley, Kellaris & Posavac, 2004).

All these, among others are the ideal beliefs of various past researchers on consumer preference for a product. However, various studies have also shown that all the ideas of the past researchers might not be appropriate to make generalization on what factors influence consumer preference for a product. The rationale behind this is that different products might have different peculiarities that distinguish them from one another. This might likely bring in some factors that might not be covered by the scope of past researchers and these factors are most likely to have varying degrees of influences on consumer preference for certain products (Parasuraman, Zeithaml & Berry, 1994) especially detergents.

Detergent as a domestic household commodity possesses unique features that can account for changes in consumer preference for it. Households are faced with allocation of their scarce resources to satisfy all their domestic needs. Detergents are one of the households' commodities, which are used daily domestically for cleaning.

The massive increase in the supply of cleansing products most especially detergents into the Nigerian market necessitated a need for research attention. In general, extant literature on determinants of increase in supply of domestic products, have focused on the role played by preference behaviour of consumers.

Many of the studies focused only on market segment with a narrow focus on the marketers, thereby neglecting business managers and administrators who are crucial to policy implementation on sale of detergents, (David & James;1998, Bradhl ; 2003,Janneke & Jabilyn;2009, Marlia, Nassuddin & Fazleen; 2011,Rook & Fisher;1995).A critical look at these studies showed that many of the researchers concentrated on consumer behavior and consumer attitude, (Ifegwu & Ajetomobi, 2014; Amadi & Ezekiel, 2013; Ezeh & Onubuobi, 2011; Oghojafor, Ladipo & Nwagwugwu,2013).However none was found to have been conducted on the influence of intrinsic and extrinsic characteristics of detergents on the preferences of female employees of selected public universities in south-west Nigeria. This study therefore intends to fill this gap.

LITERATURE REVIEW

Product characteristics are those features of a product which are used as (technical) indicators for product quality and are (in principle) measurable with (standardized) analytical (including sensoric) methods (Becker, 2000).The characteristics that are of importance and relevance for the purpose of this study, further explain how it influences the consumer in the decision making process.

The physical characteristics of a products, the ones related to the products technical specifications, and also the physiological characteristics, the ones that can be measured objectively, are referred to as the intrinsic cues of the product (Grunert, Bradhl & Brunso., 2003). These examples given are not characteristics that can be measured or evaluated by using the human abilities. On all the characteristics the consumer is exposed to, only the ones that apparently have an effect on his quality perception and further influence on his purchase decision (Grunert *et al.*, 2003).

Intrinsic and Extrinsic Cues

The knowledge of how the intrinsic and extrinsic cues affect the consumers' motivation of a purchase is important in this study. Becker (2000) categorizes the product cues into two

groups; intrinsic and extrinsic. Intrinsic is explained as the appearance, colour, shape, and presentation of the product. Extrinsic cues include the price, brand name, stamp of quality, country-of-origin, store, production information and nutritional information of the products. Further on, Evans and Colleagues (2009) argue that both intrinsic and extrinsic cues influence the consumer in the product evaluation by reminding them about previous knowledge and experience with the product. Consumers tend to rely more on extrinsic cues during the product evaluation, since they become more aware of them over time. Further, when intrinsic cues do not provide the consumer with useful information, the extrinsic cues are then used as quality indicators. This can happen in the following situations; consumer has no information or just a little information about the product, the consumer does not have enough time to evaluate the intrinsic cues, or when the consumer cannot evaluate the intrinsic cues (Zeithaml, 1988).

Attributes that signal quality have been dichotomized into intrinsic and extrinsic cues (Olson 1977; Olson & Jacoby 1972). Intrinsic cues involve the physical composition of the product. In a beverage, intrinsic cues would include such attributes as flavor, color, texture, and degree of sweetness. Intrinsic attributes cannot be changed without altering the nature of the product itself and are consumed as the product is consumed (Olson 1977; Olson & Jacoby 1972).

Extrinsic cues are product-related but not part of the physical product itself. They are, by definition, outside the product. Price, brand name, and level of advertising are examples of extrinsic cues to quality. A small number of cues, most notably those involving the product's package, are difficult to classify as either intrinsic or extrinsic. Package could be considered an intrinsic or an extrinsic cue depending on whether the package is part of the physical composition of the product (e.g., a dripless spout in detergent), in which case it would be an intrinsic cue, or protection and promotion for the product in which case it would be an extrinsic cue. For purposes of the model, package is considered an intrinsic cue but the information that appears on the package (e.g., brand name, price, and logo) is considered an extrinsic cue.

Researchers have identified key lower level attributes used by consumers to infer quality in only a few product categories. These lower level cues include price (Olson 1977; Olson and Jacoby 1972), studied level for detergents. Generalizing about quality across products has been difficult for managers and researchers. Specific or concrete intrinsic attributes differ widely across products, as do the attributes consumers use to infer quality. Obviously, attributes that signal quality in fruit juice are not the same as those indicating quality in washing machines or automobiles. Even within a product category, specific attributes may provide different signals about quality.

Though the concrete attributes that signal quality differ across products, higher level abstract dimensions of quality can be generalized to categories of products. Garvin (1983), for example, proposes that product quality can be captured in eight dimensions: performance, features, reliability, conformance, durability, serviceability, aesthetics, and perceived quality (i.e., image). Abstract dimensions that capture diverse specific attributes have been discussed in earlier studies such as Johnson (1983) and Achrol, Reve & Stem (1983). In describing the way consumers compare non comparable alternatives (e.g., how they choose between such diverse alternatives as a stereo and a Hawaiian vacation), Johnson posited that consumers represent the attributes in memory at abstract levels (e.g., using entertainment value as the dimension on which to compare stereos and Hawaiian vacations).

Rather than itemizing specific variables that affect particular firms in different industries under varying circumstances, they proposed conceptualizing the environment in terms of its abstract qualities or dimensions (e.g., homogeneity-heterogeneity, stability-in-stability, concentration-dispersion, and turbulence). Olson (1977) pointed out that consumers may use informational cues to develop beliefs about products and that task response (i.e., choice or evaluation) may be a direct function of these mediating beliefs.

Extrinsic attributes (e.g., price, brand name) are not product-specific and can serve as general indicators of quality across all types of products. Price, brand name, and level of advertising are three extrinsic cues frequently associated with quality in research, yet many other extrinsic cues are useful to consumers. Of special note are extrinsic cues such as product warranties and seals of approval. Price, the extrinsic cue receiving the most research attention appears to function as a surrogate for quality when the consumer has inadequate information about intrinsic attributes. Similarly, brand name serves as "shorthand" for quality by providing consumers with a bundle of information about the product (Jacoby Olson and Haddock, 1987).

EMPIRICAL REVIEW

Nashath, Vignes and Thaire, (2013) carried out a study on impact of various factors on customer preference towards soft drinks. Focused was made on finding various independent factors such as brand name, price, quality, task, aesthetics, variety, availability, discounts and offers, brand ambassador, advertisement, eco-friendliness and ingredients on overall customer preference towards soft drinks. They examine various demographical factors that affect the customer preference using multiple regression table and simple frequency table and chi square. From the study it was concluded that all the factors such as brand, taste, aesthetics, variety, availability, discount and offers, brand ambassador, advertisement, eco-friendliness and ingredients except price, quality and availability have significant impact on overall customer preference.

Naseem, Mhlanga, Diagne, Adegbola, and Gnonna, (2013) investigated consumer preferences for various attributes of rice marketed in Benin. Consumer choice theory postulates that products are consumed not for themselves, but for the characteristics they possess that satisfy consumers' greater liking of one attribute over another. In the case of rice, quality attributes, as incentives for both producers and consumers, have important price implications. In this study, it was empirically analyzed that there is a relationship between the price paid by consumers for their choice of rice and its attributes in the markets of Benin using hedonic pricing and discrete choice models of demand. Data was collected from rice-consuming households in four major provinces of Benin, in both rural and urban areas, during 2006. The results of this econometric estimation indicated that there was considerable variability in consumer preferences for different rice attributes across the regions studied. Nevertheless, consumers paid a premium price for observable attributes, such as grain size and breakage. In addition, both urban and rural consumers preferred imported and parboiled rice to domestic and raw rice. The study results showed that implicit prices paid by consumers for both domestic and imported rice were based on quality attributes. These findings have important implications for future breeding programs aimed at making domestic rice more competitive with imported rice.

Shalim and Masood (2010) determined consumer preference for multi attribute hybrid services like tourism so as to enable the state tourism board to deliver a desired combination of intrinsic attributes, helping it to create a sustainable competitive advantage, leading to greater customer satisfaction and positive word of mouth, information, security, choice offered, complaint redress, modes of access and less value should be placed on a variety of sightseeing options.

THEORETICAL FRAMEWORK

The Revealed Consumer Preference Theory

The Revealed Preference Theory, pioneered by American economist Paul Samuelson (1938), is a method by which it is possible to reveal the preferences of consumers by observing their purchasing habits. Revealed preference theory came about because the theories of consumer demand are based on a diminishing marginal rate of substitution (MRS). The diminishing MRS is based on the assumption that consumers make consumption decisions based on their intent to maximize their utility. While utility maximization is not a controversial assumption, the underlying utility functions cannot be measured with great certainty. Revealed preference theory is meant to reconcile demand theory by creating a means to define utility functions by observing behavior.

The main idea behind revealed preference theory is based on the assumption that if the consumer chooses detergent A when detergent B is affordable, and then we say that detergent A is preferred to detergent B. Therefore if the consumer ever purchases detergent B then it must be the case that the detergent A is unaffordable. The theory also tries to estimate consumer evaluation for attributes which are obtained from past behaviour of consumers. It does not require a group of respondents to make commitments to select a particular option. It considers alternatives to the goods in question as observables and essentially embodies existing technological constraints

Theory of Rational Choice

The theory of rational choice by Oliver (1997) can be stated succinctly and cogently. The basic unit of analysis is the consumer, with a set of well-specified preferences. Such a consumer behaves rationally by acting upon his preferences: when facing two opposite courses of choices, he will choose the one that most closely fits her preferences and is the least costly. The individual choice will be transitive and consistent: if he prefers detergent A to detergent B and B to detergents C, he will also prefer A to C. When presented with identical options in identical circumstances, he will make the same choice. In this case the individual compares products perceived performance maximization, makes decisions from clear value preferences in relation to his expectation. The consumer rational choice also comprises attitude components, which in the end represents the basis of forming a preference. This theory gives a model contribution to better understanding of the way consumers are found and providing the necessary means of researching and foreseeing the evolution of consumer preference.

MATERIALS AND METHODS

This research is exploratory in design, to implement the research design for this study, both qualitative and quantitative research approach were employed. Specifically for this study, qualitative approach in the form of interview guide and focus group discussion was used. Quantitative data was collected to make generalizations and understanding of the mechanisms through which the characteristics of the products (detergents) influenced preference decisions of respondents. Purposive and Simple random techniques were used for this study; primary data was collected for this study. Information on extrinsic characteristics such as price, packaging, brand and availability. Intrinsic characteristics which are directly associated with the function of detergents was also elicited from the female employees of the selected institutions. Reliability test was done using the Cronbach Alpha method for the purpose of assessing the consistency of the entire scale. All the questions on the validation were reported based on the alpha score that is above the standard guide of 0.70. Data collected were analyzed using discrete choice model.

RESULTS AND DISCUSSION

Influence of intrinsic characteristics of detergents on consumer preference

The result of the estimated influence of intrinsic characteristics of detergents on consumer preferences is presented in Table 1. Parameter estimate of perceived quality of detergent is negative, indicating that female consumers' preference for detergent would increase without necessary increase in quality of the detergent products. But the variable is not statistically significant. This could be attributed to possible effect of marketing programmes which often exert a considerable effect on consumers' buying decision. Consumers' purchasing decisions are normally based on their own perception and representations of quality. But, quality is a concept that is difficult to define most especially because it is classified as credence attributes-product attributes that are not easily verifiable by consumers. Quality could be derived from other product cues, either intrinsic or extrinsic. Hence, the non-significance of the variable and the negative sign could be attributed to marketing effect on female employee consumers in the sampled university.

Parameter estimate of functional value of detergent indicates a positive and significant influence on preference of female employees' consumers in the sampled universities in the study area. The positive sign shows that a unit increase in functional value of detergent would lead to increase in consumer preference for the products by 0.258. The significance of the parameter estimate signifies the importance of the variable in stimulating high preference for detergents products among female employee of universities. Functional value of detergents relates to washing and stain removing power of the product, gentility on fabric, smell and health risk associated with use of such detergents.

Risk of using detergents exerts a negative and significant ($p < 0.05$) influence on female employee preference for detergents products. Increase in perceived risk associated with the use of detergents in terms of harshness on fabrics and hands would lead to reduction in the level of consumer preference for detergents.

The findings of this study points to the relevance of intrinsic attributes in determining consumer preference for a product such as detergents. Understanding such attributes enable the manufacturers, business men and marketers to deliver a desired combination of intrinsic attributes, which helps to create a sustainable competitive advantage, leading to greater customer satisfaction. This finding corroborates Shalim and Masood (2010).

Table 1:
Estimated influence of intrinsic characteristics

Intrinsic Characteristics	Coeff.	Std.error	z-value	P>/ Z /
Quality	-0.122	0.119	0.103	0.303
Functional value	0.258	0.133	1.94*	0.053
Risk of use	0.212	0.092	-2.35**	0.019
LR chi2(3) = 8.82				
Prob> chi2 = 0.0318				
Pseudo R2 = 0.0249				
Log likelihood = 172.675778				

Source: Authors Computation (2016)

Influence of extrinsic characteristics of detergent on preferences of consumers

Results in Table 2 highlight the influence of extrinsic characteristics on respondents' preference for detergents. Price has a positive and significant ($p < 0.10$) influence on preference of female employee for detergent products. The result indicates a positive relationship between price and preference decision of consumers exists. The results suggest

that female consumers of detergents are generally not sensitive to price of the commodity possibly due to high demand of detergents by female consumers. Price is generally viewed as the amount of money charged for a product or service, or the sum of the values that consumers exchange for the benefit of having or using the product or service (Kotler *et al.*, 2005). The price is affected by the supply and demand of the detergent market and it is a factor that changes when the demand and supply for the detergent product changes. When supply increases, the price will decrease since there will be more of the product in the market and in order to sell it, the suppliers will decrease the price. When demand for the good increases, the price will increase since the consumers will be willing to pay more for the product and the price will increase. Although price is a separate attribute it can also be used as an indication of quality.

Parameter estimate of brand exerts a negative and significant ($p < 0.05$) influence on preference for detergents by female employees of sampled universities in the study area. The result suggests that decrease in preference for a brand of detergent would induce an increase in preference for the detergent. Consumers who are less familiar with a brand tend to evaluate the product based on the brands' attributes. Therefore it can be assumed that the less familiar a consumer is with a brand, the lower the preference for that product and the more the consumer will consider other extrinsic cues. The findings suggest that the manufacturers of various brands should take necessary steps to ascertain the position of their brands. The result also shows that brand of a particular product plays a fundamental function in consumer's perception of a product. It helps in developing a market position, prestige and image of the product (Aaker, 1996).

Parameter estimate of 'packaging' attribute of detergent is found to have a negative influence on female employee choice of detergents in the study area. But the variable is not statistically significant. This signifies that detergent consumers form their preference decision on other characteristic difference from packaging. Although, product quality judgments are largely influenced by product characteristics reflected by packaging between different stages of decision making process. If it communicates high, consumers tend to assume that the product is of high quality. If the package represents low quality, consumers associate this low perception to the product itself (Estiri, Hasangholipour and Yazdani, 2010). Packaging design must therefore ensure that consumer response is favourable since consumers seem to view packaging holistically to ensure that it conforms to his social identity before he purchases a brand of detergents.

Availability of detergent has a negative but insignificant ($p > 0.05$) influence on preference decision of female employees in the study area. Less frequently available detergent may induce preference of consumers and triability of the product, even if the product is not the most preferred.

The findings show that consumers tend to rely more on extrinsic cues during the product evaluation, since they become more aware of them over time. Further, when intrinsic cues do not provide the consumer with useful information, the extrinsic cues are then used as quality indicators. This can happen in situations when consumers have no information or just a little information about the product.

The extrinsic cues influence the consumer in the product evaluation by reminding them about previous knowledge and experience with the product. Consumers tend to rely more on extrinsic cues during the product evaluation, since they become more aware of them over time.

Further, when intrinsic cues do not provide the consumer with useful information, the extrinsic cues are then used as quality indicators. In line with (Zeithaml, 1988), this can happen in situations where a consumer has no information or just a little information about the product such as detergents. Since extrinsic attributes are not product-specific, they can serve as general indicators of quality across all types of products.

Table: 2
Estimated influence of extrinsic characteristics on preference

Extrinsic Characteristics	Coeff.	Std.error	z-value	P-value
Price	0.2778	0.1426	1.95*	0.051
Brand	-0.2381	0.1085	-2.19**	0.028
Package	-0.0469	0.1193	-0.39	0.694
Availability	-0.2422	0.1527	-1.59	0.113
LR chi2(4) = 10.06				
Prob > chi2 = 0.039				
Pseudo R ² = 0.028				
Log likelihood = -173.474				

Source: Data Analysis, 2016

*, **, significant at 10%, 5% respectively

CONCLUSION AND RECOMMENDATIONS

One of the key elements in successful product marketing is to understand the target audience. The target audience must be the focus for the overall marketing message, including the intrinsic and extrinsic characteristics of the product. This applies to all detergents marketing, based on the main findings, the following conclusions were reached. First, functional value of detergent, in terms of its ability to effectively perform its primary role as a 'cleansing agent', is much more important to the female employees of public institutions. While the female employees showed a high preference for this intrinsic attribute, it is important that detergents with good functional value become less risky in relation to its gentility on the users and their fabrics. Second, it could be concluded that preference of female employees for detergents were shaped by the price, brand and availability of the products. This confirmed that both intrinsic and extrinsic attributes of detergents significantly influenced female consumers in the public institutions. This is an important finding with notable managerial value, since these characteristics can be utilized by marketing managers in the context of marketing strategy formulation. As the conclusion for the study has suggested, it is recommended that retailer should stock detergents brand with high functional value. The marketing managers should also "re-educate" the female consumers by underplaying "brand" from being the main reason-why a particular detergent is chosen. Since retail brand may not necessarily be correlated with quality of the products. On the contrary, it seems that gentility of the products on fabrics, the users can be safely correlated with other important benefits for consumers, and this has to be utilized in influencing retail brand-decision making. It is thus recommended that business managers should link up with manufacturers of detergents to pay greater attention to intrinsic value of their products.

Also, it is recommended that managers should take into account that consumers are more willing to purchase detergent brands if they are positively inclined towards them. Business managers should therefore try to influence female consumers by making products available in the market and also provide female employees with detailed information about the benefits that they can expect to obtain from their detergents in terms of functional value, price and benefits to their household.

References

- Achrol, R, Singh, R, Torger, R, & Stem, L, (1983),The environment of marketing channel dyads: A frame-work for comparative analysis,*Journal of Marketing*, 47 (Fall), 55-67.
- Alba, J., & Hutchinson, J. W. (2000). Knowledge calibration: what consumers know and what they think they know, *Journal of Consumer Research*, 27(2), 123 - 156.
- Ajzen, I. (1985). From intention to actions: A theory of planned behavior, *In J. Kuhl & J. Beckmann (Eds.). action – control from cognition to behaviour*, 11-39, Heidelberg: Spring
- Amadi, C. & Ezekiel, M.S. (2013). Factors influencing brand preference of beer consumption in Port-Harcourt Metropolis, *European Journal of Business Management*, 5,(7).76-87
- Becker,T.(2000).Consumer perception of fresh meat quality: a framework for analysis, *British Food Journal*, 102(3),158-176.
- Bradhl, L.(2003).Cue utilization and quality perception with regard to braded beef food quality preference,*Journal of Consumer Marketing* (15),65-75.
- David R.B & James, M.L (1998). Shopping behavior and consumer preference for store price format: why large basket shoppers prefer EDLP”, *Marketing Science*.53,(2),191-208.
- Evans M, Jamal A, & Foxall, G, (2009).*Consumer behavior*, 2nd(ed). John Wiley & Sons Ltd.
- Ezeh, C.I & Onuabuobi, J.C.,(2011).Determinants of consumer behavior and preference to cassava valued added product in Ikwanao local Government of Abia State, *International Journal of Social Science and Humanity*,1,(4),274-276.
- Garvin, D.A. (1983). Quality on the line,*Harvard Business Review*, 65, 101-0109.
- Grunert, K.G., Bredahl, L., & Brunso, K. (2003).Consumer preception of meat quality and implications for product development – a review, Denmark; Aarhus School of Business.
- Ifegwu,K.J & Ajetomobi,O .J (2014).Consumers’ Preference for Cowpea in Nigeria. *International Journal of Agricultural Management and Development*,4,(1): 19-26.
- Jacoby, J, Olson, J. C., & Haddock, R. A. (1971).Price, brand name and product composition characteristics as determinants of perceived quality, *Journal of Applied Psychology*, 55, 570±579.
- Johnson, R.M.,(1987).Adaptive conjoint analysis in sawtooth software conference of perpetual mapping, conjoint analysis and computer intervening ,Ketum, ID. *Sawtooth Software*,253-265.
- Janneke, M.&Jabilyn, N. (2009). How consumer perceive product appearance, the identification of price products appearance attribute, *The Journal of Design*, 3, (3).
- Kardes, F. R., Kim, J., & Lim, J.-S.(2001). Consumer Expertise and the Perceived Diagnosticity of Inference, *Advances in Consumer Research*, 19, 409 - 410.
- Laird, D.A.(1932). How the consumer estimates quality by subconscious sensory impression, *Journal of Applied psychology*,16, (2),241-246.
- Marlia, M., Nasuddir, O. & Fazleem,A.F.(2011).Determinants of consumer preference for rice in Malasia’ *American International Journal of Contemporary Research* ,1(3),159-167.
- Marlia, C.F, Delane, B. & Alda, D.A.(2008).Consumer decision making in a counterfeit Plentiful market: an exploratory study in the Brazilian context ,*Latin American Advances in Consumer Research*,2,109-115.
- Nasath, R.S; Vignes, P. & Tharie, A. (2013).A study on impart of various factors on customer preference towards soft drinks, *Journal of Business and Management*, 37-41.
- Naseem,A; Mhlanga,S.; Diagne,A; Adegbola ,P.A & Gnonna, S.K.M (2013).Economic Analysis ofconsumer choices based on rice attributes in the food markets of West Africa—the case of Benin, *Springer Science+Business Media Dordrecht and International SocietyforPlantPathology* ,1-15.
- Oghojafor, B.E.A; Ladipo,P.K.A & Nwagwu,K.O (2012).Outlet Attributes as Determinants Of Preference of Women between a Supermarket and a Traditional Open Market, *American Journal of Business and Management*, 1,(4), 230-240.
- Olson, J. C. (1977). Price as an informational cue: effects in product evaluation”, *In A. G. Woodside, J. N. Sheth, & P. D. Bennet, Consumer and Industrial Buying Behavior*, 267±286). New York: North-Holland Publishers.

- Olson, J. C. & Jacoby, J. (1972). Cue utilization in the quality perception process, In Venkatesan, Proceedings of the Third Annual Conference of the Association for Consumer Research (pp. 167±179). Chicago: *Association for Consumer Research*.
- Parasuraman, A. Zeithaml, V. & Berry, L. L. (1994). Alternative scales for measuring services quality: a comparative assessment based on psychometric and diagnostic criteria, 70.
- Rook, B & Fisher, V (1995). Normative influences on impulsive buying behaviour, *Journal of Consumer Research*, (22) 305 – 313.
- Sarver, V. T. (1983). Ajzen & Fishbein's Theory of reasoned action: A critical assessment, *Journal for the Theory of Social Behavior*. (13) 155-163.
- Shalim, N.T & Masood, H.S. (2010). An empirical study of tourist preferences using conjoint analysis, *International Journal of Business Science and Applied Management*, 5, (2), 1-16.
- Walter, P.M., (1970). Package for status, *Journal of Marketing*.
- Yakubu, A. A ; Gerba, S.; Jibir, M. & Zubairu, N. (2013). Factors influencing consumer preference for beef in Sokoto metropolis, Nigeria, *International Journal of Applied Agriculture and Apicultural Research*, 9, (1&2), 106-112.

Socio-Economic Factors as Determinant of Mobile Number Portability among Mobile Phone Users in Public Universities in Nigeria

Niyi Israel Akeke

Department of business administration,
Ekiti State University, Ado-Ekiti, Nigeria

Omobola Monsura Ajayi

Department of business administration,
Ekiti State University, Ado-Ekiti, Nigeria

ABSTRACT

Mobile number portability is the window for subscriber to move to another network provider when not satisfied, but still keep his/her number. Specifically, the study evaluated the relationship between socioeconomic factors and intention to port among mobile phone users in public universities in Nigeria. The study covered twelve (12) public owned Universities in Southwest Nigeria; Primary data were collected on socio-economic of respondent using structured questionnaires. Descriptive and inferential statistics were used to analyze the data. Descriptive statistics include frequency counts and simple percentages, while inferential statistics such as logistic regression were used. The findings revealed that among all the variables, expenditure on recharge, income and duration of use were significant at ($p < 0.05$). These findings lead to further conclusion that younger consumers are more likely to port than older ones. The results also provided empirical support for linkages between socioeconomic factors, their subcomponents and mobile number compatibility among consumers.

Keywords: Network portability, sex, income, duration usage and mobile phone users.

INTRODUCTION

The Nigerian telecommunication industry has been liberalized and private-driven, but before the full liberalization in the year 2000, the Nigeria Communications Commission (NCC) in 2013 explained that the number of connected lines had been just a little above 400,000 (NCC, 2013). After thirteen years into the advent of the mobile telephone in Nigeria, about 127.6 million lines have been connected. The advent of this liberalization has brought easiness to the way people reach each other and how businesses are being done, which has also created value for mobile numbers; the owners of mobile numbers will have propagated their numbers to customers, suppliers, colleagues, family and friends (Shin & Kim, 2008). Such businesses and persons may be reluctant to change local telephone companies and forgo their number even if the alternative provider offers better service and/or at cheaper rates.

Other business customers may also be reluctant to give up their number if it involves incurring expenses such as changing stationery or product packages (Bueler & Haucap, 2004). Consumers may also prefer to keep their existing number rather than learn a new number and risk missing calls even in the presence of dissatisfaction with their current service provider (Joshua, Stephen & Graeme, 2000). A 1994 Gallup poll commissioned by Microwave Communications Incorporation (MCI) Telecommunications concluded that 80 percent of residential customers and 90 percent of business customers will not likely change their local telephone company if they could not retain their numbers (Weiss, 1998). The importance of

telecommunication to individual and businesses, has given network providers the opportunity to provide the service. Furthermore, the reluctance of consumer in changing their telephone number has given network provider an hedge to create a lock-in of customer. The development and implementation of mobile number portability has been able to pave way for customer and removing the barrier of losing their number if not satisfied with their network providers.

Mobile number portability (MNP) was introduced into the Nigerian telecommunication industry in April, 2013. It gives opportunity to subscribers to change service providers in the face of dissatisfaction without necessarily losing their initial telephone numbers. This migration from one service provider to another while still keeping the initial telephone numbers is considered a way out of the lock-in of subscribers created by the monopolistic ideology of network providers, because, in the absence of number portability, switching networks requires most users to notify people of change of numbers (Electronic Communication Committee, 2005). With the presence of MNP, it is certain that network providers will be prevented from gaining market power by creating a lock-in for subscribers. Moreover, since the introduction of this scheme (MNP) in Nigeria, it is evident that the cumulative total number of ported lines as of March, 2016 was 654,188(NCC ,2016). However, it is of importance to understand the factors that determines MNP in Nigeria as there are available telephones that have the space for multiple SIM cards.

Moving from one service provider to another requires influence of some factors like individual, families with certain economic, social, educational and demographic characteristics (Gbenmiga, 2005). The presence of these factors and how they affect MNP in Nigerian universities in the Southwest is what this study wants to premise. However, since the introduction of MNP, many studies have examined the determinants of portability with a mixed results, , Birgul (2013) in Turkey; Dominic, Joseph and Rogers (2014) in Kenya; Carroll, Howard, Peck and Murphy (2002) in Britain; Shin and Kim (2008); David (2012) in Hong Kong; Xiapong and David (2015) in Britain; Kumaresh and Praveena (2010) in India; Daniel, Alfred and Solomon (2013) in Ghana; Kofi and Oscar (2013) in Ghana; Reddi (2014) in India; Simon and Robert (2015) in Ghana and Pirc (2005) in Spain. As Nigeria communication industry has just introduced the scheme, there is dearth of research on determinants of MNP and in order to ascertain the universality of result of above studies, further investigation is necessary in a country like Nigeria with a large market for communication usage. Hence, this study becomes imperative. It is hope that this study will serve as a good reference point for decision makers in understanding the reasons responsible for customers' portability.

LITERATURE

Number Portability

The introduction of number portability is one of the most active policy challenges facing the telecommunications industry worldwide (Daniel, Alfred and Solomon, 2014). The ability to retain a telephone number while switching carrier is known as MNP (Oliver, 2009). Mobile Number Portability means that a customer can keep his/her existing mobile telephone number when he/she changes his/her service provider. Mobile Number Portability is also simply keeping your mobile phone number when moving from your existing service provider to a new provider if perceived that the quality of service offered by the old service provider is not satisfactory (Bluehler & Haucap, 2004).

MNP can be described as an ability to retain subscriber's phone numbers while changing the subscription from one mobile service provider to another. It permits competition by allowing consumers to switch service providers, still maintaining their old mobile phone number. Mobile number portability (MNP) lets subscribers opt for the best service, from one operator

to another operator, and roaming facility from one network to another network provider using the same mobile number. Consequently, the service providers will need to aggressively participate and offer novel and superior customer services, to hold on to and increase their subscribers at large (Solomon, 2010). Oloja, Kuboye and Chukwuma (2013) defined MNP as a telecommunication network property, which allows subscribers to retain their mobile phone numbers when changing from one network provider to the other. It serves as the yardstick for increasing competition and for improving the quality of service among network providers; because subscribers have the freedom to migrate from one network provider to another network provider. Mobile number portability is the ability to take your existing mobile number to a new service provider. Mobile number portability is not a service feature or a product; it is the removal of a barrier to choosing the provider or 'service that suits you.

Theoretical Framework

Theory of Planned Behaviour

This study was underpinned by the theory of Planned behaviour, the theory which provide a framework to study and explain behaviour from intentions in virtually any human behaviour context by Ajzen (1991). Thus, intention and perceived behavioural control directly predict behaviour. Since this study could not lay hands on the number of ported consumer due to service providers protection to information, this study decides to elicit the intention of subscribers on portability and looking at factors like Age, income, Expenditure on recharge, educational level, sex and duration of usage and how they will influence portability.

Empirical Review of related studies

Age and Switching Behavior

Birgul (2013) carried out a study on the effect of mobile number portability: case of Turkey, in which the study identified the model and the factors affecting the MNP in Turkey. The questionnaire was developed based on previous researches and was modified according to a pilot study applied to give end-users. It was administered to a total of 1275 Internet users and 1250 usable data were collected. Regression analysis results indicated that the overall model is statistically significant, where the factors affecting the MNP were age, contract type, operator type, and satisfaction level. This study showed that the specified model can be used by managers of telecommunications service providers in order not to be affected by the MNP.

Dominic, Joseph and Rogers (2014), in "determinant of consumer switching behaviour in the mobile telephony industry in Kenya", studied the factors that influenced consumer switching behaviour, that compel subscribers to port their cell phone numbers as they migrate to new service providers. Regression results showed a strong relationship between the consumer intention to switch and the Push Determinants i.e. the duration and the cost of porting. Other determinants identified are the Swayer Determinants which include the period of usage, age, and the average amount spent on airtime. These were found to have a minimal influence on the intention to switch. Furthermore, results indicated that 68% of the respondents had the intention of switching, but the existing legal framework was found to be ineffective in facilitating an increase in the porting rate.

Shin and Kim (2008) studied forecasting customer switching intention in mobile service: An exploratory study of predictive factors in mobile number portability and found that age has a stronger association with switching compared to education, and that younger subscribers were more likely to switch mobile carriers than older subscribers.

Educational Background and Switching Behaviour

David (2012) studied the analysis of customer switching internet banks in Hong-Kong. There were 557 respondents participating in this Internet survey and out of which 271 respondents' background matches exactly the definition of "professionals" group, in this study, it was found that more educated people were likely to switch banks

Ranganathan, Seo, and Babad (2006) discovered that subscriber churn had become a critical issue for telecom operators in India. In their work, they studied customers with no contractual obligations, and they studied the demographic correlation with their switching behaviour, based on data on over 30,000 mobile users. The study result showed significant associations between mobile users and their service usage, service bundling and their switching behaviour. Age and gender was also seen impacting subscriber churn.

Shin and Kim (2008) studied forecasting customer switching intention in mobile service: An exploratory study of predictive factors in mobile number portability and found that subscribers with higher levels of education are relatively more prone to switching mobile carriers than those with lower educational levels.

Income and Switching Behaviour

Daniel, Alfred and Solomon (2014) carried out a study on the effect of the introduction of the MNP in Ghana on subscribers. However, from consumer viewpoint, they summarize the benefits of the Mobile Number Portability system with five major themes. To achieve the objective of the study, the logistic linear regression model was used to estimate the impact of Customer service, service problems, usage costs and income on the switching preference of network subscribers. The regression results indicated that the income of the respondents has a positive relationship with switching behaviour.

Kofi and Oscar (2013), in Mobile number portability: on the switch trends among subscribers within the telecommunication industry in a Ghanaian city, studied the proliferation of mobile telecommunication service providers in the country has prompted concerns about service quality within the industry. Mobile Number Portability was introduced by the National Communications Authority (NCA) as part of a broader campaign aimed at ensuring uninhibited switch from one telecom service provider to another. With a combination of both qualitative and quantitative investigative techniques, an initial attempt is made by this paper to produce results achieved through a representative sample of 200 respondents of different network customers to determine the pattern of switch from one service provider to another. Findings suggested that the instrumentality of income has a positive relationship with switching behaviour

Reddi (2014), in the impact of MNP on consumer behaviour, with reference to the Tirupati city of Andhra Pradesh, studied consumer awareness and preference about mobile number portability and tried to find out the factors, which motive user to opting MNP. The research design used in this study was a descriptive nature. The data were collected from 259 mobile users from different service operators and collecting of the customer opinion survey was taken among the selected users. The collected data included personal detail of existing operator. The MNP awareness motivated factors to choose operator, etc., the data were analysed by percentage, chi-square test was applied. The result found out that income is significantly related to switching.

David (2012) studied the analysis of customer switching internet banks in Hong-Kong and behaviour using correlation analysis with 367 sample size and finds out that higher income

earners place more importance on service provision i.e. were likely to switch when not satisfied

Simon and Robert (2015) studied the influence of demography, Religiosity and porting behaviour on switching behaviour of mobile subscribers in Ghana. 736 respondents were randomly selected and binary logistic regression was used for the analysis of data. The result revealed that income was not significantly related with porting.

Ranganathan, et al. (2006), studied switching behaviour of mobile users and users' relational investments and demographics matter who found family income as significant predictor of switching behaviour of mobile subscribers. Relatively, consumers who earn more can bear the financial cost of switching and therefore were more likely to switch when dissatisfied with current service provider than lower income earners who may perceive the monetary cost involved in switching as a barrier to switching.

Daniel, Alfred and Solomon (2014) studied mobile number portability in Ghana and its effect on subscribers. The result revealed that there was a negative relationship between willingness to switch and the income of the respondents and this was also statistically significant. The negative relationship between willingness to switch and the income of customers indicated that as income of customers increases, they will not be willing to switch but remain with the same network operator.

Duration of Usage and Switching Behaviour

Dominic, Joseph and Rogers (2014), in determinant of consumer switching behaviour in the mobile telephony industry in Kenya, studied the factors that influenced consumer switching behaviour; and that compel subscribers to port their cell phone numbers as they migrate to new service providers. Regression results showed a strong relationship between the consumer intention to switch and the "Push Determinants" i.e. the duration and the cost of porting. Other determinants identified were the "Swayer Determinants" which include the period of usage, age, and the average amount spent on airtime. These were found to have a minimal influence on the intention to switch. Furthermore, results indicated+ that 68% of the respondents had the intention of switching, but the existing legal framework was found to be ineffective in facilitating an increasing the porting rate.

Lopez, Redondo, and Oliván (2006) studied the impact of customer relationship characteristics on customer switching behavior in Kenya. The study uses 643 sample size, logistic regression was used for the analysis of the data and the authors found that relationship length is a key predictor of consumer switching behaviour and that consumers who stayed in a longer relationship with current service providers were also less likely to switch to a new one. As consumers stayed longer in relationship with service providers, they were able to use the firm offering more and develop an attachment.

Pirc (2006), in Spain, studied the Mobile telecommunications service sector. By using the consumption system perspective on mobile services and mobile phone, he provided the explanation of the factors of Customer switching, with 1000 sample size and nested multiple regression analysis was used. It was found that the duration of services usage effect on switching intentions was curvilinear (positive linear and negative quadratic).

Sex and Switching Behaviour

Ranganathan, Seo, and Babad (2006) discovered that subscriber churn had become a critical issue for telecom operators in India. In their work, they studied customers with no contractual obligations, and they studied the demographic correlation with their switching behaviour, based on data on over 30,000 mobile users. The study result showed significant associations between mobile users and their service usage, service bundling and their switching behaviour. Age and gender was also seen impacting subscriber churn.

Expenditure on Recharge and Switching Behaviour

Dominic, Joseph and Rogers (2014) in determinant of consumer switching behaviour in the mobile telephony industry in Kenya, studied the factors that influenced consumer switching behaviour; that compelled subscribers to port their cell phone numbers as they migrate to new service providers. Regression results showed a strong relationship between the consumer intention to switch and the "Push Determinants" i.e. the duration and the cost of porting. Other determinants identified were the "Swayer Determinants" ,which include the period of usage, age, and the average amount spent on airtime. These were found to have a minimal influence on the intention to switch. Furthermore, results indicated that 68% of the respondents had the intention of switching, but the existing legal framework was found to be ineffective in facilitating an increase in the porting rate.

RESEARCH METHODS

This study adopted survey research design to achieve all the objectives of this study. The choice of this research is borne out of the fact that quantitative researches usually fit with deductive approaches in which there is a theory and or hypothesis, which justifies the variables and the objective of the research (Borredgoet Streveler, Miller and Smith, 2009). Since this study was anchored on fresh gathering of data, survey research design was the most appropriate. One of the main purposes of the quantitative research is for the researcher to use a specific population and project the findings onto a larger population using a very objective process (Thorne and Gissen, 2002). Responses were sought from staff and students of public universities in south west Nigeria on factors enumerated in the research instruments for the purpose of itemizing the incidence of socioeconomic factors and portability. The research instrument used for this study was the questionnaire adapted from the work of Olatokun and Nwonne (2012). The major modification of the research instrument is in the area of switching for portability.

Population, Sample and Sampling Techniques

The population of the study covered all the staff (academic and non-academic) and students of the selected public universities in Southwest Nigeria. A total number of 37,918 and 275, 083 of staff and students, respectively, constitute the total population of the study. The population figures were gotten from each sampled institution. All of these were gotten for the year end 2014.

Sample size and Sampling Techniques

Mugenda and Mugenda (2003) explained that target population should have some observable characteristics, to which the researcher intends to generalize the results of the study. Considering the enormity of the population of this study, and in order to avoid voluminous data, the total sample size for the study was 1522. This was achieved using the Krejcie and Morgan (1970) sample Table.

Sampling Technique

Probability and non probability sampling techniques were used for this study. The non

probability sample techniques used was the homogenous purposive sampling technique for the selection of two universities (one state university and one federal university) from each state in the Southwest, Nigeria, based on the high number of students' enrolment and by JAMB choice, which were a proxy to a large number of staff as well.

Method of Data Analysis

Data for the study were analyzed using descriptive and inferential statistics. Descriptive statistics were used to present and analyze demographic data of respondents. The inferential involve the use of binary logistic model, which was applied to all the variables of the study objectives. Parameter estimates of the model were useful in testing the hypotheses of the study following the stated research design. The model was tested using non-linear estimation techniques.

RESULTS AND DISCUSSION

Response Rate of Research instrument

A total of one thousand five hundred and twenty two (1522) copies of the questionnaires were circulated, 187 and 1335, respectively among staff and students of public owned universities. Out of the one hundred and eighty seven (187) copies of the questionnaire distributed among the staff of sampled universities, one hundred and seventy nine were found useful. This represented a response rate of 95.72% from the staff of sampled universities in the study area. However, one thousand two hundred and forty (1240) copies of the questionnaires out of one thousand three hundred and thirty five (1335) distributed copies were found useful; this was due to the improper filling of the questionnaire. This represented a response rate of 92.88%. The difference in response rate showed that the staffs of the sampled universities were more responsive than the students. Overall, a total of one thousand four hundred and nineteen (1419) copies of questionnaires were found useful for analysis, representing 94.3% of distributed copies of the questionnaires.

Relationship between socioeconomic factors and intention to port

The results of the logit model to explain the relationship between socioeconomic factors and intention to port are presented in Table 1.1 The null-hypothesis that all variables can be dropped was rejected at less than the 1% level of significance. Since the log odds of the outcome were modeled as a linear combination of the predictor variables, the marginal effects were also computed to interpret the magnitude of the coefficients. Socioeconomic variables, such as sex ($\beta = -0.61$, $z = -3.49$, $p < 0.01$), age ($\beta = -0.31$, $z = 2.66$, $p < 0.01$), expenditure on recharge ($\beta = 0.29$, $z = 2.63$, $p < 0.05$), income ($\beta = 0.27$, $z = 2.13$, $p < 0.05$) and duration of use ($\beta = -0.38$, $z = -3.54$, $p < 0.01$) were significantly related to intention to port among phone users.

Parameter estimate of sex is negative and significantly related to intention to port among mobile phone users in public owned universities. The result indicated that female mobile phone users in public owned universities were more inclined to port than male. For every unit increase in the number of female subscribers, there is likelihood of 7% increase in porting.

Coefficient of age is negative and significant, suggesting that younger mobile phone users were more likely to port than older ones. The result also implies that the likelihood of an older subscribers porting decreases by 3%, *ceteris paribus*.

Parameter estimate of monthly expenditure on recharge of mobile phone exerts a positive and significant effect on intention to port.

A positive sign is associated with monthly income variable, implying that increase in income would lead to increase in mobile number portability by magnitude of less than 1%.

Income is the fourth significant predictor of switching behaviour. The result indicates that income positively influences porting behaviour or that the higher the income a respondent earns, the more likely he/she is to port than those who earn lower incomes.

Coefficient of duration of use shows a negative but significant relationship with intention to port. Increase in number of years of relationship with mobile service provider may lead to decrease intention to port by 4%.

Table 1.1: Estimated relationship between socio-economic factors and intention to port

Variables	Estimates	Std. Err.	Z	Marginal effect
Sex	-0.619	0.177	-3.49***	-0.069**
Age	-0.306	0.115	-2.66**	-0.035***
Educational level	0.079	0.104	0.75	0.502
Expenditure on recharge	0.297	0.113	2.63**	0.034**
Income	0.265	0.124	2.13**	0.003**
Duration of use	-0.382	0.108	-3.54***	-0.043***
Constant	3.029	0.489	6.19***	

N = 1419

LR chi2 (6) = 42.98

Prob > chi2 = 0.0000

Log likelihood = 433.73

Y = pr (d5) (predict)

= 0.870205

DISCUSSION OF FINDINGS

Relationship between socio-economic factors and intention to port among mobile phone users.

Sex is positive and significant, however in the course of the running of the data we analyzed the sex separately and found that more female had intention to port than the male. As noted earlier, this result was in conflict with the study of Ranganathan *et al.* (2006), which showed that female is less likely to switch than male. This study based its findings on what is termed 'techno-phobia'- fear and anxiety of using mobile technologies, which was found to be more rampant among females in their study area. This factor, according to the study, tends to discourage female mobile subscribers from switching. Since fear and anxiety factors have not been established for female telecom subscribers in this study. The finding of this study holds that female subscribers were more likely to port than male. Plausible reason for this finding may include the observed multiple relationships between a female and different male friends. Secrecy of communication activities of female in public owned universities may likely results in their intention to port to different mobile phone service. However, this assertion is subject to further empirical test. Meanwhile, Shin and Kim (2008) found that gender may not affect subscribers' decisions to port. This contradictory empirical evidence implies that the role of gender in porting behaviour might be different for specific research contexts and consumers. Also, differences in mobile commerce and advertising diffusions may also result in different porting behaviour among male and female consumers.

Age has been found to be negative but significant. Without doubt, suggesting that younger mobile phone users were more likely to port than older ones. This is in line with the findings of Dominic *et al* (2014), in Kenya and Birgul (2013), in Turkey. Young mobile users use mobile

services to satisfy their social and leisure needs, reinforced group identity, and add value to their lifestyles. Therefore, younger subscribers were more likely to switch mobile carriers than older subscribers (Shin and Kim, 2008).

Expenditure on recharge refers to the money spent on recharge cards monthly and it was found not only to be significant but also positive. This suggests that increase in monthly expenses on mobile phone recharge could increase portability among consumers. As consumer expenses on mobile phone recharge increases, consideration of porting to another service provider with reduced charges may increase among subscribers since financial stability of individual is crucial to loyalty to a particular service this is in line with the study of (Dominic *et al*, 2014). Furthermore, income was positive and significant to portability. However, this suggested that the higher the income a respondent earns, the more likely he/she is to port than those who earn lower incomes. The finding of this study is consistent with the work Daniel *et al* (2015) and Reddi (2014). Relatively, consumers who earn more can bear the burden of porting and therefore are more likely to port when dissatisfied with current service provider than lower income earners who may feel reluctant to port due to fear of monetary cost even if charge is declared free. Duration of usage was found to be negative but significant. Duration of firm-customer relationship was a significant predictor of porting behaviour. Specifically, the longer a respondent's relationship with a service provider, the less likely he/she is to port. This implies that the longer a service provider is able to keep relationship with customers by satisfying them and meeting their needs and requirements, the less likely will such customers completely port to competitors. These findings corroborate previous studies that when service providers are able to keep profitable customers longer in business relationships by meeting their needs and expectations, the more the customers are likely to become active users of the firm's services Kofi and Oscar (2013), feel committed to current service provider Rehana *et al* (2012), and therefore, will be less likely to switch to new service providers (Daniel *et al.*, 2014; Chiu, Hsieh, Li and Lee, 2005). Furthermore, duration of use which indicates years of relationship suggest strength of firm-customer relationship as an antecedent of consumer intention to remain loyal to a service provider. Studies such as Lopez, Redondo, and Olivan (2006), Pirc (2005) have established that the strength of the relationship between a firm and its customers is recognized as extremely important cornerstone that emerges from active consumers' involvement in the use of services, and their cognitive and emotional commitment to service provider. The more a consumer frequently uses a variety or bundles of services of a firm and feels emotionally attached to the service provider, the stronger will be the firm-consumer relationship. This could also be ascertained in this study as the most patronized network is MTN with respondent who has 10-13 years relationship being the more among the sampled respondents. Educational level was found to be positive but insignificant, this result was in agreement with the study of David (2012) done in Hong-Kong. This could be as a result of the liberation in the telecommunication industry in Nigeria; which made telecommunication available and affordable to all its citizens in respective of their social, economic and educational status.

Hypotheses Testing

In order to test for the hypotheses in this study, F statistics will be more appropriate since the data in the study were ordinal in nature and the variables used in this study were categorized in to socioeconomic, push-pull-mooring factor.

Test of Hypothesis 1

There is no significant relationship between socioeconomic factors and the intentions to port among mobile phone users in public universities in Nigeria.

The results in Table 1.2 below clearly allows for the rejection of the null hypothesis that there is no significant relationship between socioeconomic factors and intention to port. This is due to the value of p being less than the 0.05 significance level.

Table 1.2 Test of Hypothesis

Source	DF	MS	Pr > F
	20	13.78	0.0000
Residual	1185		
Total	1205		

CONCLUSION AND RECOMMENDATION

From the results of data analysis, this study empirically concluded that due to the influence of socioeconomic factors, the determinants of the MNP were not a unified construct but rather one with both positive and negative switching barriers. Demographic factors such as gender and age have a negative influence on intention to port while economic factors of individual respondents such as income and expenditure exert positive influence on intention to port. These findings lead to further conclusion that younger consumers are more likely to port than older ones. The results also provided empirical support for linkages between socioeconomic factors, their subcomponents and mobile number compatibility among consumers.

References

- Birgul, K. (2013). Effect of Mobile Number Portability: Case of Turkey. *International Journal of Business and Social Science*, 4(14), 200-213
- Borredgoet, M., R.A. Streveler, R.L. Miller, and K.A. Smith. (2009) A new paradigm for a new field: Communicating representations of engineering education research. *Journal of Engineering Education*, 97 (2), 147-62.
- Buehler, S. & Haucap, J. (2004). Mobile numbering and number portability in Ireland. *Journal of Industry, Competition and Trade*, 4(3), 223-238, A report to the ODTR, Ovum: London. V
- Chiu, H.C., Hsieh, Y.C., Li, Y.C., & Lee, M. (2005). Relationship marketing and consumer switching behavior. *Journal of Business Research*, 58, 1681-1689.
- Daniel, O., Alfred, S., & Solomon, F (2014). Mobile Number Portability in Ghana: Its Effect of Subscribers. *European Journal of Business and Management*, 6 (28), 10-17
- Daniel, O., Alfred, S., & Solomon, K. (2014). Mobile number portability in Ghana: its effects on subscribers. *International journal of advanced research in management and social sciences*, 2 (12), 1-18
- David, S.Y. (2012). An Analysis of Customer Switching Internet Banks in Hong Kong. *The Journal of Global Business Management*, 8 (2), 114-125
- Dominic, O., Joseph, N., & Rogers, M. (2014). Determinant of Consumer Switching Behavior in Mobile Telephony Industry in Kenya. *International Journal of Business and Management*, 3(5), 201-212
- ECC (2005). Implementation of Mobile number Portability in CEPT countries. Electronic Communications Committee within the European conference of Postal and Telecommunications Administration. ECC report 31 1-16.
- Gbemiga, J. A.(2005). Socio-economic factors associated with Urban- Rural Migration in Nigeria. *J. Hum. Ecol.*, 17 (1) 13-16
- Kofi, A. B., & Oscar, O. O (2013). Mobile Number Portability: On the Switching Trends among Subscribers within the Telecommunication Industry in a Ghanaian City. *Communications of the IIMA*, 13 (4), 75-90
- Kumaresh. K. & Praveena, S. (2010). Empirical Analysis of Consumer Switching Behavior Towards Mobile Number Portability. *Journal of Research in Commerce and Management*, 1(11), 99-110
- Lopez, J.P.M., Redondo, Y.P., & Oliván, F (2006). The Impact of Customer Relationship characteristics on Customer Switching Behavior," *Managing Service Quality* 16 (6), 556-576
- Mugenda, O. M., & Mugenda, A. G. (2003). *Research Methods: Quantitative and Qualitative Approaches*. Nairobi: African Centre for Technology Studies.

NCC. (2016). NCC Industry Statistics. Retrieved from

http://www.ncc.gov.ng/index.php?option=com_content&view=category&id=65&Itemid=67.

Oliver, L. (2009). Number portability in emerging markets. [Online] Available:

<http://www.iccuk.com/download/papers/NP-in-Emerging-Markets.pdf> (October 30, 2013).

Pirc, M. (2005) .Mobile service and phone as consumption system - the impact on customer switching. Universitat Pompeu Fabra, Barcelona.

Ranganathan, C., Seo, D., & Babad, Y (2006). Switching behavior of mobile users: do Users relational investments and demographics matter?. *European Journal of Information systems*, 15 (3), 269-276

Reddi, M. N. (2014). Impact of MNP on Consumer Behavior With Reference to Tirupati City of Andhra Pradesh. *Journal of Business and Management*, 16(11), 33-39

Rehana, K., Saifullah ,Q., Farasat, A. S., & Hassan, H. (2012). Factors influencing the customer's satisfaction and switching behavior in Cellular services. *Interdisciplinary Journal of Research in Business*, 2 (1) 15-25.

Shin, D.H., & Kim, W.Y (2008). Forecasting customer switching intention in mobile service: An exploratory study of predictive factors in mobile number portability," *Technological Forecasting & Social Change* , 75 (6), 854-874.

Simon, G. N., & Emmanuel, K. O. (2015). A Theoretical Model for Explaining Subscribers'Intention to Switch Back in Mobile Telecommunication Industry: Implications for Management. *Management and Organizational Studies journal* 2 (1), 107-119.

Thorne, M., and M. Giesen. 2002. *Statistics for the behavioral sciences*. New York: McGraw-Hill.

Xiaoping ,H., & David, R. (2015). Why Do More British Consumers Not Switch Energy Suppliers? The Role of Individual Attitudes. EPRG Working Paper 1515, Cambridge Working Paper in Economics 1525.

An Analysis of the Effects of Brexit on Korean SMEs

Kim Dae Jong

Sejong University, Korea

ABSTRACT

The purpose of this paper is to examine the impact on Korean SMEs after the Brexit . . The research method used an industry association analysis. The results of the study are as follows. First, total exports in 2015 were \$ 519.9 billion, while exports to the UK were \$ 7.4 billion. Exports to the UK are about 1.4% of Korea's total exports. The amount of damage to the total gross domestic product of Korea is estimated to be about 1.6 trillion won. SMEs account for about 56% of the total manufacturing output in Korea and about 12% of UK exports. Second, the loss estimate for SMEs is estimated to be W940bn. The amount of about 1 trillion won is a large amount, so anyone potentially affected will have to prepare. Policy implications are as follows: First, SMEs should move from export-oriented management to domestic-oriented management. Second, the export window should be unified to help SMEs export. The significance of this paper is to analyze the impact of small firms on SMEs.

Keywords: Brexit, FTA, SMEs, international input output analysis

JEL Classifications: F13, F14

INTRODUCTION

The brake seat was confirmed. In the next two years, the UK will withdraw from the EU. France and Germany are urging Britain to withdraw as soon as possible. British citizens also demanded a resurgence, saying that Brestsch was deceived by the inconvenience of his people traveling to Europe and his false promises in the opposition.

However, it is impossible to retake the election, and the new prime minister has been elected as the leader of the Brexit. This paper is an empirical analysis of how the Brexit affects the Korean economy. In this paper, we examine the economic effect and the influence of Korean SMEs on the balance sheet by analyzing the international input and output.

The academic background of this paper is analyzed by using a CGE model and gravity equation. However, this paper can use an international input output model to ascertain which industry contributes to GDP growth through trade. GDP growth due to total trade in Korea can be seen.

The purpose of this study is to examine the effect on Korean banks, how much small businesses suffer, which industries are vulnerable, and to urge the government to take preemptive measures against vulnerable sectors. Industry-related analysis tables are used for various studies such as the total output of each country, the amount of exports, the amount of imports, employment, and the analysis of intermediate inputs.

The composition of this paper is as follows. Section II reviews existing literature. Chapter 3 explains the industry-related analysis model and explains the ripple effect. IV. Data and statistics show the data of the Bank of Korea and Small and Medium Business Administration. In Section V, empirical analysis results, we analyze the results of industry association analysis and basic statistics. Chapter VI summarizes this paper and mentions policy implications. We discuss the limitations of research and future research themes.

RESEARCH OF EXISTING LITERATURE

From most of the previous research on the CPTPP between the Korea and China FTA, etc., there are no scholarly papers related to this issue because it is a recent issue. However, SC First Bank claimed that exports to the UK accounted for 4% of domestic exports on June 6, 2016, and that the proportion of FDI was only 1%. And that the impact will be great in the market. SC Bank lowered its gross domestic product growth rate by 0.1% to 2.4%. The figure is expected to reach 2.7 % in 2018, down 0.3 percent. Previous studies on CPTPP and Korea-China FTA, which have been studied previously, are supplemented

A study by Sung Hye-kyung (2015) discusses the dynamic economic effects of CPTPP and TTIP on Korea, China and Japan. This paper explains that if the CPTPP is put into effect, it is estimated that the GDP is about -0.1~4% when Korea participates, -0.1% ~0.06% in China, and 0.5-0.6% in Japan. Korea's participation not only requires CPTPP participation but also shows that Korea's participation can be positive for Northeast Asian countries. Han Min-jeong (2013) noted that the CPTPP, which started with four regional trade agreements, expanded to a large-scale trade agreement with the active involvement of the United States' and Japan's willingness to participate. The paper is thought to be based on the steady demand of the United States and the size of the Asia - Pacific region, and the US - led CPTPP agreement is expected to be based on an existing FTA. He also explained that the United States, which is leading the way in the field of e-commerce, is expected to positively prove its advantages. Hong Un-seong (2013) And to influence trade rights. He noted that Korea is considering joining the Pacific Rim partnership agreement. "China has shown strong support for ASEAN + 3, and negotiations are underway between ASEAN + 3 and ASEAN + 6. Korea's accession will have a major impact on East Asian economic integration and trade rights. " This paper is a study on the effect of trade creation on the entry of other trade rights in Korea. Using empirical research and a gravity model, it was analyzed that between 1990 and 2011, it would be beneficial for Korea to join other trade territories using trade data from 22 countries.

Kim Gyu-hwan (2013) pointed out that Korea's real GDP will increase by 2.5 ~ 2.6% when it joins the CPTPP, and it will decrease by 0.11 ~ 0.19% if it does not join. Petri, Zhai and Plummer (2011) argued that the total welfare level of the United States at the time of the CPTPP would increase to about \$ 150- \$ 307 billion by 2025. They analyzed this using the CGE model. Kim Dae-jong (2014) argued that Korea's CPTPP subscription would increase US and Japanese GDP by about 2.1%. He pointed out that Korea needs to participate in the economic blockade led by the United States, and that CPTPP is the nature of the US - Japan FTA from the US perspective. By Choi Byung-il (2013), they referred to the Korea-China FTA and The Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) as the pending issues of the new government, and presented basic directions for each issue. He insisted that the Korea-China FTA should be concluded at a "comprehensive and high level" in order to secure future growth engines through China's preemption ,and protect the interests of Korean companies in China. Also, early participation in the CPTPP is desirable to maximize the benefits of CPTPP participation and to avoid costs associated with delayed participation. Song et al. (2008) pointed out that the symmetry of the relative size of the trading partner, which has been found to have a strongest effect on trade volume in estimating the gravity equation, has no significant effect on economic cohesion. In this paper, we have found that the number of gravitational units used in gravity theory, rather than trade concentration, is more appropriate as a determinant of economic cointegration.

RESEARCH MODEL

This paper used the Korean Banking Industry Association Analysis (2011) and International Input and Output Analysis (WIOD), which are issued once every five years (2012), Choi, Nam-gyun (2013), and Lee, Heung-bae (2014). The method of industrial association analysis is as follows:

This paper employed the 2011 Inter industry Analysis issued only every 5 years by Bank of Korea and the papers by Kim Dae-Jong (2014) and Choi Nak-Gyun (2013). The analytical method is as follows. The inter industry relations table illustrates the final demand and the form by which the gross output is distributed to other industries. For example, the total output, X₁, of Industry 1 is distributed to Industry 1 through Industry n. The rest is distributed to fulfill the final demand, Y₁, but M₁ must be included in total output to fulfill intermediate and final demands. In other words, the following is true for Industry 1.

$$X_1 = \sum_{k=1}^n x_{1k} + Y_1 - M_1 \quad (1)$$

Table 1. Basic Structure of Inter-Industrial Analysis of Korea and uk

40 countries, in current prices			Industry 1	Industry 2	Industry 3	Industry 4	Total Output
(industry-by-industry)			uk	uk	uk	uk	uk
(millions of US\$)	Country	Industry Classification	c1	c2	c3	c4	c5
Industry 1	KOR	c12	3	7	154	2	
Industry 2	KOR	c24	102	145	128	6	
Industry 3	KOR	c8	229	145	160	22	
Tariff	KOR		2	1	7	1	
Total Input	KOR	c20					

Source: World InputOutput Database(WIOD) Inter-country Input-Output Table for 2011

To express production activities of each industry, generic production factors, including intermediate goods, purchased from other industries were expressed as expenditure. In Industry 1, intermediate goods in quantities of , to were required from Industry 1, Industry 2 to Industry n.

Any residuals became part of added value, v₁, created from Industry 1 as generic production factors such as labor and capital. In other words, they are expenditures to produce quantity x₁ in Industry 1. However, since this is an interindustry analysis between two countries, added values are perceived as tariff. Consequently, the following equation was attained.

$$X_1 = \sum_{k=1}^n x_{k1} + V_1 \quad (2)$$

In domestic interindustry analysis, the section illustrating intermediate demand and input is an internal sector. Later, the section that records final demand is divided into external sectors. Then, the impact variance of external sector on the entire industry can be analyzed with the mutual interrelationship in the internal sector. Here, the approach was an interindustry analysis between Japan and Korea.

In equation, $X_i = \sum_{k=1}^n x_{ik} + Y_i - M_i$ if d is denoted as industries imported from Japan and m as Korea's industries, the following equation would be the result.

$$x_{ij} = (a_{ij}^d + a_{ij}^m)X_j, Y_i = Y_i^d + Y_i^m \text{ where } M_i = \sum_{j=1}^n a_{ij}^m X_j + Y_i^m \quad (3)$$

Substituting Equation (3) in $X_i = \sum_{k=1}^n a_{ik} + Y_i - M_i$ gives the following supply and demand balance equation.

$$\begin{aligned} a_{11}^d X_1 + a_{12}^d X_2 + \dots + a_{1n}^d X_n + Y_1^d &= X_1 \\ a_{21}^d X_1 + a_{22}^d X_2 + \dots + a_{2n}^d X_n + Y_2^d &= X_2 \\ a_{n1}^d X_1 + a_{n2}^d X_2 + \dots + a_{nn}^d X_n + Y_n^d &= X_n \end{aligned} \quad (4)$$

In vector form, there is $A^d X + Y^d = X$. The solution to equation of x becomes inverse matrix $X = (I - A^d)^{-1} Y^d$, and this result could be exploited to calculate the production effect of each industry based on ΔY with the equation. $\Delta X = (I - A^d)^{-1} \Delta Y$

One increment of the industry is denoted as increase in, and therefore, the effect by each industry can be estimated.

This study employed international interindustry analysis method announced in 2013, i.e. Interindustry input-output analysis. As mentioned before, is assumed to be added value, and in between X and V is the equation. $V_i = v_i X_i$. In vector form, the equation would be as follows.

$$V = A^v X \quad (5)$$

Here, is a diagonal coefficient matrix, where the coefficient is a diagonal element.

Unlike interindustry analysis, international input-output analysis divides industries into 35 types and sectors. The 35 industries are arranged in horizontal and vertical alignment and the impact of each industry on the aggregate industries was analyzed. In other words, ΔY induces output ΔX from each industry, and $\Delta V = A^v \Delta X$ calculates the series of development by ΔX .

Substituting $\Delta X = (I - A^d)^{-1} \Delta Y$, the production effect of ΔY , we arrive at the following equation.

$$\Delta V = A^v \Delta X = A^v (I - A^d)^{-1} \Delta Y \quad (6)$$

Using Equation (6), the induced amount of input, ΔY , in other industries can be calculated.

When measuring the effect of one industry on other nation, the exogenous specification technique could be used. Production induced effect is the impact of the industry of a nation on the total output of another nation.

DATA AND STATISTICS

2013 BOE input table and the proportion of SMEs

<Table 1> Bank of Korea Industry Input output Table(one million won, %)

Product	Total Exports	Total Product	Small Business The Total Revenue Ratio	Small Product	Large Product
Chemicals	88,587,165	335,498,008	60.3%	202,305,299	133,192,709
Electrical and electronic equipment	221,639,523	460,066,695	16.5%	75,911,005	384,155,690
Textiles & Leather Products	31,230,017	103,421,687	90.8%	93,896,550	9,525,137
Machinery and equipment	45,946,600	160,033,221	74.9%	119,928,896	40,104,325
Coal and oil products	64,194,215	204,911,807	10.0%	20,491,181	184,420,626
Primary metal products	43,143,587	268,771,923	41.6%	111,728,488	157,043,435
Transportation Equipment	131,170,274	267,051,642	33.4%	89,195,248	177,856,394
Metal products	14,393,250	104,461,768	86.3%	90,150,506	14,311,262
Other manufacturing products and foundry	5,981,149	72,766,151	95.0%	69,127,843	3,638,308
Wholesale and retail services	24,846,209	235,295,318	89.4%	210,354,014	24,941,304
Food and beverages	8,158,525	124,172,001	84.5%	104,925,341	19,246,660
Transportation Equipment	36,717,574	151,385,911	66.5%	100,671,631	50,714,280
Professional, scientific and technical services	11,652,837	140,580,412	75.7%	106,419,372	34,161,040
Wood and Paper, Printing	4,265,061	45,996,627	93.0%	42,776,863	3,219,764
Business Support Services	7,484,033	53,739,833	78.8%	42,352,362	11,387,471
Precision Instruments	11,065,777	45,061,543	65.0%	29,290,003	15,771,540
Restaurant and accommodation services	8,019,964	105,976,685	90.0%	95,379,017	10,597,669
Agriculture, forestry and marine products	795,439	69,241,562	85.0%	58,855,328	10,386,234
Financial and insurance services	2,363,873	139,506,359	80.4%	112,177,063	27,329,296
Telecommunications and broadcast service	4,669,154	122,041,614	66.2%	80,791,548	41,250,066
Cultural and other services	1,703,480	78,693,326	74.4%	58,547,835	20,145,491
Real Estate & Leasing	2,648,664	161,239,826	69.1%	111,368,348	49,871,478
Non-metallic mineral products	2,770,787	50,382,978	71.8%	36,174,978	14,208,000
Electricity, gas and steam	130,194	101,098,884	59.9%	60,558,232	40,540,652
Education Services	290,370	104,342,343	85.2%	88,899,676	15,442,667
Health and social services	128,161	105,514,387	73.8%	77,837,963	27,676,424
Coal	230,627	179,819,502	96.0%	172,626,722	7,192,780
Water, Waste and Recycling Services	59,149	22,365,076	87.0%	19,457,616	2,907,460
Public administration and defense	124,258	112,147,797	30.9%	34,597,595	77,550,202
Construction industry	294,501	190,630,663	59.4%	113,196,488	77,434,175
Subtotal	774,704,417	4,316,215,549	56.0%	2,435,526,302	1,880,689,247

Source: Bank of Korea (2015), Industry Association

<Table 1> shows the total sales and exports of the Bank of Korea 's industry table as small and medium enterprises. The Federation of Small and Medium Businesses annually announces the amount of production, the number of enterprises, the number of employees, and the value added value of SMEs. This is the author's summary. In the back, the export statistics of the Bank of Korea and the Korea Customs and Trade Development Agency, which is an affiliate of the Korea Customs Service, are slightly different. The reason is that the Customs and Trade Development Agency deals with manufacturing exports only, and is a customs clearance standard. The Bank of Korea, however, includes both the card amount used by foreigners in Korea and the service industry. Particularly, exports include all goods and services such as processing trade and intermediary trade. Chemicals, electrical and electronic equipment; textiles and leather goods, machinery and equipment; and coal and petroleum products, account for the largest share of SMEs' exports, based on the exports of SMEs in 2013. According to the Bank of Korea, 19% of manufacturing exports are small and medium enterprises, and 81% are large and medium enterprises. 56% of sales are produced by SMEs, but considering that exports account for 19% of SMEs, SMEs are more dominant than exports. Excluding this portion of SMEs, the remainder is the proportion of large and mid-sized companies. In the case of chemical products, 60% of the total sales are SMEs, and the remaining 40% are large enterprises.

Export and import statistics with each country

<Table 2> shows the trade volume between Korea and other countries. There was a total of 559.6 billion won in exports as of 2013, with imports total 515.6 billion won. China exported \$145.8 billion in 2013 and spent \$83 billion on imports (2.2 times of the US). Here, the trade volume between Korea and each country can be known. It can be seen that Korea is trading in the following order: China, USA, Japan, Hong Kong, Singapore, Vietnam, and Taiwan.

<Table 2>. South Korea's Exports and Imports by Country

	2013		2012		2011	
	Exports	Imports	Exports	Imports	Exports	Imports
TOTAL	559,648,708	515,560,844	548,075,929	519,581,584	555,213,656	524,413,090
CHINA	145,836,767	83,037,429	134,331,099	80,777,791	134,185,009	86,432,238
USA	62,056,025	41,510,611	58,523,678	43,337,402	56,207,703	44,569,029
JAPAN	34,693,728	60,015,980	38,850,174	64,350,837	39,679,706	68,320,170
HONG KONG	27,761,650	1,929,579	32,609,163	2,058,600	30,968,405	2,315,073
SINGAPORE	22,279,598	10,365,523	22,891,805	9,675,466	20,839,005	8,966,683
VIETNAM	21,087,589	7,170,311	15,954,023	5,718,017	13,464,922	5,084,246
TAIWAN	15,701,955	14,630,837	14,819,337	14,011,115	18,205,965	14,693,589
INDONESIA	11,574,115	13,188,478	13,945,845	15,678,327	13,564,498	17,216,374
INDIA	11,385,053	6,182,544	11,921,074	6,923,868	12,654,078	7,893,573
RUSSIA	11,150,209	11,496,259	11,098,724	11,355,073	10,304,880	10,852,171
MEXICO	9,727,492	2,301,580	9,041,384	2,595,100	9,729,059	2,315,698
BRAZIL	9,688,914	5,572,421	10,287,973	6,084,048	11,821,399	6,342,934
AUSTRALIA	9,563,658	20,767,694	9,268,572	22,978,398	8,163,845	26,316,304
SAUDI ARABIA	8,824,019	37,664,947	9,122,144	39,722,358	6,964,299	36,972,612
PHILIPPINES	8,783,009	3,705,004	8,229,194	3,282,160	7,338,902	3,571,472
MALAYSIA	8,589,828	11,096,723	7,802,551	9,796,003	6,275,131	10,467,817
THAILAND	8,073,603	5,229,504	8,216,964	5,352,025	8,458,966	5,413,360
GERMANY	7,907,891	19,333,437	7,511,299	17,640,703	9,500,927	16,962,579
MARSHALL ISLANDS	7,436,578	186,878	3,934,176	119,637	7,053,544	58,895
UNITED ARAB EMIRATES	5,741,036	18,124,004	6,852,113	15,115,895	7,267,754	14,759,366
TURKEY	5,658,180	691,835	4,552,344	672,300	5,070,997	804,624

Import and Export Status of Small and Medium-sized Enterprises in Korea

In Table 3, it can be seen that as time passes, the share of exports of SMEs in total exports declines, while the share of exports of large corporations increases. In 1996, SMEs accounted for 41% of total exports and 58% of large corporations. However, in 2012, SMEs accounted for 18%, and large companies accounted for 87%. In 2014, SMEs accounted for 17% of total exports, and large enterprises accounted for 82%. It is estimated that large companies are ahead of manpower and equipment.

<TABLE 3> SMEs, Large Companies, Total Export (Thousand US\$, %)

Year	SME	SME ratio %	Large companies	Large companies ratio, %	Total Exports (Thousand US\$, %)
1995	49,473,573	0.3956	75,283,273	0.6020	125,057,988
1996	54,205,445	0.4179	75,320,960	0.5807	129,715,137
1997	56,909,984	0.4180	79,090,723	0.5808	136,164,204
1998	41,033,585	0.3101	91,092,856	0.6885	132,313,143
1999	49,045,391	0.3413	94,346,432	0.6566	143,685,459
2000	63,509,345	0.3687	108,627,306	0.6306	172,267,510
2001	64,600,340	0.4294	85,738,010	0.5699	150,439,144
2002	68,307,855	0.4204	94,052,888	0.5789	162,470,528
2003	81,698,654	0.4215	112,015,325	0.5779	193,817,443
2004	90,384,864	0.3561	163,195,487	0.6429	253,844,672
2005	92,128,407	0.3239	192,055,964	0.6753	284,418,743
2006	103,692,602	0.3186	220,966,671	0.6789	325,464,848
2007	113,545,705	0.3057	257,712,319	0.6937	371,489,086
2008	130,524,448	0.3093	291,289,587	0.6902	422,007,328
2009	76,782,726	0.2112	285,632,098	0.7857	363,533,560
2010	98,623,748	0.2115	366,142,285	0.7851	466,383,761
2011	101,559,896	0.1829	452,911,842	0.8157	555,213,656
2012	102,651,000	0.1878	478,64,028	0.8736	547,869,792
2013	95,998,000	0.1720	463634000	0.8280	559,632,000
2014	98,067,000	0.1710	474598000	0.8290	572,665,000

Export and import statistics for the UK

The total exports to the UK in the year 2015 are \$ 7.3 billion. The amount and share of SMEs in exports to the UK is 8. \$ 700 million (12%) and medium-sized enterprises 8. \$ 400 million (11%), large enterprise 5.6 billion US dollars (77%). This is similar to the share of SMEs in Korea's total exports by 15%.

<Table 4> China's and UK's Exports and Their Share by Size (dollar)

year	By Country (2)	China(dollar)	importance	England (dollar)	importance
2013	Small Business (USD)	22,238,916,804	15.2%	870,619,659	18.4%
2013	Medium Enterprise (USD)	24,377,601,613	16.7%	552,840,102	11.7%
2013	Large companies (dollars)	99,184,079,825	68.0%	3,271,517,848	69.2%
2013	Others (dollars)	68,900,031	0.0%	32,107,201	0.7%
2013	Total Exports (USD)	145,869,498,273		4,727,084,810	
2014	Small Business (USD)	22,985,571,978	15.8%	982,585,393	17.0%
2014	Medium Enterprise (USD)	23,986,017,552	16.5%	685,036,726	11.8%
2014	Large companies (dollars)	98,274,084,295	67.6%	4,070,678,489	70.4%
2014	Others (dollars)	42,027,388	0.0%	44,309,230	0.8%
2014	Total Exports (USD)	145,287,701,213		5,782,609,838	
2015	Small Business (USD)	22,056,408,173	16.1%	878,831,947	11.9%
2015	Medium Enterprise (USD)	24,607,801,533	17.9%	845,459,881	11.4%
2015	Large companies (dollars)	90,420,244,225	65.9%	5,632,704,475	76.2%
2015	Others (dollars)	39,479,962	0.0%	33,100,193	0.4%
2015	Total Exports (USD)	137,123,933,893		7,390,096,496	

As of 2015, Korea's total exports to the UK are \$ 7.3 billion. Large companies accounted for \$ 5.6 billion (76 percent), midsize businesses \$ 840 million (11 percent), and SMEs \$ 870 million (12 percent). This proportion is about 1.4% of Korea's total exports by 2015.

EMPIRICAL RESULTS

<Table 5> shows the results of the ripple effect of the two countries due to the international input calculation of Korea and Britain published in 2013. The total ripple effect from trade between Korea and the UK is \$ 4.8 billion (about 5.2 trillion won, based on the exchange rate of 1100 won). The industries that were most influential in both countries were electric and electronic industries. A total impact of \$ 10.7 billion has been achieved. Water transport of \$ 890 million, financial intermediation of \$ 880 million, and automobile and transportation equipment of \$ 300 million. If the Korea-UK FTA is concluded, the expansion of exchanges is expected to further expand, resulting in a greater ripple effect. Korea's electrical and electronic industries have affected the UK's electronics industry and have had a ripple effect of about 1.2 trillion won.

Especially, since the brokerage business brings about 1 trillion won, it is expected to have a big impact on the Korean financial market after the breach.

The impact is expected to reach about \$ 7.4 billion by 2015.

<Table 5> Korea-UK industrial relations ripple effect(In millions of dollars)

Intercountry Input-Output Table for 2011 40 countries, in current prices (millions of US\$)				N	O	P	
				Health and Social Work	Other Community, Social and Personal Services	Private Households with Employed Persons	TOTAL
				GBR	GBR	GBR	
				c33	c34	c35	
30t33	Electrical and Optical Equipment	KOR	c14	16	16	0	1,071
61	Water Transport	KOR	c24	20	22	0	897
J	Financial Intermediation	KOR	c28	2	9	0	882
34t35	Transport Equipment	KOR	c15	8	2	0	309
27t28	Basic Metals and Fabricated Metal	KOR	c12	0	0	0	254
23	Coke, Refined Petroleum and Nuclear Fuel	KOR	c8	9	6	0	233
29	Machinery, Nec	KOR	c13	0	1	0	182
71t74	Renting of M&Eq and Other Business Activities	KOR	c30	13	9	0	176
0	Other Community, Social and Personal Services	KOR	c34	11	80	0	150
51	Wholesale Trade and Commission Trade, Except of Motor Vehicles and Motorcycles	KOR	c20	22	3	0	147
24	Chemicals and Chemical Products	KOR	c9	57	4	0	145
25	Rubber and Plastics	KOR	c10	4	2	0	137
62	Air Transport	KOR	c25	2	4	0	82
17t18	Textiles and Textile Products	KOR	c4	6	2	0	76
21t22	Pulp, Paper, Paper, Printing and Publishing	KOR	c7	2	1	0	29
				176	163	0	4,832

CONCLUSION

The summary of this paper is as follows. First, Korea will be slightly affected by the brake seat. By 2016, the GDP is expected to fall by about 0.2 percent annually. Secondly, the weakest sectors in SMEs are analyzed by the UK because of the second BREC SEAT, which includes electric and electronic equipment, finance, chemicals, transportation equipment, and primary metal products. Third, according to the results of the international input and output analysis, Korea and the United Kingdom had a \$ 4.8 billion ripple effect on the trade side after 2013. If Korea can not establish an FTA with the UK after the EU withdraws from the EU, the average tariff of Korea will be reduced to 12.1%, which will greatly reduce trade between the two countries. The damage to SMEs is estimated to be about 1 trillion won. The total amount of damages in Korea is estimated to be about 1.6 trillion won.

The academic and policy implications of this study are as follows. First, we used the international industry linkage analysis model to study the impact of brexit on SMEs. Ripple effects arising from

trade in each industry were found. In addition, the trade between the two countries showed which industries were influential. Second, it was found that SMEs need to expand their government support to increase exports, not to focus on domestic demand. As of 2013, SMEs account for 56% of Korea's total production, but exports account for only 15%. SMEs are operating exclusively on domestic demand rather than exporting. The future population decline and domestic market contraction will make SMEs more difficult. There is a need for an export-oriented policy to foster small and medium-sized enterprises that are strong in exports. In other words, for industries where SMEs' export competitiveness is weak, the government needs active financial and policy support to support export expansion.

References

- KimKyu-Pan(2013) "Japan's Participation in TPP declared Implications and Prospects" Korea's Institute for International Economic Policy (KIEP) April. 11. Vol 13, No 12.
- Kim, Dae-Jong (2014) "Effects of Trans-Partnership (TPP) on the United States, Japan, and South Korea" *Journal of International Trade and Commerce* Vol 10, No 4, September 2014, p 87-103
- Sung Han-Kyung(2014) "The Dynamic Economic Effect TTP and TTIP causes to South Korea, China, and Japan" Working Paper, Korea Economics Joint Conference, p24-38
- Song E-Young(2007), "Determinants of intra-industry trade: specialization is the difference between the center and the element of endowment" *Journal of international Economic Studies*, first house No. 12, p189-228
- Lee Dong-Hae(2013) "Should Korea Join the TPP : An Empirical Analysis of the Trade Effect" *Journal of Economic Studies*. No 31-4
- Lee Heung-Bae(2014) "The Effect of Korea-Japan FTA would cause on domestic material component industry" Working Paper. Korean - Japanese Economics and Management Association. P45-62
- Choi Nak-Kyun(2013) "Trade-induced effects of employment and value-added analysis" *Journal of International Economic Studies*, Volume 19 Number 1 March 2013. P105-133
- BOK Economic Statistics System (Retrieved June 4. 2018) <http://ecos.bok.or.kr/>
- Han Min-Jung(2013) "South Korea's participation in TPP Study strategy : focusing on electronic commerce" *Korea Association for International commerce and Information* p309-330
- Chinn, Menzi and Hiro(2006) "What Matters for Financial Development?" *Capital Controls, Institution, and Interactions*", *Journal of Development Economics*, 81, p163-192
- Congressional Research Service(2013) "The Trans Pacific partnership negotiations and issues for congress" US Congressional Research Service Reports. Washington DC.
- IMF(2017) eLibrary Data. (Retrieved June 10. 2017) <http://www.imf.org/external/index.htm>
- Ministry of Industry, FTA website. (Retrieved June 14. 2017) <http://www.fta.go.kr/main/>
- OECD(2018) "Mapping Global Value Chains", (Retrieved July 11. 2017) TAD/TC/WP(2012)26
- Peter Petri and Michael Plummer (2012) "The Trans-Pacific Partnership and Pacific Integration: Policy Implications" Policy Brief, Peterson Institute for International Economics(PIIE)
- Timmer, Marcel (2012), "The World Input-Output Database (WIOD) : Contents, Sources and Methods", Seventh Framework Programme.
- World input - output database (WIOD), (Retrieved May 23. 2018) <http://www.wiod.org/publications/papers/wiod10.pdf>

Removal of chromium (VI) from aqueous solution by natural clay

Yousif Algamal

Department of Chemistry, Faculty of Science & Arts, Khullais,
University of Jeddah, Jeddah, KSA
Department of Chemistry, Faculty of Science & Technology,
Omdurman Islamic University, Sudan.

N. M. Khalil

Department of Chemistry, Faculty of Science & Arts, Khullais,
University of Jeddah, Jeddah, KSA
Refractories, Ceramics and Building Materials Department,
Nat. Res. Center, 12311 Cairo, Egypt

Qyied Saleem

Department of Chemistry, Faculty of Science & Arts, Khullais,
University of Jeddah, Jeddah, KSA

Mohamed J. Almughrabi

Rabigh Power Plant, Rabigh, Saudi Arabia

ABSTRACT

The adsorption of chromium (VI) from aqueous solution was carried out using natural clay from western area in Saudi Arabia. The adsorbents used are characterized by X-ray diffraction (XRD) and other physico-chemical techniques. The various parameters affecting the adsorption process were investigated involving effect of initial concentration of Cr (VI) ion, temperature factor, dosage of adsorbent, pH of the solution, contact time and rotational per minute (RPM). Optimum conditions for adsorption process were; 50 mg/L⁻¹ initial concentration of Cr(VI), adsorbent dose =1g, temperature ~ 25°C, 3 hours contact time and pH=2, the obtained results were used to calculate the adsorption efficiency. Removal of chromium ion was found as highly depends on pH and initial Cr (VI) concentration of the solution. Langmuir isotherm was applied to get a maximum adsorption capacity of 18.68 mg/g. Although experimental data confirm with Langmuir isotherm model. The results of this study confirm that the material can be considered as effective adsorbents for the removal of chromium (VI).

Keywords: Natural clay; Adsorption; Chromium (VI); Isotherm; XRD.

INTRODUCTION

Recently the major problem for the researchers that related to our environment is the pollution whatever its kind, the disposal of the metal ions which becoming a harmful and causing a sever problems. Some of these metal ions are essential to our living but an increase in their quantities make trouble and affecting the resources. Among these ions is the chromium ion, which exists naturally as in natural mineral (rocks, soil) and in living system (animals and plants). Chromium (III) plays important role in biological activity using sugar, protein, and fat required by our body whereas Cr (VI) is a toxic one usually used as a mixture with copper and arsenic in manufacturing the pesticides commonly known as CCA (Chromated copper arsenate) [1]. Chromium (VI) causing a cancer to human by eating or breathing [2]. It can be deposited in soil and easily compounded with other particles resulting in different oxidizing states [3]. Authors reported another source of chromium (VI) that comes from water industries

(plastic containers and water pipes), tanning industries as well as electroplating process [3, 4]. Several methods like adsorption, ion exchange, membrane filtration and reverse osmosis were applied to remove Cr(VI) from industrial wastewater [4-6]. Adsorption process is commonly used to remove Cr(VI) from polluted water using different materials as adsorbent like charcoal, activated charcoal and activated aluminum [7], bentonite [4], wool [8], etc [9-11]. This study will focus on the adsorption of chromium (VI) from aqueous solution using natural clay collected from Khullais area in Kingdom of Saudi Arabia.

EXPERIMENTAL SECTION

Reagents:

Analar grades of $K_2Cr_2O_7$, HCl, NaOH were used. From these reagents, Stock solutions were prepared using double distilled water throughout the experiments. (500 mg/L using 1.414 g in 1000 ml of DD), 1M of Hydrochloric acid and 1M of sodium hydroxide to adjust the pH values). The natural clay used was collected from Khullais area 90 km north Jeddah city, KSA. The chemical composition of the clay was checked using XRD technique.

Equipment:

XRF of the raw clay samples was testing using Philips X-ray fluorescence (XRF) machine while XRD was testing using D8 Advance Bruker Germany, Shaker Model GFL 3017 was used for shaking, pH meter (HANNA instruments) for measuring the pH values and UV-visible spectrophotometer (DR 5000, Hach, USA) also used. Atomic Absorption Spectrometry (AAS) (AA- 6200 Shimadzu) used to determine the total chromium concentration in the solution without botheration of its oxidation state of the metal [12]. The chromium hexavalent can be determined spectrophotometrically (Shimadzu (UV-1601), according to diphenyl carbazide-based method [13].

Methods:

The following adsorption processes were conducted, different concentration of Cr (VI) ions, varying the pH values, different RPM, different contact time, different amount of adsorbent and different range of temperature to study the equilibrium state. A 250 ml of Cr (VI) solution was transferred into a 500 ml conical flask and addition with the HCl/NaOH solution to adjust the desired pH value. To this solution, 1g of natural clay was added then shaken at 200 RPM for three hours. Flask well sealed and kept aside to decrease atmospheric loss. Then the solution was analyzed for chromium (VI) ions concentration after 24 hours. The Cr (VI) ions adsorbed on the surface of the adsorbent 'Q' was calculated using "Equation 1" as given below:

$$Q = \frac{(C_0 - C)V}{W} \quad (1)$$

Where, 'C₀' represents initial concentration of Cr (VI) (mg/L) and 'C' the concentration of Cr (VI) at different interval time 't', 'V' represents the total volume taken in the conical flask and 'W' represents the amount of the adsorbent used. At equilibrium state 'C' becomes 'C_e' and 'Q' becomes 'Q_e'.

A 100 ml of the stock solution of Cr (VI) ions (50 mg L⁻¹) was placed in 250 mL flask. Enough amount of 1M HCl solution is added to adjust the pH value at ~2, 1 g of the adsorbent (natural clay) was added to the solution, and then shaken at 200 RPM for a period of 3 hours at constant temperature 25.0 ± 0.2 °C. At different interval times, samples were collected and analyzed during the adsorption process to attain the equilibrium state. The percentage removal of chromium (VI) ions was calculated using "Equation 2". A duplicate run was done for checking

the adsorption of chromium ions on the surface of the conical flask in the absence of natural clay. This experiment showed no notable adsorption by the conical flask surface.

$$Cr(VI)removal \% = \frac{100(C_0 - C)}{C_0} \quad (2)$$

Evaluation of various parameters on the adsorption process was conducted involving; different chromium (VI) solutions (20, 30, 40, 50, 100, 150, and 200 mg L⁻¹), different temperatures from 25°C to 40°C, pH range of 2.0 to 10.0, RPM from 30 to 200 RPM, contact time in the range of 30 minutes to three hours, amount of adsorbent ranging from 0.5 to 3.5 g.

Langmuir adsorption isotherm “Equation 3”, can be applied to account for the equilibrium relationships between adsorbent and adsorbate [14].

$$\frac{C_e}{Q_e} = \frac{1}{kQ_{max}} + \frac{C_e}{Q_{max}} \quad (3)$$

Where ‘C_e’; the Cr(VI) concentration (in mgL⁻¹) at equilibrium state, ‘Q_e’; mass (in mg/g) of the adsorbed Cr(VI) ions at equilibrium state ‘k’; is the Langmuir constant (Lmg⁻¹), and ‘Q_{max}’; the maximum value of adsorbed Cr(VI) ions (in mg /g). Thus, these constants relate the maximum adsorption capacity and the energy of adsorption.

RESULTS AND DISCUSSION

Characteristics of the adsorbents (Natural clay):

Chemical analysis of the raw clay sample is given in “Table 1”. The table indicates that the used raw clay composed mainly of SiO₂, Al₂O₃ and Fe₂O₃ with considerable contents of Na₂O and CaO. The loss of ignition was 12.03%, which corresponds to the evaporation of physical and chemical combined water together with the decomposed organic matter.

Table 1. Chemical composition of the natural clay

Chemical composition	SiO ₂	Al ₂ O ₃	Fe ₂ O ₃	Na ₂ O	CaO	LOI
Weight %	58.10	13.11	9.60	5.11	2.05	12.03

“Figure 1” shows the mineral constituents of natural clay. The figure indicates that the clay sample contains quartz, nontronite in addition to some kaolinite and cronstedtite minerals.

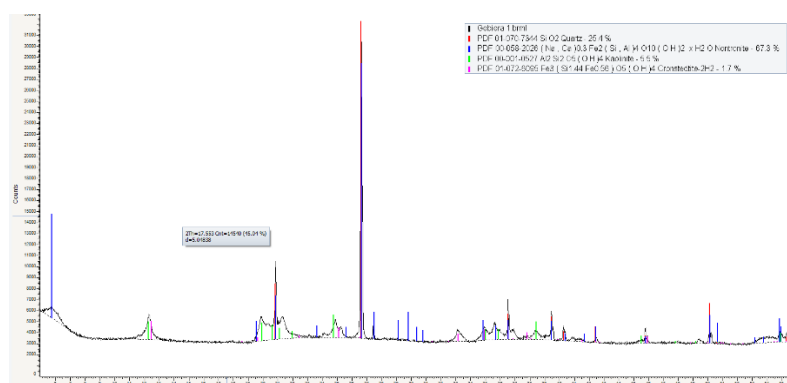


Figure 1. X-ray diffraction patterns of the natural clay

Effect of pH of the solution

“Figure 2”, illustrates the effect of pH of the solution ranging from 2 to 10 on the removal of

total Cr(VI) ions from the solution (keeping other parameters constant i.e., initial concentration of Cr(VI), temperature 25°C, RPM =180, time is 3 hours and using 1 g of clay. The maximum adsorption (75%) on natural clay was obtained at pH =2.0. It is a notable from the figure different removal percentage corresponds to different pH values (pH ranging from 2 to 4 the removal percentage ranging from (75 to 60%), pH ranging from 4 to 8 the removal is in the range of (60-50%) and pH = 8 to 10 the removal is (50 to 40%). This can be explained based on the possibility of formation of Cr(VI) anions in form of HCrO_4^- , CrO_4^{2-} , and $\text{Cr}_2\text{O}_7^{2-}$, this can be explained in terms of chromium ions will have different states at different pH values [15] resulting in different charge density and easily can be bonded with the positively charged natural clay surface [14,16]. In addition, the lower efficiency (50%) of the adsorbent at high pH values, the anions undergo transformation into diverse oxidation states. The reduction of chromium (VI) to chromium (III) was studied spectrophotometrically using the natural clay at different pH values, with 50 mg/ L initial concentration of Cr(VI) solution [13].

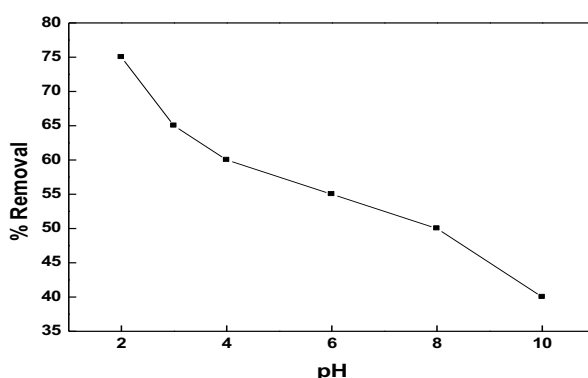


Figure 2. Effect of pH on Cr(VI) removal.

Effect of Cr(VI) concentration:

The efficiency percentage of Cr(VI) removal carried out at different concentrations of Cr(VI) ions varying from 50 to 200 mg/ L, keeping remaining factors constant (1 gm of natural clay, pH = 2, RPM =180 and contact time of 3 hours) is shown in “Figure 3”. The removal efficiency is increased with increasing the initial concentration of Cr(VI) up to 150 mgL^{-1} . For concentration higher than 150 mg L^{-1} , the retention curves of total chromium and Cr(VI) start to advance further, suggesting chromium can have different oxidation state in these conditions. Assuming that the reduction of Cr(VI) to Cr(III) takes place on the natural clay and then releasing of the reduced form of chromium (III) leading to a curve retention. Same trend was reported with different adsorbents [17–23].

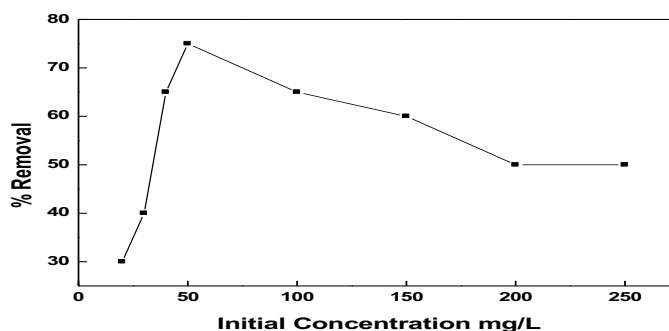


Figure 3. Effect of initial concentration on Cr(VI) removal.

Effect of adsorbent dosage:

The percentage removal of chromium ions with different amount of adsorbents ranging from 0.5 to 3.5 g of natural clay keeping remaining factors constant (50 mgL⁻¹ of Cr(VI), pH = 2, RPM =180 and contact time of 3 hours) is shown in "Figure 4". The figure shows an increase of percentage removal of Cr (VI) when amount of adsorbent increased. From the figure, three stages in the curve could be recognized, the first increase ranging from 0.5 to 1 g, the second increase in the curve correspond to 1.0 - 3.0 g and the third stage in the curve for the amount 3.0 to 4.0g of adsorbent. This behavior is correlated with the chemical and mineralogical composition of the used clay i.e., the presence of SiO₂, Al₂O₃, Fe₂O₃, Na₂O and CaO in the form of quartz, nontronite, kaolinite and cronstedtite minerals which are known with the high adsorption capability [24,25]. As a result, the large amount of adsorbent (natural clay) enhances the uptake capacity of the adsorbent, and hence the metal ions can be easily occupying the active sites of the natural clay.

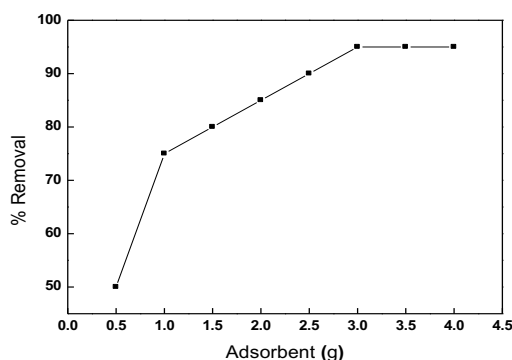


Figure 4. Effect of adsorbent dosage on Cr(VI) removal.

Effect of contact time:

The contact time plays an importance role in the adsorption process, keeping other parameters constants. "Figure 5", shows the percentage removal of Cr (VI) and the effect of contact time, the efficiency of removal of Cr(VI) increases with increasing the contact time, approximately 70-80 % of maximum removal of Cr (VI) is attained within 210 minutes and the maximum adsorption is attained in 180 minutes. This can be explained based on the presence of the positively charged surface of the adsorbent for anionic Cr (VI) species present in the solution. The retention in the curve may be explained in sense of the electrostatic hindrance caused by already adsorbed negatively charged Cr (VI) ions in the solution [26].

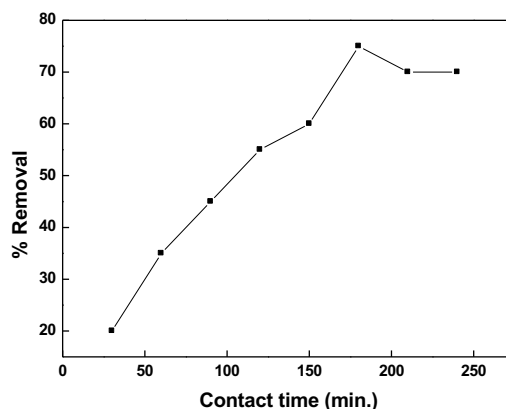


Figure 5. Effect of contact time on Cr (VI) removal.

Effect of temperature:

Temperature play also an important role on the process of adsorption. A range of 25°C to 40°C temperature were studied keeping other parameters like initial concentration, pH, RPM and adsorbent are constant. The obtained results show a decrease in percentage of adsorption with rise in temperature. This can be explained in terms of the desorption caused by the thermal energy. Thus, higher temperature results in higher mobility of the adsorbate causing desorption [27].

Effect of RPM:

The effect of RPM on the adsorption process was studied at different range 10 to 200 RPM keeping remaining parameters constant. "Figure 6", reveals an increase in the percentage of Cr (VI) removal with increase in RPM up to 180, so it has been taken as the optimum rotational per minute for this study.

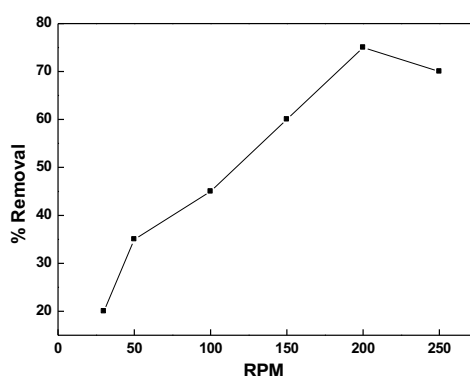


Figure 6. Effect of RPM on Cr (VI) removal.

Adsorption isotherm:

To determine the adsorption capacity, the Langmuir isotherm was applied, the isotherm also helping in modeling the equilibrium data equation (3). The experiment carried out at pH = 2. The points are fitted straightly "Figure 7", from a plot C_e/Q_e versus C_e the values of 'Qmax' and 'k' are calculated (Langmuir constants) and their values are found to be 18.68 and 0.1265 respectively. The high value of correlation coefficient ($R^2= 0.9857$) indicates a good agreement with the parameters and confirms the monolayer adsorption of Cr(VI) onto the adsorbent surface. The importance of this isotherm supporting the feasibility of the natural clay as an efficient adsorbent in removing the chromium (VI) from aqueous solution.

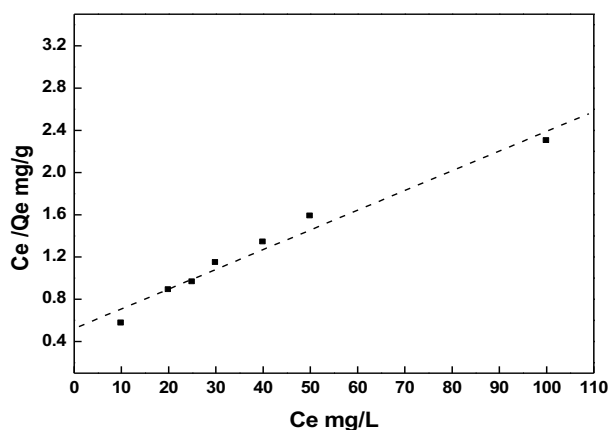


Figure 7. Langmuir isotherm for adsorption of Cr(VI) at 25°C.

CONCLUSIONS

From this study we can conclude that the natural clay collected from Khullais area in Kingdom of Saudi Arabia which is widely available, low cost and an effective adsorbent for Cr(VI) removal from aqueous solution at ambient pH since this material showed a relatively large capability of adsorption of chromium(VI) from aqueous solution. The following results were obtained:

- As pH increases % removal of Cr(VI) decreases and the maximum % removal of Cr(VI) at pH = 2
- As the contact time of adsorption increases the % removal also increases, and the optimum time is 180 min.
- As the amount of adsorbent increases, the % removal of Cr (VI) is also increases.
- As the temperature increases the % removal gets decreases.
- As the RPM increases the percentage removal gets increases and observed that the maximum % removal at 200 RPM.

References

- National Pesticide Information Center (NPIC), "Cooperative agreement between Oregon State University and the U.S. Environmental Protection Agency," 2011, <http://npic.orst.edu/ingred/ptype/treatwood/cca.html>, <http://npic.orst.edu/ingred/ptype/treatwood/chromium.html>.
- Agency for toxic substances and disease registry (ATSDR). Toxicological Profile for Chromium: U.S Department of Health and Human Services, Atlanta. Ga, USA. 1998.
- S. Katz, H. Salam. The Biological and Environmental Chemistry of Chromium: VCH Published, New York, NY, USA. 1994.
- L. N. Shi, X. Zhang, Z. L. Chen. Removal of Chromium (VI) from wastewater using bentonite-supported nanoscale zero valent iron. *Water Research*. 45(2011)886-892.
- Y. Zhao, S. Yang, D. Ding, J. Chen, Y. Yang, Z. Lei. Effective adsorption of Cr (VI) from aqueous solution using natural Akadama clay. *Journal of Colloid and Interface Science*. 395 (2013)198-204.
- M. Khamis, F. Jumean, N. Abdo. Speciation and removal of chromium from aqueous solution by white, yellow and red UAE sand, *Journal of Hazardous Materials*. 169 (2009)948-952.
- S. Mor, K. Ravindra, N. R. Bishnoi. Adsorption of chromium from aqueous solution by activated alumina and activated charcoal, *Bioresource Technology*. 98 (4), (2007) 954-957.
- A. Manassra, M. Khamis, T. Ihmied, M. Eldakiky. Removal of chromium by continuous flow using wool packed columns. *Electronic Journal of Environmental, Agricultural and Food Chemistry*. 9(3), (2010) 651-663.
- N. Daneshvar, D. Salari, S. Aber. Chromium adsorption and Cr (VI) reduction to trivalent chromium in aqueous solutions by soya cake. *Journal of Hazardous Materials*. 94(1), (2002) 49-61.
- C. Modrogan, C. Costache, D. Orbulet. Removal of hexavalent chromium from aqueous solutions by adsorption on peach kernel and nutshell, in *Proceedings of the 1st International Proficiency Testing Conference, Sinia, Romania 2007*.
- G. Rytwo Y. Gonen. Functionalized activated carbons for the removal of inorganic pollutants. *Desalination and Water Treatment*. 11(1-3), (2009) 318-323.
- Determination of hexavalent and total chromium in effluent samples from electrolytic chrome plating operations, Bay Area Air Quality Management District, San Francisco, CA, Method 34 (Adopted 1/18/89, Reformatted 8/8/91) <http://www.baaqmd.gov/~media/Files/Records/MOP/vol%203/MOP-34.ashx?la=en>.
- Chromium hexavalent (colorimetric), EPA Method 7196A1992, <http://www.epa.gov/osw/hazard/testmethods/sw-846/pdfs/7196a.pdf>.
- M. Dakiky, M. Khamis, A. Manassra, M. Mer'eb. Selective adsorption of chromium (VI) in industrial wastewater using low-cost abundantly available adsorbents. *Advances in Environmental Research*. 6 (4), (2002)533-540.
- L.A. Rodrigues, L.J. Maschio, R. E. da Silva, M.L.C.P. da Silva. Adsorption of Cr(VI) from aqueous solution by hydrous zirconium oxide. *J. Hazard Mater.* 173 (2010) 630-636.

- B. M. Weckhuysen, I. E. Wachs, R. A. Schoonheydt. Surface chemistry and spectroscopy of chromium in inorganic oxides. *Chemical Reviews*. 96(8), (1996) 3327-3349.
- M. Rao, A. V. Parwate, A. G. Bhole. Removal of Cr⁶⁺ and Ni²⁺ from aqueous solution using bagasse and fly ash. *Waste Management*. 22(7), (2002) 821-830.
- M. R. Unnithan T. S. Anirudhan. The kinetics and thermodynamics of sorption of chromium (VI) onto the iron(III) complex of a carboxylated polyacrylamide-grafted sawdust. *Industrial and Engineering Chemistry Research*. 40(12), (2001)2693-2701.
- C. Raji T. S. Anirudhan. Batch Cr(VI) removal by polyacrylamide-grafted sawdust: kinetics and thermodynamics. *Water Research*. 32(12), (1998)3772-3780.
- J. Wu, H. Zhang, P.-J. He, Q. Yao, L.-M. Shao. Cr (VI) removal from aqueous solution by dried activated sludge biomass. *Journal of Hazardous Materials*.176 (1-3), (2010) 697-703.
- P. Yuan, D. Liu, M. Fan et al. Removal of hexavalent chromium [Cr(VI)] from aqueous solutions by the diatomite supported/unsupported magnetite nanoparticles, *Journal of Hazardous Materials*.173(1-3), (2010) 614-621.
- X. S. Wang, L. F. Chen, F. Y. Li, K. L. Chen, W. Y. Wan, Y.J. Tang. Removal of Cr (VI) with wheat-residue derived black carbon: reaction mechanism and adsorption performance. *Journal of Hazardous Materials*.175 (1-3), (2010) 816-822.
- S. S. Liu, Y. Z. Chen, L. De Zhang et al., Enhanced removal of trace Cr(VI) ions from aqueous solution by titanium oxide-Ag composite adsorbents, *Journal of Hazardous Materials*. 190 (1-3), (2011) 723-728.
- R. Lahkale, R. Sadik, E. Sabbar. Removal of trivalent chromium from tannery effluent by calcined layered double hydroxide. *J. Mater. Environ. Sci*. 5(2014)2403-.
- J. Hmimou, E.H. Rifi, A. Lebkiri, L. Chafki, M.E. Touhami, Z. Hatim. Removal of Heavy Metals from Aqueous by Thephosphate Dihydrate Dicalcium. *Mor. J. Chem*. 3(2015) 74-.
- U.C. Ghosh, S. Goswami. Studies on adsorption behavior of Cr (VI) onto synthetic hydrous stannic oxide. *Water SA*. 31(4), (2005)597-602.
- G.F. Froment, K.B. Bischoff. *Chemical Reactor Analysis and Design*. Second Ed., John Wiley, Singapore. 1990.

Effect Of Employee Morale On Productivity In The Ghanaian Public Sector. The Mediating Role Of Delegation.

Eunice Aidoo

Human Resource Management Department
Ghana Baptist University College, Ghana

Jacob Donkor, Ph.D.

Marketing Department
Ghana Baptist University College, Ghana

Agnes Odoi

Human Resource Management Department
Ghana Baptist University College, Ghana

ABSTRACT

Delegation of authority is one of modern trends practiced by managers, and a key management skill in the business world. It enhances human relations amongst organizational members, increases self-confidence among employees and raise the level of tasks accomplishment in tasks. The study sought to assess the effect of delegation on employee morale and productivity in public sector organisations in Ghana. The target population included all the workers in the public sector of Ghana from which the simple random sampling technique was employed to select 128 workers from 20 public sector organisations across the country. The findings from the study show that delegation of authority has a positive and significant relation with employee morale and productivity. Subsequently, the study also revealed that delegation fully mediates the relationship between employee morale and productivity. Based on the findings, it is recommended that organisations should utilise or adopt the concept of delegation in performing organisational duties. Again, organisations should implement measures or strategies that can help build the morale of employees.

Keywords: Delegation, Employee Morale, Employee Productivity, Public Sector, Ghana

INTRODUCTION

According to [1], engaged employees are committed to their jobs and they provide their organizations critical competitive advantages such as efficiency in performance, and fewer turnover among employees. Therefore, it is not shocking that a lot of organisations today identify avenues to make and keep employees committed through delegating some managerial authority to them [2]. Delegation of authority is one of the modern practices horned by managers and is a vital tool for organisational progress. Thus, the role of delegation stands out, contributes and expands the level of enthusiasm among employees and accomplish positive returns for organizations [1]. The main goal of delegation is to ensure organisational tasks are not performed by a single individual or manager alone. Delegation enhances the morale, build the confidence and create a sense of belonging among employees in organizations [3], [4]. [1], opined that delegation of authority enables organizations to attain competitive advantage, increases productivity and achieve efficiency in task completion that lessens the functional burdens of managers. Again, studies have established that application of delegation of authority enhances employee effectiveness, maintain managers' job positions and preserves the processes involved in facilitating businesses' goal achievement, employees' devotion and enhancing organisational performance [5],[6].

Information processing stream indicates that hierarchical organizations that centralize decision-making experience the ill effects of organizational failures as a result of information transmission leaks in passing on information from top level to the bottom of the hierarchy [7]. Therefore, overall strategies formulated by superiors (top management) may be different from those understood and employed by subordinates due to intra-firm communication inefficiencies. In developing countries especially in the public sector, delegation of authorities is partially practiced because of personal perceptions, fear of delegation itself by top management, and the fear of subordinates to be delegated to due to misunderstandings about what needs to be done [8]. Thus, delegating authority poorly could lead to demoralization, frustration, and inability to accomplish set objectives. Nevertheless, delegation provides benefits such as enabling subordinates in decision making as well as encouraging the participation of workers in the activities of organizations [9]. Consequently, management should establish a framework that would enable them lead subordinates to achieve the set goals of organisations successfully [10]. Managers who decide to perform every task by themselves limit the performance of their employees and thus hinder increases in their own performance and the productivity of their organisations as whole. Hence, it is imperative to incorporate delegation of authority in managerial functions and practices so as to increase performance of both management, employees and the organisation as a whole [2]. To this extent, delegation of authority could be a vital element in boosting employees' morale and subsequently their productivity in organisations. Thus, the morale and productivity of employees could be increased when managers or heads of departments delegate some of their authorities to them; as a healthy morale in the workplace plays a significant role in employees' productivity. Yet, most often management undervalue the significance of building morale in the work environment. Thus, [11] elucidates that improving the morale of employees has been a major challenge to employers and management over the years. In this regard, this study sought to assess how employees' morale affect their productivity when mediated by delegation in the public sector of Ghana.

The theoretical literature on delegation gives several reasons for the use of delegation to make more efficient decisions. Hence, several studies have been conducted on delegation of authority, employees' productivity or morale. For instance, the impact of the delegation of authority on employees' performance has been established in literature by [1], [6]. Also, other studies have concentrated on delegation of authority in business organizations and their rate of effectiveness [12], [13], and [14]. Despite the extensive research conducted on delegation and its effect on employee performance, not much has been done on how delegation affects the morale of employees or how it influences both the morale and productivity of employees. Furthermore, employers are continuously offering various incentives, including higher wages, promotion, training, just to mention a few in order to boost employees' morale and consequently their productivity. Yet, the contribution of delegation of authority has been overlooked in building employees' morale and productivity. In this regard, this study sought to assess how delegation affects employees' morale and productivity in the public sector of Ghana.

LITERATURE REVIEW

Concept of Delegation

Delegation of authority is one of recent practices by managers, and a key management skills in the business world [1], [8]. [15], defined delegation of authority as a practice of allotting tasks and authorities in organisations. Thus, delegation is theorised as the activities involving leaders assigning part of their authority corresponding with given task to subordinates [5]. Again, delegation of authority is also regarded as authority transferred from top management

through to executives and to other managers [2]. Hence, delegation of authority is said to have occurred when decision-making powers are bestowed on subordinates by superiors. But, delegation takes place when someone with authority bestows upon another the power to perform a specific task. Yet, the ultimate responsibility for task accomplishment usually rests on the individual who delegated the authority in the first place. Based on this, the study describes delegation as the transfer of part or full authority and right to certain individuals in organizations to accomplish a particular task or execute plans towards the achievement of organisational goals. That is, the transfer of authority to make decisions and complete specific tasks.

Delegation of authority is a tool that builds and promotes superior-subordinate relations within organisations [16]. It rises the motivational levels among employees and enable them to achieve positive returns for their organisations, managers and other stakeholders [1]. In terms of organization, it helps to attain competitive advantage, increases productivity levels and provides speed in completing tasks efficiently. For managers, delegation helps in lessening functional loads, gaining the satisfaction of employees and building support and confidence among managers and employees. On the side of employees, delegation helps in accomplishing functional empowerment by making employees confident and motivated for excellence in their performance. Delegation of authority reinforces relationships among members in organizations, improve self-confidence among employees and increases the level of tasks accomplishment and speed of plans execution [17]. In any case, the absence of delegation usually leaves individuals disappointed, apathetic, and undertrained, whereas managers are burdened with huge amounts of work [8]. It is therefore hypothesized that;

Concept of Employee Morale

Morale is the most essential psychological state of mind of an individual which is conveyed in the form of self-confidence, zeal and devotion towards an organization. Thus, morale is viewed as a person's attitude towards being part of an organization and it reveals the satisfaction and the sense of accomplishment they obtain from being a part of the group [18]. Hence, employees' morale refers to the total viewpoints, attitudes, fulfilment and self-assurance that they feel at work [19], [20]. Accordingly, morale is an indispensable element of organizational success for it mirrors the attitudes and opinions that individuals and groups have towards organizational goals. Good morale is demonstrated by employee zeal, willing conformance with rules and instructions and readiness to liaise with others in realizing organizational goals. On the other hand, poor morale is demonstrated by aloofness, resistance, sentiments of dissuasion and aversion of jobs.

Organisations today are endeavouring to keep up positive morale among its workers, since workers with positive morale perform better, reduce the rate of absenteeism and waste, tend to be devoted and consequently increase the productivity of organisations [18]. Therefore, it is vital to know the factors such as leadership style, absence of incentive schemes, imprecise promotion procedures, unsafe working environment, ineffective communication and just to mention a few [21], [22], and [23] that influence the morale of employees and how to redress them. Thus, [24] stated that there is no single factor that regularly describes good or poor morale, but morale could be affected by a combination of factors. One crucial stage in enhancing employees' morale is to build a culture where the members in the team understand that their wellbeing and morale at work is significant [25]. At the point when the morale of employees is high, productivity and attitude towards work progresses. Morale is more impacted from the top down (management) than from the bottom up (first line employees). Morale can be a driving force for organisational development [26]. For that reason, [27], revealed that the morale of employees is significant for the following reasons; improving

productivity, performance and quality, greater consideration for details, a safer working environment and increased efficiency.

Concept of Productivity

The conceptualization of worker productivity has gained increasing consideration over the last decade [28]. It is debated that productivity is one of the fundamental factors governing economic production activities, maybe the most essential one [29]. Even though, productivity is regularly talked about by managers, it is hardly ever defined, frequently misunderstood and often jumbled with similar terms, and seldom estimated in proper manner [28]. In a broad sense, productivity can be described as the proportion between a measure of output and a measure of input. The productivity of workers could thus be measured as an output, e.g. sales or units produced, relative to an input, e.g. the number of hours worked or the cost of labour [28]. Hence, productivity can be viewed as the comparative measure of the efficacy of a person, machine, factory, system, and so forth, in transforming inputs into suitable outputs.

Relationship between Delegation and Employee Morale

Delegation is carried out by most organisations because it provides motivation by encouraging participatory management skills to subordinates and thus enhance employee morale [30]. Most organisations would want their managers or superiors to delegate task or authority to subordinates, however, in some instances some superiors may distrust their subordinates. Situations like this may lead to low morale of employees and low performance of the organisation. Low morale among employees makes them lose interests in organisations, especially when management do not place a lot of value on their efforts and performance [31]. Thus, [32], explained that delegation of authority enables employees to feel valued as part of organizations and propel them to be effective in carrying out their assignments. Based on this, the study therefore hypothesized that;

H1: Delegation has a positive and significant relationship with employee morale

Relationship between Delegation and Productivity

The productivity of employees is a critical element in achieving organizational goals [33], [34], [35]. Therefore, most organizations find ways of making their employees committed and involved by delegating some authority/responsibility to them [36]. As a result, [1], indicated that delegation of authority has lessened the functional burdens of managers and has led to collaboration and trust among subordinates and their supervisors. When authority is delegated to employees, they feel self-confident and are motivation for excellence in their performance. Thus, [6] revealed that delegation of authority enhances organisational performance. Also, [1], found that delegation of authority significantly predicted employees' productivity and [14], discovered a significant correlation between delegation and employees' work effectiveness. Therefore, it can be deduced that when delegation is done properly, it increases the productivity of employees. Based on this knowledge, the study hypothesised that;

H2: Delegation have a positive and significant relationship on productivity.

Mediating Role of Delegation on Employee Morale and Productivity

Morale is an abstract feature that encompasses feelings, sentiments, demeanour and opinions concerning organizations and the people that work therein [37] Hence, morale can be said to be a concept involving many factors and conditions levied on people. Nevertheless, these factors influence people differently and may affect the same individual in different ways over time. Thus, the relative impact of each factor is subject to interactions with other factors which are value by the individual and can be channelled to influence productivity using theoretical or mathematical frameworks [38]. But high morale is generally described by features such as self-

control, self-confidence and preparedness to execute assigned tasks [39] In general, high morale affects productivity positively [40]. Thus, [41] describes different mixtures of morale and productivity such as high morale and low productivity; high morale and high productivity; low morale and high productivity; and low morale and low productivity. This implies that there is always not a positive correlation between the two [37]. As such, management need to work on improving the morale of employees by enhancing the work environment [42], [43] as high morale influences the productivity of employees [40]. Even though, research has revealed a relationship between morale and productivity it cannot be said that the morale of employees is the only predictor of high employee productivity. Thus, there may be other mediating variables which affects the relationship between morale and productivity of employees. In this regard, the study hypothesised that;

H3: Delegation mediates the relationship between employee morale and productivity.

METHODOLOGY

This study employed quantitative techniques to explain the effect of delegation in the relationship between employee morale and productivity among public sector workers in Ghana. The target population included all the workers in the public sector of Ghana from which the simple random sampling technique was employed to select 128 workers from 20 public sector organisations across the country.

Reliability Statistics

To ensure reliability, the Cronbach alpha value was used. The Cronbach alpha values for delegation, employee morale and productivity was .714, .854 and .906 respectively. According to [44], numerical values of alpha ranging from 0.7 to 0.95 are acceptable values. This implies that the reliability of the research instruments were high.

Table 1 Reliability of constructs

Item	Cronbach Alpha Value
Delegation	.714
Employee Morale	.854
Productivity	.906

Confirmatory Factor Analysis

[45], contend that there is no reliable standard for assessing a suitable model so they only gave emphasis to CFI, TLI, and RMSEA as regularly used fit indexes. Similarly, [46], explained CFI, NNFI (TLI), DELTA2 (IFI), RNI, and RMSEA in LISREL8 as fit measures. However, it is not likely to see all these fit measures in a particular work [47]. Yet, some of the indices from major classifications has been employed in this work to evaluate the total fitness of the measurement model. Thus, the χ^2/df (CMIN/DF), CFI, and RMSEA, Average Variance Extracted (AVE) and Construct Reliability (CR) were used in this work. According to [48], [49], a normal chi-square (CMIN/DF) value near 1 but not exceeding 3 shows a good fit. With respect to Comparative Fit Index (CFI), the model is regarded as acceptable if it exceeds .93 [50]. Moreover, a Root Mean-Square Error of Approximation (RMSEA) of about .05 or less shows a close fit of the model [51]. Additionally, Average Variance Expected (AVE) value greater than .05 is acceptable [52]. The result of the confirmatory factor analysis is shown in Table 2. It indicates that most values fall within the acceptable values discussed.

Table 2: Confirmatory Factor Analysis

Construct	CMIN/DF (χ^2/df)	CFI	RMSEA	AVE	CR
Delegation	.276	1.000	.000	0.779985	0.566675
Employee Morale	.951	.1000	.000	0.564996	0.435004
Employee Productivity	5.081	.967	.179	0.623204	0.678233

Effects of Delegation on Employees Morale

A simple regression analysis was used to test the relationship between delegation and employee morale as shown on Table 3. The results of the regression analysis revealed a positive and significant relation between delegation and employees' morale. There is a significant relationship because the p-value (0.00) is less than 0.05 ($p\text{-values} \leq 0.05$). Moreover, there is a positive relationship because the coefficient or the beta value is positive ($\beta=.458$). Thus hypothesis 1 which states that delegation has a significant and positive effect on employee morale was supported. As a consequence there is significant and positive relationship between delegation and employees' morale. The R square value of (.127) shows that (12.7%) of the variations in delegation statements are explained by employee morale and the remaining (87.3%) is due to other factors.

Table 3 Regression Analysis on the effects of delegation on employee morale

Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	
1	.357 ^a	.127	.120	.41966	
a. Predictors: (Constant), Delegation					
Coefficient					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.752	.127		5.907	.000
Delegation	.458	.107	.357	4.288	.000
a. Dependent Variable: Employee Morale					

p-values ≤ 0.05 have significant relationship

Effects of Delegation on Employees Productivity

The results of the simple regression analysis on Table 4 shows that there is a positive and significant relationship between delegation and employee productivity ($\beta=.345$, $p \leq 0.05$). Thus, delegation and productivity have a positive and significant relationship. Hence, hypothesis 2 which states that delegation has a significant and positive effect on employee productivity was supported. The R Square of .043 shows that approximately (43%) of the variations in delegation is predicted by employee productivity whilst the rest (57%) can be explained by other factors.

Table 4 Regression Analysis on the effects of delegation on Productivity

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.208 ^a	.043	.036	.84686		
a. Predictors: (Constant), Delegation						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.303	.257		12.865	.000
	Delegation	.515	.215	.208	2.392	.018
a. Dependent Variable: Productivity						

The mediating role of delegation in the relationship between employee morale and productivity

The steps suggested by [53] were followed in the mediating analysis. The first step in the mediation analysis is to test for the relationships among the variables. The Pearson correlation analysis was used to conduct the test. From Table 5, there is a significant relationship among all the three variables. Thus, there is a significant relationship between delegation and morale, delegation and productivity and morale and productivity.

Table 5 Correlation Analysis between Delegation, Morale and Productivity

Correlations				
		Delegation	Morale	Productivity
Delegation	Pearson Correlation	1	.357**	.208*
	Sig. (2-tailed)		.000	.018
	N	128	128	128
Morale	Pearson Correlation	.357**	1	.180*
	Sig. (2-tailed)	.000		.042
	N	128	128	128
Productivity	Pearson Correlation	.208*	.180*	1
	Sig. (2-tailed)	.018	.042	
	N	128	128	128
**. Correlation is significant at the 0.01 level (2-tailed).				
*. Correlation is significant at the 0.05 level (2-tailed).				

**** Correlation is significant at the 0.01 level (2-tailed).**

Correlation between delegation and morale is .000

*** Correlation is significant at the 0.05 level (2-tailed).**

Correlation between delegation and productivity is .018

Correlation between morale and productivity is .042

A two-step hierarchical regression was conducted to test for the mediating role of delegation on employee morale and productivity. The first step predicted the relationship between morale and productivity. The predictor variable (employee morale) were entered in step 1. In step 2, the mediating variable (delegation) and predictor variables were entered. Table 6 summarizes the results of the mediation test of delegation in the relationship between morale and productivity. As shown on Table 6, the effect of employee morale on productive was significant at ($\beta = .347, p < .05$). However, the relationship between morale and productivity became insignificant at ($p > .05$) when the mediating variable (delegation) was introduced, thereby implying full mediation. In other words, delegation fully mediates the relationship between morale and productivity.

Table 6 Mediation of Delegation on Morale and Productivity

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.449	.228		15.133	.000
	EM*EP	.347	.169	.180	2.055	.042
2	(Constant)	3.128	.289		10.810	.000
	EM*EP*D	.234	.179	.121	1.303	.195
	D	.408	.230	.165	1.776	.078

a. Dependent Variable: Employee Productivity

Table 6 Summary of Hypothesis

Hypothesis	Statement	Conclusion
H1	Delegation has a positive and significant relationship with employee morale	Supported
H2	Delegation have a positive and significant relationship on productivity.	Supported
H3	Delegation mediates the relationship between employee morale and productivity	Supported

DISCUSSION

The findings from the study discovered a positive and significant relationship between delegation and employee morale ($\beta=.458$, $p \leq 0.05$). This implies that, when there is a high level of delegation, there will be a higher level of employees' morale and the lesser the level of delegation the lesser the level of employees' morale. Thus, effective delegation helps to build the morale of employees. The findings of the study confirm with other studies previously conducted such as, [32], [3] [4], who indicated that delegation of authority enhances the moral of employees in organizations and makes them feel confident. Similarly, giving the employees some rights and authority through delegation enhances their morale to accomplish their tasks effectively [2]. Therefore, when task is delegated to employees, it helps them to develop their capacity and skills and feels a sense of belonging, value and appreciation. This entice them to perform their assigned duties adequately and efficiently, thus, enhancing their productivity.

From the analysis, it was revealed that delegation has a positive and significant relationship with productivity. There was a positive relationship because the coefficient or the beta value was positive ($\beta=.345$) Thus when delegation is high productivity will also be high and vice versa. The relationship between delegation and productivity was also statistically significant ($p = .018$). The study findings supported [6], who stated that the application of delegation of authority helps in achieving performance efficiency and employees' productivity. Also, [1], found that delegation of authority significantly predicted employees' productivity and [14], revealed a significant correlation between delegation and employees' work effectiveness. The results implied that employees appreciate it when authority is being delegated to them by reciprocating it with improved productivity. Therefore, if authority is not delegated to employees, execution of tasks will be ineffective and lessen their productivity. Thus, when there is high level of productivity, it helps in the achievement of organisational goals and positive outcomes [2].

The findings showed a significant relationship between employee morale and productivity without the introduction of delegation. This means that morale has a significant relationship with productivity. This finding is supported by a study conducted by [37], which revealed that high employee morale leads to high productivity in organisations. This is because the existence of high morale in an organisation makes for a better working environment where employees can perform efficiently. The findings revealed that when the mediating variable (delegation) was introduced, the relationship between morale and productivity became insignificant,

meaning there was a full mediation. Hence, Employee morale has a direct effect on productivity via delegation. Therefore delegation fully mediates the relationship between employee morale and productivity.

CONCLUSION

From the findings of the study, delegation of authority is significant in ensuring employees' morale and productivity. The results show that the more authority is delegated the more employees in the public sector will perform the tasks expected from them thereby increasing productivity and as a result, enhancing their morale. Delegation of authority shows that supervisors in the public sector have confidence in the ability of their subordinates to act on their behalf or on the organizations' behalf. Employees on the other hand perceive this as a form of trust and try to justify the trust through effective discharge of responsibilities expected from them by way of higher productivity. Therefore, organisations in the public sector of Ghana should implement measures and strategies that can help create more avenues for delegation. This will help increase the morale of employees and enhance their productivity.

References

- Al-Jammal, H. R., Al-Khasawneh, A. L., & Hamadat, M. H. (2015). The impact of the delegation of authority on employees' performance at great Irbid municipality : case study. *International Journal of Human Resource Studies*, 5(3), 48–69.
- Olubayo, T. O., Idowu, O. O., & Olarewaju, A. A. (2017). *Delegation of Authority and Employee Performance : An Empirical Evidence from Ikeja Division in Lagos State*.
- Mathieu, J. E., Gilson, L. L., & Ruddy, T. M. (2006). Empowerment and team effectiveness: an empirical test of an integrated model. *J Appl Psychology*, 91(1), 97-108
- Zhang, X., Qian, J., Wang, B., Jin, Z., Wang, J., & Wang, Y. (2017). Leaders' Behaviors Matter: The Role of Delegation in Promoting Employees' Feedback-Seeking Behavior. *Frontiers in Psychology*, 8, 920.
- Kiiza, P & Picho, E.O (2015). Delegation and staff commitment in the school of finance and banking in Kigali, Rwanda: An empirical study. *Global Journal of Commerce and Management Perspective*, 4(3), 50-54
- Kombo, B.W., Obonyo, G. O & Oloko, M (2014). Effects of delegation on employee performance in savings and credit cooperative societies in Kisii County, Kenya. *The International Journal of Business and Management*, 2(7), 22-31
- Van Zandt, T., (1999). 'Real-time Decentralized Information Processing as a Model of Organizations with Boundedly Rational Agents,' *Review of Economic Studies*, 66, 633–658
- Swai, L. (2014). *Factors Inhibiting Effective Delegation In Public Organization : A Case Study Of Kibaha Education Centre (KEC)*. Mzumbe University, Tanzania
- Yukl, G., & Fu, P. P. (1999). Determinants of delegation and consultation by managers. *Journal of Organisational Behaviour*, 20, 219-232
- De Wilzem, E., Van Dyk, H. & Coetzer, I.J.M. (2012). *Management of Education Institutions*, Cresta: Education Facilitators.
- Taylor, G. S. (2004). The internal disclosure policies of private-sector employers: An initial look at their relationship to employee whistleblowing. *Journal of Business Ethics*, 12(2), 127-136
- Colombo, M. G., & Delmastro, M. (2004). Delegation Of Authority In Business Organizations: An Empirical Test. *The Journal Of Industrial Economics*, LII(1), 53–80.
- Mcelheran, K. (2013). *Delegation in Multi- Establishment Firms : Evidence from I.T. Purchasing* (No. Working Paper 11-101). Boston.
- Shekari, G., Naien, M. M., & Nouri, S. R. (2012). Relationship Between Delegation Authority Process And Rate Of Efectiveness (Case Study : Municipality Regions Of Mashhad). *Interdisciplinary Journal Of Contemporary Research In Business*, 4(5), pp. 870–880
- Lutgans, fred & Hodegts, Richard (2004). *Business*, 2nd Ed, McGraw, hill Book Company.

- Joiner, T.A., Bakalis, S & Choy, J (2016). *Delegation, job satisfaction and subordinate performance: The mediating effect of leader-member exchange*. <https://www.Research gate.net/publication/268343424>
- Wadi, Khamis Adam (2009). *The impact of delegation of authority to managerial performance*, unpublished Master Thesis, University of Sudan for Science and Technology, Faculty of Business Studies, Sudan
- Kandhakumar, P., & Balasingh, J. I. (2016). Conceptual Frame Works On Employee Morale And Satisfaction In Work Place. *International Conference on "Innovative Management Practices*, 1(1), 312–318.
- Heathfield, S. M. (2018). *You can boost employee morale*. Available: <https://www.thebalancecareers.com/you-can-boost-employee-morale-1918107>
- Coughlan, R. J. (1970). *Dimensions of Teacher Morale*. *American Educational Research Journal*, 7(2), 221-234
- Holliday, A. R. (2007). *Doing and writing qualitative research*. 2nd ed. London: Sage Publications
- Sankey, D. 2011. Future Horizons: Morale learning and the socially embedded synaptic self. *Journal of morale education*, 40(3), 417-425
- Wittmer, D. (2000). Individual morale development: An empirical exploration of public and private sector differences. *Public Integrity*, 2(3), 181-194
- Finger, J. (2005). *The Mangement Bible*. New Hollabd Publishers Limited.
- Bennett, T., Hess, B.I. (2001). Performance of Operational Policy Rules in Organisational Structure. GSI Working Paper. Carnegie Mellon University: Tepper School of Business.
- Ewton, Z. (2007). Sustaining Employee Morale: Keeping the Peace or Burning or Burning Down the House.
- Millett T (2010). *6 reasons why staff morale is important*. Available: <http://ezinearticles.com/?6-Reasons-Why-Staff-Morale-Is-Important&id=4340843>
- Sauermann, J. (2016). *Performance measures and worker productivity*. Available: <https://wol.iza.org/uploads/articles/260/pdfs/performance-measures-and-worker-productivity.pdf>
- Singh, H., Motwani, J., Kumar, A. (2000). A review and analysis of the state of the art research on productivity measurement. *Industrial Management and Data Systems*, 100, 234-41.
- Mukawasi, B. S., (2013). *The effect of work delegation strategies on employee morale in an organisation. A case of Kenyan agricultural research institute*. Diploma in Public relation thesis submitted to the university of Nairobi.
- Zeynep, T ., & Robert, S. H. (2008). *Managing the Impact of Employee Turnover on Performance: The Role of Process Conformance*. *Organization Science*, 19(1), 56-68. <https://doi.org/10.1287/orsc.1070.0294>
- Hashim, T., Ahmed, A & Jaradat, N (2013). The impact of structural empowerment in achieving psychological empowerment in the Jordanian public organizations. *Journal of Hebron University for Research*, 8(1), 44-56.
- Voon, M. L., Lo, M. C., Ngui, K. S., & Ayob, N. B. (2011). The influence of leadership styles on employees' job satisfaction in public sector organizations in Malaysia. *International Journal of Business, Management and Social Sciences*, 2(1), 24-32
- Parker, R., & Bradley, L. (2000). Organisational culture in the public sector: evidence from six organisations. *International Journal of Public Sector Management*, 13 (2), 125-141
- Anitha, J. (2014). Determinants of employee engagement and their impact on employee performance. *International Journal of Productivity and Performance Management*, 63(3), 308-323
- Chen, Z. X., & Aryee, S. (2007). Delegation and employee work outcomes: an examination of the cultural context of mediating processes in china. *Academy of Management Journal*, 50(1)
- Shaban, O. S., Al-Zubi, Z., Ali, N., & Alqotaish, A. (2017). The Effect of Low Morale and Motivation on Employees' Productivity & Competitiveness in Jordanian Industrial Companies. *International Business Research*, 10(7)
- Jason, S., (2015). *Morale and productivity*. Calhoun: The NPS Institutional Archive Dspace Repository.
- Schulman, M. L., & Kowadlo, B. F. (2004). *Working Smart*. Cengage Learning
- Weakliem, D. L., & Frenkel, S. J. (2006). Morale and Workplace Perfomance. *Work and Occupations Journal*, 33(3)
- Likert, R. (1951). Motivation Dimensions of Administration. Available: https://www.psc.isr.umich.edu/dis/infoserv/isrpub/pdf/Motivational_378_.PDF

- Cori, C. (2017). How work environment influence on morale of employees of employee cooperative. *South East Asia Journal of Contemporary Business and Law*, 13(2), 87-90
- Edem, M. J., Akpan, E. U., & Pepple, N. M. (2017). Impact of workplace environment on health workers. *Occupational Medicine & Health Affairs*, 5(2) 1-5
- Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International Journal of Medical Education*, 2, 53-55.
- Kenny, D., & McCoach, D. B. (2003). Effect of the Number of Variables on Measures of Fit in Structural Equation Modeling. *Structural Equation Modeling: A Multidisciplinary Model*, 10(3), 333-351
- Knight, G. A., & Cavusgil, T. S. (2004). Innovation, organizational capabilities, and the born-global firm. *Journal of International Business Studies*, 35(2), 124-141
- Holmes-Smith, P., Coote, L., & Cunningham, E. (2006). Structural equation modeling: From the fundamentals to advanced topics. *Melbourne: Sreams*.
- Kline, R. B. (1998). *Principles and practice of structural equation modeling*. NY: Guilford Press
- Ullman, J. B., & Bentler, P. M. (2012). Structural Equation Modeling. *Research Methods in Psychology*, 2
- Byrne, B. M. (1994). *Structural Equation Modeling with EQS and EQS-Windows: Basic Concepts, Applications, and Programming*. Sage Publications, Inc.
- Chen F, Curran PJ, Bollen KA, Kirby J, Paxton P. An Empirical Evaluation of the Use of Fixed Cutoff Points in RMSEA Test Statistic in Structural Equation Models. *Sociological methods & research*. 2008;36(4):462-494. doi:10.1177/0049124108314720.
- Fornell, C., & Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *American Marketing Association*, 18(1), 39-50
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173-1182

Consolidation, Reforms and Profitability of Deposit Money Banks: Evidence from Nigeria

Bunmi A. Bajomo (PhD)

Director, Corporate Banking,
Coronation Merchant Bank, Lagos, Nigeria.

Anthony E. Akinlo

Professor, Economics Department,
Faculty of Social Sciences, Obafemi Awolowo University,
Ile – Ife, Nigeria.

ABSTRACT

Of all reforms agenda instituted by successive government in Nigeria, the issue of increasing shareholders' fund to N25 billion and the need to comply before 31st December 2005 generated so much controversy especially among the stakeholders and seemed to have left a lasting impact on the structure of banking in the country. This study aimed to determine the effect of consolidation and resulting reforms on practice and conducts of banks using a profit efficiency function generated by adopting the reduced form of the cost efficiency function that replaces the cost variable with a profit variable via a financial intermediation approach covering the period 2005-2014. The study proves that banking sector reform has a positive effect on industry profitability; with the channels of transmissions being level of capitalization, liquidity and network effectiveness. This study also affirms the structure-conduct-performance (SCP) hypothesis when NIM is used as the dependent variable for Nigerian banking, which indicates that the size and structure of some banks confers some advantages in terms of pricing and product leadership. The study also reinforce the importance of adequate capitalization and liquidity. Finally, volatility resulting from macro-economic policies impacts negatively on bank's margin as it affects industry perception and attractiveness of the economy to potential investors. Policy initiatives that signals continuing and sustained government focus on maintain macro-economic stability will contribute to growth of banking and as a consequence the real economy.

JEL Classification:

Keywords: Reforms, Consolidations, Profitability, Risk, Macro economic variables

INTRODUCTION

In the past decade, global financial systems, have experienced dramatic turnaround due to the adoption of financial reform policies. The underlying facts behind the acronym 'financial reform' were deregulation of the financial system, enhancement of the degree of competition, elimination of the imbalances in the financial markets, and improvement of the performance of financial institutions (Galagedera and Edirisuriya, 2005). Subsequently, many emerging economies embraced financial reform in response to internal or external pressure. Internal pressure resulted from fundamental macroeconomic issues while external pressure was exerted by various supranationals and donor agencies such as the International Monetary Fund (IMF) and World Bank (Hossain and Chowdhury, 1996).

To function effectively under this ever changing scenario, monetary authorities are increasingly interested in measuring the performance of banks in terms of profitability, cost efficiency, asset quality and management efficiency to ascertain the impact of instituted financial reform programs on the financial sector and by implication the society at large.

Needless to mention that financial sectors are also interested in dimensioning the impact of reforms on their performance and their competitive position after adopting these reforms in view of significant momentum in financial innovation, and automation created by reforms and resulting consolidation initiatives (Claudia et al., 2004).

It is widely believed that Banks with better performance are better able to withstand negative shocks and contribute to the stability of the financial system (Athanasoglou et al., 2008). Hence, the impact of banking reforms in form of Consolidation of banks have attracted the interest of academics, professionals, banks stakeholders, financial markets and regulators. Despite this interest, there is limited research investigating the status of the financial performance and the impact of consolidation on the performance landscape in the country. Too little studies were conducted to investigate the status of the Nigerian banking industry's performance and its determinants while some other studies were undertaken to investigate the performance of banks in the light of financial reform. More importantly, the impact banks' sensitivity to risks and its effect on industry profitability also needs to be assessed.

Post Consolidation, the banking sector witnessed unprecedented growth which hindsight seemed like neither the regulatory authorities nor the industry itself were prepared for neither was there any effective tools or measures to monitor the industry's explosive growth. The phenomenal growth of banking institutions overstretched the regulatory capacity of the CBN while growing sophistication of designed financial instruments and its usage heightened the risks of malpractices and invariably fraud in the industry. Specifically, mismanagement such as insiders' abuse and poor credit appraisal systems, resulted in the accumulation of unpaid loans and advances, which eventually contributed to the distress situation experienced in the banking system, which culminated in government fostered consolidation exercise of 2005. Today, compared with 2008, banks in Nigeria are more adequately capitalized and their exposures are more controlled. Average sector capital adequacy ratio is now over 20% due to recapitalizations.

Despite the hiccups in 2009, the industry has emerged more robust and the industry still remains one of the fastest growing in-country with double digit spread on its assets and liabilities. Earnings CAGR (Compounded average growth rate) was 32% at FYE2010 (Bismarck Rewane, 2011) and remains one of the most profitable globally with historical margins in the region of 63% and control of over 90% financial savings available also for investments (Agusto Report, 2009). However the recession witnessed since year 2015-2017 and resultant effect have dampened the earnings profile of Nigerian banks as default risk level became elevated due to declining oil price, falling reserves and stunted loan book. Earnings growth in 2017 (c.32%) were largely due to Loan repricing and FX gains from currency trading. Industry ROA for FYE 2017 declined to c. 17.3% due to reduced FX gains owing to return to normalcy since Q3'17 as the effect of the transparency brought by the Investors and Exporters Window (I&E) introduction in April 2017 kick in.

In view of the above, keen interest subsists and debate still on-going among analysts on factors that impact bank performance. What is generally not in doubt is that industry, bank specific, macroeconomic factors and monetary policy affect performance of banks. In theory, economists generally agree that large-scale businesses use economies of scale for competitive advantages. Most empirical works in support of size as a positive factor for bank performance use aggregate data and econometric analysis. However, in terms of micro data on individual bank basis, it is necessary to also validate the theory that bigger banks (by size or capitalization) are better in terms of performance, not only from the point of view of the regulatory authorities who are generally interested in capital adequacy and banking system

soundness but also from the point of view of the shareholders and potential investors who, ultimately, are interested in the returns on their investments (CBN, 2013).

More importantly, bank profitability trend in Nigeria since the liberalization of the financial sector, led to the thinking that investment was most worthwhile in the banking industry. The increase in the number of new entrants to the industry in the late 1980s, 1990s and till date lend credence to this assertion. In view of the role that the banking industry plays in the economy, the regulatory authorities, policy makers, banks' management, and other stakeholders cannot be less interested in the growth, competition and performance statistics of the industry.

Based on Brissimis et al. (2008), there are three interrelated and dominant determinants of bank performance in the current theoretical debate, namely the financial reform, the degree of competition and the risk-taking behavior of banks. These variables have been included in research efforts by different scholars drawing on initial effort of Keeley (1990), who argued that the deregulation of the US banking sector in the 1970s and 1980s increased competition and led to a reduction in monopoly rents thus, worsened performance, to a higher equilibrium risk of failure. These studies have however yielded conflicting and contentious results.

This paper reviews the impact of banking reforms on industry profitability and the impact of industry structure and banks risk-posturing on industry performance. To do this effectively, we attempt a review of the nexus between banking consolidation, other reform efforts and influences of banks risk appetite and balance sheet management on banks' eventual performance and sustainability in the Nigerian banking industry.

This study uses the net interest margin (NIM) as a measure of bank performance. However, unlike, Brissimis et al (2008) which construct a yearly index of competition for each country following a non-structural methodology, this study uses the level of Bank's shareholder's investment or equity to proxy consolidation given significant alteration to the industry capitalization structure post consolidation. The study also analyses the level of concentration (defined in network terms) to measure the competitiveness of the industry and to see how diverse industry competition is or the extent to which individual bank wields market power or control. To effectively ascertain the extent of relationship between the reform process and bank performance, the study utilized bank-level over a ten year period which captures the significant period of reform. Finally, to analyze the risk- posturing of banks, we consider three categories of risk, namely credit, liquidity and capital risk.

The rest of this paper proceeds as follows. Section 2 briefly reviews the relevant literature. Section 3 describes the econometric methodology that corresponds to the derivation of bank performance measures; it also discusses the determinants of bank performance and their impact on banks profitability. Section 4 presents the data used and resulting findings from data analysis. Finally, Section 5 concludes.

REVIEW OF LITERATURE

There have been various studies focusing on consolidation induced reforms and performance; however, results from these studies on resultant impacts of financial reform program on profitability have been mixed (Strum and Williams, 2004). Some studies clearly observed improved performance of banks after the adoption of financial reform, while others studies could not ascertain any correlation post banking reform period. The researches on bank performance were initially devoted to the analysis of bank margins. Examples of these studies

include: Greece (Athanasoglou et al., 2008), China (Garcia-Herrero et al., 2009) and Indonesia (Sufian and Habibullah, 2010).

The pioneering paper of Ho and Saunders (1981) has been the theoretical framework for all empirical studies on the determinants of bank margins. The dealership model of Ho and Saunders indicates that the optimum bank interest margin depends on the bank's risk aversion, the size of bank transactions, the variance of the interest rate on deposits and loans, and the degree of market competition (see Hawtrey and Liang, 2008 and Kasman, 2010 for a detailed review of the results in both developed and developing countries). An alternative approach adopted by Naceur and Omran (2010) focused on performance analysis using both net interest margins and return on bank assets and equity with a more eclectic one-step estimation procedure based on a behavioral model of the banking firm. Bank performance is usually expressed in this approach as a function of internal and external determinants. The internal variables commonly used are bank specific determinants and the external variables are related to the economic, financial and institutional environment.

Following from Naceur and Omran (2011); Size (a proxy for consolidation) is included to assess the existence of economies or diseconomies of scale in the banking. The empirical results provide conflicting evidence. Smirlock (1985), and Ben Naceur and Goaid (2008) find a positive and significant relationship between size and bank performance. On the other hand, Kosmidou et al. (2005) find that small UK banks display higher profitability to larger ones over the period in 1998. Kasman (2010) find that a size has a negative and statistically significant impact on the net interest margin on a panel of 431 banks in 39 countries.

Sufian and Habibullah (2010) examined the impact of financial crisis on bank performance, by employing an unbalanced panel of 404 bank year observation for the period 1990-2005. The empirical results suggest that the Asian financial crisis exerts negative and significant impact on Indonesian banks' profitability. In addition, Garcia-Herrero et al. (2009) analysed the main determinants of profitability for Chinese banks by employing a panel data set for 87 banks from 1997-2004. They found that better capitalized banks, with a relatively larger share of deposits, and more X-efficient banks tend to be more profitable. Hence, a less concentrated banking system as well as lower government intervention increases bank profitability. Furthermore, from the macroeconomic variables included, higher real interest rates on loans and inflation appear to foster profitability while the volatility of interest rates reduces it.

When analyzing impact of reform and risk posture on banks performance two different yet complementary approaches are prominent. The first examines the relationship between Banking reform, market power (competition) and bank risk-taking, while the second investigates the direct effect of banking reform on bank performance. Studies in the first approach adjudged as mainly theoretical by Brissimis et al (2008) include Matutes and Vives (2000), an affirmation of Keeley (1990) which focuses on the liabilities side of a bank's statement of financial position, while Bolt and Tieman (2004) reached similar conclusions by examining the assets side. Based on this approach banking reforms which alters level of banks capital requirements is not a Pareto optimal policy for controlling banks' risk-taking incentives except such requirements are considered along side deposit mobilization capabilities (Hellmann et al.(2000)). Diamond and Rajan (2000, 2001) pointed out that the optimal bank capital structure trades off liquidity creation and costs of bank distress. Therefore, banks are fragile during episodes of aggregate liquidity shortages, in which case capital has a strategic role to preventing failure.

However, Allen and Gale (2004), studying a variety of models, suggested a complex and multi-

faceted link. For example, partial-equilibrium models generate a negative trade-off between competition and stability, but other models in form of general equilibrium or Schumpeterian competition require the combination of perfect competition and financial instability.

Boyd et al. (2006) examined two theoretical models, the first pointing to a negative correlation between banks' risk of failure and competition, and the second establishing the opposite result. The fact that the second model was verified empirically on the basis of large US and international samples implies that increased competition does not lead to unstable banking environments.

On the other hand, most studies, including Boyd et al. (2006), which pointed to a negative correlation between banks' risk of failure and competition, all proxy competition by concentration ratios that in many aspects have proved to be limited measures of competition. Other indicators of competition/market power employed include Tobin's q (used by Salas and Saurina, 2003; De Jonghe and Vander Vennet, 2008), the Panzar and Rosse H-statistic (used by Claessens and Laeven, 2004 and Yildirim and Philippatos, 2007) and the Lerner index (see e.g. Angelini and Cetorelli, 2003). This literature lacks a measure of market power that shows how competition evolves over time, and thus during the deregulation process. The Panzar and Rosse H-static model seems the most reliable measure of competition in banking as it ascertain level of competition on the basis of magnitude and sign of derived H-Statistic.

The other theoretical model analysis the direct impact of reforms on bank performance without accounting for its effect through competition and risk-taking, via the use of parametric and non-parametric estimates of bank efficiency and productivity. The results also came out mixed. Hence results are also rather controversial. Indeed, Wheelock and Wilson (1999) examined both the efficiency and total factor productivity of US commercial banks in the 1984–1993 period, coinciding with period of major regulatory reforms. The study found that whilst large banks experienced productivity growth, efficiency declined due to economics of technological change. Variations in results from these studies are largely due to dissimilar measures of performance and samples used. With samples reflecting divergent macroeconomic conditions and reforms prevalent at the time.

While above enumerated studies offer insights into the relationship between reform, market power and banks risk-focus, or between reform and bank performance, it is important that we have a study that focuses on the links in the reform-bank performance chain in order to draw verifiable and informed position.

ECONOMETRIC FRAMEWORK AND METHODOLOGY

Performance Estimation

The models used in this study in the estimation of efficiency – proxied by the determinants of net interest margin are based the two empirical approaches of the dealership model proposed by Ho and Saunders (1981) and its subsequent elucidations. Under the first, the determinants of the net interest margins are explained through a two-step procedure. In the first step, a regression of net interest margins is run on a set of explanatory variables. The resulting constant term in this regression - is the measure of the 'pure' margin. In the second step, the relationship between this 'pure' margin and the variables posited by the theoretical model is analysed. The main advantage of this model is that it allows 'pure' margin to be estimated (kasman et al. (2010) However, this model also requires a time series long enough to be able to estimate the 'pure' margin. An alternative approach is a single-stage regression technique based on a behavioral model of the banking firm in which various potential determinants of the

net interest margin are included. Following Angbazo (1997), Demirguc-Kunt and Huizinga (1999), Drakos (2003), and Maudos and de Guevara (2004), we use single-step estimation approach to analyze the determinants of net interest margin for the Nigerian banking industry. Following the approach commonly used in the literature, we specify net interest margin as a function of: (a) bank-specific variables, such as capitalization, liquidity, and credit risk and market power. (b) Industry - specific characteristic, such as the degree of concentration, and (c) country-specific macroeconomic conditions, such as inflation, short term interest rate, Investment to Gross Domestic Products.

Based on Berger et al. (2000a), bank performance tend to persist over time reflecting impediments to market competition, informational opacity, and sensitivity to macroeconomic shocks. While Garcia-Herrero et al. (2009) points out that potential endogeneity could be a problem when assessing bank profitability determinants analysis on determinants of bank performance may suffer from several sources of inconsistencies, such as highly persistence performance, omitted variables, and endogeneity bias. As larger banks with significant economies of scale may have sufficient resources to provision for their non-performing loans. Thus, a more efficient banks may also find it easier to increase their customer base through a successful advertising campaign and could hire the most skilled personnel thereby enhance their profitability (Garcia-Herrero et al., 2009).

To overcome the concerns associated with pooled OLS results, we introduce a lagged dependent variable in the regression models by employing the Generalized Methods of Moments (GMM) estimator introduced by Arellano and Bond(1991), Arellano and Bover (1995), and Blundell and Bond (1998). The system GMM (see Blundell and Bond, 1998) allows us to control for persistence and endogeneity issues so as to generate consistent estimates. The GMM joins in a single system the regression equations in differences and levels, each one with its set of instrumental variables. By doing so, this study follows Sufiana and Habibullah (2011) in exploring the panel structure of the dataset and controls for unobserved bank specific effects, potential endogeneity problems of the explanatory variables, time specific effects, and the use of lagged dependent variables. Thus, the panel data regression method provides efficient solution and enables valuable inferences to be drawn in respect to the degree of performance of banks over different economic and institutional conditions.

Based on theoretical discussions above we specify our empirical model as below:
Our empirical model is specified as follows:

$$P_{it} = \beta_1 + \beta_2 BSV_t + \beta_3 INDCON_t + \beta_4 MAC_t + \epsilon_{it} \quad (1)$$

The performance p of bank i at time t is expressed as a function of: a) bank-specific variables, such as credit, liquidity and capital risk, BSV , b) Industry-specific characteristics, an index of banking industry market power $INDCON$, and c) country-specific macroeconomic conditions, common to all banks MAC such as short term interest rate, ratio of investment to Gross Domestic Product (GDP) and the error term ϵ_{it} and the subscripts 'i' and 't' represent individual banks and time period, respectively. Extending Eq. (1) to reflect NIM as the dependent variable in line with the variables described in Table 1, the regression model is formulated as follows:

$$NIM_{it} = \beta_1 + \beta_2 BSV_t + \beta_3 INDCON_t + \beta_4 MAC_t + \epsilon_{it} \quad (2)$$

where NIM_{it} is the net interest margin of bank i at time t . The NIM is computed as the

difference between interest revenue and interest expense per Naira assets. To ascertain the validity of instruments used in our estimates, we employed Sargan's test of over-identifying restrictions. Using a dynamic panel approach incorporating the lagged value of the dependent variable as part of the regressors we estimate equation (3)

$$NIM_{it} = \beta_1 NIM_{i,t-1} + \beta_2 BSV_t + \beta_3 INDCON_t + \beta_4 MAC_t + \epsilon_{it} \quad (3)$$

The results of present test statistics for the first and second order serial correlations in the error process are presented. Results indicate absence of second order serial correlation as used +instruments are not correlated with the error terms. (Baum et al., 2010). Following Garcia-Herrero et al. (2009) among others, all regressors were instrumented, while the macroeconomic characteristics were treated as exogenous. The definitions and expected signs of bank-specific and country-specific variables are presented in Table 1.

Table 1: Description of the variables

Variables	Description	Notation	Hypothesised Relationship
Dependent Variable			
Net interest margin	Difference between interest revenue and Interest expense per dollar of assets	NIM	
Bank -Specific Determinants			
Capitalization/Capital Risk	equity/total assets	CAP	+
Credit Risk	Loan-loss provisions/Total Loans	CR	+
Liquidity Risk	Liquid Asset/Total assets	LR	+
Industry-specific determinant			
Industrial Concentration (HHI)	Sum of squares of the market shares of all bank (Number of Bank' Branches/ Total Banks Branches)	INDCON+/-	
Macroeconomic determinants			
Short Term Interest Rates	Minimum Rediscount Rate and Monetary Rate	INT	+/-Policy
Investment to GDP	Gross Capital Accumulation	INVGDP +/-	

This table describes the variables used in our profitability analysis to investigate Relationship between Bank's Margin when measured against the determinants of Nigeria banks' performance

Source: Bank-Specific Data were obtained from audited financial statements of surveyed banks during the period.

Macro Data were obtained from various publications of the CBN and Bureau of Statistics.

Theoretical Background for measurement of bank Profitability

Profitability means ability to make profit from all the business activities of an organization, company, firm, or an enterprise. It shows how efficiently the management can make profit by using all the resources available in the market. According to Harward and Upton (1961), profitability is the ability of a given investment to earn a return from its use. However, Profitability is not synonymous to Efficiency. Profitability is an index of efficiency; and is regarded as a measure of efficiency and management guide to greater efficiency. Though, profitability is an important yardstick for measuring the efficiency, the extent of profitability cannot be taken as a final proof of efficiency. Sometimes satisfactory profits can mark inefficiency and conversely, a proper degree of efficiency can be accompanied by an absence of

profit. The net profit figure simply reveals a satisfactory balance between the values receive and value given. From a banking perspective, the change in operational efficiency is merely one of the factors on which profitability of an enterprise largely depends. Thus to understand profitability, it will be useful to understand and measure the effectiveness of the bank by determining its level of efficiency. There are two broad approaches to measuring banking efficiency, profitability and performance. These are the non-structural and structural performance approaches.

Structural Performance Approach

The structural approach is choice-theoretic and, as such, relies on a theoretical model of the banking and a concept of optimization. The older literature applies the traditional microeconomic theory of production to banking firms in much the same way as it is applied to non-financial firms and industries. The newer literature views the bank as a financial intermediary that produces information-intensive financial services that takes on and diversifies risks. Risk diversification is an essential aspect of financial intermediation that is not generally taken into account in traditional applications of production theory (Mester, 1992). For instance, the traditional theory defines a cost function by a unique cost minimizing combination of inputs for any given level of outputs. Thus, the cost function gives the minimum cost of any given output vector without regard to the return risk implied by the cost-minimizing input vector. Ignoring the implied return risk may be appropriate for non-financial firms, but for financial institutions, return risk plays an essential role in maximizing the discounted flow of expected profits.

The traditional structural approach usually relies on the economics of cost minimization or profit maximization, where the performance equation denotes a cost function or a profit function. Occasionally, the structural performance equation denotes a production function. While estimating a production function might tell us if the bank is technically efficient, the study is more interested in economic efficiency, i.e. banking performance, whether, a bank is responding to relative prices in choosing its inputs and outputs to minimize cost and/or to maximize profit, which subsumes technical efficiency. Risk plays no explicit role in these performance estimate although some papers include one or more dimensions of risk in the estimation as control variables. (Berger and Mester, 1997 and 2003)

Non-structural Performance Approach

The non-structural approach applies a variety of financial measures that capture various aspects of performance to compare performance among banks and considers the relationship of performance to investment strategies and other factors namely bank specific, industry specific, quality of regulation and governance structure. For example, the non-structural approach could investigate banking asset market size or profitability by asking how performance measures are correlated with such investment strategies as growing by asset acquisitions at consolidation and the diversification or focus of the bank's product mix. It looks for evidence of agency problems in correlations of performance measures and variables characterizing the quality of banks' governance. Thus, while informal and formal theories may motivate some of these investigations, no general theory of performance provides a unifying framework for these studies.

Methodology for Measuring Banks Performance

Two general methodologies that are commonly used to measure efficiency and performance. They are: parametric approach using econometric techniques; and, nonparametric approach utilising linear programming method. Both differ mainly in how they handle the random error and their assumptions regarding the shape of the efficient frontier. The parametric approach

has the advantage of allowing noise in the measurement of inefficiency. However, the approach needs to specify the functional form for the production, cost or profit function.

Non-parametric is simple and easy to calculate since it does not require specification of functional form (Coelli, 2004). However, it suffers from the drawback that all deviations from the best-practice frontier are attributed to inefficiency since it does not allow for noise to be taken into account. Common parametric methods are the Stochastic Frontier Approach (SFA), the Thick Frontier Approach (TFA) and the Distribution Free Approach (DFA), while the common nonparametric techniques are the Free Disposal Hull analysis (FDH) and the Data Envelopment Analysis (DEA).

It is suggested both parametric and nonparametric techniques are used in order to strengthen the findings and to make the study more robust (Favero & Papi, 1995; Intarachote, 2001; Nghia, 2003; Mohamed, 2003). Ideally, if the majority of the findings from the two different techniques are similar, then one can be sure that the findings are not being driven by chance or luck.

After the type of efficiency and the measurement techniques, a financial service provider must decide which approach to adopt in selecting inputs for desired output before measuring the bank's efficiency. Any decision made, however, will essentially be subject to banks' treatment of the money they received from the depositors as well as the money they extended to the creditors. In relation to this, two main approaches can be found in the literature. They are: the intermediation approach; and, the production approach.

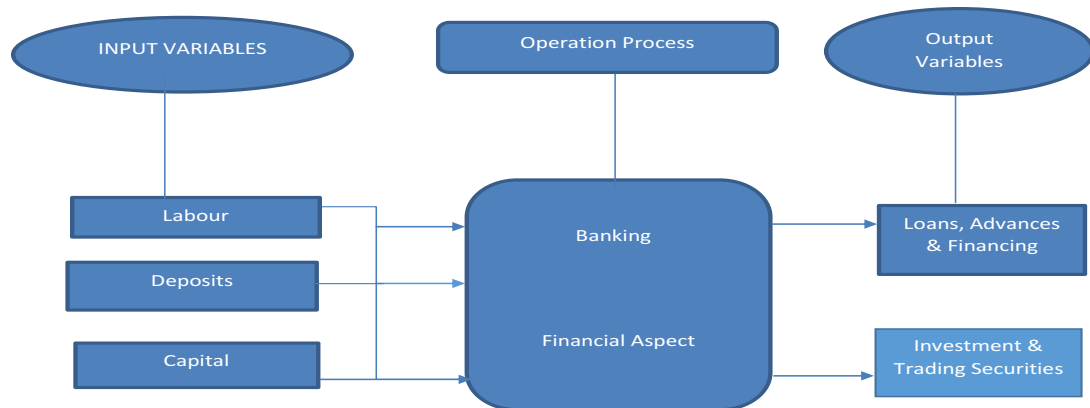
Production Approach

The production approach defines the bank activity as production of services and views the banks as using physical inputs such as labour and capital to provide deposit and loan accounts. While the intermediation approach views banks as the intermediary of financial services and assumes that banks collect deposits, using labour and capital, then intermediate those sources of funds into loans and other earning assets (Sealey & Lindley, 1977). This intermediation approach is argued to be particularly appropriate for banks where most activities consist of turning large deposits and funds purchased from other financial institutions into loans or financing and investments (Favero & Papi, 1995).

Intermediation Approach

In choosing the appropriate approach, Berger and Humphrey (1997) suggested that the intermediation approach is the most appropriate for evaluating the entire bank because it is inclusive of interest expense (income paid to depositors), which often accounts for one-half to two-third of total costs. Meanwhile, he recommended that the production approach is more appropriate for evaluating the efficiency of the bank's branches because branches process customer documents for the banks as a whole.

An example of the intermediation approach is illustrated in Figure 1. In this case, the banking operation process produces joint-outputs. That is to say, banks produced different outputs from the same set of inputs. To give but one example, the same staff, office space and deposits and funds (for brevity, they are called inputs) are used to provide financial assistance to corporate or retail clients. At the same time they are used to conduct other business dealings like investment and trade, which generate returns for the banks and subsequently depositors. This study deploys the intermediation approach to analyzing the determinants of banks profitability.



Source: Alhabshi and Abdullah (2006)

Figure 1: Input-output relationship in banking (intermediation approach)

Measurement of Banks' Profitability

Net Interest Margin

The study employed a financial intermediation approach to measuring banks profitability. Bank's performance is proxied by NIM. NIM is the resulting difference between a bank's total interest expense paid on customers deposit or borrowed funds and interest earned on a bank's risk asset portfolio. NIM is a major indicator of efficiency in financial intermediation, since a high NIM is indicative of the effective maximisation of yield on risk assets and a sensible pricing of interest-bearing liabilities in a bank's book. However, NIM has limited application in investment banking where Non-Interest Income component via Fees are expected to outweigh interest income. As banks move toward more fee-based income generating activities, NIM will decline in importance as a measure of asset profitability.

Bank's Risk Sensitivity

A bank's risk posturing and its risk architecture will usually define its sensitivity to risk and tolerance threshold for deviations from set risk framework. The level of risk a bank is willing to take affected its expected end of period return, To capture the effect of risk on performance the study identifies three broad risk category namely credit, liquidity and capital risk. Poor risk asset quality will usually signals default (increased credit risk) which in turn will affect levels of liquidity (Liquidity risk) and ability to meet depositors calls. Illiquidity usually precedes insolvency¹. Where the two major causes of bank failures. In periods of uncertainty, financial institutions are usually expected to review their portfolios and hedge risk or diversity portfolio asset mix. Ability to hedge emerging risks will be helped by adequate level of capitalization, which represents hedge against headwinds in financial crises. An adequately capitalized institution will be able to hedge capital risk associated with its loan book. Significant capital buffers will aid a bank's drive to raise liquid holdings in order to reduce credit risk. Expectedly, increased levels of capital (lower capital risk) act as a safety net in the case of adverse developments and therefore are expected to have a positive impact on bank performance. Following similar studies (Sufian and Habibullah, 2012), we use the ratio of loan-loss

¹ Both are major causes of bank failures.

provisions to total loans (CR) to measure credit risk, the ratio of liquid to total assets (LQ) to proxy liquidity risk and the ratio of total equity to total assets (CAP) to proxy capital risk. More importantly, while a bank's leverage in form of capitalization has been demonstrated to be important in explaining the performance of financial institutions, its impact on bank performance is equally ambiguous. Based on Berger (1995), Lower capital ratios may suggest a relatively risky position, thus we should expect a negative coefficient of this variable. Moreover, an increase in capital may raise expected earnings by reducing the expected costs of financial distress, including bankruptcy.

Macro/External Control variables

Following the approach adopted by Goddard, et al. (2004); Panayiotis et al. (2005) and Francis (2013), among others on bank efficiency in developed and a few developing economies. In measuring bank profitability, macroeconomic indicators are utilised as inputs and outputs in the estimation process. Applicable control indicators are the ratio of total investment to GDP (INVGDP) as a proxy for fluctuations in economic activity, and a short-term interest rate (IR), which captures the variability of market interest rates and the impact of swings in interest rate structure on banks' profitability. Higher level of interest rate portends well for Banks' earning potential as banks have option in investing loanable funds. Banks would either invest in short term, liquid and risk free government securities or choose to lend directly to the real sector. In a period of high interest rates, banks' lending may actually reduce as banks divert loanable funds into government securities. This has adverse impact on the real sector and will adversely affect level of aggregate demand which may lower the nation's GDP in that given period but the multiplier effect of such action may linger beyond given period. These variables are taken from data published by the National bureau of Statistics and CBN quarterly statistical bulletins.

Estimation and Technique of Analysis

This study employed a panel data estimation approach to measuring profitability, in order to explore both time series and cross-sectional variations in our sample, this follows similar approach by Al-Muharrami et al. (2006). The log specification of these variables was used to reduce any possible simultaneity bias. The choice of the right model for use was selected through the Hausman test which was used to assess the effect of time. Derived Hausman test static for each model specification was large, with significant p-values, thus, the null hypothesis is rejected, in all estimations, the fixed effect model is adjudged to be suitable for estimation.

In addition, the model was modified with the lagged dependent variable included to wipe out the unobserved firm specific effect by estimating the first difference of the revenue equation thus generating the dynamic revenue equation. The lagged dependent variables introduce endogeneity Problem (Fosu, 2013) as, by construction, they are correlated with the differentiated error terms.

To control for such endogeneity bias, the study followed Goddard and Wilson (2009) in the use of the difference GMM estimator by Arellano & Bond (1991), in which lagged levels of the endogenous variables are used as instruments in the differenced equation.

In the context of panel data, there is the need to deal with unobserved heterogeneity by applying the within (demeaning) transformation, as in one-way fixed effects models, or by taking first differences if the second dimension of the panel is a proper time series. The ability of first differencing to remove unobserved heterogeneity also underlies the family of estimators that have been developed for dynamic panel data (DPD) models. In analyzing banking industry profitability, to ascertain the effect of determinants of banking profitability,

the study adopted a one-way error component regression model. A fixed cross-sectional effect was adopted above so as to capture unobserved idiosyncratic effects of different banks with the constant variable treated as section-specific. The fixed effects estimator (LSDV) is the least-squares dummy variables which allows for different constants for each group as it includes a dummy variable for each group as outlined in (Cooper and Schindler , 2010).

The Arellano–Bond approach, and its extension to the ‘System GMM’ context, is an estimator designed for situations with: (1) ‘small T, large N’ panels: few time periods and many individual units (2) a linear functional relationship; (3) one left-hand variable that is dynamic, depending on its own past realisations; (4) right-hand variables that are not strictly exogenous: correlated with past and possibly current realisations of the error; (5) fixed individual effects, implying unobserved heterogeneity and (6) heteroskedasticity and autocorrelation within individual units’ errors, but not across them.

DATA AND DATA SOURCES

To analyse bank consolidation and profitability of commercial banks in Nigeria, the study focused on yearly data from 18 banks in Nigeria. Information and data are collected from the annual report and accounts of these banks as audited by respective bank’ auditors. Independent data were obtained through the Central Bank of Nigeria statistical unit. Macro data are obtained from both the Central bank and also Bureau of statistics in Nigeria. Data period covers 2005-2014. Due to fundamental changes that have occurred in Nigerian Banking landscape since 2004, which resulted in hurried re-alignment and un-envisaged M&A in response to the consolidation deadline of December 2005 coupled with subsequent banking reform in year 2009 (culminating in further reduction in number of deposit money banks (DMBs); some banks had missing data in some years. To ensure our results are devoid of bias banks, all acquired banks were omitted in our analysis. Therefore, the periods under analysis covers the actual consolidation era (2005 – 2009) and 2009-2014. These represent the periods of actual consolidation and period post the 2009 banking reform till end of that governance regime. This allows for a comprehensive evaluation of impact of reform measures undertaken by the central bank governors in charge at these independent periods.

Table 2: Descriptive Statistics

	CAP	LIQ	CR	INT	INVGDP	INDCONC	NIM
Mean	0.099261	23.51710	0.093724	10.35000	0.002081	5.214698	11.02621
Median	0.045304	0.306096	0.052908	11.00000	0.002151	5.298317	11.22754
Maximum	1.180547	648.4289	1.031264	13.00000	0.003041	6.418365	12.85709
Minimum	0.008384	0.023252	0.010070	6.000000	0.001128	1.098612	5.021265
Std. Dev.	0.151004	91.82196	0.123618	2.440810	0.000635	0.908314	1.104406
Skewness	4.040572	4.479831	4.164744	-0.704943	-0.090519	-1.395604	-1.515391
Kurtosis	24.18059	24.19421	27.01051	2.178426	1.746572	7.210645	8.111397
Jarque-Bera	2997.879	3088.574	3767.662	15.53278	9.355830	148.8689	205.9868
Probability	0.000000	0.000000	0.000000	0.000424	0.009298	0.000000	0.000000
Sum	13.89649	3292.394	13.12133	1449.000	0.291292	730.0577	1543.669
Sum Sq. Dev.	3.169518	1171947.	2.124112	828.1000	5.60E-05	114.6797	169.5402
Observations	140	140	140	140	140	140	140

Table 2 shows that the data series being analysed follow expectation with no apparent deviations. The data exhibit a high goodness of fit as reported mean and median are well within the range of the data, high Jarque-Bera statistics, Kurtosis in excess of 3, thus indicating goodness of fit. However, as can be seen from Table 2, there is a clear difference among banks

in terms of their liquidity position and ease of adjustment to changes in macro-economic indicators especially the impact of interest rate adjustments on their financial position. This is also clear when we look at the Kurtosis relating to the macro variables - interest Rate (INT) and Investment (INVGDP). Consequently, controlling for macro, industry and bank-specific characteristics is of great importance in understanding the determinants of bank performance.

DISCUSSION OF RESULTS

The results of regressions in models 1 and 2 below relates to a panel two-stage estimation comprising pooled least square estimates in model 1 and the dynamic one –step GMM estimates in model 2. Variables used are common to both estimations comprising bank specific, industry specific and the two market control variables – (INT, INVGDP). The adj-R²-squared statistic of 0.5249 for model 1 shows the model’s goodness of fit and the ability of the variables to explain the dynamics of Net Interest Margin in relation to the risk profile and other inherent characteristics of banks in the country. GMM estimation in model 2 is to done to allow us adjust for problems associated with Pooled OLS estimation.

Table 2: Determinants of Banks’ Profitability:

Dependent Variable: Ln NIM				
Variables	Pooled OLS		Dynamic GMM	
	[1] coefficient	Probability	[2] Coefficient	Probability
L.NIM	-	-	0.395434	0.0000
Ln (CAP)	0.267147	0.0249**	2.285015	0.0480**
Ln (LIQ)	0.000134	0.0875*	0.001258	0.0910*
Ln (CR)	0.011780	0.8549	-0.51297	0.9330
Ln (INDCON)	0.066461	0.0000**	0.497847	0.0000**
INT	-0.011420	0.01808*	-0.870088	0.0710*
INVGDP	-0.135625	0.0001*	-0.218301	0.0003**
Constant	1.301239		6.003991	
Number of Observation	140		126	
Adj-R ²	0.524908		-	
F-Statistic	12.70585		-	
S.D Dependent VAR	0.967970		-	
Durbin-Watson Stat	1.054252		-	
Schwarz criterion	2.442768		-	
Prob>F	0.000000		-	
Sargan /Hansen (p-values)	-		34.00(0.5160)	
1 st order ser. Cor.(p-values)	-		-1.99(0.046)	
2 nd order ser. Cor.(p-values)	-		-0.56(0.577)	

* Significantly different from zero at the 10% significance level.

** Significantly different from zero at the 5% significance level.

The result above shows the importance and a direct application of elements of CAMEL² assessment in Banking; of bank level characteristics review, Capital adequacy (CAP) and Liquidity (LR) significantly affected banks profitability over the reform period. Industrial concentration (INDCON) also significantly affects the bank profitability at 5% level of significance. Credit Risk (CR) however did not affect bank's profitability in both estimations over the reform period.

CAP (proxy for consolidation), the measure of the adequacy of capital and capital has a positive and significant impact on banks returns following reforms in both models estimated in Table 2.. This is not unexpected as banks with high capital are able to assume higher level of risk and as a consequence obtain higher profitability. Higher profitability will result from lower cost of deposit insurance payment, as well capitalized banks will have reduced cost of funding but are able to also lend at higher rates thus maintaining a wide transaction spread³. The ability to reduce cost of funding and maintain or even increase lending rate will ensure the bank profitability (Demirguc-Kunt and Huizinga, 1999).

In terms of Liquidity Risk, LIQ follows expected outcome and the level of a bank's liquidity is shown to be a major factor impacting interest revenue. This is plausible. Banks with higher level of liquidity are able to maximize funds deployment between direct lending to customers or utilizing liquidity for investment in government backed security. Given the history of default culminating in significant non-performing loans in periods coinciding with reforms (Years: 2005 and 2009), banks in Nigeria have moved away from long term structured lending to short dated lending. In turns banks have invested heavily in Nigerian treasury bills of up to 1-year tenor with highly attractive yields and no risk. Prevailing high interest rate regime have also benefited banks significantly. Hence the positive correlation between liquidity and interest margins. In the same manner, high liquidity also implies that banks can grow quality risk assets by deploying funds to 'safe' sector. High bid-ask spread implies significant returns from loan creation. Conversely a lower leverage ratio would imply a lower insolvency risk. Financial reform, however, led to the development of new banking products and alternative sources of funds for banks, which would signal a strategic role for bank capital in cases of liquidity shortages (see Diamond and Rajan, 2001).

The impact of Credit (CR also called default Risk) on bank profitability is mixed and varies in both our models. Pooled OLS regression in Model 1 indicates a positive relationship. Positive coefficient of Credit risk is a pointer to a bad management and affirms the Skimping hypotheses of Berger and DeYoung (1997a,b). Berger & DeYoung (1997) introduced the efficiency-risk hypotheses which dwelt on the Bad management framework and Skimping. Loan skimping explains a scenario in which in order to be more efficient a bank reduces expenses devoted to credit screening in loan origination in the short run. Reduced screening cost will improve efficiency in the short run but at the same time, lead to increased adverse selection of borrowers which will result in increased loan default thus resulting in increased

² The CAMELS rating system is a recognized international rating system that bank supervisory authorities use in order to rate financial institutions according to six factors represented by the acronym "CAMELS." A rating of one is considered the best and the rating of five is considered the worst for each factor. The components of a bank's condition that are assessed are Capital adequacy, Assets quality, Management Capability, Earnings and Liquidity. In 1995 the Federal Reserve and the OCC replaced CAMEL with CAMELS, adding the "S" which stands for Sensitivity to Market Risk.

³ The transaction spread in Nigeria is indeed wide with average interest rate of 3.0% p.a on current account balances versus minimum 14% as indicated by the monetary policy rate (MPR) Banks would normally lend at higher than the MPR to ensure premium over the CBN rediscount rate which represents profit. High transaction spread remains a major attraction for investors in Banking.

non-performing loans and adverse credit quality consequences in the long run. Although not expected, the negative impact of credit risk on bank margin in model 2 is understandable for Nigerian banking industry as the quality of the credit can be confirmed from reported level of non-performing loans (NPL) during the considered period. Prior to consolidation, the quality of loans granted by the industry were suspect as most banks did not subject loan approval process to strict risk management framework, hence prevalence of high level of non-performing credits.

Post consolidation, with availability of tier 1 capital to banks, there was aggressive expansion of the loan books thus generating another round of systemic stress which led to the 2009 intervention in 10 banks. As at the date of intervention in 2009, industry's ratio of non-performing loans to total loans had jumped from 6.3% in 2008 to 32.8% in 2009, with improvements to 15.5% in 2010. With strong risk framework drafted for the industry, post 2009, industry non-performing loan to total loans has settled at 3.3% by end of 2014. Continuing periodic spike in NPL levels shows that though the Nigerian banks have been able to increase their capacity to manage credit risks, this needs to be sustained over a measurable period of time to change the profile of loan intensity for the industry. Recent volatility in oil prices have led to a reversal of previous credit management initiative. As Nigerian fell into recession in year 2016, the industry witnessed significant credit deterioration with Industry NPL ratio at above 13% in Q1 2018. Acceptable regulatory benchmark is 5% per bank. However, similar to Brissimis et al. (2008), credit risk (CR) is not a significant determinant of NIM in both models in Table 2. This may be due to the impact of other revenue sources on banks' profitability level and inability of net interest margin to capture the increasing importance of fee generating activities.

The level of competitiveness of the Nigerian banking is found to be strong when competitiveness is measured in terms of each operator's market power, proxied as Industry Concentration (a measure of market operator in terms of total industry).

INDCON measured in terms of network coverage (Number of Bank Branches/Total industry bank branches) is positive and significantly correlated to banks' net income levels in both models. This result is not strange as the impact of network (branch coverage) on banks profitability levels is always positive, supporting the earlier findings of Randhawa and Lim (2005). A major reason would be the ability of commercial banks with wide branch coverage to mobilise cheap deposit and low interest current account deposits. Commercial banks then on-lend these cheap deposits to the real sector at monetary policy rate plus significant spreads across geographies and demographics, with resultant high profits. On the other hand, banks with limited number of branches may have to resort to more expensive inter-bank market to source funds thus creating disparity in banks funds structure. A positive coefficient of INDCON thus affirms the structure-conduct-performance (SCP) hypothesis when NIM is used as the dependent variable for Nigerian banking. Presence of SCP hypothesis implies that the size and structure of some banks (especially the biggest 5 banks which commands over 50% of total industry asset and Branches) confers some advantages. From the results, these are able to engage in non-competitive behavior despite the presence of monopolistic competition in the Nigerian banking space. Non-rejection of the SCP hypothesis indicates that in a concentrated market, banks with large market share can secure better profits by adopting oligopolistic behavior. Perhaps, correlation between corporate profit and market concentration can be explained by the fact that firms with superior management, cost reduction technologies, and efficient production and operation may reap substantial profits and expand their market share. This explains why in the analysis of market structure, the non-structural approach measures

market competition in the context of corporate behaviour rather than measuring the degree of concentration. Indeed, Nigerian banking is concentrated with the top 5 banks accounting for more than half (52%) market share of the total banking industry in year 2014. However, Nigerian banking market is highly regulated and competitive. Banks are able to price their assets freely within permissible limit by regulators and customers able to move freely amongst banks in search for least cost banking services for expected service quality. The size of some banks would imply that they can muscle out competition on specific transactions as they can choose a cost leadership strategy.

The macroeconomic environment

Finally, as regards the effect of the macroeconomic control variables on bank performance, we find a negative and significant relationship between NIM and INT as well as between NIM and INVGDP.

The level of interest rate (INT) is one of the most significant variables in the explanation of the net interest margin given that banks principal function is financial intermediation. The ability of individual financial institutions to moderate interest cost and sources and cost profile of deposits and other financial instruments is what distinguishes an efficient bank from an effective one. From both our models in Table 2, Short term Interest (INT) rates exerts a negative but highly significant impact on interest margins. This is not unexpected of Nigerian banking, given that Nigerian bank's face homogenous monetary conditions, thus to boost margins banks offer other structured banking solutions covering trade, foreign exchange, payments and advisory services instead of remunerating deposits explicitly by paying an interest rate, which in turn leads higher interest margins. The effect of implicit interest payment on net interest margin after the consolidation period has been slightly reduced because of the changes in the revenue structure of bank services operating in the sample. This reflects the fact that an increase in the importance of explicit collection of banking commissions results in a smaller volume of implicit interest payment, which led to a decline of the interest margin. Moreover, a negative and significant effect of, short-term interest rate on revenue growth, is also in line with theoretical priors suggesting that lower interest rates raise investments in new technology (Brissimis et al. (2008).

Finally, our analysis of the impact of volatility of economic activity proxied by INVGDP follows (Maudos and de Guevara, 2004; and Yildirim and Philippatos, 2007), reveals an adverse relationship between changes in macro-economic activities and banks interest margins. As widely known, markets do not favour uncertainties. Thus, an uncertain market will be deemed 'hostile' to investment, which will lead to the exit to portfolio investment and reduction in FDI flows into an economy. Should this situation occur, aggregate demand will be reduced resulting in Gross Domestic product contraction. Contraction in economic activity will lead to reduced monetary flows which will affect banks' ability to create credit and earn interest income. The Nigerian economy witnessed significant volatility in year 2016 on the back of oil induced recession. This culminated in reduced FDI and portfolio investment flows into the economy. The result is a complex web of activities which led to contraction in economic activity as evidenced by sustained reduction in GDP growth rates until we turned a corner in Q4 2017 with positive GDP growth.

⁴ The results show that the fall of margins in the European banking system is compatible with a relaxation of the competitive conditions (increase in market power and concentration), as this effect has been counteracted by a reduction of interest rate risk, credit risk, and operating costs.

CONCLUSION AND RECOMMENDATIONS

This study examines the relationship between banking reforms, industry competitiveness and banks risk architecture on banks profitability in Nigeria. In analysing the impact of reforms on banking profitability, the study adopted a financial intermediation approach using bank-level data from 2005-2014. This paper follows existing literature in the EU that studied the relationship between financial reforms, banking industry competition, risk-taking behaviour of banks, and growth in banks profitability levels since beginning of various reform initiatives. Empirical evidence since 2005 banking reform indicate that, on average, that banks efficiency and product offerings have improved significantly while the competitive conditions in the Nigerian banking systems have also improved and have become broad but with a few banks still controlling over 5% of total asset of the industry.

Consequently. We model available bank level data to analyze the inter-relationship between banking sector reform and performance. By drawing on recent literature presented by Brissimis et al. (2008); we are able to show that banking sector reform has a positive effect on industry profitability, with the channels of transmissions being via level of capitalization, liquidity and network effectiveness modelled by level of concentration prevalent. This affirms the structure-conduct-performance (SCP) hypothesis when NIM is used as the dependent variable for Nigerian banking. Presence of SCP hypothesis implies that the size and structure of some banks confers some advantages in terms of pricing and product leadership. In addition, the impact of capital and liquidity risk is prominent while non-prominence of credit risk in our estimation shows that developments since beginning of reforms already affected credit risk exposure and tolerance threshold. Hence impact of credit risk is muted in this study. Finally volatility of macro-economic policies and activities impacts negatively on bank's margin as it affects industry perception and attractiveness of the economy to potential investors. Policy initiatives that signals continuing and sustained government focus on maintain macro-economic stability will contribute to growth of banking and as a consequence the real economy.

The study proves that reforms have improved the profitability of the banking industry in Nigeria. Improved profitability has manifested in significant growth witnessed in the introduction of technology driven banking services and increased spread of banking patronage resulting in wide embrace of e-banking platforms by Nigerian Citizens. Results from this study provide evidence that the profitability of post-consolidation banking system in Nigeria was derived from banks' internal management' decisions as well as industrial structure prevalent at the time. From the regulator's perspective, this means that there is need for an effective regulation covering risk management framework and architecture which adequately moderate banks management and ownership decisions and industrial structure is highly essential in achieving sound banking performance and competition in Nigeria.

Lastly, the use of the dynamic GMM method of estimation used in analyzing profitability of banks in the model also proves that that the banking landscape in Nigeria is dynamic with orderly transmission process in adjusting to various shocks to the system. Ultimately, all banks would adjust to changes in the medium to long term.

References

- Ahmad Mokhtar, Hamim & Abdullah, Naziruddin & M. Al-Habshi, Syed. (2006). Efficiency of Islamic banking in Malaysia: A stochastic frontier approach. *Journal of Economic Cooperation*. 27.
- Allen, F. and Gale, D. (2004) 'Financial intermediaries and markets', *Econometrica*, Vol. 72, pp. 1023-1061.

- Al-Muharrami, S., Matthews, K., & Khabari, Y. (2006). Market structure and competitive conditions in the Arab GCC banking system. *Journal of Banking & Finance*, 30(1) : 3487-3501.
- Athanasoglou, P.P., Brissimis, S.N., and Delis, M.D. (2008). Bank-specific, industry-specific and macroeconomic determinants of bank profitability. *Journal of International Financial Markets, Institutions, and Money*, 18(2), 121-136.
- Asogwa R.C. (2005). Assessing The Benefits And Costs Of Financial Sector Reforms In Nigeria: And Event Study Analysis" Paper Presented at the Nigerian Economic Society Conference, Ikeja, and Lagos 23rd – 25th Aug.
- Baumol, W. (1982). Contestable market: An uprising in the theory of industry structure. *The American Economic Review*, 72(1), 1–15.
- Beck, T., Cull, R., Jerome, A., (2005). "Bank Privatization and Performance: Empirical Evidence from Nigeria". *Journal of Banking and Finance* 29(1): 2355 – 2379.
- Berger, A. N. (1995). The profit–structure relationship in banking: Tests of market power and efficient-structure hypotheses. *Journal of Money, Credit, and Banking* 27(2):404–431.
- Berger, A.N., Bonime, S.D., Covitz, D.M., Hancock, D., 2000a. Why are bank profits so persistent? The roles of product market competition, information opacity, and regional macroeconomic shocks. *Journal of Banking and Finance* 24 (7), 1203–1235.
- Berger, A.N, DeYoung, R., Genay, H., Udell, G.F., 2000b. Globalization, of financial institutions: evidence from cross border banking performance. *Brookings-Wharton Papers on Financial Services* 3, 23–158.
- Boyd, J.H., De Nicolo, G., 2006. The theory of bank risk taking and competition revisited. *The Journal of Finance* 60 (3), 1329–1343.
- Brissimis, S. N., Delis, M. D., & Papanikolaou, N. I. (2008). Exploring the Nexus Between Banking Sector Reform and Performance: Evidence from Newly Acceded EU Countries. *Journal of Banking and Finance*, 32, 12, 2674–2683.
- Chortareas, Georgios E., Jesus Gustavo Garza-Garcia and Claudia Girardone. "Banking sector performance in some Latin American countries: Market power versus efficiency." (2010).
- Douglas W. Diamond & Raghuram G. Rajan, 2001. "Liquidity Risk, Liquidity Creation, and Financial Fragility: A Theory of Banking," *Journal of Political Economy*, University of Chicago Press, vol. 109(2), pages 287-327, April.
- Demsetz, H. (1974). Industry structure, market rivalry, and public policy. *Journal of Law and Economics*, 16(1): 1–9.
- Farrell, M. J. (1957). The Measurement of Productive Efficiency. *Journal of the Royal Statistical Society*, 120(3): 253-290.
- Favero, C. A., & Papi, L. (1995). Technical efficiency and Scale Efficiency in the Italian Banking Sector: a Non-parametric Approach. *Applied Economics*, 27(4):385-395.
- Galagedera, D. U. A., & Edirisuriya, P. (2005). Performance of Indian Commercial Banks (1995–2002). *South Asian Journal of Management*. 12. 52-74. 12 (1):52–74.
- García-Herrero, A. Gavilá, S. and Santabárbara, D. 2009. What explains the low profitability of Chinese banks? *Journal of Banking and Finance* 33 (11). 2080-2092.
- Garcia-Herrero, A., Gavila, S., Santabarbara, D., 2006. China's banking reform: an assessment of its evolution and possible impact. *CESifo Economic Studies* 52 (2), 304–363.
- Gelos, G. R., & Roldos, J. (2002). Consolidation and market structure in emerging market banking system. IMF Working Paper, No. 186.
- Gilbert, R. A., & Wilson, P. W. (1998). Effects of Deregulation on the Productivity of Korean Banks. *Journal of Economics and Business*, 46(1): 39-64.
- Hao, J., Hunter, W. C., & Yang, W. K. (2001). Deregulation and Efficiency: the Case of Private Korean Banks. *Journal of Economics and Business*, 53(1): 237-254.
- Haslem, J. (1969). A statistical estimation of commercial bank profitability. *Journal of Business*, 42(1): 22-35.
- Ho, Thomas S. Y and Anthony Saunders, 1981. "The determinants of bank interest margins: theory and empirical evidence". *Journal of financial and Quantitative analysis*, Vol. xVi, No. 4, 1981.
- Hoque, H. A. A. B., & Khan, A. R (2001). Financial Performance of Banks: A Statistical Analysis. *Journal of Business Studies*, 22(1), 27-49.

Hossain, A., & Chowdhuey, A. (1996). *Monetary and Financial Policies in Developing Countries Growth and Stabilization*. Routledge Studies in Development Economics, London and New York.

Humphrey, D., & Pulley, L. (1997). Banks' Responses to Deregulation: Profits, Technology, and Efficiency. *Journal of Money, Credit and Banking*, 29(1): 73-93.

Kasman, A. 2010. Consolidation and Commercial bank net interest margins: evidence from the old and new European union members and candidate countries. *Economic Modeling* 27. 648-655.

Kim, I. G., & Kim, C. H. (1993). The effect of competitive structure in the bank market on the performance. *Journal of Money and Finance*, 7(2):83-116.

Kosmidou K, Tanna S, Pasiouras F. 2005. Determinants of profitability of domestic UK commercial banks: Panel evidence from the period 1995-2002. *In Money Macro and Finance (MMF) Research Group Conference*, 45, 1-27.

Leightner, J. E., & Lovell, C. A. K. (1998). The Impact of Financial Liberalization on the Performance of Thai Banks. *Journal of Economics and Business*, 50(1):115-131.

Mason, E. S. (1939). Price and production policies of large-scale enterprise. *American Economic Review*, 29(1): 61-74.

Maudos, J., & Pastor, J. M. (2003). Cost and Profit Efficiency in the Spanish Banking Sector (1985-1996): A Nonparametric Approach. *Applied Financial Economics*, 13(1): 1-12.

Maudos, Joaquin & Fernandez de Guevara, Juan, 2004. "Factors explaining the interest margin in the banking sectors of the European Union," *Journal of Banking & Finance*, Elsevier, vol. 28(9), pages 2259-2281, September.

McAllister, P. H. & McManus, D. A. (1993). Resolving the scale efficiency puzzle in banking. *Journal of Banking and Finance*, 17(1): 389-405.

Naceur, S.B. and Kandil, M. (2009). The impact of capital requirements on banks' cost of intermediation and performance: the case of Egypt. *Journal of Economics and Business*, 61(1):70-89.

Naceur, S.B. and Omran, M. (2011). The effects of bank regulations, competition, and financial reforms on banks' performance. *Emerging Markets Review*, 12(1): 1-20.

Nathan, A., & Neave, E. H. (1989). Competition and contestability in Canada's financial system: Empirical results. *Canadian Journal of Economic*, 22, 576-594. OECD. (2000). Mergers in financial services.

Panzar, J. C. and J. N. Rosse (1987). Testing for "Monopoly" equilibrium. *The Journal of Industrial Economics* 35 (4): 443-456.

Pasiouras, F. & Kosmidou, K. (2007). Factors influencing the profitability of domestic and foreign commercial banks in the European Union. *International Business and Finance*, 21(1): 222-237

Peltzman, S. (1977). The Gains and Losses from Industrial Concentration. *Journal of Law and Economics*, 20(1): 229-263.

Profitability: Some International Evidence. *World Bank Economic Review*, 13(2):379-408.

Resti, A. (1997). Evaluating the cost efficiency of the Italian Banking system: What can be learned from the joint application of parametric and non-parametric techniques. *Journal of banking and Finance*, 21(1):221-250.

Rhoades, S. (1985). Market share as a source of market power: Implications and some evidence. *Journal of Economics and Business*, 37(1): 343-363.

Sato, Y. (2005). Bank restructuring and financial institution reform in Indonesia. *The Developing Economies*, 43(1):91-120.

Sharma, S. D. (2001). The Indonesian financial crisis: from banking crisis to financial sector reforms, 1997-2000. *Indonesia*, 71, 79-110.

Shin, Dong Jin and Kim, Brian H.S. Bank consolidation and competitiveness: Empirical evidence from the Korean banking industry. *Journal of Asian Economics* 24 (1): 41-50

Smirlock, M. (1985). Evidence of the (non) relationship between concentration and probability in banking.

Fosu, S. (2013). *Banking Competition in Africa: Sub-regional Comparative Studies*, Working Paper No. 13/12, University of Leicester, UK.

- Solnik, B. (1993a). The Performance of International Asset Allocation Strategies Using Conditioning Information. *Journal of Finance*, 33-55.
- Soludo C. C. (2004). "Consolidating The Nigerian Banking Industry to Meet The Development Challenges Of The 21st Century" And Address by the CBN Governor at the special meeting of the Bankers' Committee on July 6 2004, CBN Headquarters Abuja.
- Sufian, F. (2011). Profitability of the Korean banking sector: panel evidence on bank-specific and macroeconomic determinants. *Journal of Economics and Management*, 7(1):43-72.
- Sufian, F. and Habibullah, S.F. (2010). Assessing the impact of financial crisis on bank performance. *ASEAN Economic Bulletin*, 27(3):245-262.
- Wall, L. (1985) "Why Are Some Banks More Profitable Than Others?" *Journal of Bank Reseat* 15 (1): 240-56.
- Wheelock DC and PW Wilson (1999). "Technical Progress, Inefficiency, and Productivity Change in U.S. Banking, 1984-1993." *J Money, Credit and Banking* 31(2): 212-234.
- Zimmerman G.C. (1996). "Factors influencing community bank performance in California," *Economic Review*, Federal Reserve Bank of San Francisco, pages 26-40.

A Primer For Non-Americans On Understanding The Legal System In The United States: Sources, Schools Of Thought, And International Implications

Richard J. Hunter, Jr.

Professor of Legal Studies,
Stillman School of Business,
Seton Hall University, South Orange, N.J.

Hector R. Lozada

Associate Professor of Marketing,
Stillman School of Business,
Seton Hall University, South Orange, N.J.

John H. Shannon

Professor of Legal Studies,
Stillman School of Business,
Seton Hall University, South Orange, N.J.

"The law is not a series of calculating machines where definitions and answers come tumbling out when the right levers are pushed." Associate Justice William O. Douglas, The Dissent, A Safeguard of Democracy (1948)

ABSTRACT

This paper is a primer or introduction to the American legal system prepared especially for those outside the United States who may be called upon to navigate the American legal system. It discusses the origins and functions of American law and its derivation from both the common law system of England and from aspects of the civil law system of continental Europe. The paper delineates the sources of American law, with a special emphasis on the hierarchy of American courts and the principles of supremacy and preemption. The paper then contrasts the American legal system with discreet aspects of international law, based on Article 38 of the Statute of the International Court of Justice, and the Convention on the International Sale of Goods or CISG to which nearly 90 states are signatories. The paper concludes with a discussion of jurisprudence with a focus on the legal philosophies judges bring to the adjudication of actual cases. In addition, the paper provides thumbnail summaries of the major constitutional cases identified in the narrative, as well as references relating to the categorization of the legal systems of nations around the world, an extensive bibliography, and an Appendix containing a list of those nations who have adopted the CISG.

KEY WORDS: common law; civil law; international law; supremacy; preemption; jurisprudence

INTRODUCTION

To many around the world, the American legal system seems to be unintelligible, contradictory, or incomprehensible. Issues relating to the jurisdiction or powers of courts, judicial decision-making, and enforcement of judgments, often appear to be insurmountable roadblocks to seeking justice within the United States. This paper is a primer on the American legal system—an explanatory note—as to the sources of law in the United States, the nature of

the judicial processes, international implications, and a background to *how judges may come to their decisions*.

By gaining a knowledge of American law and the American system, litigants—most especially those from outside the borders of the United States—will come to a clearer understanding of their rights and responsibilities when attempting to enforce these rights or when they are the subject of litigation in the United States.

WHAT IS THE LAW?

Professor Cheeseman (2002, p. 2) asserted that "The law consists of rules that regulate the conduct of individuals, business, and other organizations within society." In *The Spirit of Liberty*, Judge Learned Hand (1960) stated: "Without the law we cannot live; only with it can we insure the future which by right is ours. The best of men's hopes are enmeshed in its success."

The system of law in the United States is based primarily on the English system (Posner, 1997). Vermont provides an interesting insight into this circumstance. As Gillies (2017, p. 14) writes: "It [Vermont] adopted the common law of England and the statutes of that country up to the time of the [Revolutionary] war, and through all of these sources inherited the customs, traditions, and principles of law that were created by Roman law." However, other nations, such as Spain and France, have also influenced the law as well. It may be interesting to note that certain aspects of land-law (specifically condominium, co-op, and time-share law) have their origins in the Dutch civil law system (Hunter, 2018).

In the United States, all states, with the exception of Louisiana, have based their legal systems on the English common law. In contrast, because of its unique French heritage, Louisiana modeled its legal system on French civil law, with its origins in the Romano-Germanic civil law system, which traces its beginnings to 450 B.C. when Rome adopted the *Twelve Tables*, a code applicable to all Romans (Gillies, 2017). A compilation of Roman laws, called the *Corpus Juris Civilis* (Kunkel, 1966; Dingley, 2016) or the "Body of Civil Law," was completed in 529 A.D. In 1804, France adopted the Civil Code (often referred to as the Napoleonic Code) (Lehrman, 2008; Wilde, 2018), and in 1896, the German Civil Code was adopted. Wilde (2018) noted that the Napoleonic Code "heavily influenced world laws in the nineteenth century."

In the civil law system, individual national codes and statutes adopted by the parliaments of various nations are the sole sources of national law (Syam, 2014). The main function of courts operating within the civil law system is to adjudicate a case by applying the relevant section of the code or statute to the particular facts presented. In that sense, the role of a judge is quite limited. Syam (2014) notes that "there are roughly 150 countries that have what can be described as primarily civil law systems, whereas there are about 80 common law countries" (CIA, 2018). Civil law countries include most of the nations of Western Europe, nations which comprised the former Indochina (Laos, Cambodia, and Viet Nam), Indonesia, Japan, nations of Latin America, South Korea, Poland and Eastern and Central Europe (most especially after 1989), Russia, China, nations in Sub-Saharan Africa (other than those which were former British colonies), and Turkey (CIA, 2016). In some civil law countries, judicial decisions do not create law, which is the exclusive province of the legislature.

DEVELOPMENT OF LAW IN THE UNITED STATES

From their founding, the American colonies adopted the English system of law which became the foundation from which judges created a "common law" in the United States (Gillies, 2017). The basis of the common law is found in *cases* decided by judges. The English common law

provided a framework and a structure of courts within which the legal system in the United States would develop. The English system of courts included:

- *Law Courts*: After the Norman Conquest in 1066 after the Battle of Hastings, a uniform system of courts was gradually established in England to supplant the patchwork of local courts administered by local lords or chieftains. The crown would now appoint its local supporters as judges in localities who would administer the law in a uniform manner. These courts were called *law courts*. The law courts often stressed legal procedures over the substance, content, or equities of a case. Law courts were confined to awarding money damages as a remedy in any case filed "at law."
- *Chancery or Equity Courts*: As the law courts were often subjected to criticism for favoring form over substance, a second set of courts—the Court of Chancery or a Court of Equity—was established (The Law Dictionary 2018). These specialized courts fell under the authority of the Lord Chancellor, the most trusted personal advisor to the crown. Individuals who challenged the fairness or equity of decisions of the law court or who were seeking a remedy other than monetary damages could now seek relief in the Court of Equity.

Remedies available in the Court of Equity were termed *equitable* remedies (often in the form of a *writ* or order of a court) and were shaped to fit each individual situation. An example of such an order is the writ of specific performance in which a court orders a party to undertake a specific act or enjoins a party from violating the terms of a contract. The remedy of specific performance is especially relevant in a contract action where a court of equity can order a party to carry out the terms of a contract where the "bargained for" consideration was unique (i.e., "family heirlooms or priceless works of art," etc.) and where monetary damages were inadequate under the circumstances of the case (see UCC Section 2-716, Comment 1). Calamari and Perillo (1979, p. 581) note: "The remedy of specific performance is an extraordinary remedy developed in Courts of Equity to provide relief when the legal remedies of damages and restitution are inadequate." Professor Cheeseman (2002, p. 9) noted that "Equitable orders and remedies of the Court of Chancery took precedent over the legal decisions and remedies of the law courts."

In the United States, the title of the *court of chancery* is applied "to a court possessing general equity powers, distinct from the courts of common law" (*Parmeter v. Bourne*, 1894, quoted in The Law Dictionary, 2018). As noted in the *Law Dictionary* (2018), "The terms "equity" and "chancery," "court of equity" and "court of chancery" are constantly used as synonymous in the United States. It is presumed that this custom arises from the circumstances that the equity jurisdiction which is exercised by the courts of the various states is assimilated to that possessed by the English courts of chancery. Indeed, in some of the states it is made identical there with by statute, so far as comfortable to our institutions."

- *Merchant Courts*: As commerce developed during the Middle Ages, the merchants themselves developed rules to resolve commercial disputes (Trakman, 1983). These rules became known as the "law of merchants" (*Lex Mercatoria*) or "*Law Merchant*," and were based on the common trade practices adopted by English merchants who traveled throughout England, Europe, and other places (Mitchell, 1904). From these informal arrangements, a separate set of courts was established in England to administer the rules that had been established from practice and common usage. This court came to be known as the *Merchant Court*. The Merchant Court was absorbed into the regular law court system in England, but the philosophy which underpinned the creation of the Merchant Court may be seen as the origin of a separate set of rules applicable to "merchants" and certain commercial transactions embodied in the Uniform Commercial

Code (1952/2018) in the United States or the international Convention on the United Nations Convention on the International Sale of Goods or CISG (1980) (Trackman, 2011). [See Appendix I for a listing of CISG signatory nations.]

As Huber and Mullis (2007, p. 25) noted:

"The CISG applies to contracts of sale of moveable goods between parties which have their place of business in different states when these States are Contracting States (Art. 1(1) lit. (a) CISG) or when the rules of private international law lead to the application of the law of a contracting state (Art. 1(1) lit. (b) CISG). Certain types of contracts are excluded from its scope of application by virtue of Art. 2 CISG. By way of example, most consumer sales will not fall under the CISG (cf. Art. 2 lit. (a) CISG)."

Sources of Law and the Hierarchy of Courts in the United States

The main sources of law in the United States are the U.S. Constitution, treaties, state constitutions, federal and state statutory law, local ordinances, rules and regulations of state and federal administrative agencies, executive orders, and judicial decisions of both federal and state courts.

The U.S. Constitution is the *supreme law of the land* in the United States. As such, any law that conflicts with the Constitution is deemed unconstitutional and unenforceable. Treaties which are entered into with the "advice and consent" of the United States Senate are a part of the supreme law of the land (*Fairfax's Devisee v. Hunter's Lessee*, 1813/*Martin v. Hunter's Lessee*, 1816). An example of a modern application of treaty law is a *Bilateral Investment Treaty* or BIT that regulates trade relations between nations (Juillard, 2001). Swenson (2008) states that "... BITs foster international integration through channels that are mediated by multinational firms" and are thus an important part of the fabric of commercial law in the United States (see also Hunter, Shapiro, & Ryan, 2003).

Statutory law consists of written laws enacted by a legislative body—either federal or state. Often times, statutes enacted by the legislative branch will be further organized by topic into codes. Perhaps the best known are the United States Bankruptcy Code, the Internal Revenue Code, or the Uniform Commercial Code. State statutes deal with issues such as corporation and partnership law, business associations, criminal law, products liability, and workmen' compensation laws. State legislatures often delegate a portion of their lawmaking authority to a variety of local governmental bodies who are then empowered to enact what are termed ordinances. Some examples include local building codes, zoning laws, and traffic laws. These ordinances are likewise often codified or organized by topic.

Article III of the United States Constitution and similar provisions of state constitutions deal with executive actions undertaken by the President of the United States and of the governors of the various states. Recently, executive orders have come under intense scrutiny and have been criticized as a way to avoid legislative action relating to sometimes difficult or controversial issues. For example, in 1993, President Clinton issued an executive order that "lifted the so-called 'gag' rule forbidding abortion counseling in federally funded family planning clinics" (Cheeseman, 2002, p. 12), or the January 27, 2017 executive order issued by President Trump (Number 13769), "Protecting the Nation from Foreign Terrorist Entry into the United States." An executive order may be challenged in the courts on the basis that is a violation of the United States Constitution or of a federal or state statute.

The legislative and executive branches of both federal and state governments are empowered

to create a variety of administrative agencies, bureaus, boards, and commissions to enforce, administer, and interpret statutory law enacted by Congress or state legislatures. Agencies then create administrative rules and regulations in order to interpret the statute which the agency is authorized to enforce which have the force of law. Administrative agencies have the authority to hear and decide disputes [through an Administrative Law Judge or ALJ] which occur under their statutory jurisdiction. The decisions of administrative bodies are termed as *orders*. In some cases, litigants may challenge the authority of administrative agencies on grounds that the agency has exceeded its delegated powers; that is, that an agency has acted "*ultra vires*" ["beyond their powers] or rule making authority (generally, Hunter, 2011; Hunter & Shannon, 2017).

Stare Decisis

Judicial decisions are found in the written opinions of judges in which a judge explains the legal reasoning or rule used in deciding a "case or controversy." These opinions often involve an interpretation of a statute, an administrative regulation, or a local ordinance. The common law system is based on the premise that certain court decisions will become a *precedent* for court decisions in future cases. In the United States, lower federal courts (both the United States District Courts and the Courts of Appeals) must adhere to the precedents established by higher federal courts. In addition, under the principle of precedent, *all* federal and state courts in the United States are bound to follow the precedents established in cases decided by the United States Supreme Court (see *Marbury v. Madison*, 1803). In the American legal system, the courts of one jurisdiction (state) are not bound by the precedents established by courts in another jurisdiction (state) but may "take judicial notice" of a precedent in deciding a similar case in their own state court proceedings (*Brown v. Piper*, 1875; Dorfman & Zogby, 2017).

Adherence to precedent is termed as *stare decisis* ("to stand by the decision") (Cooper, 1988; Kozel, 2010). *Stare decisis* provides the legal system with both predictability and stability (see *contra*, Roland, 2000), although courts may on occasion change, distinguish, or even overrule a precedent (see *Flagiello v. Pennsylvania*, 1965). Questions relating to a judicial nominee's views on *stare decisis* play an important part of the confirmation process of an individual nominated for the United States Supreme Court today (generally, Hunter & Lozada, 2010).

Stare decisis, while providing an important element of stability, nevertheless may prove to be an obstacle to social change. In such cases, for example in *Brown v. Board of Education* (1954), the Supreme Court may be called up to discard or overrule a precedent that no longer merits protection, one that reflects or calls for a change in societal norms, or one in which the Court now admits it simply had "made a mistake." Generally, a court will only overrule an earlier precedent on "compelling grounds" (see, e.g., *Morrison v. Thoelke*, 1963).

THE SUPREMACY CLAUSE

Article VI, Section 6 of the U.S. Constitution, known as the *Supremacy Clause*, establishes that the Constitution, treaties, federal statutes and federal regulations are the "supreme law of the land" (see Williams, 2014). Thus, any state or local laws that conflict with federal law are held to be unconstitutional. This concept of the supremacy of federal law is commonly found in the *preemption* doctrine (generally, Conway, 2013). However, as Spence and Murray (1999, p. 1) noted, "Federal preemption case law under the Commerce Clause and Supremacy Clause has been marked by a high degree of conflict and controversy."

John Marshall, who served as Chief Justice of the United States Supreme Court from 1801 to 1835, provides the proper context: "The government of the United States, then, though limited

in its powers, is supreme, and its laws, when made in pursuance of the constitution, form the supreme law of the land, 'anything in the constitution or laws of any state to the contrary notwithstanding'" (*McCulloch v. Maryland*, 1819; Ray, 2018). The Supremacy Clause is the keystone in establishing order in the relationship between the federal and state governments. The Supremacy Clause provides that when a *direct conflict* exists between a federal law and a state law, the state law is invalid and the federal law is supreme. As Professor Tribe (2000, p. 1178) noted: "Such actual conflict is most clearly manifest when the federal statute and state enactments are directly and facially contradictory. Federal regulation obviously supersedes state regulation where compliance with both is a literal impossibility...."

Some powers, however, are shared by the states and the federal government. These are called *concurrent powers* (see *Gibbons v. Ogden*, 1824). In cases of shared or concurrent powers, it may be necessary to determine which law or regulation—federal or state—should prevail. As noted, as a general rule, when concurrent federal and state powers are involved, a state law that conflicts with a federal law is invalid. However, when Congress has chosen to act in an exclusive manner, it may be said that Congress has exercised its power of *complete preemption* in this area (Merriam, 2017). Newell (2017, p. 1353) notes that "The preemption doctrine arises out of the Constitution's Supremacy Clause, which provides that federal law is the 'Supreme Law of the Land,' such that federal law supersedes conflicting state laws." In the case of preemption, a federal regulatory scheme would preempt state regulation not only if there is a direct conflict between the two, but also where the state regulation *interferes* with a federal objective, as where "it encourages conduct the absence of which would aid in the effectuation of the federal scheme as interpreted and applied" (Tribe, 2000, p. 1884).

For example, in *City of Burbank v. Lockheed Air Terminal Inc.* (1973), the Supreme Court concluded that a city ordinance, making it unlawful for jet aircraft to take off from the privately owned city airport between 11 p.m. and 7 a.m., was in conflict with the purposes of the *Federal Aviation Act* (1958) because local "control of takeoffs and landings would severely limit the flexibility of the FAA to control air traffic control" (*City of Burbank*, 1973, p. 639). Similarly, in *Jones v. Rath Packing Co.* (1977), the United States Supreme Court invalidated a California regulation relating to the labeling of packaged flour sold in the state because to do would frustrate the purpose of the federal *Fair Packaging and Labeling Act* (1967).

In fact, however, Congress rarely expresses its clear an unambiguous intent to preempt an entire subject area against state regulation. As a result, it is the responsibility of the courts to determine whether Congress intended to exercise exclusive jurisdiction over the area in question. Such an intention may be found where the federal regulation is so "pervasive, comprehensive, or detailed" that the states have no room to augment or add to it. Under these circumstances, it may be said that the federal law "*occupies the field*" (Chemerinsky, Forman, Hopper, & Kamin, 2015). As noted by Professor Tribe (2000, p. 1205): "For if Congress has validly decided to 'occupy the field' for the federal government, state and local regulations within the field must be invalidated no matter how well they comport with substantive federal policies."

In two cases, the United States Supreme Court invalidated a state regulation limiting the length of trailer trucks traveling on interstate highways on the basis of federal preemption. In *Raymond Motor Transportation, Inc. v. Rice* (1978), the Supreme Court determined that the regulations adopted by the State of Wisconsin "place[d] a substantial burden on interstate commerce and they cannot be said to make more than the most speculative contribution to highway safety." In *Kassel v. Consolidated Freightways Corp. of Delaware* (1981), the Supreme Court concluded that an Iowa law prohibiting 65-foot double trailers from entering the state

discriminated against interstate commerce and was therefore invalid. In both cases, the Supreme Court determined that these state laws had been preempted through an application of the Supremacy Clause.

In a third case, *Cipollone v. Liggett Group, Inc.* (1992), a case which is important as well from an historical point of view—“outlining the history of the required warnings on cigarette packages and the evolving form of the warning itself so as not to minimize the danger of smoking” (Hunter, Shannon, & Amoroso, 2012)—the United States Supreme Court held that federal law preempts only those actions that *related to the required warnings, advertising, or promotion of cigarettes*. Other actions or theories of recover offered by the plaintiffs, with the exception of those based on the required warnings, were *not preempted* and could proceed (Foley, 1992).

Finally, “occupation of the field” may be seen in the direct federal regulation of safety designs for nuclear power plants which precluded state regulation (*Silkwood v. Kerr-McGee Corp.*, 1984; Voight, 1984).

CONTRAST WITH INTERNATIONAL LAW

In contrast and sometimes complementary to American law, there is also a body of law termed “international law” (von Glahn & Taulbee, 2017). International law encompasses both “public international law” (Brownlie, 1990; Vos, 2013) and “private international law” (Hill, 2014). As Fawcett and Torremans (1998) noted in the synopsis of *Intellectual Property and Private International Law*: “The protection and commercial exploitation of intellectual property rights such as patent designs and copyright are seldom confined to one country and the introduction of a foreign element inevitably raises potential problems of private international law, ranging from establishing which court has jurisdiction and which is the applicable law to securing the recognition and enforcement of foreign judgments.”

Professor Christopher Greenwood (2008) outlines the essential problem with international law when he notes: “There is no ‘Code of International Law.’ International law has no Parliament and nothing that can be described as legislation. While there is an International Court of Justice and a range of specialized international courts and tribunals, their jurisdiction is critically dependent upon the consent of States and they lack what can properly be described as compulsory jurisdiction of the kind possessed by national courts.”

Public international law deals with actions of states and other parties in their international relations or obligations (generally, Feliu, 2018). As Feliu (2018) notes: “Public International Law is composed of the laws, rules, and principles of general application that deal with the conduct of nation states and international organizations among themselves as well as the relationships between nation states and international organizations with persons, whether natural or juridical. Public International Law is sometimes called the ‘law of nations’ or simply just International law.”

Disputes relating to public international law are frequently adjudicated by the International Court of Justice or ICJ (Gilmore, 1945/1946), which was established in 1945 under the Charter of the United Nations. According to Article 36 of the Statute of the International Court of Justice, public international law concerns: a) the interpretation of a treaty; b) any question of international law; c) the existence of any fact which, if established, would constitute a breach of an international obligation; and d) the nature or extent of the reparation to be made for the breach of an international obligation. By way of contrast, “private international law” deals with

such issues as private contract enforcement and interpretation, private business interests, intellectual property (Fawcett & Torremans, 1998), and transnational taxation.

Sources of Public International Law

Although as Omar (2011) notes, “They are neither the only source nor the most authoritative one, for creating rights and obligations under international law,” Article 38(1) of the Statute of the International Court of Justice lists the four sources of public international law (see Kennedy, 1987) in hierarchal form as follows:

- Treaties and conventions are the functional equivalent of domestic legislation or statutory law at the international level. As Greenwood (2008) states: “Treaties [are] sometimes called agreements, conventions, exchanges of notes or protocols between States—or sometimes between States and international organizations....” A bilateral treaty is entered into between two nations; a multilateral treaty involves an agreement among more than two nations. Conventions are treaties that are sponsored by an international organization and normally involve multiple signatories. Examples of prominent international conventions include the Convention on the Law of the Seas (1982), the Vienna Convention of the Law of Treaties (1969/1980) (Dorr & Schmalenbach, 2012), and the Third Geneva Convention Relative to the Treatment of Prisoners of War (1949).
- Customary international law describes practices that are followed by two or more nations when dealing with each other in the international sphere (see Born, 2017). Customary law may be found in official government statements or practices, diplomatic correspondence recognizing certain rights or privileges, policy statements made by governmental officials, press releases, speeches, etc. (It will be interesting to see the legal status of certain “presidential tweets” in the creation of law in the United States.) Professor Cheeseman (2002, p. 90) notes that two elements must be demonstrated in order to show that a discreet practice should be recognized as creating a legally recognizable custom which rises to the level of customary law: “Consistent and recurring action by two or more nations over a considerable period of time; and recognition that the custom is binding—that is, followed because of legal obligation rather than courtesy” (see also Greenwood, 2008).

As the International Court of Justice stated in *North Sea Continental Shelf* cases (1969, p. 44): “Not only must the acts concerned be a settled practice, but they must also be such, or be carried out in such a way, as to be evidence of a belief that this practice is rendered obligatory by the existence of a rule requiring it. ... The States concerned must feel that they are conforming to what amounts to a legal obligation.”

Customs are often later codified in bilateral or multilateral treaties.

- Specialized international courts or specially constituted tribunals, for example, the International Criminal Tribunal for the former Yugoslavia (ICTY) (del Rosso, 2016) or the International Criminal Tribunal for Rwanda (Schabas, 2006), often rely on “general principles of law that are recognized by civilized nations” (see Schlesinger, 1957; Friedmann, 1963; Leyh, 2018).
As noted by Piero Bernardini (2016, p. 1), President of the Italian Arbitration Association, “Association of States national law with international law may be found in the formation of the general principles of law recognized by civilized nations and in applicable law clauses of State contracts. The general principles of law, one of the sources of international law under Article 38(1) of the ICJ Statute, are drawn by the creative task of the international judge from the legal system of the great majority of States, provided they are uniformly applied and felt as obligatory and necessary also on the point of view of international law.”
- Judicial decisions and “teachings of the most qualified legal scholars of various nations”

are a fourth, yet subsidiary, source of international law. Unlike in the United States, international courts are not bound by the principle of *stare decisis* and are free to decide each case on its own individual merits. "Indeed, the Statute of the ICJ expressly provides that a decision of the Court is not binding on anyone except the parties to the case in which that decision is given and even then only in respect of that particular case" (Greenwood, 2008, citing Article 59 of the Statute of the International Court of Justice). However, other international courts, most notably the European Court of Justice, often refer to its own past precedents as informative guidance. Decisions of national courts do not create precedent for international courts.

FUNCTIONS OF LAW IN THE UNITED STATES

The law has taken on a number of important societal functions. In the realm of promoting societal norms, the law provides an important vehicle for maintaining "peace," by enforcing societal standards regarding certain types of conduct which are declared criminal or anti-social in nature. Often reflecting the moral standards of society, the law both encourages and discourages various types of conduct (for example, discouraging drug use; encouraging home ownership or charitable contributions through the tax code). The law may be seen as a method to ensure social justice through enacting "social" legislation to assure fair treatment by groups in society seeking equal treatment or fair adjudication of claims ("Equal Pay" legislation; anti-discrimination laws; the Violence Against Women Act; etc.). The law provides a forum to resolve societal conflicts, either formally, through the adjudication process found in filing a lawsuit, or through the processes termed "alternate dispute resolution" [arbitration, mediation, etc.] (Schackman, 1996; Pryor, 2018; Greenspan, Brooks, Painter, & Walton, 2018).

In the United States, the law also fulfills an important role in facilitating contractual relationships, protecting business relationships and associations, and assuring fairness in the allocation of productive resources (for example, enacting antitrust legislation). Finally, law assures the protection of individual freedoms and liberties, such as the freedom to worship, the freedom of the press, the freedom to carry a firearm, the freedom of association, and certain procedural and substantive protections within the context of criminal law found in the Bill of Rights of the U.S. Constitution.

Many of these functionalities carry within them potential or real conflicts which then must be adjudicated or resolved as well. For example, a Boy Scout assistant leader files a law suit against the Boy Scouts of America (BSA) when he was terminated for being a homosexual (*Boy Scouts of America v. Dale*, 2000). The Boy Scouts countered by claiming that requiring them to continue his position with the organization violates *their* freedom of association to select leaders for their private organization who embody their "core beliefs" (see Leonard, 2000; Knauer, 2001; Bhagwat, 2011). A second example involves a recurring controversy relating to a women's "right to choose" an abortion versus the putative rights of the unborn (see *Roe v. Wade*, 1973). The same may be said of the Supreme Court's decision recognizing "gay" marriage under the guise of enforcing the equal protection clause of the Fourteenth Amendment (*Obergefell v. Hodges*, 2015; Siegel, 2017. Nan Hunter (2017, p. 1662) noted, however, that "The lawyers who led the marriage equality campaign succeeded by decentering litigation until after opinion polls registered majority support for allowing same-sex marriage." These types of conflicts are often resolved through the legal system, which may be called upon to balance rights between competing claimants. Some resolutions will be accepted by society-at large, and others may be the subject of continued opposition, criticism, or challenge. Perhaps with the exception of the eradication of slavery and the American Civil War, Americans have looked to the courts for resolution rather than "the streets" or violence.

METHODS OF DECIDING CASES: *JURISPRUDENCE*

Because the law fulfills so many important societal and functional roles, it is important to understand the philosophy behind a legal system. Social scientists and jurists often refer to the philosophy or science of the law as *jurisprudence*. Jurisprudence will provide a unique glimpse into the reasoning behind the creation of laws, the adjudication of cases, the development of an overall judicial philosophy of a nation, or of the judicial philosophies of individual judges. The same is certainly true of the development of the legal system in the United States. These legal philosophies (generally, Dasgupta, 2011) will be summarized in the following explanatory paragraphs:

- *Natural Law School*: The most common school of law thought in much of Western civilization is the natural law school (Rice, 1999). The natural law school is based upon morality, ethics, and "right conduct" (see, e.g., Finnis, 2012). As the *World Encyclopedia of Law* (2018) notes, "Natural law [is] a jurisprudence that emphasizes a law that transcends positive laws (human laws) and points to a set of principles that are universal in application." The United States Constitution, the English Magna Carta, and the United Nations Charter are said to be natural law documents, reflecting a moral basis of law. The natural law school provides an important philosophical critique of modern *secular* legal institutions and of law thought (Marske, Kofron, & Vago, 2017; Legarre, 2017).
- *Legal Positivism*: The positivist school of law is often contrasted with the natural law school. Positivism is a particular view of man-made law "as it is... rather than as it ought to be" (Business Dictionary, 2018). The positive school holds that legal rules are valid not because they have their origins in moral or natural law, but because they have been enacted by the legitimate legal authority. If morality is a consideration in the legal system, it only has relevance at the point a law is debated and enacted (see, e.g., Leiter, 2009). As Boyte (2017, p. 493) writes, "For legal positivists, laws do not have to embody and incorporate moral ideal because laws are, by nature, socially contingent and independent of moral ideals."
- *The Sociological School*: The sociological school asserts that the law is a means of achieving and advancing certain sociological or societal goals (Cotterrell, 2018). The sociological school posits that the purpose of law is to shape and influence social behavior (see Gardner, 1961). Adherents to the sociological school of law are sometimes referred to as *legal realists* (see Green, 2005; Dubey, 2018). Legal realists are most prone to disregard a precedent which might conflict with a differentiated view of society from that reflected in an early precedent. It may be said that the social context of law is more important to the school of legal realism than the formal application of precedent to decide current or future legal disputes.
As noted in the *World Encyclopedia of Law* (2018), "The legal realist school flourished in the 1920s and 1930s as a reaction to the historical school. Legal realists pointed out that because life and society are constantly changing, certain laws and doctrines have to be altered or modernized in order to remain current."
- *The Analytical School*: Adherents to the analytical school maintain that the law should be shaped by the application of logic to specific facts of each case. Adherents emphasize the logic of the result to be obtained rather than on how the result is achieved. The analytical school is sometimes referred to as "legal formalism" (see Boyte, 2017).
- *The Historical School*: The historical school maintains that the law is an aggregate of social traditions and customs that have developed over many centuries (Berman, 1994; Rodes, 2004). Berman (1994) notes that "The basic tenet of the historical school is that the primary source of the validity of law, including both its moral validity and its political validity, is its historicity, reflected especially in the developing customs and ongoing traditions of the community whose law it is." The historical school holds that

changes in societal norms will *gradually* be reflected in the law. To those who adhere to this philosophy, the law is an evolutionary process and legal scholars will look to past legal decisions or precedents or to the words of certain “foundation documents” to solve contemporary problems or for insights into current issues or controversies (e.g., Calabresi, 2011). Those who model the historical school are often said to follow “judicial restraint” in deciding cases and argue against precipitous judicial involvement in social conflicts that may better be resolved *over time* through the political or legislative processes.

- *The Command School*: Adherents to the command school hold that the law is a set of rules developed and enforced by those in power rather than a set of principles based upon morality, history, logic, or sociology. The command school rejects any legal philosophy that is not based on the promulgation of political power. Changes in the law will occur when the ruling class changes. Aspects of socialist law, based on the writings of Karl Marx, may be seen as a representation of the command school because of its close symmetry with the existence of the “command and control” economies of Central and Eastern Europe after World War II (see, e.g., Hunter, Nowak, & Ryan, 1995) and the development of law in China which are based on the expression of the political will of those in power.
- *The Critical Legal Studies School (CLS)* (Kelman, 1987): Adherents (sometimes referred to as “*Crits*”) posit that hard and fast legal rules are unnecessary, and in fact often stand as an obstacle to legal reform by the powerful in society who desire to maintain their power and the *status quo* (e.g., LaGreca, 2015). At the core of this theory lies the view that that disputes should be resolved by the application of rules that are based on broad notions of “fairness” in each particular circumstance. This theory permits judges to engage in subjective decision-making based on an individual judge’s concept of fairness. “Judicial activism” is often associated with the critical legal studies school (Hunter and Alexander, 2001).

As noted in the *World Encyclopedia of Law* (2018), “Some ‘*Crits*’ are clearly influenced by the economist Karl Marx and also by distributive justice theory. The CLS school believes the wealthy have historically oppressed and exploited those with less wealth and have maintained social control through law. In so doing, the wealthy have perpetuated an unjust distribution of both rights and goods in society. Law is politics and thus not neutral or value free. The CLS movement would use the law to overturn the hierarchial structures of domination in the modern society.”

The critical legal studies school is not without its severe critics. As noted by Unger (1983), “The critical legal studies movement has undermined the central ideas of modern legal thought and put another conception of law in their place. This conception implies a view of society and informs a practice of politics.”

- *The Law and Economics School*: The law and economics school seeks to apply “free market” principles to determine the outcome of lawsuits and the necessity for legislation or regulation in the economic sphere (e.g., Mercurio, 2009). As noted by Kaplow and Shavell (1999), the law and economics school has special relevance in “liability for accidents (tort law), property law, and contracts.” With its origins at the University of Chicago (Medema, 2003) and the philosophical moorings of Judge Richard Posner of the Seventh Circuit Court of Appeals, the promotion of market efficiency is the central focus of legal analysis. The law and economics school has held particular sway in the application of antitrust litigation in the United States, particularly in analyzing corporate mergers, acquisitions, and takeovers. Instead of deciding cases on the basis of potential market domination, adherents to this school of thought would find such activities illegal only if they render the market less efficient. In cases involving the

regulation of business, members of the law and economics school would be prone to adopt a cost-benefit analysis to the exclusion of moral or policy arguments and would generally favor deregulation of the American economy.

FINAL COMMENTARY

It surprises many non-Americans that the legal system in the United States is really not *a* legal system; but rather, the system is an amalgam of *both* common and civil law, coupled with a strong element of administrative law and executive action. In addition, with the possible exception of Germany and a few other nations (see Darlington, 2018), our dual side-by-side federal and state court systems prove to be a challenge in attempting to understand the concept of jurisdiction or the power of the various courts to hear and adjudicate cases.

As well, it may come as a surprise that many contentious social, religious, or political issues are resolved not through legislation or the administrative process, but rather by the intervention of the courts—most notably by the United States Supreme Court—whose members apply various forms of reasoning described above to their decision-making. Finally, while there is a well developed body of international law, American courts by-and-large are resistant to its application in the American legal system, especially in non-commercial areas.

This paper has explicated many of the issues and concepts central to an understanding of the American legal system in the belief that one seeking or called upon to participate in the system will come away with a better understanding of the important—perhaps central—role that law plays in shaping American social, economic, and political policy.

APPENDIX I

CISG: List of Contracting States

- [Albania](#)
- [Argentina](#)
- [Armenia](#)
- [Australia](#)
- [Austria](#)
- [Bahrain](#)
- [Belarus](#)
- [Belgium](#)
- [Benin](#)
- [Bosnia-Herzegovina](#)
- [Brazil](#)
- [Bulgaria](#)
- [Burundi](#)
- [Canada](#)
- [Chile](#)
- [China \(PRC\)](#)
- [Colombia](#)
- [Croatia](#)
- [Cuba](#)
- [Cyprus](#)
- [Czech Republic](#)
- [Denmark](#)
- [Dominican Republic](#)
- [Ecuador](#)
- [Egypt](#)
- [El Salvador](#)
- [Estonia](#)
- [Finland](#)
- [France](#)
- [Gabon](#)
- [Georgia](#)
- [Germany](#)
- [Greece](#)
- [Guinea](#)
- [Guyana](#)
- [Honduras](#)
- [Hungary](#)
- [Iceland](#)
- [Iraq](#)
- [Israel](#)
- [Italy](#)
- [Japan](#)
- [Kyrgyzstan](#)
- [Latvia](#)
- [Lebanon](#)
- [Lesotho](#)
- [Liberia](#)
- [Lithuania](#)
- [Luxembourg](#)
- [Macedonia](#)
- [Mauritania](#)
- [Madagascar](#)
- [Mexico](#)
- [Moldova](#)
- [Mongolia](#)
- [Montenegro](#)
- [Netherlands](#)
- [New Zealand](#)
- [Norway](#)
- [Paraguay](#)
- [Peru](#)
- [Poland](#)
- [Republic of Congo](#)
- [Republic of Korea](#)
- [Romania](#)
- [Russian Federation](#)
- [Saint Vincent & Grenadines](#)
- [San Marino](#)
- [Serbia](#)
- [Singapore](#)
- [Slovakia](#)
- [Slovenia](#)
- [Spain](#)
- [Sweden](#)
- [Switzerland](#)
- [Syria](#)
- [Turkey](#)
- [Uganda](#)
- [Ukraine](#)
- [United States](#)
- [Uruguay](#)
- [Uzbekistan](#)
- [Yugoslavia](#)
- [Zambia](#)
- [USSR\(superseded\)](#)

References

- Berman, H.J. (1994). The origins of historical jurisprudence: Coke, Selden, Hale. *Yale Law Journal*, 103(7): 1651-1738.
- Bernardini, P. (2016). Private law and general principles of public international law. *Uniform Law Review*, 21(2-3): 184-196.
- Bhagwat, A. (2011). Associational speech. *Yale Law Journal*, 120: 978-1030.
- Born, G. (2017). Customary international law in United States courts. *Washington Law Review*, 92: 1641-1720.
- Boyte, A.N. (2017). Picking at morals: analytical jurisprudence in the age of naturalized ethics. *Southern California Interdisciplinary Law Journal*, 26: 493-519.
- Brownlie, I. (1990). *Principles of public international law*. Oxford, U.K.: Clarendon Press.
- Business Dictionary. (2018). Legal positivism. Available: <http://www.businessdictionary.com/definition/legal-positivism.html> (accessed August 5, 2018).
- Calabresi, S.G. (2011). Originalism and sex discrimination. *Texas Law Review*, 90(1): 1-101.
- Calamari, J.D. & Perillo, J.M. (1979). *Contracts*. St. Paul, Minn.: West Publishing.
- Central Intelligence Agency (CIA) (2018). *CIA Factbook- legal system*. Available: www.cia.gov/library/publications/the-world-factbook/fields/2100.html (accessed August 6, 2018).

- Cheeseman, H.R. (2002). *The legal environment* (Third Edition). Upper Saddle River, N.J.: Prentice Hall.
- Chemerinsky, E., Forman, J., Hopper, A., & Kamin, S. (2015). Cooperative federalism and marijuana regulation. *University of California at Los Angeles Law Review*, 62: 74-122.
- Conway, K.S. (2013). Inherently or exclusively federal: constitutional preemption and the relationship between public law 280 and federalism. *Journal of Constitutional Law*, 15(5): 1323-1371.
- Cooper, C.J. (1988). Stare decisis: precedent and principle in constitutional adjudication. *Cornell Law Review*, 73(2): 401-410.
- Cotterrell, R. (2018). *Sociological jurisprudence: juristic thought and social inquiry*. Abingdon, U.K.: Routledge.
- Darlington, R. (2018). A short guide to the German political system. Available: <http://www.rogerdarlington.me/uk/Germanpoliticalsystem.html> (accessed August 12, 2018).
- Dasgupta, R. (2011). Notes on different schools of law. Available: <http://www.preservearticles.com/201104265958/notes-on-different-schools-of-law.html> (accessed August 13, 2018).
- del Rosso, E. (2016). What is the international criminal tribunal for the former Yugoslavia? Available: <http://www.icty.org/> (accessed August 11, 2011).
- Dingley, F.W. (2016). The corpus juris civilis: a guide to its history and use. *Legal Reference Services Quarterly*, 35(4): 231-255.
- Dorfman, D.A. & Zogby, M.C. (2017). Judicial notice: an underappreciated and misapplied tool of efficiency. *Defense Counsel Journal*, 84(2): 1-16.
- Dorr, O. & Schmalenbach, K. (eds.). (2012). *Vienna Convention on the Law of Treaties*. New York: Springer.
- Douglas, W.O. (1948). The dissent, a safeguard of democracy. *Journal of the American Judicial Society*, 32: 104-ff. Available: <https://www.azquotes.com/quote/1082427> (accessed August 3, 2018).
- Dubey, K. (2018). Jurisprudential aspect at a supralegal scale: school of realism. Available: <https://www.rg.net/publication/325968123> (accessed August 10, 2018).
- Fawcett, J.J. & Torremans, P. (1998). *Intellectual property and private international law*. Oxford, U.K.: Oxford University Press.
- Feliu, V. (2008). Introduction to public international law research. Available: http://www.nyulawglobal.org/globalex/Public_International_Law_Research.html (accessed August 10, 2018).
- Finnis, J.M. (2012). Natural law theory: its past and its present. Available: https://scholarship.law/ndu/law_faculty_scholarship/1085 (accessed August 10, 2018).
- Foley, E.P. (1992). Federal preemption of state common law- Federal Cigarette Labeling and Advertising Act: *Cipollone v. Liggett Group, Inc. Tennessee Law Review*, 60: 243-261.
- Friedmann, W. (1963). The uses of "general principles" in the development of international law. *American Journal of International Law*, 57(2): 279-299.
- Gardner, J.A. (1961). The sociological jurisprudence of Roscoe Pound (Part I). *Villanova Law Review*, 7: 1-26.
- Gillies, P.S. (2017). Roman remains in Vermont law. *Vermont Bar Journal and Law Digest*, 43: 14-24.
- Gilmore, G. (1945/1946). The international court of justice. *Yale Law Journal*, 55: 1049-1066.
- Green, M.S. (2005). Legal realism as theory of law. *William and Mary Law Review*, 46: 1915-2000.
- Greenspan, D., Brooks, F.M., Panter, M., & Walton, J. (2017). Recent developments in alternative dispute resolution. *Tort Trial and Insurance Practice Law Journal*, 52(2): 207-235.
- Greenwood, C. (2008). Sources of international law: an introduction. Available: <http://docplayer.net/20854911-Sources-of-international-law-an-introduction-professor-christopher-greenwood.html> (accessed August 6, 2018).
- Hand, L. (1960). The spirit of liberty (Speech). Available: <http://www.learnedhand.org/?p=4> (accessed August 8, 2018).
- Hill, D. (2014). *Private international law*. Edinburgh: Edinburgh University Press.
- Huber, P. & Mullis, A. (2007). *The CISG*. Munich: Sellier.

Hunter, N. (2017). Varieties of constitutional experience: democracy and the marriage equality campaign. *UCLA Law Review*, 64: 1662-1726.

Hunter, R.J., Jr. (2011). Judicial review of administrative rule making. *Mustang Journal of Law and Legal Studies*, 2: 31-39.

Hunter, R.J., Jr. (2018). A primer on common interest communities and interval ownership: a panacea or an inevitable trap? Seton Hall University, Stillman School of Business Working Paper (available from author).

Hunter, R.J., Jr. & Alexander, P. (2001). "The most important thing we do is not doing": changing concepts in constitutional law: judicial activism vs. judicial restraint. *Business Law Review*, 34: 87-100.

Hunter, R.J., Jr. & Lozada, H.R. (2010). A nomination of a supreme court justice: the incorporation doctrine revisited. *Oklahoma City Law Review*, 35: 365-385.

Hunter, R.J., Jr., Nowak, A., & Ryan, L.V. (1995). Legal aspects of the transformation process in Poland: business association forms. *The Polish Review*, 40(4): 387-407.

Hunter, R.J., Jr. & Shannon, J.H. (2017). The confluence of the Americans with Disabilities Act with administrative law: the case of the recalcitrant or perhaps dangerous employee. *Texas Tech Administrative Law Journal*, 18(1): 83-101.

Hunter, R.J., Jr., Shannon, J.H., & Amoroso, H. J. (2012). *Products liability: a managerial perspective*. North Charleston, S.C.: Create Space. Available: <https://www.amazon.com/Products-Liability-Richard-Hunter-Jr/dp/147839370X>.

Hunter, R.J., Jr., Shapiro, R.E., & Ryan, L.V. (2003). Legal considerations in foreign direct investment. *Oklahoma City University Law Review*, 28(2 /3): 851-873.

Juillard, P. (2001). Bilateral investment treaties in the context of investment law. (OECD). Available: <http://www.oecd.org/investment/internationalinvestmentagreements/1894794.pdf> (accessed August 10, 2018).

Kaplow, L. & Shavell, S. (1999). Economic analysis of law. NBER Working Paper 6960. Available: <http://www.nber.org/papers/w6960> (accessed August 10, 2018).

Kelman, M. (1987). *A guide to critical legal studies*. Cambridge, Mass. and London, U.K.: Harvard University Press.

Kennedy, D. (1987). The sources of international law. *American University International Law Review*, 2(1): 1-96.

Kozel, R.J. (2010). Stare decisis as judicial doctrine. *Washington and Lee Law Review*, 67: 411-466.

Knauer, N. J. (2001). "Simply so different": the uniquely expressive character of the openly gay individual after *Boy Scouts v. Dale*. *Kentucky Law Journal*, 89: 997-1073.

Kunkel, W. (1996). *An introduction to Roman legal and constitutional history*. Wotton-Under-Edge, U.K.: Clarendon Press.

Legarre S. (2018). A new natural law reading of the constitution. *Louisiana Law Review*, 78: 877-905.

LaGreca, P. C. (2015). Separate and unequal: the American dream unfulfilled. *Rutgers Race and Law Review*, 16: 183-201.

Lehman, D. (1997). The Code of Napoleon. *The Yale Review*, 85(4): 118-120.

Leiter, B. (2009). Why legal positivism? University of Chicago Public Law & Legal Theory Working Paper No. 298. Available: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2323013 (accessed August 10, 2018).

Leonard, A.S. (2000). Supreme Court rules for boy scouts in gay membership dispute. *Lesbian/Gay Law Notes*: 113-114.

Leyh, B.M. (2018). Pragmatism over principles: the international criminal court and a human rights-based approach to judicial interpretation. *Fordham International Law Journal*, 41: 697-736.

Madema, S.G. (2003). Chicago law and economics. Available: https://www.researchgate.net/publication/228244699_Chicago_Law_and_Economics (accessed August 10, 2018).

Marske, C. E., Kofron, C.P., & Vago, S. (1978). The significance of natural law in contemporary legal thought. *The Catholic Lawyer*, 24(1): 60-76.

Mercuro, N. (2009). The jurisprudential niche occupied by law and economics. *Journal of Jurisprudence*, 2: 61-109. Available: <https://digitalcommons.law.msu.edu/facpubs/72/> (accessed August 10, 2018).

- Merriam, J. (2017). Preemption as a consistency doctrine. *William & Mary Bill of Rights Journal*, 25: 981-1045.
- Mitchell, W. (1904). *An essay on the early history of the law merchant*. Cambridge, U.K.: Cambridge University Press.
- Newell, L.A. (2017). Up in smoke? Unintended consequences of retail marijuana laws for partnerships. *Cardozo Law Review*, 38: 1343-1395.
- Omar, S. (2011). Sources of international law in the light of the article 38 of the international court of justice. *Law and Society: International and Comparative Law eJournal*: 1-15.
- Posner, R. A. (1997). *Law and legal theory in England and America*. Oxford, U.K.: Oxford University Press.
- Pryor, B.G. (2018). Alternative dispute resolution: pros and cons. Available: www.PryorandBruce.com (accessed August 5, 2018).
- Ray, C. (2018). John Marshall, McCulloch v. Maryland, and the concept of constitutional sovereignty. *Perspectives on Political Science*, 47(2): 65-77.
- Rice, C. (1999). *50 questions on the natural law: what it is and why we need it*. San Francisco, Cal.: Ignatius Press.
- Rodes, R.E. (2004). On the historical school of jurisprudence. *American Journal of Jurisprudence*, 49: 165-184.
- Roland, J. (2000). How stare decisis subverts the law. Available: <http://www.constitution.org/col/0610staredrift.htm> (accessed August 9, 2018).
- Schabas, W.A. (2006). *The UN international criminal tribunals: the former Yugoslavia, Rwanda and Sierra Leone*. Cambridge, U.K.: Cambridge University Press.
- Schackman, W.M. (1996). Alternative dispute resolution. *Insurance Advocate*, 107(43): 24-ff.
- Schlesinger, R.B. (1957). Research on the general principles of law recognized by civilized nations. *American Journal of International Law*: 51(4): 734-753.
- Siegel, R.B. (2017). Community in conflict: same-sex marriage and backlash. *UCLA Law Review*, 64: 1728-1769.
- Spence, D.B. & Murray, P. (1999). The law, economics, and politics of federal preemption jurisprudence. *California Law Review*, 87(5): 1125-1206.
- Swenson, D.L. (2008). Bilateral investment treaties and international integration. Available: <http://www.faculty.econ.ucdavis.edu/faculty/dswenson/BITsIntegration08.pdf> (accessed August 9, 2018).
- Syam, P. (2014). What is the difference between common law and civil law? Available: <https://onlinelaw.wustl.edu/blog/common-law-vs-civil-law/> (accessed August 9, 2018).
- The Law Dictionary. (2018). What is a court of chancery? Available: <https://thelawdictionary.org/courtofchancery/> (accessed August 5, 2018).
- Trakman, L. (1983). *The law merchant: the evolution of commercial law*. San Francisco, Cal.: Rothman & Co.
- Trakman, L. (2011). The twenty-first century law merchant. *American Business Law Journal*, 48(4): 775-834.
- Tribe, L.H. (2000). *American constitutional law*. (Third edition). New York: Foundation Press.
- Unger, R.M. (1983). The critical legal studies movement. *Harvard Law Review*, 96: 561-675.
- Voigt, H.H. (1984). Actual and punitive damages for exposure within regulatory limits: the Karen Silkwood case, *Environmental Law Reporter*: 14: 10126-10127.
- von Glahn, G., & Taulbee, J.L. (2017). *Law among nations*. New York: Routledge.
- Vos, J.A. (2013). *The function of public international law*. New York: Springer.
- Wilde, R. (2018). A history of the Napoleonic Code. Available: <https://www.thoughtco.com/the-napoleonic-code-code-napoleon-1221918> (accessed August 9, 2018).
- Williams, J.B. (2014). Federal supremacy vs. states' rights. *News With Views*. Available: <http://newswithviews.com/IBWilliams/williams276.htm> (accessed August 13, 2018).
- World Encyclopedia of Law. (2018). Jurisprudential thought. Available: <https://lawin.org/jurisprudential-thought> (accessed August 6, 2018).

Cases

- Boy Scouts of America v. Dale (2000). 530 U.S. 640 (United States Supreme Court). *
- Brown v. Board of Education (1954). 347 U.S. 483 (United States Supreme Court). *
- Brown v. Piper (1875). 91 U.S. 37 (United States Supreme Court).
- Cipollone v. Liggett Group, Inc. (1992). 505 U.S. 504 (United States Supreme Court). *
- City of Burbank v. Lockheed Air Terminal Inc. (1973). 411 U.S. 624 (United States Supreme Court).
- Fairfax Devisee v Hunter's Lessee (1813). 11 U.S. (7 Cranch) 603 (United States Supreme Court). *
- Flagiello v. Pennsylvania (1965). 417 Pa. 486 (Supreme Court of Pennsylvania).
- Gibbons v. Ogden (1824). 22 U.S. 1 (United States Supreme Court). *
- Jones v. Rath Packing Co. (1977). 430 U.S. 519 (United States Supreme Court).
- Kassel v. Consolidated Freightways (1981). 450 U.S. 662 (United States Supreme Court).
- Marbury v. Madison (1803). 5 U.S. (1 Cranch) 137 (United States Supreme Court). *
- Martin v. Hunter's Lessee (1816), 14 U.S. 304 (United States Supreme Court). *
- McCulloch v. Maryland (1819). 17 U.S. 316 (United States Supreme Court). *
- Morrison v. Thoelke (1967). 155 So.2d 889 (Florida District Appellate Court).
- North Sea Continental Shelf Cases (1969). Federal Republic of Germany/Denmark, Federal Republic of Germany/Netherlands. (I.C.J. Reports).
- Obergefell v. Hodges (2015). 135 S. Ct. 2584 (United States Supreme Court). *
- Parmeter v. Bourne (1894). 8 Wash. 45 (Supreme Court of Washington).
- Raymond Motor Transportation, Inc. v. Rice (1978). 434 U.S. 429 (United States Supreme Court).
- Roe v. Wade (1973). 410 U.S. 113 (United States Supreme Court). *
- Silkwood v. Kerr-McGee (1984). 464 U.S. 238 (United States Supreme Court). *

* Contained in Constitutional Case Summaries

Statutes And Conventions

Fair Packaging and Labeling Act. (1967). 15 U.S.C. Chapter 39, Sections 1451-1461.

Federal Aviation Act. (1958). Public Law 85-726.

Third Geneva Convention Relative to the Treatment of Prisoners of War. (1949). Available:

<https://www.un.org/en/genocideprevention/documents/atrocities-crimes/Doc.32> (accessed August 11, 2018).

Uniform Commercial Code (1952/2018). Available: <https://www.law.cornell.edu/ucc> (accessed August 11, 2018).

United Nations Convention on Contracts for the International Sale of Goods, Vienna, 11 April 1980, S.Treaty

Document Number 98-9 (1984), UN Document Number A/CONF 97/19, 1489 UNTS 3. Available:

http://www.uncitral.org/uncitral/en/uncitral_texts/sale_goods/1980CISG.html (accessed August 11, 2018).

United Nations Convention on the Law of the Seas. (1982). Available:

https://www.un.org/Depts/los/convention_agreements/texts/unclos/unclos_e.pdf (accessed August 11, 2018).

Vienna Convention on the Law of Treaties. (1969/1980). Available:

https://legal.un.org/ilc/texts/instruments/english/conventions/1_1_1969.pdf (accessed August 11, 2018).

Website

CISG. (2018). *Contracting states*. Available: <http://www.cisg.law.pace.edu/cisg/countries/cntries.html> (accessed August 5, 2018).

CONSTITUTIONAL CASE SUMMARIES

Boy Scouts of America v. Dale (2000)

"Applying New Jersey's public accommodations law to require the Boy Scouts to admit Dale violates the Boy Scouts' First Amendment right of expressive association. Government actions that unconstitutionally burden that right may take many forms, one of which is intrusion into a group's internal affairs by forcing it to accept a member it does not desire. Such forced membership is unconstitutional if the person's presence affects in a significant way the group's ability to advocate public or private viewpoints."

The United States Supreme Court held that the constitutional right to freedom of association allowed the Boy Scouts of America (BSA) to exclude a homosexual person from membership in the Scouts despite a New Jersey state law requiring equal treatment of homosexuals in "public accommodations." The court ruled that a private organization such as the BSA may exclude a person from membership when "the presence of that person affects in a significant way the group's ability to advocate public or private viewpoints." In a five to four decision, the Supreme Court ruled that opposition to homosexuality is part of BSA's "expressive message" and that allowing homosexuals to become adult leaders would interfere with that message, reversing a decision of the New Jersey Supreme Court.

Brown v. Board of Education (1954)

"We conclude that in the field of public education the doctrine of "separate but equal" has no place. Separate educational facilities are inherently unequal. Therefore, we hold that the plaintiffs and others similarly situated for whom the actions have been brought are, by reason of the segregation complained of, deprived of the equal protection of the laws guaranteed by the 14th Amendment."

In *Plessy v. Ferguson* (1896), the Supreme Court had sanctioned segregation by upholding the doctrine of "separate but equal." The National Association for the Advancement of Colored People, represented by future Supreme Court Justice Thurgood Marshall, challenged the constitutionality of segregation in the Topeka, Kansas, school system. In 1954, the United States Court unanimously overruled its decision in *Plessy*, holding that "separate schools are inherently unequal."

Cipollone v. Liggett Group, Inc. (1992)

"We conclude that § 5 of the 1965 Act only pre-empted state and federal rulemaking bodies from mandating particular cautionary statements and did not pre-empt state-law damages actions."

The Supreme Court addressed the issue of *preemption* of federal law in regard to state law regulating the tobacco industry relating to advertisements and promotion. In question was *The Cigarette Labeling and Advertising Act of 1966*, which regulates manufacturers who label their packages with warnings prescribed by the Act. The majority of the court ruled that the "failure-to-warn" claim against the tobacco industry by the plaintiff was invalid and prohibited because such an action had been preempted. In addition, cases involving the "neutralization" of federal warnings in cigarette advertisements (either weakening or strengthening such warnings) were also invalid and prohibited on the grounds that the Act preempted, or overrode, state laws.

The majority ruling by the Supreme Court also limited the potential litigants in lawsuits against tobacco industries to only smokers who developed diseases *prior* to 1969. The opinion did not

exclude common law fraud and conspiracy or express warranty actions—but only related to issues relating to advertising.

Fairfax Devisee v. Hunter's Lessee (1813)/Martin v. Hunter's Lessee (1816)

"The appellate jurisdiction of the supreme court of the United States extends to a final judgment or decree in any suit in the highest court of law or equity of a state; where is drawn in question the validity of a treaty, or statute of, or an authority exercised under, the United States, and the decision is against their validity; or where is drawn in question the validity of a statute of, or an authority exercised under, any state, on the ground of their being repugnant to the constitution, treaties, or laws of the United States, and the decision is in favour of such their validity; or the construction of a treaty, or statute of, or commission held under, the United States, and the decision is against the title, right, privilege, or exemption specially set up or claimed, by either party, under such clause of the constitution, treaty, statute or commission."

The original case from 1803, *Fairfax's Devisee*, was the prelude to the eventual constitutional confrontation between the state of Virginia and the government of the United States that culminated in the Supreme Court's decision in *Martin v. Hunter's Lessee* (1816). The cases involved questions relating to Virginia's wartime confiscation of Loyalist (pro-British) property, state obligations under the Jay Treaty of 1794, and the authority of the Supreme Court over decisions of state supreme courts under section 25 of the Judiciary Act of 1789. *Fairfax Devisee* provided the basis for *Martin v. Hunter's Lessee*, a case decided on March 20, 1816, which was the first case to assert ultimate Supreme Court authority over state courts under the Constitution of the United States.

Gibbons v. Ogden (1824):

"When a state proceeds to regulate commerce with foreign nations, or among the several states, it is exercising the very power that is granted to Congress, and is doing the very thing which Congress is authorized to do."

In 1808, the government of New York granted a steamboat company a monopoly to operate its boats on the state's waters, which included bodies of water that stretched *between* states. Ogden held a license under this monopoly to operate steamboats between New Jersey and New York. Gibbons, another steamboat operator, was a competitor Ogden on this same route but held a federal coasting license issued by an act of Congress. Ogden filed a complaint in a New York court to stop Gibbons from operating his boats, claiming that the monopoly granted by New York was legal even though he operated on shared, *interstate* waters. Gibbons argued that the U.S. Constitution gave Congress the *sole power over interstate commerce*. After losing twice in New York courts, Gibbons appealed the case to the Supreme Court. The Supreme Court determined that the commerce clause of the Constitution grants the federal government the exclusive power to determine how interstate commerce is conducted.

Marbury v. Madison (1803)

"It is emphatically the province and duty of the judicial department to say what the law is. Those who apply the rule to particular cases, must of necessity expound and interpret that rule. If two laws conflict with each other, the courts must decide on the operation of each. So if a law be in opposition to the Constitution; if both the law and the Constitution apply to a particular case, so that the court must either decide that case conformably to the law,

disregarding the Constitution; or conformably to the Constitution, disregarding the law; the court must determine which of these conflicting rules governs the case. This is of the very essence of judicial duty."

In the Judiciary Act of 1789, Congress gave the Supreme Court the authority to issue certain judicial writs or orders, expanding its original jurisdiction beyond what was stated in the Constitution. Included was the authority of the Supreme Court to issue a *writ of mandamus*. Because the Constitution is the Supreme Law of the Land, the Court held that any contradictory congressional Act is without force. *Marbury v. Madison* established the power of federal courts (in this case, the United States Supreme Court) to declare legislative unconstitutional. This power has come to be known as the power of *judicial review*.

McCulloch v. Maryland (1819)

"The government of the United States, though limited in its powers, is supreme; and its laws, when made in pursuance of the constitution, form the supreme law of the land, any thing in the constitution or laws of any State to the contrary notwithstanding."

The state of Maryland imposed a tax on the Bank of the United States and questioned the federal government's ability to grant charters without explicit constitutional sanction. The United States Supreme Court held that the tax imposed by Maryland unconstitutionally interfered with federal supremacy and ruled that the Constitution gives the federal government certain implied powers. The Court noted, "The power to tax is the power to destroy."

Obergefell v. Hodges (2015)

"Under the 14th Amendment, no State shall deprive any person of life, liberty, or property, without due process of law. The fundamental liberties protected by this Clause include most of the rights enumerated in the Constitution. In addition these liberties extend to certain personal choices central to individual dignity and autonomy, including intimate choices that define personal identity and beliefs."

The United States Supreme Court held that the fundamental right to marry is guaranteed to same-sex couples by both the Due Process Clause and the Equal Protection Clause of the Fourteenth Amendment to the United States Constitution. The 5-4 ruling required all fifty states to perform and recognize the marriages of same-sex couples "on the same terms and conditions as the marriages of opposite-sex couples, with all the accompanying rights and responsibilities."

Roe v. Wade (1973)

"This right of privacy, whether it be founded in the concept of personal liberty and restrictions upon state action, as the court feels it is, or, in the reservation of rights to the people, is broad enough to encompass a woman's decision whether or not to terminate her pregnancy."

Jane Roe, a pseudonym for the actual plaintiff, Norma McCorvey, was an unmarried and pregnant Texas resident in 1970. Texas law made it a felony to abort a fetus unless "on medical advice for the purpose of saving the life of the mother." Roe filed suit against Wade, the district attorney of Dallas County, who was charged with enforcing the statute, arguing that the statute violated the guarantee of personal liberty and the right to privacy implicitly guaranteed in the

First, Fourth, Fifth, Ninth, and Fourteenth Amendments. *Roe* was based on the Supreme Court's decision in *Griswold v. Connecticut* (1965), which had recognized a fundamental right of privacy protected in the "penumbras and emanations" of the Bill of Rights. In deciding for *Roe*, the Supreme Court invalidated any state laws that prohibited first trimester abortions. *Roe* is still subject to severe criticism as a prime example of "judicial activism," and has been modified over the years in several decisions of the United States Supreme Court

Silkwood vs. Kerr-McGee (1984)

"The federal government occupies the entire field of nuclear safety concerns, except the limited powers expressly ceded to the states."

Karen Silkwood's father and her children filed a lawsuit against Kerr-McGee for negligence on behalf of her estate. The estate presented evidence from an autopsy that proved Silkwood was contaminated with plutonium at her death. To prove that the contamination was sustained at the plant, evidence was given by a series of witnesses who were former employees of the facility.

The defense relied on the testimony of an expert witness, Dr. George Voelz, a top-level scientist at the Los Alamos Lab. Voelz testified that he believed the contamination in Silkwood's body was within legal standards. The defense later proposed that Silkwood was a "troublemaker," who might have poisoned herself. Following the summation arguments of the attorneys, Judge Frank Theis instructed the jury as follows: "[I]f you find that the damage to the person or property of Karen Silkwood resulted from the operation of this plant ... defendant Kerr-McGee Nuclear Corporation is liable...."

The jury rendered its verdict \$505,000 in actual damages and \$10,000,000 in punitive damages. On appeal, the judgment was reduced to \$5,000, the estimated value of Silkwood's losses in property at her rental house. The appellate court also disallowed the award of punitive damages. In 1984, the U.S. Supreme Court restored the original verdict, ruling that "the NRC's exclusive authority to set safety standards did *not* foreclose the use of state tort remedies." In so doing, the appellate court rejected the preemption claim raised by the defendants. Although suggesting it would appeal on other grounds, Kerr-McGee nonetheless settled out of court for \$1.38 million, still admitting no liability.



Risk, Earning and Capital As An Antecedent Variable Of Financial Soundness With Good Corporate Governance As A Contingent Variable On Private Commercial Banks Listed In The Indonesia Stock Exchange

Herizon

Doctoral Student at The Doctoral Program,
Faculty of Economics and Business,
University of 17 Agustus 1945 Surabaya, Indonesia;
Department of Management,
Sekolah Tinggi Ilmu Ekonomi Perbanas Surabaya, Indonesia;

Tri Ratnawati

Lecturer at The Faculty of Economics and Business
University of 17 Agustus 1945 Surabaya, Indonesia;

Slamet Riyadi

Lecturer at The Faculty of Economics and Business
University of 17 Agustus 1945 Surabaya, Indonesia

ABSTRACT

The Government of Indonesia has sought to create a sound banking industry, but has not fully succeeded as expected. The soundness of private commercial banks listed on the Indonesia Stock Exchange has decreased from 2012 to 2016. The purpose of this research is first, found empirical evidence of the antecedent variable of bank financial soundness. Secondly, found empirical evidence of the ability to moderate good corporate governance (GCG) to influence a risk to bank financial soundness. Third, found empirical evidence of the ability to mediate GCG on the influence of earnings performance to bank financial soundness. The variables analyzed in this study include credit risk, market risk liquidity risk, operational risk, GCG, earnings and capital as the independent variable and bank soundness as the dependent variable. This study makes private commercial banks listed in Indonesia Stock Exchange as population and by using purposive sampling technique selected 22 banks as sample research. The period of this study is from 2012 to 2016. In conducting the research hypothesis proof, used SmartPLS software. The results obtained from this research are credit risk, operational risk, GCG, earning and capital performance into an antecedent variable of bank financial soundness because it has a significant effect on the bank financial soundness. GCG moderates the impact of credit risk and operational risk to financial soundness and GCG mediates the effect of earnings on the financial soundness of private commercial banks listed on the Indonesia Stock Exchange.

Keywords: Risk, GCG, Earning, capital and bank financial soundness

INTRODUCTION

The Indonesian banking industry faces an external environment that has changed since it was published Basel I in 1988, then the market risk amendment in 1996, Basel II in 2004 and Basel III in 2009, all of which govern the imperative of risk management and GCG at the bank. Indonesia responded to the changes in the external environment by implementing Bank Indonesia Regulation (PBI) number 5/8/PBI/2003 enhanced by PBI number 11/25/PBI/2009

and updated by Financial Service Authority Rule (POJK) number 18/POJK.03/2016. The regulations contain the implementation of risk management for commercial banks operating in Indonesia.

The regulation on the implementation of risk management is strengthened by the enactment of PBI number 8/4/ PBI/2006 which is then enhanced by PBI number 8/14/PBI/2006 and Bank Indonesia Circular Letter No. 9/12/ DPNP/2007. The year 2013 is enhanced with SEBI number 15/15/DPNP/2013 which contains about the obligation of commercial bank management operating in Indonesia to implement GCG. The year 2016 refined with POJK number 55/POJK.03/2016 and Circular of Financial Services Authority (SEOJK) number 13/SEOJK.03/2017 about the implementing GCG for Commercial Bank.

The Government of Indonesia through Bank Indonesia (BI) and the Financial Services Authority (OJK) has also made improvements to the bank's financial soundness assessment system. The period prior to 2014 uses the CAMEL (Capital, Asset Quality, Management, Earning and Liquidity) approach and from 2004 through 2011 using the CAMELS (Capital, Assets Quality, Management, Earning, Liquidity and Sensitivity) approach as set forth in PBI No. 6/10/PBI/2004. The year 2011 is enhanced by using the Risk Based Bank Rating (RBBR) approach as set forth in PBI number 13/1/PBI/2011. The year 2016 refined by enforcing POJK number 04/POJK.03/2016. POJK number 04/POJK.03/2016 contains the provision that the financial rating of commercial banks is conducted by assessing the risk profile aspect, the value of GCG implementation, earnings and capital bank or also called RGEC approach. The improvement and refinement of regulations of the bank's financial soundness aims to create a sound banking industry, in which there are banks that have the capability to perform normal banking operations and be able to fulfill all their responsibility well in the appropriate way of the prevailing rules (Triandaru and Totok Budisantoso, 2008: 51).

The creation of a sound banking industry that has been done by the Indonesian government has not been fully successful. The financial soundness score of private commercial banks listed on the Indonesia Stock Exchange over the past five years has decreased. The year 2012 amounted 87.75, then in 2013 decreased to 86.10, in 2014 decreased again to 82.66, by 2015 decreased to 80.88 and in 2016 rose slightly to 81.70. The decline in financial soundness scores of private commercial banks listed on the Indonesia Stock Exchange is because from 2012 to 2013 there are 13 banks or 40.63 percent decreased soundness scores, from 2013 to 2014 there are 26 banks or 81.25 percent of the soundness scores decrease, from 2014 to 2015 there are 10 banks or 31.25 percent who experienced a decrease in soundness scores and from 2015 to 2016 there were 15 banks or 46.88 percent who experienced a decrease in soundness scores. The overall average in 2016 was 18 or 56.25 percent of private commercial banks listed on the Indonesia Stock Exchange which experienced a decline in soundness scores.

The phenomenon of a decrease in the score of bank financial soundness shows that there is still a problem on the financial soundness of private commercial banks listed on the Indonesia Stock Exchange, so it is necessary to do research to determine the factors that cause the decline in financial soundness. The purpose of this research is first, analyze and know the antecedent variable of bank financial soundness. Secondly, analyze and know the ability to moderate GCG to influence from risk to bank financial soundness. Third, analyze and know the ability to mediate GCG on the influence of earnings performance to bank financial soundness.

Research on the antecedent variable of bank financial soundness is still very little done by previous researchers and find different results, meaning there is still a research gap. The research gap that occurred between the previous research can be explained as follows. Research about the influence of asset quality to the bank financial soundness that can be interpreted also research on the effect of credit risk to the bank financial soundness conducted by Indira and Muljaman [1998] found that the Non Performing Loans (NPL) as a measure of credit quality had a significant negative effect on the bank financial soundness. Aryati and Balafif research [2007] found that NPL has a significant influence on bank financial soundness, but research Haryati [2005] found that NPL has a significant positive effect on bank financial soundness. The results of Santoso [2000], Haryati [2005] and Cyree J W Wansley and T P Boehm. [2000] found that the ratio of Non-Performing Productive Assets (APB) had a significant positive effect on bank financial soundness.

Research about the influence of market sensitivity on bank financial soundness that can be interpreted also research on the influence of market risk to bank financial soundness conducted by Meyer and Piefer [1970] found that the ratio of Interest rate risk ratio (IRR) as a measure bank sensitivity to the market (changes in interest rates) have a significant positive effect on bank financial soundness, but research Haryati [2005] found that IRR has no significant effect on bank financial soundness. Research Santoso [2000] and Haryati [2005] found that Net Open Position (PDN) as a measure of bank sensitivity to the market (exchange rate changes) has an insignificant influence on bank financial soundness.

Research about the influence of liquidity on bank financial soundness that can be interpreted also research on the effect of liquidity risk on the bank financial soundness by Meyer and Piefer [1970], Altman et.al [1977] and Indira and Muljaman [1998] had a significant positive effect on failed/problem banks, but in Sinkey's [1975] study, Martin [1977], Gunther and Moore [2003] and Haryati [2005] had no significant effect. Meyer and Piefer's research [1970], Sinkey [1975] found that Loan to Assets Ratio (LAR) as a measure of bank liquidity had a significant negative effect on the bank financial soundness, but Martin [1977] and Indira and Muljaman found LAR had a significant positive effect on bank financial soundness. Santoso research [2000] found that Loan to Deposit Ratio (LDR) has a significant negative effect on bank financial soundness. However, Haryati and Setiawan [2000] found that LDR has a significant positive effect on bank financial soundness. Haryati's research [2005] and Aryati and Bluff [2007] found that LDR has no significant effect on bank financial soundness.

Research about the influence of operational efficiency on bank financial soundness can also be interpreted as research on the effect of operational risk to bank financial soundness by Meyer and Piefer [1970] and Haryati and Setiawan [2000] found that the ratio of Operating Cost to Operating income (BOPO) or efficiency ratios had a significant negative effect on the bank financial soundness, but Sinkey's [1975] and Haryati [2005] studies found that the BOPO had a significant positive effect. The ICR ratio in Sinkey's [1975] study had no significant negative effect, but Santoso's [2000] study was not consistent in each group of banks.

Research about the influence of earnings on bank financial soundness by Meyer and Piefer [1970], Santoso [2000] and Haryati and Setiawan [2000] found that Return On Assets (ROA) has a significant negative effect on the financial soundness of banks. Altman et.al [1977] study found that ROA can be a predictor of the bankruptcy of banks, but research by Gilbert et al. [2002] found that ROA has a significant negative effect on the bank financial soundness. Research Haryati [2005] and Aryati and Bluff [2007] found that ROA has no significant effect on the bank financial soundness. Research Santoso [2000] found that ROE had a significant negative effect on the bank financial soundness, but Haryati [2005] found that Return On

Equity (ROE) had a significant positive effect on bank financial soundness and Aryati and Bluff [2007] research found ROE had no significant effect on bank financial soundness. Martin [1977] and Haryati [2005] found that the Net Interest Margin (NIM) ratio had a significant positive effect on bank financial soundness, failed/insolvent bank, but Aryati and Bluff [2007] found that NIM had no significant effect on bank financial soundness.

Research about the influence of capital on the bank financial soundness by Martin [1977] found that the Capital Adequacy Ratio (CAR) ratio has a significant negative effect on failed/insolvent banks, but Santoso [2000] and Indira and Muljaman [1998] found that CAR had a significant positive effect and Gunther [2003], Haryati [2005] and Aryati and Bluff [2007] found that CAR had no significant effect on bank financial soundness. Meyer and Piefer's research [1970], Santoso [2000] and Haryati [2005] found that Fixes Assets to Capital Ratio (FACR) had a significant positive effect on bank financial soundness.

The research on the influence of GCG on bank financial soundness is still very little done by previous researchers. Research conducted by Hutama [2013] found that GCG has a significant effect on the bank financial soundness, only this research judging from the point of view of the positive law, while other researchers have not tested the effect of this variable on bank financial soundness.

The novelty of this research from previous studies is first, the inclusion of risk and GCG in knowing the predictors or antecedents of bank financial soundness from an economic perspective, which this aspect has not been used in previous studies. Second, the use of financial ratios that have not been used in previous studies, but become soundness indicators in the soundness assessment system applicable. The financial ratios in question are an allowance for impairment losses on loans (CKPN on credit) that can be used to measure credit risks faced by banks and Fee Based Income Ratio (FBIR) that can be used to measure operational risks faced by banks. Third, the moderate impact test of GCG variables on the effect of risk on bank financial soundness and the mediation impact of GCG variables on the influence of earning variables on bank financial soundness.

LITERATURE REVIEW

Financial sciences can be divided into three areas: (1) Corporate finance, (2) Investment and (3) Financial markets and intermediaries. The last field is better known as banking [Lucas, 2008: 2]. Corporate finance is a field of finance that relates to a company's operations from the company's point of view. Investment is a field of finance that is also related to the company's funding decisions seen from another point of view not from the company but from the investor. Financial markets and intermediaries relate to corporate funding decisions, but from a third-party point of view. Financial markets are markets for financial assets such as securities. The Intermediary Institution, for example a bank, is a financial intermediary between a company that requires funds with an investor who provides funds. The function of financial markets and intermediaries is to facilitate the circulation of funds from the owners of capital to the company that requires capital

The performance of the company's financial management is the result of a series of business processes with the sacrifice of various resources that can be human resources as well as corporate finance. If the financial performance of the company increases, can be seen in the incessant activities of the company in order to generate profits as big as possible. Profit generated will certainly differ depending on the size of the company [Moerdiyanto, 2010].

Assessment of the financial performance of an enterprise is one way that can be done by management or external parties in order to fulfill its responsibility to the funders and also to achieve the goals set by the company. Assessment of corporate financial performance generated as a result of management decision-making process, is a complex problem because it involves the effectiveness of capital utilization and efficiency of the company's activities concerning the value and security of various claims arising against the company.

The performance of financial management in the bank is represented by the bank's financial ratios [Taswan, 2010: 164]. Financial ratios such as liquidity ratios, asset quality ratios, sensitivity ratios, efficiency ratios, profitability ratios and solvency ratios held by banks can indicate the financial soundness of banks. Assessment level of bank financial soundness can be done by analyzing the ratio of financial ratios owned by banks. Bank financial ratios can be calculated and analyzed using information in the bank's financial statements.

Bank financial soundness is an important thing that should get the attention of government, banking supervisors, bank management and community users of bank products and services. The soundness of a bank can be defined as the ability of a bank to perform normal banking operations and be able to fulfill all its responsibility properly in ways appropriate to prevailing banking regulations [Triandaru dan Totok Budisantoso, 2008: 51]. The bank financial soundness is the result of an assessment of the condition of the bank performed on the bank's risk and performance [POJK number 4/POJK.03/2016]. Understanding the bank explains that the level of bank financial soundness is the level of ability of banks in performing responsibility to activities normally and to know it must go through a process of assessment by institutions that have the authority to assess.

The level of bank financial soundness which is a measure of the achievement of bank performance comprehensively is an input for the preparation of the future plan. For banks, the purpose of assessing the financial soundness of a bank is to obtain a picture of the financial soundness of the bank so that it can be used as input in preparing the strategy and business plan for the next period and to fix the weaknesses that potentially disturb the bank's performance. For regulators or provisions, the results of the bank's financial soundness rating become inputs in developing effective bank supervisory strategies and plans so that together with banks can create individual banks and a soundness banking industry on a continuous basis [POJK number 4/POJK.03/ 2016].

The changing environment of the banking industry requires changes to the bank's financial soundness assessment system internationally that leads to a risk-based supervision approach. Increased risk exposure and risk profile and the application of the risk-based supervisory approach have subsequently influenced the soundness of the bank. Changes in approaches to the assessment of international soundness levels have been responded to and adopted by bank supervisors in Indonesia, where from January 2012 using December 2011 data, banks operating in Indonesia have been required to report soundness rating based on Risk Based Bank Rating (RBBR) replaces the approach based on CAMELS (Capital, Asset Quality, Management, Earning, Liquidity and Sensitivity to Market Risk) used previously [PBI 13/1/PBI/2011].

The RBBR approach is applied because from the previous performance evaluation conducted by the bank has been focusing more on the business side (achievement of profit and growth), but only slightly discuss the downside side (risk). Evaluations that are only on the upside side tend to be oriented towards long-term achievement so that the bank's financial soundness rating [including upside and downside] becomes a more comprehensive performance

appraisal solution. The soundness assessment approach of RBBR assesses four factors: risk profile, GCG implementation, Earning and Capital. The determination of the bank's financial composite rating based on RBBR is based on the assessment of bank management quality as measured by GCG implementation and risk management. Assessment of earning factors and capital factors is only the impact of management strategy [PBI 13/1/PBI/2011].

The improvement of the soundness rating system from CAMELS approach to the RBBR-based approach with a view to creating a sound national banking industry will contribute to the creation of a sound and strong international banking industry. The creation of a sound banking industry is not just for a single moment, but it must be for an indefinite time. Thus, efforts to create a sound banking industry must be done continuously and sustainably [PBI 13/1/PBI/2011].

Awareness of the importance of the existence of a sound banking industry has aroused the concern and attention of many parties. An international organization that is very concerned and gives full attention to the efforts to create a sound banking industry is the Basel Committee on Banking Supervision who has worked hard and finally able to publish and enforce Basel I document in 1988, which regulates the bank must manage credit risk and must provide capital sufficient to cover credit risk [Basel I, 1988]. In 1996, improvements to Basel I were made with the market risk amendment, so from now on banks are required to also manage market risk in addition to credit risk [Market Risk Amendment, 1996]. In 2004, Basel II enforced the provisions that banks are required to manage 6 [six] types of risk, namely credit risk, market risk, operational risk, strategic risk, business risk and reputation risk [Basel II, 2004]. In 2009, Basel III's improvements were made to regulate liquidity risk management, which also includes risks that banks must manage [Basel III, 2009].

Other evidence of concern and concern for the creation of a sound banking industry are studies of the bank's financial soundness or bank failures or bankruptcies committed by researchers either individually or institutionally. Individual studies that have examined the soundness or failure or bankruptcy of banks such as Meyer and Piefer's [1970] research on variables affecting bankruptcy of banks, Sinkey's [1975] study of variables that are predictors of bank problems and non-bank problems and can be used as early warning signal, Altman et al. [1977] about the variables that can be used to predict bankruptcy of banks, Martin D [1977] research on financial ratios that affect bankruptcy of banks, Indira and Muljaman [1998] research on variables that can be used in discriminant function between solvent and insolvent bank groups, Santoso [2000] on variables that have an influence on problem banks and non-performing banks in Indonesia, Haryati and Setiawan [2000] research on the ratio that can be used to predict bankruptcy of banks

Another individual study that could be evidence of concern for the financial soundness of banks is the research of Gilbert et al. [2002] about variables that can be predictors of bank downgrades, Gunter and Moore [2003] research on variables that have an effect on soundness rating downgrade, Haryati [2005] study on variables that form the discriminant function model and can be used to measure and predict level of bank financial soundness, Aryati and Bluff [2007] research about variables affecting the financial soundness of the bank, Shahchera and Jouzdani [2011] research on the effect of regulation on bank financial soundness. Institutional studies that show concern and concern for the financial soundness of banks such as research conducted by the IMF research team [2011] about the influence of risks to the financial soundness of banks.

The assessment of bank financial soundness in Indonesia is conducted in the manner prescribed by the bank supervisor in Indonesia, and up to this research, the financial rating of the bank in Indonesia is guided by the provisions contained in the POJK number 4/POJK.03/2016. POJK number 4/POJK.03/2016, it is explained that to carry out the responsibility for the continuity of the bank's business, the board of directors and the board of commissioners are responsible for maintaining and monitoring the financial soundness of the bank and taking the necessary steps to maintain and improve the Financial Soundness Level bank. Banks are required to conduct a soundness rating by using RBBR either individually or consolidative on a self-assessment basis.

The mechanism for assessing the financial soundness of individual banks is regulated by bank procedure to perform an individual bank financial soundness rating by using Risk-based Bank Rating with assessment scope of the following factors:

- a. Measurement of risk profile includes an assessment of the inherent risks and the quality of risk management implementation in the eight risks faced by the bank..
- b. Good Corporate Governance assessment of bank management on the implementation of GCG principles.
- c. Profitability includes an assessment of earnings performance and sustainability earnings Bank.
- d. Capital includes an assessment of the adequacy of capital and capital management

Assessment of risk profile factor is an assessment of the inherent risk and quality of risk management in the Bank's operations on 8 [eight] risks:

- a. credit risk
- b. market risk
- c. liquidity risk
- d. operational risk
- e. legal risk
- f. strategic risk
- g. compliance risk
- h. reputation risk

This study only examined four risks among the eight risks, namely credit risk, market risk, liquidity risk and operational risk. The consideration to examine only those four ratios is because these four ratios are very closely related to the financial soundness of the bank. The composite rating of the bank's financial soundness level is determined based on a comprehensive and structured analysis of the ranking of each factor as referred to in account the materiality and significance of each factor [POJK number 4/POJK.03 2016]. The Composite Rating is as follows:

- a. Composite Rating 1
- b. Composite Rating 2
- c. Composite Rating 3
- d. Composite Rating 4
- e. Composite Rating 5

The Composite Rating 1, reflecting the Bank's generally soundness condition, is judged to be able to deal with significant negative effects of changes in business conditions and other external factors. Composite Rating 2, reflecting the general soundness condition of the Bank so that it is deemed able to deal with significant negative effects of changes in business conditions and other external factors. Composite Rating 3, reflecting the condition of Banks that are generally soundness enough to be judged sufficiently able to deal with significant negative

effects of changes in business conditions and other external factors. Composite Rating 4, reflecting the Bank's generally unhygienic condition which is deemed less able to face significant negative impacts from changes in business conditions and other external factors. Composite Rating 5, reflecting the Bank's generally unsoundness condition, is deemed incapable of facing significant negative impacts from changes in business conditions and other external factors [POJK number 4/POJK.03/ 2016].

The risk is the potential loss due to the occurrence of a particular event [POJK number 18/OJK.03/2016]. POJK number 18/POJK.03/2016 provides that commercial banks operating in Indonesia are required to manage 8 [eight] types of risk, ie credit risk, market risk, liquidity risk, operational risk, legal risk, reputation risk, strategic risk and compliance risk. Bank management must be able to mitigate these risks to be as low as possible and ultimately the performance of the bank can be optimized. Risks that must be managed by the management of commercial banks operating in Indonesia, four of which are credit risk, market risk, liquidity risk and operational risk can be measured using data from bank financial statements and very closely related to the financial performance of the bank, while the other four can not be measured using data from bank financial statements

Credit risk, market risk, liquidity risk and operational risk faced by banks can be measured using financial ratios. Credit risk can be measured including CKPN and NPL [Rivai et al. 2013: 566], Martono [2013: 83 -84], Kasmir, [2012: 311], Taswan, [2010: 164-165], Lukman Dendawijaya, [2009: 153] and SEBI number 13/24 / DPNP 2011 Meyer and Piefer [1970], Martin [1977] Indira and Muljaman [1998], Santoso [2000], Haryati [2005] and Aryati and Balafif [2007]. The ratio of CKPN and NPL has a negative effect on credit risk and has a negative effect on the bank financial soundness, so that credit risk has a negative effect on the bank financial soundness.

H1: Credit risk significantly affects the financial soundness of private commercial banks listed on the Indonesia Stock Exchange.

Market risk faced by the bank can be measured by the bank's financial ratios such as Interest Rate Risk (IRR) and Net Open Position (PDN) [Rivai et al. [2013: 570-576], SEBI number 13/24/DPNP 2011, Santoso [2000], and Haryati [2005], IRR and NOP can positively or negatively affect market risk [interest rate and exchange rate risk] and may positively or negatively affect the financial soundness of the bank, thereby affecting interest rate risk and exchange rate risk of negative bank financial soundness.

H2: Market risk significantly affects the financial soundness of private commercial banks listed on the Indonesia Stock Exchange.

Liquidity risks faced by banks can be measured by the financial ratios, such as LDR, IPR and LAR [Rivai et al. 2013: 483-485], Martono [2013: 83-84], Kasmir [2012: 315-319], Meyer and Piefer [1970], Sinkey [1975], Altman et al. [1977], Indira and Muljaman [1998], Santoso [2000], and Haryati [2005] LDR, IPR and LAR can negatively affect to liquidity risk and can positively affect to the bank financial soundness, so that the effect of liquidity risk on the bank financial soundness is negative.

H3: Liquidity risk significantly affects the financial soundness of private commercial banks listed on the Indonesia Stock Exchange.

Operational risks faced by banks can be measured by financial ratios such as BOPO and FBIR [Rivai et al. 2013: 482], Martono [2013: 86] and research results conducted by Meyer and Piefer [1970], Sinkey [1975], Santoso [2000], and Haryati [2005]. BOPO has a negative influence on the bank financial soundness, but FBIR has a positive influence on the bank financial soundness, so that the effect of operational risk on the bank financial soundness is negative.

H4: Operational risk significantly affects the financial soundness of private commercial banks listed on the Indonesia Stock Exchange.

Good corporate governance (GCG) is a bank governance that applies the principles of transparency, accountability, responsibility, independence and fairness in a bank abbreviated as TARIF. The performance of bank management in the implementation of GCG can affect the financial soundness of banks, because if the bank's management can implement GCG with good quality, then the performance of banks including the financial performance of banks will be better and increasing. POJK number 55 / POJK.03 / 2016 and SEOJK number 13/SEOJK.03/2017 concerning Implementation of Good Corporate Governance for Commercial Banks a which requires bank management to conduct its own assessment to determine the quality of GCG implementation in the managed bank. GCG in this study was measured by the bank's own management assessment score in a given year. Given that the composite value and predicate for GCG are inversely proportional, the composite value is reciprocal.

H5: GCG significantly affects the financial soundness of private commercial banks listed on the Indonesia Stock Exchange.

Earning and capital are two important things besides the quality of risk management and GCG that must be optimized by bank management in an effort to make the managed bank has excellent financial soundness. Earning and capital achieved by the bank must be able to meet the applicable provisions and should be able to increase over time, because with increasing earnings and capital performance will improve the financial soundness of the bank. The earning and capital performance of a bank can be measured by bank financial ratios. The earning performance of a bank can be measured by financial ratios such as Return on Asset (ROA), Return on Equity (ROE) and Net Interest Margin (NIM) [Rivai et al., 2013: 480-482], Martono [2013: 85] [1977], Martin [1977], Santoso [2000], Haryati and Djoko [2001], respectively, Gunther and Moore [2003] and Haryati [2005]. ROA, ROE and NIM bank positively affect earnings and the bank financial soundness, so Earning positively affect the bank financial soundness.

H6: Earning significantly affects the financial soundness of private commercial banks listed on the Indonesia Stock Exchange.

The capital of a bank can be measured by financial ratios including Capital Adequacy Ratio (CAR), and Fixed Asset Capital Ratio (FACR) [Rivai et al., 2013: 480-482], Martono [2013: 85], Cashmere [2012: 296], Tasan [2010: 165] and the results of research conducted by Meyer and Piefer [1970], Altman at al. [1977], Martin [1977], Indira and Muljaman [1998], Santoso [2000], and Hariyati [2005]. CAR has a positive effect on capital and positively affect the financial soundness of banks, so Capital has a positive effect on the bank financial soundness. FACR has a negative effect on capital and negatively affect the bank financial soundness, so Capital has a positive effect on the bank financial soundness.

H7: Capital significantly affects on the financial soundness of private commercial banks listed on the Indonesia Stock Exchange.

The risk is potential loss due to the occurrence of a particular event [POJK number 18 / POJK.03 / 2016]. The risks faced by banks today are very complex. Therefore, it is necessary to have risk management in a bank that aims to minimize losses incurred by an event. GCG is a governance bank that applies the principles of transparency, accountability, accountability [responsibility], independence [indepency] and fairness [POJK number 55/ POJK, 03/2016]. Banks that can implement GCG, means that the bank has implemented good governance, so it will be able to provide good results for the bank. Understanding the risks and GCG if connected can be said that if in implementing risk management banks can implement GCG principles, then the risks faced by banks can be minimized, meaning that banks will be able to minimize losses caused by adverse events, meaning that GCG can reduce the impact of risk experienced by the bank. This logic implies that the risk that could have a negative impact on the financial health of the bank will be minimized by the application of GCG in the bank.

H8-11: GCG moderates the effect of risks to the financial soundness of private commercial banks listed on the Indonesia Stock Exchange

Profitability is the ability of banks in obtaining profit or profits both from operational activities and from non-operational activities [Martono: 2013: 90]. This sense of profitability implies that the performance of bank profitability is a performance that shows the ability of banks in generating profits. The performance of a bank related to the performance of profitability cannot be separated from the GCG applied in the bank. This means that if a bank has an increased profitability performance, it will be able to make the bank able to design the structure and implement GCG better, because:

1. Banks may recruit commissioners, especially independent commissioners who are more competent to have a board of commissioners who perform very well for the bank and provide many benefits for the bank.
2. The Bank may recruit members of committees, especially members of independent committees in accordance with those stipulated in more competent provisions so as to have an audit committee, a risk monitoring committee and a remuneration and nomination committee that performs very well and may provide substantial benefits to the bank.
3. The Bank may provide an information system that enables the implementation of GCG principles well.

Commissioners, directors, competent committees and reliable information systems will be able to realize GCG within the bank. The Bank will also be able to transparent financial and non-financial conditions, GCG implementation reports and internal reporting, so that ultimately will be able to improve the financial soundness of banks.

H12: GCG mediates the impact of earning to the financial soundness of private commercial banks listed on the Indonesia Stock Exchange.

CONCEPTUAL FRAMEWORK

The conceptual framework of this research is as shown in Figure 1. The conceptual framework shows the relationship and direction of influence between research variables. The explanation of the relationship layout and the direction of influence shown in Figure 1 is as follows:

Effect of Credit Risk on Bank Financial Soundness

Credit risk as measured by the ratio of CKPN or NPL negatively affects to the bank financial soundness. This can happen because if CKPN or NPL increases, it means that there has been an

increase in nonperforming loans at the bank. The increase in nonperforming loans caused the bank's credit risk to increase. Increased credit risk causes the soundness scores on the risk aspect to decrease and assuming no change in soundness score due to other aspects, then the total score of bank financial soundness will decrease, so it can be concluded that credit risk negatively affects on the bank financial soundness. Credit risk that negatively affects on the bank financial soundness is in accordance with the theory expressed by Lukman Dendawijaya, [2009:153], Taswan, [2010:164-165], Kasmir, [2012:311], Rivai et al., [2013: 566], Martono, [2013: 83-84], SEBI number 13/24/DPNP/2011 and the results of Indira and Muljaman [1998] study that found that NPL as a measure of credit quality significantly negatively affect on the bank financial soundness that can be interpreted also that credit risk has a significant negative effect on bank financial soundness.

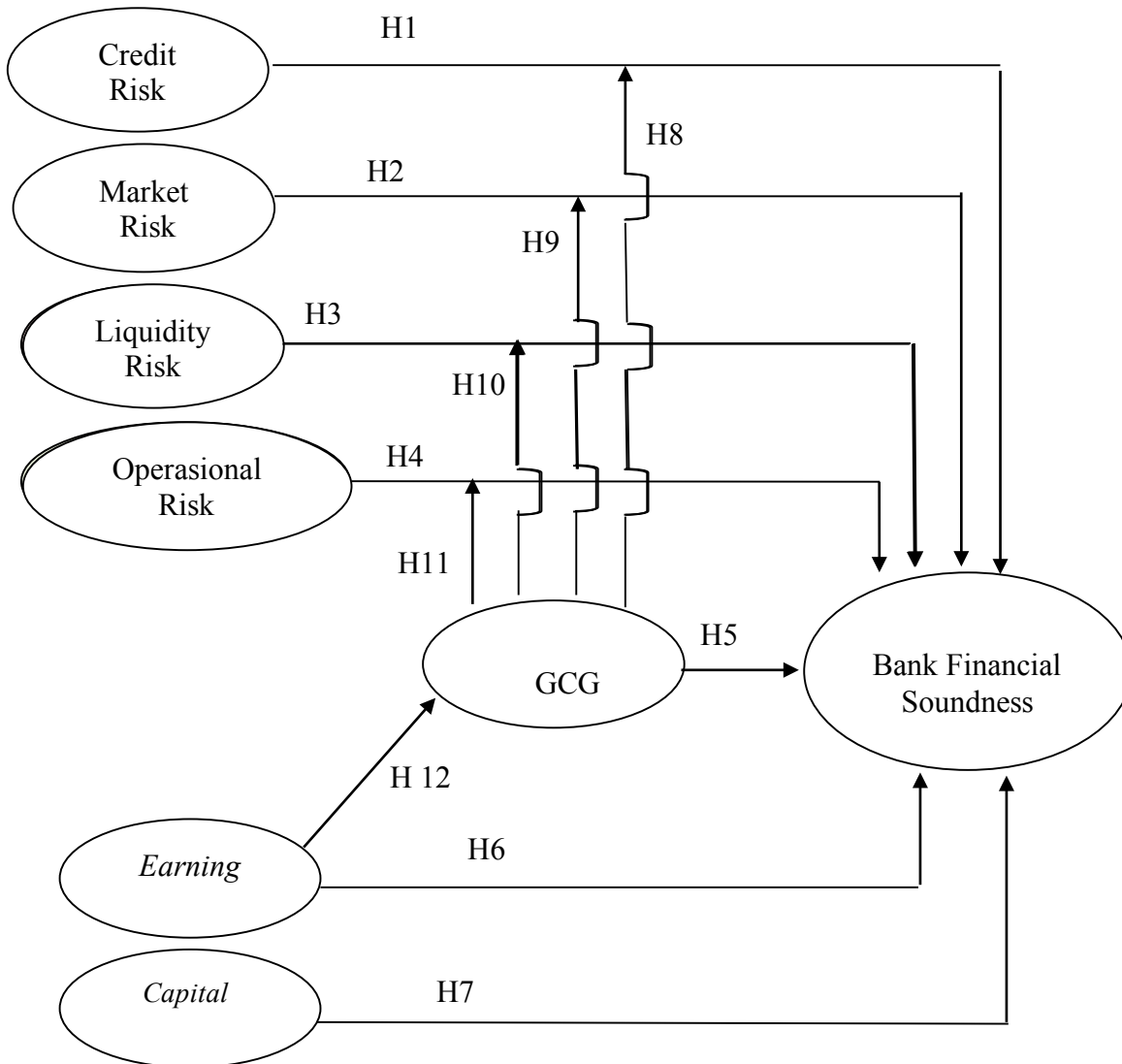


Figure 1: Conceptual Framework

Influence of Market Risk on Bank Financial Soundness

Market risk as measured by the ratio of IRR or PDN negatively affects on the bank financial soundness. This can happen because if the IRR is above 100 percent, the PDN is positive and both increases and at the same time the interest rate and the exchange rate increases, it will decrease the market risk that is in the bank. The decrease in market risk causes the soundness scores on the risks aspect to increase and assuming no change in soundness scores result from other aspects, then the total score of bank financial soundness will increase. If the IRR is above 100 percent, the NOP is positive and both increases and at the same time the interest rate and

exchange rate decreases, it will increase the market risk of the bank. Increased market risk causes soundness scores on the risk aspect to decrease and assuming no change in soundness scores due to other aspects, then the total score of bank financial soundness will decrease, so it can be concluded that market risk negatively affects on the bank financial soundness. Market risk that negatively affects on the bank financial soundness is in accordance with the theory disclosed by Rivai et al. [2013: 566], SEBI number 13/24 / DPNP 2011 and the results of research Meyer and Piefer [1970] found that the ratio of IRR as a measure of bank sensitivity to the market (changes in interest rates) have a significant positive effect on the bank financial soundness, which can be interpreted also that the market risk negatively significant on the bank financial soundness.

Influence of Liquidity Risk to Bank Financial Soundness

Liquidity risk as measured by LDR, IPR or LAR ratio negatively affects on the bank financial soundness. This can happen because if the LDR, IPR or LAR increases, it will reduce the liquidity risk that is in the bank. The decrease of liquidity risk causes the soundness score on risk aspect to increase and assuming no change in soundness score due to another aspect, then the total score of bank financial soundness will increase, so it can be concluded that liquidity risk negatively affects on the bank financial soundness. Liquidity risk that negatively affects on the bank financial soundness is in accordance with the theory expressed by Kasmir [2012: 315-319], Rivai et al. [2013: 483-485, Martono [2013: 83-84] and research results Meyer and Piefer [1970], Altman et.al [1977] and Indira and Muljaman [1998] who found the ratio of liquidity gauge has a significant positive effect on failed / problem bank. Another research conducted by Haryati and Setiawan [2000] found that LDR has a significant positive effect on bank financial soundness which can be interpreted also that liquidity risk has a significant negative effect on bank financial soundness.

Influence of Operational Risk to Bank Financial Soundness

Operational risk as measured by the ratio of BOPO or FBIR negatively affects on the bank financial soundness. This can happen because if BOPO increases or FBIR decreases it will increase operational risk in bank. Increased operational risk causes the soundness scores on the risk aspect to decrease and assuming no change in soundness scores due to other aspects, then the total score of bank financial soundness will decrease, so it can be concluded that liquidity risk negatively affects on the bank financial soundness. Operational risks that negatively affect on the bank financial soundness is in accordance with the theory disclosed by Rivai et al. [2013: 482] and Martono [2013: 86] and the results of research conducted by Meyer and Piefer [1970] and Haryati and Setiawan [2000] who found that the ratio of BOPO or efficiency ratio had a significant negative effect on the bank financial soundness which could be interpreted also that operational risk has a significant negative effect on bank financial soundness.

The Influence of GCG on Bank Financial Soundness

GCG as measured by GCG scores owned by banks positively affects the bank financial soundness. This may occur because if the reciprocal GCG score increases, then the bank's financial soundness score on GCG aspects will increase and assuming no change in soundness scores due to other aspects, then the total score of bank financial soundness will increase, so it can be concluded that GCG positively affects on the bank financial soundness. GCG which positively affects on the bank financial soundness is in accordance with the theory disclosed in Bank Indonesia Circular Letter number 15/15 / DPNP / 2013 and Hutama's [2013] research findings that the poor level of bank financial soundness is caused by external and internal

factors. One of the internal factors that can cause bad soundness is not yet applied the principles of GCG in bank management conducted by bank management. This conclusion implies that GCG can positively affect on the financial soundness.

Effect of Earning on Bank Financial Soundness

Earning measured by ROA, ROE or NIM ratio positively affects the financial soundness of banks. This can happen because if ROA, ROE or NIM increase, it will increase soundness score on earnings aspect increase and with assumption no change in soundness score result from another aspect, the total score of bank financial soundness will increase, so it can be concluded that earnings positively affect the financial soundness of banks. Earning that positively affects the financial soundness of this bank in accordance with the theory expressed Lukman Dendawijaya [2009: 118], Taswan [2010: 165], Kasmir [2012: 327-332], Rivai et al. [2013: 480-482], and Martono [2013: 85], and the results of Haryati [2005] study that found that ROE has a significant positive effect on bank financial soundness. Another study conducted by Martin [1977] and Haryati [2005] found that the ratio of NIM has a significant positive effect on financial soundness which can be interpreted also that earnings have a significant positive effect on the financial soundness of banks.

Influence of Capital on Bank Financial Soundness

Capital measured by the ratio of CAR, or FACR positively affect the financial soundness of banks. This may occur because if the CAR increases, or FACR decreases, it will increase the soundness score on the increased capital aspect and assuming no change in soundness score due to other aspects, then the total score of bank financial soundness will increase, so it can be concluded that the capital positively affects the bank financial soundness. Capital that positively affects on the bank financial soundness is in accordance with the theory expressed by Taswan [2010: 165], Kasmir [2012: 296], Rivai et al. [2013: 480-482] and Martono [2013: 85], and the results research of Santoso [2000] and Indira and Muljaman [1998] found that CAR has a significant positive effect which can be interpreted also that capital has a significant positive effect on bank financial soundness.

Impact of GCG Moderation on the Influence of Risk on Bank Financial Soundness

Risk and GCG are two things that are very closely related, and if in implementing risk management the bank can implement the principles of GCG, then the risk faced by the bank can be minimized, meaning that GCG can reduce the impact of risk experienced by the bank. This logic implies that the risks that could have a negative impact on the bank financial soundness will be minimized by the application of GCG in the bank.

Impact of GCG Mediation on the Influence of Earning on Bank Financial Soundness

The performance of a bank related to earnings is inseparable from the GCG applied in the bank. This means that if a bank has an increased earnings, it will be able to make the bank able to design the structure and implement GCG better, because:

1. Banks may recruit commissioners, especially independent commissioners who are more competent to have a board of commissioners who perform very well for banks and provide many benefits for banks.
2. Banks may recruit members of committees, especially members of independent committees that are more competent to have an audit committee, risk monitoring committee and remuneration and nomination committees that perform very well and can provide substantial benefits to banks.
3. The Bank may provide an information system that enables GCG principles to be implemented properly.

Commissioners, directors, competent committees and reliable information systems will be able to realize GCG within the bank. The Bank will also be able to transparent financial and non-financial conditions, GCG implementation reports and internal reporting, so that ultimately will be able to improve the financial soundness of banks.

RESEARCH METHODS

This research includes the type of research using quantitative methods because of the research data in the form of numbers and analysis using statistics to test the hypothesis. Quantitative method is used if the problem is the starting point of research is clear, if the researcher wants to get broad information from a population and if the researcher intends to test the research hypothesis [Sugiyono, 2017,23]. This research also includes explanatory research because the purpose is to explain the causal relationship between the variables through hypothesis testing and is also a conclusive study because it meets the following characteristics [Malhotra, 2006: 84]:

- a. The goal is to test the hypothesis of influence between the variables studied.
- b. The required information is clearly defined.
- c. Formal and structured research process.
- d. Data analysis using quantitative techniques.

The population in this study are 34 private commercial banks listed on the Indonesia Stock Exchange period 2012-2016. The sampling technique used in this study is Non-Probability Sampling which is a sampling technique that does not provide opportunities or equal opportunity for each member of the population to be selected to be a sample [Sugiyono, 2017,142]. Nonprobability technique The sampling used is Purposive sampling with criteria:

1. A private commercial bank listed on the Indonesia Stock Exchange in 2012-2016.
2. Private commercial banks that are still actively operating in Indonesia Stock Exchange until the end of the year 2016.
3. Private commercial banks that have soundness scores published by the InfoBank Research Bureau from 2013 to 2017.
4. A private commercial bank that publishes an annual report that has been audited using the closing year ending on 31 December.
5. A private commercial bank having a financial report certified by Bank Indonesia [BI] or the Financial Services Authority [OJK] to know the 2012 book by 2016
6. The financial statements are presented in Rupiah. This criterion is intended to obtain uniform data in terms of monetary units.

Based on these criteria, 22 banks were selected as research samples, so that the banks that became the focus of the research were 22 private commercial banks listed on the Indonesia Stock Exchange

The dependent variable of this research is the bank financial soundness with the indicator of the bank's financial soundness score published by Manjalah Infobank. Independent variable is business risk consisting of credit risk, market risk, liquidity risk and operational risk, GCG, earning and capital. Credit risk is measured by CKPN's and NPL, market risk is measured by IRR and PDN financial ratios, liquidity risk is measured by financial ratios of LDR, IPR and LAR operational risk measured by BOPO and FBIR financial ratios, GCG implementation quality as measured by composite self-assessment GCG score, earnings measured by ROA, ROE and NIM, Capital measured by CAR and FACR.

Data for risk indicators are taken from the financial statements of private commercial banks listed on the Stock Exchange from 2012 to 2016 from the OJK website. The GCG indicator data is taken from the bank's annual report and soundness-level data taken from Infobank magazine. The hypothesis proof analysis used in this research SmartPLS software.

ANALYSIS AND DISCUSSION

The result of statistical analysis using WarpPLS Software is as shown in Figure 2 and Table 1.

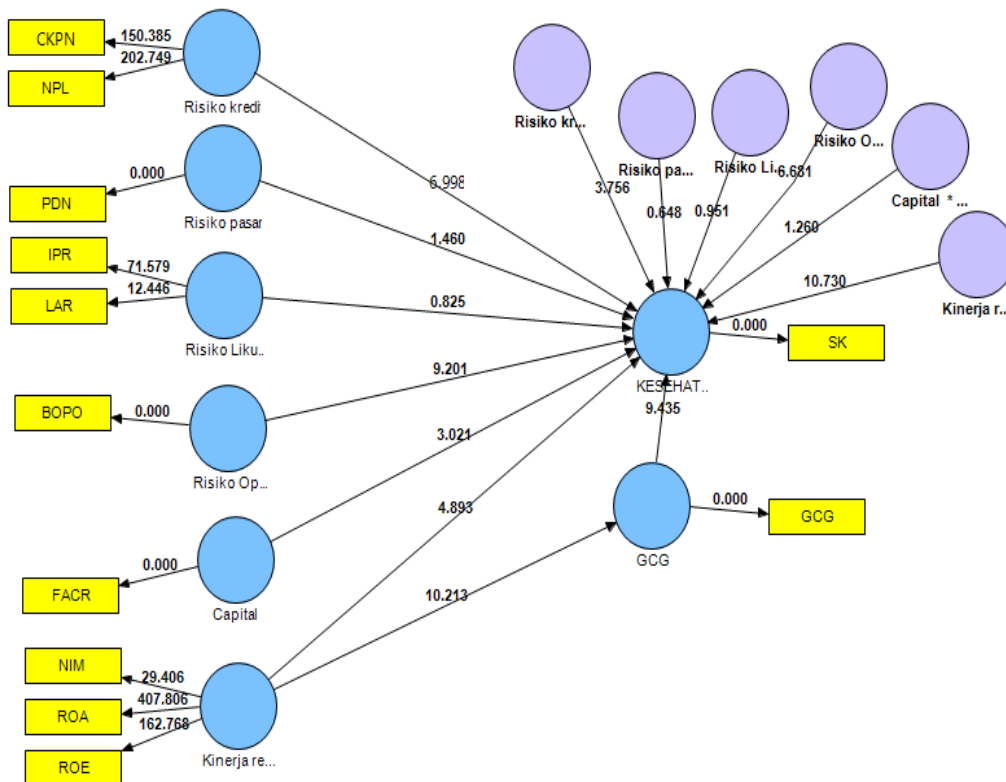


Figure 2: Output Bootstrapping

Tabel 1: PATH COEFFICIENTS [Mean, STDEV, T-Values]

	Original Sample [O]	Sample Mean [M]	Standard Deviation [STDEV]	Standard Error [STERR]	T Statistics [O/STERR]
Credit Risk -> Bank Financial Soundness	-0.539699	-0.529829	0.077121	0.077121	6.998108
Market Risk -> Bank Financial Soundness	0.060626	0.055769	0.041529	0.041529	1.459857
Risiko Likuiditas -> Bank Financial Soundness	0.025662	0.025323	0.031087	0.031087	0.825470
Risiko Operasional -> Bank Financial Soundness	-1.152255	-1.147379	0.125238	0.125238	9.200503
GCG -> Bank Financial Soundness	-1.214047	-1.211950	0.128680	0.128680	9.434633
Earning -> Bank Financial Soundness	-0.436405	-0.428244	0.089197	0.089197	4.892620
Capital -> Bank Financial Soundness	-0.133456	-0.129218	0.044181	0.044181	3.020700
Risiko kredit * GCG -> Bank Financial Soundness	0.223509	0.217212	0.059509	0.059509	3.755873
Risiko pasar * GCG -> Bank Financial Soundness	-0.023022	-0.018415	0.035513	0.035513	0.648266
Risiko Likuiditas * GCG -> Bank Financial Soundness	0.028691	0.027445	0.030183	0.030183	0.950580
Risiko Operasional * GCG -> Bank Financial Soundness	1.269166	1.261982	0.189961	0.189961	6.681196
Earning * GCG -> Financial Soundness of Bank	0.980686	0.972468	0.091397	0.091397	10.729946

Based on Figure 2 and Table 1 it is found that variables that have a significant influence on the financial soundness of private commercial banks listed on the Indonesia Stock Exchange are credit risk, operational risk, GCG. Earning and capital because the five variables have a T-Statistic greater than 1.96. Market risk and liquidity risk variables have an insignificant effect on the financial soundness of private commercial banks listed on the Indonesia Stock Exchange as these two variables have a T-Statistic smaller than 1.96. The results of statistical analysis also show that GCG moderates the effect of credit risk and operational risk on the financial soundness of private commercial banks listed on the Indonesia Stock Exchange because it has a T-Statistic greater than 1.96. GCG does not moderate the effect of market risk and liquidity risk on the financial soundness of private commercial banks listed on the Indonesia Stock Exchange because it has a T-Statistic smaller than 1.96. GCG as the mediator of earning a relationship with the financial soundness of private commercial banks listed on the Indonesia Stock Exchange because it has a T-Statistic greater than 1.96. Discussion of the results of this statistical analysis is as follows.

The results of the study found that credit risk significantly influences the financial soundness of private commercial banks listed on the Indonesia Stock Exchange. The results of this study

make the first hypothesis of this study which states that credit risk significantly influences the bank financial soundness of private commercial banks listed on the Indonesia Stock Exchange received. The effect of credit risk on the financial soundness of the sample research bank is in the opposite direction, meaning the decreasing of credit risk faced by the private commercial banks listed on the Indonesia Stock Exchange, the financial soundness of the sample research bank will increase and vice versa if credit risk faced by private commercial banks listed on the Indonesia Stock Exchange is increasing, financial soundness private commercial banks listed on the Indonesia Stock Exchange will progressively decline

The results of this study also support the theory that the greater the risk faced by banks, the financial soundness of banks will be lower, and vice versa if the credit risk faced by the smaller banks, the financial soundness of banks will be higher. This can happen because if there is a failure in credit management, it can cause a lot of problem loans or bad debts that make credit risks increase and if a bank experiencing a lot of bad credit or bad credit, it will lower the financial soundness of the bank [Bester, 1994, Bofondi and Gobbi, 2003 in Richard et al., 2008]. The results of this study are in accordance with the practice of financial soundness assessment of banks in Indonesia using Risk Based Bank Rating (RBBR) approach or risk approach, good corporate governance, earning and capital (RGEC), because if credit risks faced by banks decreased, the bank of the risk profile will increase, and assuming that there is no change in the soundness score from other aspects of soundness assessment, the total soundness score will increase and should make the financial soundness of the bank increase, meaning the direction of the opposite effect. This study finds a direction of influence that is also in opposite directions

The results of this study support the results of previous research conducted Indira and Muljaman [1998] who found that the ratio of NPL as a measure of credit quality significantly negatively affect the financial soundness of banks. The decrease in NPL ratio will cause credit risk to decrease and decrease of credit risk will cause bank financial soundness increase. The results of this study do not support the results of research conducted by Haryati [2005] who found that the ratio of NPL has a significant positive effect on the financial soundness of banks. Haryati's research finds that if the NPL ratio of a bank increases, it will increase the credit risk and will cause the financial soundness of the bank to increase

The significant impact of credit risk on the financial soundness of private commercial banks listed on the Indonesia Stock Exchange is due to the fact that during the period of credit risk research faced by private commercial banks listed on the Indonesia Stock Exchange increased as evidenced by the positive trend both in the ratio of CKPN to Credit as well as the NPL ratio. This increase in credit risk along with the interest rate set by the Board of Governors of Bank Indonesia tends to decrease, thus causing decrease soundness score on the aspect of risk profile that affects the decrease in the total score of financial soundness of private commercial banks listed on the Indonesia Stock Exchange.

The results found that market risk (exchange rate risk) had no significant effect on the financial soundness of private commercial banks listed on the Indonesia Stock Exchange. The results of this study make the second hypothesis of this study which states that market risk significantly affects the financial soundness of private commercial banks listed on the Indonesia Stock Exchange was rejected. The insignificant effect of market risk on the financial soundness of banks in this study because during the study period of 2012 to 2016 the average ratio of the bank's NPS sample of positive research which means the forex assets are greater than the foreign exchange liabilities and tend to decrease as evidenced by the average trend of -0.32. this positive and declining PDN ratio is exacerbated by the increase in the US dollar against the Rupiah, which means the value of the rupiah weakened during the study period. The increase

in the US dollar exchange rate is due to the increase in the Fed's interest rate from 2012 to 2016, wherein 2012 to 2014 it is 0.25 percent, by 2015 by 0.5 percent and by 2016 to 0.75 percent. The increase of the US dollar against the Rupiah cannot be intervened by the Indonesian government because Indonesia uses a floating exchange rate system.

The results of this study support the results of Santoso [2000] and Haryati [2005] studies which also found that the ratio of NOP as a measure of bank sensitivity to the market [exchange rate changes] has an insignificant effect on the bank financial soundness. The results of the study found that liquidity risk had no significant effect on the financial soundness of private commercial banks listed on the Indonesia Stock Exchange. The results of this study make the third hypothesis of this study that states that liquidity risk significantly affects the financial soundness of private commercial banks listed on the Indonesia Stock Exchange was rejected.

The insignificant effect of liquidity risk on the financial soundness of private commercial banks listed on the Indonesia Stock Exchange is because the liquidity of commercial banks operating in Indonesia is strictly regulated by bank supervisors during the study period held by Bank Indonesia and then transferred to the Financial Services Authority. Regulations on liquidity that must be met by banks operating in Indonesia during the study period are PBI number 12/19/PBI/2010, PBI number 15/7/PBI/2013, POJK number 42/POJK.03/2015 which is then enhanced Regulation of the Member of the Board of Governors of Bank Indonesia [PADG] number 19/4/PADG/2017. The regulations on liquidity require that commercial banks operating in Indonesia reserve funds derived from funds collected from the public and should not be allocated to productive assets such as in the form of loans that will provide a relatively large income for banks. The reserve is referred to as the minimum reserve requirement of Statutory Reserves]. The reserve requirement shall be 6.5 percent of the DPK in the form of primary primary reserve requirement in the form of cash, and 4 percent from third-party deposits in the form of securities, namely Bank Indonesia Certificates (SBI), Bank Indonesia Time Deposit (SDBI) Letter of State Treasury (SBN) and Government Securities (SUN). The IPR data describing secondary GWM established by the sample bank's management during the study period indicated that the research sample had been able to meet the requirements of the Statutory Reserves during the study period determined by the supervisor, but the tendency was stable. This fact indicates that there is a tendency of the sample bank's management to research only trying to meet the minimum requirements and not willing to allocate large funds to the reserve for GWM

The results of this study do not support the research of Meyer and Piefer [1970], Altman et.al [1977] and Indira and Muljaman [1998] who found bank liquidity as measured by Cash + Securities/Total Asset or IPR or liquidity ratio had a significant positive effect on failed/problem bank, but supported the research Sinkey [1975], Martin [1977], Gunther and Moore [2003] and Haryati [2005] who found to have an insignificant influence. The results of this study also do not support the results of research by Meyer and Piefer [1970] and Sinkey [1975] who found that LAR as a measure of bank liquidity has a significant negative effect on the financial soundness of banks, and also Martin [1977] and Indira and Muljaman find LAR positive significant to the financial soundness of banks.

The results of the study found that operational risk significantly influences the financial soundness of private commercial banks listed on the Indonesia Stock Exchange. The results of this study make the fourth hypothesis of this study which states that operational risks

significantly affect the financial soundness of private commercial banks listed on the Indonesia Stock Exchange received. The direction of influence from operational risk to financial soundness of private commercial banks listed on the Indonesia Stock Exchange is opposite direction, meaning decreasing operational risk faced by bank of sample of research, hence financial soundness of bank sample research will increase and vice versa if operational risk faced by bank of research sample progressively, hence soundness financial bank sample research will progressively decline.

The results of this study support the theory that the greater the operational risks faced by banks, the financial soundness of banks will be lower, and vice versa if the operational faced by the smaller banks, the financial soundness of banks will be higher. This can happen because if the operational efficiency that occurs in a bank increases, the operational risks faced by the bank will decrease. The decrease in operational risk will make the financial soundness of banks increases. The results of this study are also in accordance with the practice of assessing the financial soundness of banks in Indonesia using Risk Based Bak Rating (RBBR) approach or risk approach, good corporate governance, earning and capital (RGEN), because if the operational risks faced by banks increases, bank finances from risk profiles will decline, and assuming that no changes in soundness scores from other aspects of soundness assessment, the total soundness score will decrease and decrease the financial soundness of the bank. In fact, the financial soundness of private commercial banks listed on the Indonesia Stock Exchange decreased as evidenced by the average trend of negative bank financial soundness scores during the study period.

The results of this study support previous research conducted by Meyer and Piefer (1970) and Haryati and Setiawan [2000] who found that the ratio of BOPO or efficiency ratio had a significant negative effect on bank financial soundness but did not support Sinkey's [1975] and Haryati [2005] who found that the ratio of operational efficiency or BOPO ratio had a significant positive effect on the financial soundness of the bank. The significant impact of operational risk on the financial soundness of private commercial banks listed on the Indonesia Stock Exchange is due to during the operational risk study period encountered by private commercial banks listed on the Indonesia Stock Exchange as evidenced by the positive trend of BOPO ratio. This increase in operational risk caused a decrease in the soundness score on the aspect of the risk profile which resulted in the decrease in total financial soundness score of private commercial banks listed on the Indonesia Stock Exchange.

The results of the study found that good corporate governance (GCG) has a significant effect on the financial soundness of private commercial banks listed on the Indonesia Stock Exchange. The results of this study make the fifth hypothesis of this study which states that GCG has a significant effect on the financial soundness of private commercial banks listed on the Indonesia Stock Exchange is accepted. The significance of GCG influences on the financial soundness of private commercial banks listed on the Indonesia Stock Exchange because during the study period 2012 to 2016 GCG as measured by GCG score in this study showed an increasing trend as evidenced by the average of positive GCG score trends. The increasing trend of GCG scores implies that the quality of governance in the private commercial banks listed on the Indonesia Stock Exchange is increasing or improving.

The results of this study do not support the theory that the increasing quality of governance in a bank, the financial soundness of banks will increase, and vice versa if the quality of governance in a bank worsens, the financial soundness of banks will decline further. The results of this study are also not suitable in accordance with the practice of financial soundness assessment of banks in Indonesia using Risk Based Bak Rating (RBBR) or risk approach, good

corporate governance, earning and capital (RGEC), because if the GCG faced by banks increases, the financial soundness of banks from GCG aspects will increase, and assuming that there is no change in soundness scores from other aspects of soundness assessment, then the total soundness score will increase and should make the financial soundness of the bank increase. The study found that GCG is increasing but the financial soundness of banks is declining.

Research on the influence of GCG on the financial soundness of banks is still very little done by previous researchers. Research conducted by Hutama [2013] found that GCG has a significant effect on bank financial soundness, only this research from normality point of view, while other researchers have not tested the effect of this variable on bank financial soundness. The results of this study support the results of research conducted by Hutama [2013] who found that GCG has a significant effect on the financial soundness of the bank, only Hutama's research from the normative legal point of view, while this researcher from governance quality as measured by GCG score.

The results found that earnings have a significant effect on the financial soundness of private commercial banks listed on the Indonesia Stock Exchange. The results of this study make the sixth hypothesis of this study which states that earnings have a significant effect on the financial soundness of private commercial banks listed on the Indonesia Stock Exchange received. The direction of earnings to the financial soundness of sample research banks is opposite, meaning the decreasing earnings obtained by banks, the financial soundness of banks will increase and vice versa if earnings obtained by banks increasing, then the financial soundness of banks will decrease.

The effect of credit risk to financial soundness obtained in the research is in line with the reality in the field because during the period of 2012 to 2016 earnings measured by ROA, ROE and NIM indicators in this study showed a downward trend as evidenced by the average ROA trend, ROE and NIM are negative. The decline in ROA, ROE and NIM trends will cause earnings of private commercial banks listed on the Indonesia Stock Exchange to decrease and should cause the financial soundness of the private commercial banks listed on the Indonesia Stock Exchange to decline. In fact, the financial soundness of the sample research banks decreased as evidenced by the average trend of negative bank soundness scores (declining) during the study period. Thus, should the direction of earning influence on financial soundness is unidirectional, but this study finds the direction of opposite effect.

The results of this study support the theory that declining earnings earned banks, the financial soundness of banks will be lower, and vice versa if earnings are gained greater bank, the financial soundness of banks will be higher. The results of this study are in accordance with the practice of bank soundness assessment in Indonesia using Risk Based Bak Rating (RBBR) approach or risk approach, good corporate governance, earning and capital (RGEC), because if earnings obtained by banks decreased, earnings will decrease, and assuming that there is no change in soundness scores from other aspects of soundness assessment, the total soundness score will decrease and decrease the financial soundness of the bank.

The results of this study support the results of previous research conducted Meyer and Piefer (1970), Santoso (2000) and Haryati and Setiawan (2000) found that ROA has a significant negative effect on the financial soundness of banks. The results of this study also support the results of research Altman et.al (1977) found that ROA can be a predictor bankruptcy bank, and research Gilbert et al. (2002) found that ROA has a significant negative impact on the

financial soundness of banks. The results of this study also supports the results of the study Santoso (2000) found that ROE had a significant negative effect on the financial soundness of banks, but did not support the results of research Haryati (2005) found that ROE has a significant positive effect on the financial soundness of banks and research Aryati and Balafif (2007) found the ROE had no significant effect on bank financial soundness. The results of this study also do not support the results of research Martin (1977) and Haryati (2005) found that the ratio of NIM has a significant positive impact on the financial soundness of banks, failed / insolvent banks, as well as research Aryati and Balafif (2007) found that NIMs have no effect significant to the financial soundness of banks.

The results of the study found that capital significantly influences on the financial soundness of private commercial banks listed on the Indonesia Stock Exchange. The results of this study make the seventh hypothesis of this study which states that capital has a significant effect on the financial soundness of private commercial banks listed on the Indonesia Stock Exchange received. The direction of the influence of capital to the financial health of the private commercial banks listed on the Indonesia Stock Exchange is opposite direction, meaning that the bank's capital decreases, the financial soundness of the bank will increase and vice versa if the bank's capital increases, the financial soundness of the bank will decrease.

The direction of capital influence to financial health obtained in the study is not in line with the reality in the field because during the period of 2012 to 2016 capital measured by the FACR indicator in this study showed an increasing trend as evidenced by the average of positive FACR trends. The increasing trend of FACR has caused the capital owned by the private commercial banks listed on the Indonesia Stock Exchange to decrease and should cause the financial soundness of the sample research banks to decline. In fact, the financial soundness of the private commercial banks listed on the Indonesia Stock Exchange decreased as evidenced by the average trend of negative bank soundness scores (declining) during the study period. Thus, should the direction of capital influence to financial soundness is unidirectional, but this study finds a direction of opposite direction.

The results of this study also support the theory that declining capital owned by banks, the financial soundness of banks will be lower, and vice versa if the capital owned banks increased, the financial health of banks will be higher. The results of this study are also in accordance with the practice of health assessment of banks in Indonesia using Risk Based Bak Rating (RBBR) approach or risk approach, good corporate governance, earning and capital (RGEC), because if the bank-owned capital declines, the risk profile will decrease, and assuming that there is no change in the health score from other aspects of health assessment, then the total health score will decrease and the financial soundness of the bank will decrease.

The results of this study do not support the results of previous studies conducted Meyer and Piefer (1970), Santoso (2000) and Haryati (2005) found that FACR has a significant positive effect on the bank financial soundness.

The results of the study found that GCG as a moderator of the effect of credit risk and operational risk to the financial soundness of private commercial banks listed on the Indonesia Stock Exchange. The results of this study make the eighth and eleventh hypothesis of this study which states that GCG moderates the effect of credit risk and operational risk on the financial soundness of private commercial banks listed on the Indonesia Stock Exchange. The results of this study can not be compared with the results of previous studies, as previous studies did not test the moderate impact of GCG on the effect of credit risk on the financial soundness of banks.

The results of the study found that GCG as the mediator of earning a relationship with the financial soundness of private commercial banks listed on the Indonesia Stock Exchange. This finding makes the twelfth hypothesis of this study which states that GCG mediates the effect of earning on the financial soundness of private commercial banks listed on the Indonesia Stock Exchange. The result of the research shows that earnings have significant effect to bank financial soundness, earnings also have a significant effect on GCG and GCG have a significant effect on bank financial soundness, so it can be concluded that GCG is a mediator of earning effect on bank financial soundness. The results of this study can not be compared with the results of previous research, because previous studies did not test the impact of mediation from GCG on the influence of earnings to the financial soundness of banks.

SUMMARY

Based on the description presented earlier, it can be seen that in this study produced findings research which can be explained as follows:

1. Credit risk significant affected on the bank financial soundness strengthening the findings of research conducted by Indira and Muljaman [1998] who found that NPL as a measure of credit quality that can also be used as an indicator of credit risk has a significant negative effect on the financial soundness of banks. The decline that occurs in NPLs will cause credit risk to decrease and decrease credit risk will cause financial soundness of banks to increase.

The results of this study do not support the results of research conducted by Haryati [2005] who found that NPL has a significant positive effect on the financial soundness of banks. Haryati's research finds that if the NPL of a bank increases, it will increase credit risk and will cause financial soundness of the bank increases.

1. Market risks have an insignificant effect on the bank financial soundness strengthening the findings of research conducted by Santoso [2000] and Haryati [2005] who also found that PDN as a measure of bank sensitivity to markets [exchange rate changes] has had no significant effect on financial soundness bank.
2. Liquidity risk has an insignificant effect on the bank financial soundness strengthening the findings of research conducted by Meyer and Piefer [1970], Altman et.al [1977] and Indira and Muljaman [1998] found that bank liquidity as measured by Cash + Securities/Total Assets or IPRs or liquidity ratios have a significant positive effect on failed/problem banks, but do not support the research of Sinkey [1975], Martin [1977], Gunther and Moore [2003] and Haryati [2005] who found to have an insignificant effect. The results of this study do not support the results of research by Meyer and Piefer [1970] and Sinkey [1975] who found that the LAR as a measure of bank liquidity has a significant negative effect on the financial soundness of banks, and also Martin [1977] and Indira and Muljaman research that found LAR have positive significant to the financial soundness of banks.
3. Operational risks have significant effect on the bank financial soundness strengthening the findings of research conducted by Meyer and Piefer [1970] and Haryati and Setiawan [2000] who found that the ratio of BOPO or efficiency ratio had a significant negative effect on bank financial soundness but did not support Sinkey's research 1975] and Haryati [2005] who found that the operational efficiency ratio or BOPO had a significant positive effect on bank financial soundness.
4. GCG has a significant effect on bank financial soundness strengthening the findings of research conducted by Hutama [2013] found that GCG has a significant effect on the financial soundness of banks, only this research from a normative legal point of view, whereas this researcher from governance quality as measured by score GCG.

5. Earnings have a significant effect on the financial soundness strengthening the findings of research conducted Meyer and Piefer (1970), Santoso (2000) and Haryati and Setiawan (2001) who found that ROA has a significant negative effect on the financial soundness of banks. The results of this study also support the results of research Altman et.al (1977) found that ROA can be a predictor bankruptcy bank, and research Gilbert et al. (2002) found that ROA has a significant negative impact on the financial soundness of banks. The results of this study also supports the results of the study Santoso (2000) found that ROE had a significant negative effect on the financial soundness of banks, but did not support the results of research Haryati (2005) found that ROE has a significant positive effect on the financial soundness of banks and research Aryati and Balafif (2007) found the ROE had no significant effect on bank financial soundness. The results of this study also do not support the results of research Martin (1977) and Haryati (2005) found that the ratio of NIM has a significant positive impact on the financial soundness of banks, failed / insolvent banks, as well as research Aryati and Balafif (2007) found that NIMs have no effect significant to the financial soundness of banks.
6. Capital has a significant effect on the financial soundness strengthening the findings the results of previous studies conducted Meyer and Piefer (1970), Santoso (2000) and Haryati (2005) found that FACR has a significant positive effect on the bank financial soundness.
7. The GCG moderates the effect of credit risk on bank financial soundness as a new finding from this research, as no previous studies have examined the impact of GCG moderation on the effect of credit risk on bank financial soundness.
8. GCG does not moderate the effect of market risk on bank financial soundness as new findings from this research, as no previous research has examined the impact of moderation of GCG on the effect of market risk on bank financial soundness.
9. GCG does not moderate the effect of liquidity risk on bank financial soundness as new findings from this research, as no previous research has examined the impact of GCG moderation on the effect of liquidity risk on bank financial soundness.
10. GCG moderates the effect of operational risks on bank financial soundness as a new finding from this study, as no previous studies have examined the impact of GCG moderation on the effect of operational risk on bank financial soundness.
11. GCG mediates the impact of earning on financial soundness as a new finding from this study, as no previous studies have examined the impact of GCG moderation on the effect of operational risk on bank financial soundness.

LIMITATION

Based on the result of the study which has been described, the researcher feels still not fully able to answer all the problems related to the variables used are credit risk, market risk, liquidity risk, operational risk, good corporate governance (GCG), earning and capital, this limitation of the researcher hopes this research can be used as reference material of the next researcher and contribution to next study. Limitations of the study are as follows:

1. The incomplete data on the financial soundness score of the bank which is the population of this study, so that members of the population are not included in the process of determining the research sample
2. Incomplete data on bank financial statements published through BI and OJK sites, so that the incomplete data is not included in the sample determination process.

References

Altman, E.I., Robert G.H., and P. Narayan. 1977, Zeta Analysis: A New Model to Identify Bankruptcy Risk of Corporations, *Journal of Banking and Finance*, pp 29-54.

Aryati T and Shirin Balafif, 2007, Analysis of Factors Affecting Bank Soundness With Logit Regression, *Winner Journal*, vol 8 no 2, pp111-125.

Bank Indonesia, 2003, Bank Indonesia Regulation (PBI) Number 5/8/PBI/2003 dated May 19, 2003, concerning the Application of Risk Management for Commercial Banks, Bank Indonesia, Jakarta.

_____, 2004. Bank Indonesia Regulation [PBI] Number 6/10 / PBI / 2004 dated April 12, 2004, concerning the Soundness Rating of Commercial Banks, Bank Indonesia, Jakarta.

_____, 2005. Regulation of Bank Indonesia [PBI] Number 7/25 / PBI / 2005 dated August 3, 2005, concerning Risk Management Certification for Officials and Managers of Commercial Banks, Bank Indonesia, Jakarta.

_____, 2006. Bank Indonesia Regulation [PBI] Number 8/4 / PBI / 2006 dated 1 January 2006, regarding the Implementation of Good Corporate Governance [GCG] for Commercial Banks, Bank Indonesia, Jakarta.

_____, 2006. Regulation of Bank Indonesia [PBI] Number 8/14 / PBI / 2006 dated 5 October 2006 regarding the Amendment of PBI Number 8/4 / PBI / 2006 concerning Implementation of Good Corporate Governance [GCG] for Commercial Banks, Bank Indonesia, Jakarta.

_____, 2007, Circular Letter of Bank Indonesia [SEBI] No: 9/12 / DPNP dated May 30, 2007 on the Implementation of Good Corporate Governance for Commercial Banks, Bank Indonesia, Jakarta.

_____, 2009. Bank Indonesia Regulation [PBI] Number 11 / 19 / PBI / 2009 dated June 4, 2009 concerning Risk Management Certification for Officials and Managers of Commercial Banks, Bank Indonesia, Jakarta.

_____, 2009 on Bank Indonesia Regulation No. 11/25 / PBI / 2009 dated July 1, 2009 regarding the amendment to Bank Indonesia Regulation Number 5/8 / PBI / 2003 concerning the Implementation of Risk Management for Commercial Banks, Bank Indonesia, Jakarta.

_____, 2011, Bank Indonesia Regulation [PBI] No: 13/1 / PBI / 2011 dated January 5, 2011, concerning Rating of Soundness Level of Commercial Banks, Bank Indonesia, Jakarta.

_____, 2011, Circular Letter of Bank Indonesia [SEBI] No: 13/24 / DPNP dated 25 October 2011 Assessment of Soundness Level of Commercial Banks, Bank Indonesia, Jakarta.

_____, 2013, Circular Letter of Bank Indonesia [SEBI] No: 15/15 / DPNP 29 April 2013 Implementation of Good Corporate Governance for Commercial Banks, Bank Indonesia, Jakarta.

Basel Committee on Banking Supervision, 1988, International Convergence of Capital Measurement and Capital Standards, Basel Committee On Banking Supervision, Basle.

_____, 1996, Overview Of The Amendment To The Capital Accord To Incorporate Market Risk, Basel Committee On Banking Supervision, Basle.

_____, 2004, International Convergence Of Capital Measurement and Capital Standards, A Revised Framework, International Convergence Of Capital Measurement and Capital Standards, A Revised Framework, Basel Committee On Banking Supervision, Basle.

_____, 2009, A global regulatory framework for more resilient banks and banking systems, Basel Committee On Banking Supervision, Basle.

Cvilikas, 2010, The Structure of Decision for Banking Risk Management's Economic Efficiency Assessment. *Journal of Economic and Management*, Vol 15, pp 893-899.

Cyree K. B., James W.W., and Thomas P.B., 2000, Determinants of Bank Growth Choice: *Journal of Banks & Finance*, 24, pp 709-734.

Financial Services Authority, 2016, OJK Regulation number 04 / POJK.03 / 2016, January 26, 2016, on the Soundness Assessment of Commercial Banks, OJK, Jakarta.

_____, 2016. OJK Regulation number 18 / POJK.03 / 2016, March 16, 2016, concerning Application of Risk Management for Commercial Banks, OJK, Jakarta.

_____, 2016. OJK Regulation number 55 / POJK.03 / 2016, December 7, 2016, concerning Implementation of Good Corporate Governance for Commercial Banks, OJK, Jakarta.

_____, 2017. Circular Letter OJK number 13 / SEOJK.03 / 2017, March 17, 2017, on the Implementation of Good Corporate Governance for Commercial Banks, OJK, Jakarta.

- Gilbert R.A., Andrew P.M., and Mark D.V., 2002, Could a CAMELS Downgrade Model Improve Off-Site Surveillance?, *The Federal Reserve Bank of St. Louis*, January-February, 47-64.
- Gozali Imam, 2015, Partial Least Squares: Concepts, Techniques and Applications Using the SmartPLS Program, Agency Publisher Diponegoro University, Jakarta.
- Gunther and Moore, 2003, Early Warning Model in Real Time, *Journal of Banking & Finance*, 27, pp 1979-2001.
- Haryati S and Joko Budi Setiawan, 2000, Performance Analysis of Frozen Banks Operations, Takeovers, Recapitalization and Soundness Banks 1992 -1998, *Journal of Business Economics and Accounting Ventura*, Volume 4, No 2, pp 97-107.
- Haryati S, 2005, Study of Prediction Model of Bank Indonesia National Private Banking Level, *Journal of Business Economics and Accounting Ventura*, Volume 9, No. 3, pp 1-19.
- Hutama R H, 2013, Good Corporate Governance As One of the Soundness Rating Factors of Commercial Banks, *Privat Law Journal*, Vol 3, No. 1, pp 35-52.
- Indira and Muljaman, 1998, Predicting Banking Conditions Through a Dynamic Solvency Approach, *Bulletin of Monetary Economics & Banking*, 2, pp 169 - 184.
- Infobank Research Bureau, 2013, Infobank Magazine, "Soundness Rating of Banks in Indonesia". June 2013 Edition, InfoBank Research Bureau, Jakarta.
- _____, 2014, Infobank Magazine, "Soundness Rating of Banks in Indonesia". June 2014 Edition, Infobank Research Bureau, Jakarta.
- _____, 2015, Infobank Magazine, "Soundness Rating of Banks in Indonesia". July 2015 Edition, Infobank Research Bureau, Jakarta.
- _____, 2016, Infobank Magazine, "Soundness Rating of Banks in Indonesia". June 2016 Edition, Infobank Research Bureau, Jakarta.
- _____, 2017, Infobank Magazine, "Soundness Rating of Banks in Indonesia". July 2017 Edition, Infobank Research Bureau, Jakarta.
- Kasmir, 2012. Banking Management. Matter Eleventh, PT. Raja Grafindo Persada, Jakarta.
- Lucas Setya Atmaja, 2008, Theory and Practice of Financial Management, ANDI, Yogyakarta.
- Lukman Dendawijaya. 2009, Banking Management. Publisher Ghalia Indonesia, Jakarta.
- Malhotra, Naresh K. 2006, Marketing Research An Applied Orientation, Prentice Hall, United State of America.
- Martin D., 1977, Early Warning of Bank Failure, *Journal of Banking and Finance*, 1, pp 249-276.
- Martono, 2013, Bank and Other Financial Institutions, Ecclesiastical Publishers, Yogyakarta.
- Meyer and Pifer, 1970, Prediction of Bank Failure, *The Journal of Finance*, pp 853-868.
- Moerdiyanto. [2010]. Level of Manager Education and Corporate Performance Go-Public (Obstacles or Opportunities?), *Educational Horizon*, February 2011, Th. XXX, No. 1, pp 116-129.
- Richard E., Marcelina C., Erasmus K., Christer P., and Hakan B. 2008. Credit Risk Management System of A Commercial Bank in Tanzania, *International Journal of Emerging Markets*, Vol. 3. No. 3, pp 323-332.
- Rivai V., Sofyan Basir, Sarwono Sudarto and Arifiandy Permata Veithzal. 2013. Commercial Bank Management: Banking Management From Theory To Practice. PT. Raja Grafindo Persada, Jakarta.
- Santoso W., 2000, The Determinants of Problem Banks in Indonesia [An Empirical Study., Htp: www.bi.go.id/bank.
- Shahchera Mahshid and Nasim Jouzdani, 2010, The Impact of Regulation on Soundness Banking (Selected Countries), vol.1 *IACSIT Press*, Kuala Lumpur, Malaysia, pp 152-156.
- Sinkey Joseph F.Jr., 1975, A Multivariate Statistical Analysis of The Characteristics of Problem Banks, *The Journal of Finance*, XX, pp 21-36.
- Sugiyono, 2017, Business Research Methods, Quantitative Approach, Qualitative, Combinations, and R & D, Third Edition, ALFABETA, Bandung.
- Taswan, 2010, Banking Management [Concepts, Engineering and Applications], Second Edition, UPP STIM YKPN, Yogyakarta.
- Triandaru S. and Totok Budisantoso, 2008, Bank and Other Financial Institutions, Fourth Edition, Salemba Four, Jakarta.