Volume 5, Issue 2 – February 2017
ISSN: 2054-7404

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ARCHIVES OF BUSINESS RESEARCH

SOCIETY FOR SCIENCE AND EDUCATION - UNITED KINGDOM

TABLE OF CONTENTS

EDITORIAL ADVISORY BOARD I
DISCLAIMER II

The Impact of Competitive Strategies, and Strategic Human Resource Management on Firm Performance of Palestine 01
Nermeen Sayyad

A Quantitative Evaluation of Metacognitive Awareness among Business Administration Students 16
Doha Al Awdah
Dr Sofia Jasmeen
Dr Asha Alexander

The Impact of the Resource Specificity on the Interfirm Interaction 26
Popov Evgeny
Simonova Viktoriya

A Journey through Development of Inland Waterways in India 38
Aditya Gupta
Neeraj Anand
A K Bansal

Determinants of Non-Performing Loans in Nigeria's Deposit Money Banks 74
EL-Maude, Jibreel Gambo
Abdul-Rahman, Ahmad
Ibrahim, Muhammad

Under-Pricing of IPOs in Indian Capital Market and Determinants of Under-Pricing 89
Dr.M.Appala Raju

Stress Management Strategies: An Approach for Productive Employee Performance in the Nigerian Banking Organizations a Survey of Commercial Banking Firms in Nigeriaa 112
Joseph Teryima Sev

Disclosure of Relevant Acts or Facts: A Study of Brazilian Companies Issuing American Deposit Receipts – Adrs at American Stock Exchanges 135
Ludmila Lavorato Loures
Carlos Alberto Gonçalves
Daniel Jardin Pardini

Logistics Processes Management in Supply Chain 149
Dr. Paweł Ślaski

A Eurasian or a European Future for Post-Soviet Georgia's Economic Development: Which is better? 159
Vladimer Papava

The Distribution Analysis for Extreme Returns of Nikkei 225 Index: Based on the Extreme Value Distribution of GEV and GL 171
Yuan An
Ernest Agyemang Duah

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Archives of Business Research – Vol.5, No.2
Publication Date: February 25, 2017
DOI: 10.14738/abr.52.2664.
Arshi, A. T. (2017). Is Innovation a Second Order Construct: Clarifying the Formative and Reflective Measures of Innovation. *Archives of Business Research, 5*(2), 1-13.

Is Innovation a Second Order Construct: Clarifying the Formative and Reflective Measures of Innovation

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Abstract
The primary purpose of this study is to bring clarity to the measurement of innovation construct, particularly within corporate firms. Measures of innovation continue to be debated in academic literature and absence of universally accepted and valid quantitate scale of innovation can be attributed to lack of clarity of innovation measures. Academic research needs to increase the understanding of diverse conceptualization and operationalization of the innovation construct and its implications in research and practice. Drawing from corporate entrepreneurship and innovation literature, this study argues that innovation is a second order construct consisting of radical and incremental innovation degree and frequency, which are its reflective measures. It further argues that readiness for innovation is a formative measure and an antecedent to innovation. The study uses a dominantly quantitative approach and utilizes structural equation modelling to test the measures of innovation through first and second order measurement and structural models. The results of the study on a sample of Omani corporate firms indicate that measurement of innovation can better understood through both reflective and formative measures.

Key Words: Corporate entrepreneurship, radical innovation, incremental innovation, formative and reflective measures.

INTRODUCTION

Corporate entrepreneurship is closely associated with innovation. Some studies treat corporate entrepreneurship synonymous to innovation and argue that without innovation corporate entrepreneurship cannot be conceptualized. Burns (2016) citing Kuratko et al. (2015) pointed out that entrepreneurship and innovation are used interchangeably as the objective of corporate entrepreneurship is to achieve 'superior organizational performance' by promoting innovation at all levels of the organization. Since corporate entrepreneurship does not claim a rich pedigree of theoretical and empirical development, only few prominent models are proposed in the literature. Some of the prominent models are Entrepreneurial Management (Steven and Jarillo 1990), Entrepreneurial Intensity (Morris and Sexton 1996) Organizational Climate Models (Amabile, 1997, Isaksen and Ekvall, 2010) Entrepreneurial Architecture (Burns 2013), and Entrepreneurial Orientation (Lumpkin and Dess, 1996 and Covin and Slevin, 1991). These models treat innovation with prime importance but few have attempted to clarify the innovation construct. Entrepreneurial Orientation (EO) is a widely researched and cited construct of corporate entrepreneurship (Rauch et al. 2009) and Innovation is a key factor of EO along with four other factors namely risk taking, proactiveness, competitive aggressiveness and autonomy. The five factor model of EO has attracted considerable empirical attention (Parkman et al. 2012). The conceptualization of innovation dimension within EO as 'innovativeness' implies the ability of the organization to be innovative, rather than measures of innovation itself. A closer look at the original measures of innovation within EO indicated that these measures includes input measures, such as research and development, as well as output measures such as new products and services. This conceptualization of both input and output measures within innovation literature in general and EO literature in particular, requires empirical clarification and this study precisely aims to do so. According to Lumpkin and Dess (1996), innovativeness within the EO construct meant the 'willingness' of the firms to pursue new ideas and to explore and experiment with them with creativity.

LITERATURE REVIEW

Wales et al. (2013) and Covin et al. (2006) argued that entrepreneurial orientation is one of the most prominent and widely accepted constructs in the extant literature and without innovation entrepreneurship is difficult to conceptualize. Dess and Lumpkin (1996, p.49) observed that *"without innovation other dimensions of EO have little or no value*". It was observed that innovation drives all other EO dimensions. Yildiz (2014) citing Rutherford and Holt (2007) pointed out that innovation is an important force behind two of the most important functions of corporate entrepreneurship, which are strategic renewal and business venturing. Measurement of innovation continue to be an issue of interest in the literature and an unrestricted search on innovation yields thousands of results, but the lack of clarity of measurement of innovation persists.

Innovation

The literature on innovation is rich with abundance of definitions and explanations. Baregheh et al. (2009, p. 1324) reported that *"there is no clear authoritative definition of innovation"* and conceptualizations have varied over the last 40 years of research on innovation. Innovation was explained as "*the proposal and generation of new ideas and commercial exploitation of its outcomes''* (Tonnessen, 2005, p.195). Proctor (2014, p. 288) defined innovation as *"practical application of new inventions into marketable products and services"*. Wang and Ahmed (2004, p.306) defined innovation as *Organization's overall innovative capability is conceptualized as consisting of product, market, and process, behavioural and strategic innovativeness".* The UK government white paper Innovation Nation (2007, p. 13) defined innovation as *"Successful exploitation of new ideas".* Sabarae (2010, p.6) concluded that *"Innovation is not an isolated event but fruit of a process hence the concerns with assessing not just a simple result (number of innovations), but rather the maturity of the process.'' Finally, Wang et al., (2015, p. 65) defined as innovation as Entrepreneurial orientation (EO) is seen as a significant driver of firms' innovation capability.* The last two definitions of innovation is interesting as it clearly implies that innovation is a process comprising of inputs and outputs (key words being 'processes' and 'driver'). Innovative inputs are essential for 'innovative outputs' to be exploited in the 'market' as defined by Tonnesen (2005, p.196) 'marketable products and services' as explained by Proctor (2014, p. 288). Vasconcellos and Marx (2011), Forsman (2011) and Sebrae and Texeria (2010) all argued that innovation is a process comprising of input and output factors. Therefore, 'readiness for innovation' as input factor, should precede innovation.

Readiness for innovation

The literature on innovation, particularly within the context of EO indicates that innovation involves a series of processes ranging from input to output stages. Amabile et al. (1997) and Isaksen and Ekvall (2010) laid emphasis on organizational climate and resources that promotes innovation. Bessant (2005) pointed toward importance of capabilities and mind set for innovation to occur, while Shah et al. (2011) and Dyer et al. (2011) focused on resources and networking to promote innovation. These studies pointed out that certain conditions or inputs for innovation are required before innovation outputs can be achieved. It implies two prepositions. One, that there are certain antecedents for innovation to happen. Second, these antecedents causes innovation to happen and these are not measures of innovation but rather causes of innovation. Measures of innovation are evident in the 'market' (Tonnesen, 2005) and radical and incremental innovation have been proposed in the literature as measures of this innovation (Bessant and Tidd, 2011).

Measures of Innovation: Radical Innovation

Assink (2006, p. 217) defined radical innovation as "a successfully exploited radical new product, process, or concept that significantly transforms the demand and needs of an existing market or industry, disrupts its former key players and creates whole new business practices or markets with significant societal impact." This definition is quite comprehensive as it implies a number of measures of radical innovation. Radical innovation measures comprises of radically new products and services, disruptions to the market and competition and changes in customer behaviour and demand patterns. Goffin and Mitchell (2010) and Prahlad and Mashelkar (2010) argued that size or degree of impact is the primary source of competitive advantage derived from radical innovation.

Measures of Innovation: Incremental innovation

Jha et al. (1996, p. 22) defined continuous incremental improvement as *"a collection of activities that constitute a process intended to achieve performance improvement".*Goffin and Mitchell (2010) and Bessant (2005) explained that incremental Innovation involves improvement of existing products and services. Incremental innovation is usually safe (considering lower risks), less expensive and can be achieved in reasonably short time lines and hence is more frequent in occurrence (Bessant and Tidd, 2011). Incremental innovation does not impact the market and competition in a major way and is not disruptive, unlike radical innovation. The primary competitive advantage of incremental innovation comes from its frequency, which enhances the sustainability of products and services in the market (Bessant and Tidd, 2011).

RESEARCH GAP

The discussion in the literature indicates that there is lack of clarity on measures of Innovation. Despite the wealth of research and interest in innovation construct, there are two major gaps in the literature related to the innovation construct. First, there is no universally accepted definition or explanation of innovation construct and there has been varied levels of conceptualization and operationalization of the innovation construct. The literature has interchangeably used the measures of innovation with measures of 'readiness for innovation' (RTI). The first research gap has given rise to the second, which is, the literature is devoid of universally accepted quantitative scale of innovation. Further, amongst the proposed models of innovation in the literature most of the models treat innovation as a first order construct without throwing much light on the measures and nature of the construct. This calls for rigorous research and empirical evidences that can clarify the measurement of innovation. Based on the research gaps the following research model (figure 1) is developed and associated hypotheses are framed.

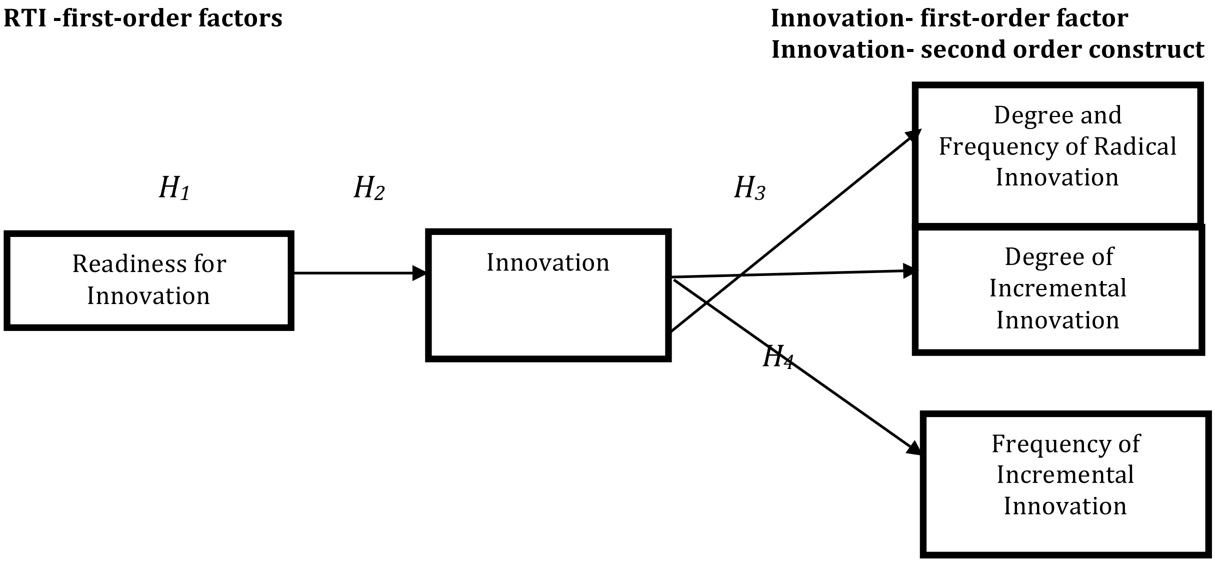


Figure 1: Research Model

The research model is presented as per the hypothesized relationships in this study. Diamantopoulos and Siguaw (2006) are of the view that empirical studies should clarify the hypothesized relationship, particularly clarifying whether the measures are studied formatively or reflectively. Hardin et al. (2008) explained that if the measures are conceptualized reflectively, variation in a construct leads to variation in its measures. On the hand, formative measures indicate that the variation in the measures have a causal effect on the construct. The first half of the research model above represents the causal relationship (formative measure) between readiness for innovation (RTI) and innovation which is, an output of the organization. The second part of the research model represents the reflective measures where the degree and frequency of innovation are quantitative measures of innovation construct. Degree and frequency of incremental innovation is treated as separate construct as the literature suggested that frequency is a key measure of innovation and is therefore more associated with incremental innovation rather than radical innovation.

H_1: Readiness for innovation is an antecedent to innovation
H_2: Readiness for innovation has a positive impact on innovation
H_3: Innovation is a second order construct with radical innovation degree and frequency as its appropriate measures.
H_4: Incremental Innovation frequency and degree are appropriate measures of incremental innovation at the first order and innovation construct at the second order.

METHODOLOGY

Epistemologically this study aims to contribute towards measurement of innovation construct and therefore, positivism and realist approach was more suited to the study. Ontologically an objectivist approach is the correct philosophical positioning of this research as the participants had little control over the measurement of the construct (Saunders, 2010). Since this study adopted a positivist and realist approach and follows a deductive approach, all the measures were adopted from the literature using relevant theoretical frameworks (Fisher, 2004). Quantitative research strategies were the dominant research strategy, although its limitations are well recognized. A realist approach enabled to test relationship between variables as well as test hypotheses. Measurement, reliability, causality, and validity, were key considerations and were the metrics used in this research to assess its rigor and robustness as well as to infer its appropriateness for generalisability.

Sample unit of analysis

Ireland (2009) suggested that corporate entrepreneurship and innovation should be studied at 'organizational members' level. Based on judgement sampling middle level managers were chosen as suggested by Kuratko et al. (2015). Additionally, as per the recommendations of Covin et al. (2006), top managers were also chosen as they (ibid) argued that top managers play an important role in promoting innovation at the corporate level. A sample size of 400 managers was decided based on Yamane's formula. One middle or top manager was chosen from each organization representing different sectors of Omani corporate sector.

Measures

The measures of readiness for innovation was derived from the original EO scale (Covin and Slevin 1989) EO Modified Scale (Morris and Sexton, 1996), while some were adopted by studies that modified and tested the EO scale in different research settings such as Morris et al. (2011) and Liao et al. (2005). 'Readiness for innovation' measures were also influenced by Innovation Capacity Model (Hurley and Hult, 1998), Innovation Capability-Rigidity Paradox (Atuahene-Gima, 2005) and Organizational Climate Model (Amabile, 1997). The measures for innovation construct were derived from various models which includes entrepreneurial intensity (Morris and Kuratko, 2002); (Tahseen, 2012); Innovation Ambition Matrix (Nagji and Tuff, 2012); incremental and radical innovation studies by Bessant and Tidd (2011) and Innovation intensity (Burns, 2013). The description of measures are shown in appendix 2.

RESULTS

Before analysing the data, the reliability and robustness of data was checked through various statistical tests. The results showed satisfactory levels of reliability with Cronbach Alpha scores >.7 as suggested by Saunders (2010).

Table 1: Cronbach Alpha (α) coefficients for reliability of the factors

Factors	Cronbach's Alpha	Number of Items	Total Cases
Readiness for innovation	.779	6	404
Radical Innovation degree and frequency	.786	9	404
Incremental Innovation Degree	.820	5	404
Incremental Innovation Frequency	.787	3	404

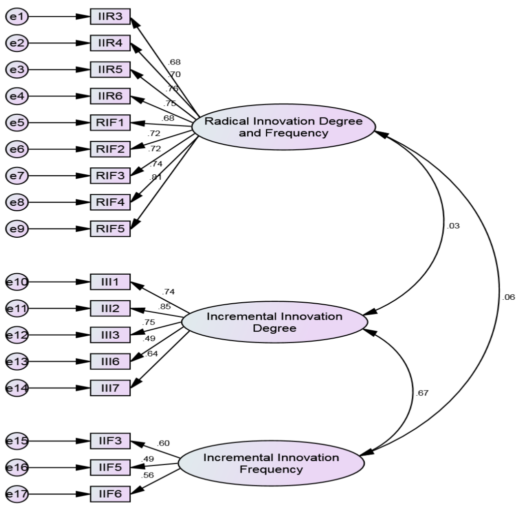
Tests of homoscedasticity indicates that the sample across various sectors was homogeneous (Levene Statistic >.05 and single column Tukey HSD) on all control measures such as position, experience and education. Normality of data was checked through Kolmogorov Smirnov and Shapiro Wilks (test values > .000) which showed that that the data was derived from a normally distributed sample. There was no evidence of multi- collinearity (VIF < .2). After confirming the robustness of data, the measures were subjected to exploratory factor analysis involving Principal Components Analysis with Promax Rotation and Kaiser Normalization as suggested by Kline (2011). The KMO scores, which was quite good showed that the data is fit enough to conduct factor analysis and structural equation modelling tests.

Exploratory factor analysis (EFA) was conducted to test the factorial structure of 'readiness for innovation' (RTI) construct and 'innovation' construct. The patterns matrix showing the factorial structures is shown in Appendix 1. The measures loaded satisfactorily on the RTI construct (>.40). The measures also loaded satisfactorily (>.40) onto three factors of innovation construct namely radical innovation degree and frequency, incremental innovation degree and incremental innovation frequency.

Table 2: KMO and Bartlett's Tests

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.855
Bartlett's Test of Sphericity	Approx. Chi-Square	3662.002
	df	253
	Sig.	.000

Structure Equation Modelling (SEM) was further applied as it is powerful tool to test the hypotheses. SEM is a combination of factor analysis and regression and indicates both formative and reflective modelling through path diagrams (Tabachnik and Fidel, 2007). Further, modelling interactions, non-linearity, correlated independents, correlated errors and error terms are accounted for in SEM analysis (Gaskin, 2012). In order to test the factorial structure of innovation construct which comprises of radical and incremental innovation degree and frequency, a measurement model was developed. The results showed that radical innovation degree and frequency is a single factor, while incremental innovation degree and frequency split into two factors. The results are shown in figure 2 below.

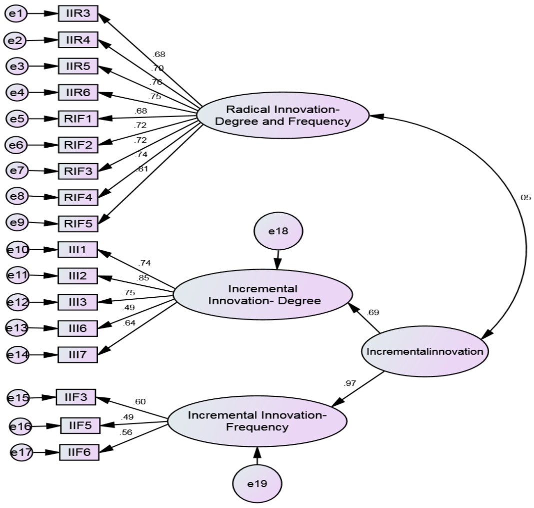


CMINDF 1.867 GFI .997 AGFI .964 CFI.995 RMSEA .038

Figure 2: Measurement Model 1 testing the dimensions of innovation construct

(Labels: IIR-Radical innovation degree, RIF- Radical innovation frequency III- Incremental innovation degree, IIF- Incremental innovation frequency)

The fit indices in the measurement model 1 were strong indicating a good model fit. The factor loadings were satisfactory (>.40, p<.001) and the measures loaded on their respective factors as conceptualized and operationalized. The covariance scores were low (.03 and .06) indicating discriminant validity, except between incremental innovation degree and frequency. Therefore, there was a need to further check whether the factors belonged to the same construct or two separate constructs. Therefore, in order to test whether incremental innovation degree and incremental innovation frequency were indeed measures of incremental innovation, a second order measurement model was tested and the results are shown in figure 3 below.



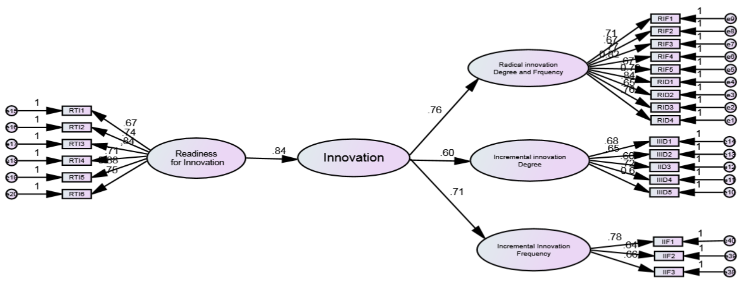
CMINDF 1.951 GFI .992 AGFI .951 CFI.992 RMSEA .041

Figure 3: Measurement Model 2 for Incremental innovation degree and frequency

(Labels: IIR-Radical innovation degree, RIF- Radical innovation frequency III- Incremental innovation degree, IIF-Incremental innovation frequency)

The fit indices in the measurement model 2 indicated good fit of data showing good measurement of fit, as suggested by Kline (2011). The measurement model 2 shows that radical and incremental innovation degree and frequency as appropriate measures of innovation. The results in the two measurement models indicate that H_1 is supported positively and significantly. At the same time, the measurement model 2 showed that incremental innovation degree and frequency are indeed measures of the incremental innovation construct and second order testing showed factor loadings of .69 and .97 (p <.05) indicating that the measures loaded satisfactorily on incremental innovation construct. The factor loadings on all measures (>.40) indicated convergent validity, while low covariance scores between factors (.05) indicated discriminant validity.

Finally, the research model was tested through the structural model and the results are shown in figure 4. Based on the cut off criteria (>.40), as suggested by Tabachnik and Fidel (2007), all items validated in the measurement model were retained in the SEM model. Only the labels of measures were changed for clarity. Both the factor loading and coefficient values were good enough to judge the hypotheses. All the fit indices were satisfactory as shown in figure 4 below.



CMINDF 1.979 GFI .982 AGFI .911 CFI.982 RMSEA .048

Figure 4: Complete SEM Model showing formative and reflective measures of innovation at the first and second order

(Labels: RTI – Ready to innovate, RID-Radical innovation degree, RIF- Radical innovation frequency IID- Incremental innovation degree, IIF- Incremental innovation frequency)

The complete SEM model shows that H_2 is well supported positively and significantly. The complete SEM model showed that readiness for innovation (RTI) dimension significantly and positively impacts innovation output reflected through the radical and incremental innovation (Path coefficient value of .84 p<.001). Therefore, structural model indicates that RTI is instrumental in promoting innovation. Based on the findings H_3 is supported positively and significantly as radical innovation degree and frequency (path coefficient value .76, p<.001) were found to be reflective measures of innovation construct. Further, based on the findings H_4 is supported positively and significantly as incremental innovation degree (path coefficient value .60, p<.001) and incremental innovation frequency (path coefficient value .71, p<.001) were found to be reflective measures of innovation.

DISCUSSION

The findings confirmed that readiness for innovation is an antecedent to innovation. An organization should be first ready to innovate before innovation outputs can be achieved. Rodrigues et al. (2010) therefore argued that innovation is the result of innovativeness. The same views resonate with Kamaruddeen et al. (2011) and Mbiziet al. (2013) who argued that innovativeness is about developing the organization's capability to innovate. Innovativeness or readiness for innovation involves creating conditions, climate, resources and capabilities for innovation. Without the necessary resources and capabilities innovation is difficult to achieve, even if the organization is committed to realize its innovation dream. Garcia and Calantone (2002, p. 113) argued that ''propensity for innovation'' is important condition, while Lumpkin and Dess (1996, p. 142) argued that ''willingness for innovation'' is an important condition for innovation to take place. Baregeheh et al. (2009) opined that innovativeness is often mixed up with measures of innovation. Innovativeness or readiness for innovation is formative measure that promotes innovation, while the measures of innovation are reflective measures, which can be utilized in development of quantitative scales of innovation. The six formative measures included in this study for readiness for innovation factor revolved around creating an organizational climate where ideas are encouraged, recognized and rewarded, resources and capabilities are created through external partnership and creation of new venture units. On the other hand, reflective measures of innovation at the second order revolved around radical and incremental innovation degree and frequency which is evident in the market.

Measures of radical innovation at the first order included radical new products and services, development of radical technologies (Vaughan, 2013), creation of new target market, changes in customer and competitive behaviour (Jansen et al. 2006 and Norman and Verganti, 2014). Radical innovation focuses on competency destroying and not letting firms slip into comfort zones. Existing competencies may be beneficial to firm in the short run, but in the long run these competencies can in fact become core rigidities. Radical innovation is more associated with degree and impact rather than frequency. Since incremental innovation requires lower research and development intensity, incremental innovation is more frequent than radical innovation. Banu and Grant (2011) pointed out that radical innovation requires higher research and development intensity and is more risky and hence have lower frequencies.

Measures of incremental innovation degree at the first order revolved around modifications and improvement in existing products and services, listening to customer feedback (Martin, 2011), satisfying existing customers (Arnold et al, 2011) and penetration of existing target markets (Ashish et al, 2009). While radical innovation was competency destroying, incremental innovation is competency enhancing so that continuous improvements can take place. Therefore, incremental innovation frequency become important. Chen and Bau-Guang

(2012) had emphasised the need for measuring frequency of innovation, which accumulated over a period of time, can provide firms with competitive advantage.

CONCLUSION

The findings of this study is based on sound empirical evidence and contributes to better understanding of formative and reflective measures of innovation. Innovation in corporate firms is very important not only for competitive advantage but also for its survival. Academicians, researchers and practitioners should have a better understanding of innovation measures so that the resources, capabilities and organizational climate can be aligned with its innovation goals which may be targeted either towards radical and incremental innovation. It is implied that resources, capabilities and organizational climate for radical innovation will be different, than for incremental innovation. Readiness for innovation can be either for radical or incremental innovation. There is further debate in the literature, but beyond the scope of this study, to discuss the interactions between the two types of innovation measures. However, it is important to note that the conditions of 'readiness for innovation' must be created before innovation is expected. The measures of incremental innovation were opposite to measures for radical innovation as both try to leverage on different philosophies. While radical innovation is disruptive, incremental innovation is sustaining. A better understanding of both formative and reflective measures of innovation can help firms to understand and implement innovation strategies in their firms. The abstract and many faces of innovation can be better understood through the findings of this study and it is expected that this study has in many ways improved the understanding of measures of innovation construct. However, the study has its limitations. The sample represents wide variety of sectors, but every sector could not be included in the study. Further, qualitative and in-depth investigations could not be conducted in this study, which could have further clarified the measures with more contextual understanding of the measures. These are therefore, future research directions. At the same time, these hypotheses and the research model can be tested in different research settings so that both generalisability and transferability of the findings can be established and enhanced.

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Appendix 1: Results of EFA

Pattern Matrix[a]

	Component			
	1	2	3	4
EORI1			.669	
EORI2			.778	
EORI3			.697	
EORI4			.686	
EORI5			.657	
EORI6			.646	
III1		.731		
III2		.857		
III3		.787		
III6		.675		
III7		.716		
IIF3				.559
IIF5				.763
IIF6				.782
IIR3	.728			
IIR4	.751			
IIR5	.798			
IIR6	.774			
RIF1	.731			
RIF2	.752			
RIF3	.759			
RIF4	.768			
RIF5	.824			

Extraction Method: Principal Component Analysis.

Rotation Method: Promax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

Appendix 2: Description of Measures

Readiness for Innovation

RTI2	An organizational culture of creativity and innovation is evident
RTI2	The leaders in my organization actively seeks and rewards innovative ideas
RTI3	We get time for learning and innovation
RTI4	new competencies are developed in my organization even if the existing ones are effective
RT5	Venture units in my organization are focused on development of new products and services
RTI6	My organization is open to sourcing of ideas from shared forums and professional groups

Radical Innovation Degree and Frequency

RID1	My organization finds and develops new target markets
RIF1	The frequency with which my organization has found or created new target markets has been higher over the last two years
RID2	My organization continuously shapes and modifies customer behaviours
RIF2	The frequency with which my organization has influenced customers' behaviours has been higher over the last two years
RID3	My organization introduces new products, services and processes, which are radically different from existing products and services in the market
RIF3	The frequency of introduction of radically different product and services in my organization has been higher over the last two years
RID4	My organization has utilized radically new technologies in our products, services and processes
RIF4	The number of times my organization has utilized latest technologies in our products, services and processes has been higher over last two years
RID5	My organization has been able to change the industry dynamics through its new product/ service

Incremental Innovation Degree and Frequency

IID1	My organization has considerably penetrated the markets in which it operates
IIF1	The frequency with which my organization has penetrated existing target markets has been higher over the last two years
IID2	My organization continuously removes deficiencies from products and services
IIF2	The frequency of product and/or service improvements in my organization has been higher over the last two years
IID3	The innovation in my organization is aimed at retaining existing customers
IID4	My organization makes improvements to the operational processes
IIF3	The frequency with which my organization has met the demands of its customers has been higher over the last two years
IID5	My organization takes feedback from customers and suppliers to understand industry trends

Archives of Business Research – Vol.5, No.2
Publication Date: February. 25, 2017
DOI: 10.14738/abr.52.2685.
Mustapha, M. I. (2017). Identifying Factors That Impact Virtual Teams. *Archives of Business Research, 5*(2), 14-19

Identifying Factors That Impact Virtual Teams

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Abstract
In our modern age of globalization, organizations are forced to explore several means of increasing performance, by using technology in the most efficient ways. The speed and agility of technology have caused the materialization of Virtual Teams. The following literature review attempts to cover various identifying factors that impact virtual teams. Factors such as Leadership and Management Styles, Multiculturalism, Communication, Conflict resolution, and Trust. Studies showed that effective leadership would help to facilitate an easier workflow. This included leaders that understood the significant effects of multiculturalism on team cohesiveness. The literature gives a clear understanding of how communication if not properly managed can lead to conflict in virtual teams. The literature reported on the investigation of the impact of conflict resolution on virtual teams and how trust must be built to encourage high work performance. Though several studies on the dynamic nature of virtual teams were insightful, many contained limited solution on conflict resolution. This study concludes with the possibility of future investigation and hopes that more studies would soon emerge.

KeyWords: Conflict Resolution, Virtual Teams, Multiculturalism, Cross Cultural Teams.

INTRODUCTION

Crossing through regional boundaries is the phenomenon known as Virtual teams. These are teams that are created either for short-term projects or long-term projects. Huang [1] opined that 50% of companies with larger than 5,000 employees use virtual teams. These were teams that were believed to have a long-standing history of co-ordination routine. These comprised of highly skilled personnel who were specialized in different areas and had being brought together via technology for a common goal. While the advantages of the virtual teams are of efficiency and speedy production, it is equally important for an organization to identify the different factors that impact the performance of such teams (Bergiel, B, Belgiel E, & Balsmiere [2]. These include and the effect of leadership style and management qualities, the role of multiculturalism on team synergy, how communication affects team performance, the impact of conflict resolution on team members and trust and awareness among virtual team members. Huang [1] suggested that unlike face to face teams, virtual teams lacked the personal touch that might bring about trust. Managers are expected to be first respondents in such teams and their ability to transform the team is very important. To compete in a fast-paced economy, many companies have resorted to using this medium because it incorporates the new wave of technology with physiological aspects of work processes and functionality. Teams were gathered together across geographical, regional, national, culture, language, and time. This too can create a more pronounced cultural diversity and multiculturalism that affects communication and therefore performance. When communication lines become blurred, an organization must determine the most skillful way to resolve this problem and bring trust back into the team.

Leadership and Management of virtual teams

A recent study by Huang [1] showed that trust was a key factor in team motivation. Trust worthy leaders often were the leaders who had the ability to perform the task with integrity and were able to maintain a friendship environment. The transformational leader often excelled in such environment because they knew how to integrate workers and properly share the goals and objectives of the organization. According to Bergiel, et al. [2], strong leadership was important in virtual teams because a leader had to be focused, determined and trustworthy. Henry & Hartzler [3] opined that a leader must have the ability to understand the team and have knowledge in the task and activities of the team. A manager must not accept incompetence and poor output. Such behaviors must be addressed, and plausible causes must be investigated. A leader must be able to maintain a proper monitoring and periodic evaluation of team members. Furthermore, a leader must have the ability to create a forum for the unification of ideas and just like a face to face team the goals must be specific, measurable, achievable, relevant and timely. It is stated in the article by Horwitz & Bravington [4], that leading virtual teams can pose several difficulties, but as the team progresses and mature a leader must be capable of transitioning from an advocate to a catalyst and then to an integrator. A leader should have great knowledge of the subject matter, and they must make sure that the necessary tools for performance are available to the team. Leaders should also develop habits that go with a great value system. Evans & Lindsey [5] intimated that leadership that fostered legal and ethical behaviors and place emphasis on management and fiscal accountability are, more likely than not to attract followers that will embrace their ideas. One of the challenges of leadership is developing the appropriate recruiting and selection methods for virtual teams [4]

The impact of multiculturalism on Virtual teams

As leaders strive to enhance team performance, they are often faced with the role of multiculturalism that exist within virtual teams. The fact that technology is used to connect people from different parts of the world creates a possibility that teams will be culturally diverse. [6] Such cultural diversity includes norms, values, perception and cognitiveness [7] in the study of the effects of cultural diversity on work teams by Staples & Zhao [6] the effect of cultural diversity was compared to face to face teams using heterogeneous groups. The study concluded found that heterogeneous groups were less satisfied and more cohesive and had more conflict than homogeneous groups. Whereas in face to face teams homogenous groups performed better. The paradox of being more cohesive yet less satisfied was buttressed by Glikson & Erez [7], in their article “Emotional display norms in virtual teams” The article stated that negative emotions in heterogeneous teams were often repressed due to different cultural norms while positive emotions were often expressed. Furthermore often a misinterpretation of norms as a result of diversity was a matter of concern. An international venture survey, where French managers were asked to comment on Americans gave an interesting feedback. Their responses showed that often time’s norms were misinterpreted as being difficult, and not welcoming of the ideas of others.[8] It was noted that workers who possessed a high measure of global identity demonstrated greater agreement on display norms for multiculturalism.

The impact of communication on virtual teams

While some have argued that virtual teams enable an organization to achieve faster time for producing rapid work, with processes integration despite the geographical difference; others believed that there are some inherent factors that can negatively impact the team performance [4]. In the article by Jang [9], the facilitation of trust in teams was crucial to effective communication. The concluded that the more team members communicated, the greater the team awareness and the perceived interdependence and the greater the level of trust. In face to face teams, location is a common denominator. Shared language and culture can minimize the effects of misunderstanding. Virtual teams were noted to be agile in the dissemination of information because it was invisible. However, the lack of physical contribution may lead to awareness factors such as informal encounters and therefore spontaneous connection becomes absent. This attribute when present in face to face teams allows for the proper dissemination of information and easy workflow [10]. It is important to employ several strategies at the crucial stages of team development to enhance communication. Further consideration was given to the developmental phase of virtual teams. The reason was that the formation stages of the team would set the tone for the subsequent stages: Bergiel et al. [2] gave the following possible recommendation to maximize the effects of communication on virtual teams;

1. Moving to electronic communication after a face to face meeting might help.
2. Objective must be clear and easy to implement
3. Allow members to become acquainted
4. Make sure the tools necessary for production are available
5. Maintaining a consistency on how agreements are made is also relevant

It is significantly noted that there are many idiosyncrasies that are prevalent in different cultures. This is why a clear means of communication is necessary. What one person thinks is a norm might not be suitable for a team where diversity exists. The technology used should include voice projection and visuals such as video conferences. This could add a personal touch to the team. [2]

Many researchers believed that it is important for an organization to align different task with different technological functions order to obtain performance efficiency and this was parallel to the idea that coordinating different task to applicable virtual teams. Not every team will perform well under the same conditions [10]

Dealing with Conflict Resolution in virtual teams

The expectations of virtual team members across different time zones and the crossing of those zones can be quite a hassle. Language barriers can pose a big threat because more often multicultural teams experience a gap in understanding. Different culture has their individual norms, and these norms are what makes up their identity. When their values are no longer aligned with their external environment, it creates total misunderstanding. A gap in understanding can generate conflict or disagreement within work teams. Conflict resolution, therefore, is the ability to effectively manage these disagreements [2]. Managing might not be easily realized due to the lack of face to face contact because they might not be notable until a member.

Vocalizes these concerns. In the study "Getting it together: Temporal coordination and conflict management in global virtual teams," they found that the ways virtual teams manage conflict was significant to their performance. The fact that virtual teams lacked all the cues of a traditional team it was important to have a mechanism in place to manage conflicts [11]. Pazos, Ustun & DelAguila [12] contended that conflict management moderated the relationship between team commitment and goal outcome. They found that high level of goal commitment proved to be beneficial to the overall team performance. In other cases, temporal coordination was viewed as more suitable for mitigating virtual team conflict. Avoidance was found to be detrimental to virtual team performance. By avoidance, it meant a member would not want to confront another and as such prolonging the process of resolution. Further analysis proved that a more cohesive structure that encouraged the cycling of work between team members and the continuous flow of information on decisions made created a more synergetic environment for the virtual team [10]. This brings one to the notion of human emotions when dealing with virtual teams. The fact that people are not in physical contact does not mean that their work is emotionless. A partner can be unresponsive due to unresolved issues thereby hindering the process for another member of the same team. It is also believed that accountability can be a great way to amend the situation by making sure that members are forced to interact in a loop, and each one in the loop was responsible for the others.

Trust and Awareness within virtual teams

Human nature is one that is in a constant conflict with its values and beliefs. There is the need for affiliation which cannot be negated by the need for uniqueness. Rather these two psychological aspects of our lives must complement each other [8]. It was found that in virtual teams trust must be present for the success of performance measures. The more a team communicated, the greater the team awareness of who its members were and the values that they might share in common. This is a prerequisite for interdependence and a catalyst for trust [9]. Trust can be realized in different forms. It could be trusted for team members; it could be trusted for organizations goals and trust for leadership. A leader that is transparent and possess the power to motivate and empower their members to build trust in their teams, and it is with this they can effectively move the team through different phases of their projects. When there is trust, there is respect for values and consideration for others. The misunderstanding that is prevalent in multiculturalism will be alleviated when team's members trust the shared ideas of their counterparts. Researchers contend that it is important not to be too judgmental of others but to be more understanding of our differences and uniqueness [13]. Some researchers proposed recommendations that included; making sure leaders enlist the help of experts who specialize in team development. A complete cultural identity profile is important because it allows virtual team members into the lives of their colleagues and partners all over the globe. An article by King [14] touched on the power of intent to create a trustworthy environment. The onus is on leaders to investigate their virtual communication teams to see what level of trust exist within them. It is equally as important to galvanize the team and develop programs that would

Encourage trust. This is the only way proper communication can exist, thereby increasing performance levels.

CONCLUSION

The literature review has established a series of facts on the factors that impact virtually teams and each of these is equally important, however, communication is the key to information and how work processes can proceed without the impact of the other factors reviewed. Other factors such as leadership management, trust, multiculturalism, conflict resolution are centered in the fabric of communication. We established that virtual teams are teams that comprises not only of individuals from all aspects of life but also from different geographical regions and cultural backgrounds. The fact that their location is different in itself poses a threat to synergy. As opposed to face to face teams, virtual teams lack the ability to have a fair judgment of their fellow team members and lack the human aspect of a traditional work life. We must keep in mind that because there is no personal touch does not mean that they are emotionless. Very often the virtual team is treated as an automated, and this might be the reason such teams might harbor conflict for a considerable amount of time. Conflict vary in forms such as work habits and not necessary goal conflict. Some researcher observing virtual teams had noticed that while the team members had a different way to reach a goal they somehow get a common sense of accomplishment when the goals were achieved. It is important to note that issue will arise even in a face to face team, leaders play a significant role in how such issues are managed. The leaders who adopt the transformation style of leadership are effective in redirecting the team to the goals and objectives of the projects. They are often motivational and have the capability to not only advocate but also integrate the teams for better performance. The leaders must be trust worthy and understand how to influence the team to adopt a trust mantra. When communication is broken, people tend to withdraw into a more non-responsive mode because trust is then perceived as unachievable. A leader must investigate the differences between team members such as cultural differences in beliefs and core values. This can be a major problem if members of the virtual team feel that they are being disrespected. Many people, rather than try to understand others, they might judge by their ignorance. Virtual teams should effectively use technological means such as audio and video conferences to add some human aspects to the work process. Furthermore, diversity in teams is very effective because its evidence of a collaboration of people from all works of life with varying skill that if correctly aligned with the right task can produce a level of high performance. Finally, the factors that impact virtual teams, if properly managed can produce a high level of performance which will give rise to a competitive advantage in this rapid global economy.

FURTHER RESEARCH

1. Further investigation can yield more insight into the different types of technology and how virtual teams adapt to change in technology.
2. The impact of Conflict resolution can be explored me more details to determine what types of management style can limit such conflict and steps to managing them.
3. The human aspect of virtual teams and how to incorporate that into the work process, by creating awareness.
4. Building trust where there is value conflict or cultural dissonance.

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Archives of Business Research – Vol.5, No.2
Publication Date: February. 25, 2017
DOI: 10.14738/abr.52.2699.
Hunter, R. J. (2017). Charting a New Path for Poland or Turning Its Back On More Than a Quarter Century of Progress? *Archives of Business Research, 5(*2), 20-30

Charting a New Path for Poland or Turning Its Back On More Than a Quarter Century of Progress?

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ABSTRACT

The paper analyzes the Morawiecki Plan for the Polish economy in light of its emphasis on encouraging domestic, rather than foreign, development in Poland. It discusses the critique of the current government relating to foreign ownership of assets in Poland and what the government intends to do about reversing this trend from both historical and practical perspectives. The paper includes both positive and negative assessments of these proposed changes in policy and emphasis.

KEYWORDS: Balcerowicz Plan; Foreign Direct Investment; Incentives; Morawiecki Plan

INTRODUCTION

From the perspective of nearly twenty-eight years, it is now possible to state with certainty that despite a "propaganda of success" trumpeted by adherents to the former system of central planning (also called the command-rationing method or CRM), the economy of Poland had literally imploded by 1988-1989 because of a combination of four interrelated factors, which Hunter and Ryan (2006) have termed the "Grand Failures" of the communist system as it existed in Poland. These factors included:

- Failure to create economic value or to improve the standard of living for the average Pole;
- Failure to provide adequate individual and organizational incentives;
- Failure to "measure up" to comparative economies, not only those capitalist economies in the West, but also several "fraternal" socialist economies in Central and Eastern Europe (most notably, Hungary, Czechoslovakia, and Slovenia—then a part of Yugoslavia); and
- Failure to satisfy basic consumer needs, essentially creating an unofficial dollarization of the Polish economy through the existence of a large, open, semi-official, and surprisingly efficient black market, and the existence of official "dollar" stores and foreign currency shops. (Adapted from Hunter & Ryan, 2006, p. 73).

Since transitioning from communism in 1989, Poland's young, skilled, and low-cost workforce, coupled with political stability and business-friendly policies, has appealed to an array of foreign investors. The initial changes in the Polish economy which created an investor friendly atmosphere were largely accomplished under the aegis of the *Balcerowicz Plan* (Garland, 2015)—named for the Deputy Prime Minister and Minister of Finance in the first post-communist government led by Prime Minister Tadeusz Mazowiecki. (Sachs, 1993a; Hunter & Ryan, 2009).

The Balcerowicz Plan

Early in the transformation process, Minister Balcerowicz and team of advisors, led by American economist Jeffrey Sachs, decided on a reform strategy that would be based on two overriding considerations: *A market economy was preferred over a centrally planned economy and a private market economy was preferred over so-called "market socialism."* In addition, Minister Balcerowicz decided upon a policy of implementation termed "shock therapy" where political and economic changes would be effected in a short period of time. (Murrell, 2013).

As result, the largely successful process of economic transformation in Poland has been quite instructive and has provided a more general model for other "transition economies"—although it has not escaped criticisms which have argued that the program has favored "foreign" over "Polish" national interests.

The program conceived by Minister Balcerowicz was based on what are known as the "*five pillars of economic transformation.*" These included:

1. Rapid transformation of the failed monocentric system of state central planning (Kaminski, 1991) into a private functioning market economy;
2. Liberalization of economic functions, especially in relation to foreign trade and foreign direct investment;
3. Privatization of state-owned enterprises (SOEs) (Sachs, 1993b);
4. Construction of an effective social safety net; and
5. Mobilization of international financial assistance (especially from the World Bank and the International Monetary Fund) to support the process. (Generally Balcerowicz, 1995; Hunter & Ryan, 2008; Hunter & Ryan, 2009).

As noted by Johnson and Loveman (1995) in the *Harvard Business Review*, the program was intended to:

"... stabilize the macroeconomy and to create the conditions necessary for privatization, enterprise restructuring, and the development of an institutional system compatible with a market economy. Because of the speed and scope of the reforms, the impact on Polish markets and enterprises was immediate and profound. Remarkably, the main goals of the program, widely known as "shock therapy," were achieved within a few months."

THE RESULTS

It is undoubtedly true that Poland's economy has seen tremendous growth over the past 25 years – much higher than anyone could have imagined. While the European Union's average growth rate has been .6% since 2007, Poland's economy grew an impressive 24%. (United States Department of State, 2015). Poland was the only EU nation that managed to avoid a recession (and actually continued to grow) during the 2008-2009 financial crisis despite surrounding neighbors' tanking economies. (Generally, Orenstein, 2014).

The following are selected economic data relating to the current economic situation in Poland:

Population of Poland	38,630,868 (01/16/2017)
GDP Growth (Constant Prices, National Currency)	3.571%
GDP (Current Prices, US Dollars)	$473.501 Billion
GDP Per Capita (Current Prices, US Dollars)	$12,459.59
GDP (PPP) (US Dollars)	$1,051.56 Billion

Inflation (Average Consumer Price Change %)	-.238 to -.05
Unemployment rate (% of the Labor Force)	8.2% to 8.6%
Industrial Production	4.8%
Stock Market	-9.6%
Public Debt as a % of GDP	51.3%
Trade Balance (Euro)	2.1 Billion

(FocusEconomics, 2017).

But do these figures tell the whole truth? Skeptics contend that the unemployment rate is not completely accurate, as 850,000 Poles (mainly youth) are living and working in the United Kingdom and more than 1.15 million additional Poles are living and working throughout the European Union, skewing the real rate of unemployment. (Burrell, 2009/2016).

In addition, many observers point out that there have been grave negative consequences for Polish society. The 2015 *Corruption Perceptions Index* ranked Poland 30/168 and gave it a score of 62/100 (the closer the score is to 100 the *cleaner* and less corrupt the country is). (Transparency International, 2016). The majority of corruption occurs in the public services and public procurement sectors. As Business Anti-Corruption reported: "Poland's Criminal Code offenses include active and passive bribery of foreign officials, extortion and money laundering. However, the government does not prosecute these offenses effectively, and officials engage in corruption with impunity." (Business Anti-Corruption, 2016). The *Poland Country Profile* further notes that despite "facilitation payments and gifts being criminalized, these practices are widespread." (Business Anti-Corruption, 2016). (Generally Hunter & Mest, 2015; Hunter and Domanska, 2016).

Corruption and bribery were perceived by many Polish voters as unacceptable results of the transition that could have been anticipated because of the manner in which successive Polish governments, following the general outlines of the Balcerowicz Plan, had conducted "business as usual" to the detriment of the average Pole. (Generally, Heywood & Meyer-Sahling, 2013).

ATTRACTING FOREIGN DIRECT INVESTMENT

For countries with depressed or non-functioning economies, little capital, and high unemployment rates such a Poland, Foreign Direct Investment (FDI) was seen as the literal "economic savior" and an attempt to answer a fundamental question: *How do you create capitalism in a country where you can find neither capital nor capitalists?* The answer, of course, was to attract foreign capital, foreign investors, and foreign ownership into Poland. That perspective became the guiding objective of much of Poland's economic planning, as well as sparking changes in the Polish legal system that made it possible for "foreigners" to become owners of Polish enterprises, real property, and businesses. (Hunter, Nowak & Ryan, 1995).

FDI can be a mutually beneficial way of stimulating the economy and job market in a recipient nation, often by carefully targeting select economic sectors. (Hunter & Ryan, 2013). FDI encourages the inflow of new technology, products, capital, and potential opportunities and for collaboration with local businesses that would otherwise not be possible. Heimann (2001, pp. 8-11) is even more direct in a seminal study of tax incentives relating to foreign direct investment in Poland. She stressed the importance of Foreign Direct Investment in Poland and noted that foreign capital can facilitate the restructuring of industry through:

- Attraction of incremental investment capital,
- Enhanced access to Western markets,

- Access to advanced management techniques,
- Access to advanced management techniques,
- Access to advanced technologies, which stimulates technological adaptation and innovation and that leads to faster economic growth, and
- Facilitation of privatization and restructuring of the economy.

Poland's track record in terms of attracting FDI has been, in fact, quite impressive. (Jasiniak, 2015). The Polish Information and Foreign Investment Agency (PAIiIZ) reported that the aggregate of FDI had reached 159 billion euro at the end of 2015. Those who invested in Poland were especially drawn to the aerospace, automotive, biotechnology, business support services, domestic appliances, electronics, food processing, IT, renewable energy, and research and development sectors (PAIiIZ, 2016). The manufacturing sector (37%) and financial intermediation (25.3%) attracted well over 60% of FDI into Poland.
According to PAIiIZ (2016):

- The pool of foreign investors in Poland amounted to 26,464 firms.
- Among new firms created in 2014 there were 1,104 new *greenfield* projects.
- The great share of investments was in activities related to education (9.2%), in culture, entertainment and recreation (7.7%,) and in information and communication (6.0%).
- Foreign capital in companies where its value exceeded $1 million in aggregate amounted to 96.5% of foreign capital invested in Poland.
- Foreign capital located in Poland in 2014 originated from 125 countries. European Union and the OECD countries originated 89.7% and 93.9% of foreign capital respectively.
- At the end of 2014 there were 1,748.700 persons employed in companies with foreign capital—fully 7.3% more than in the previous year. These perspns were employed mainly in manufacturing (45.8% of all employed) and trade and repair of cars (23.3%).

In terms of FDI inflows by country of origin, a list of the main countries who invested in Poland in 2014 included:

- Germany (17.1%);
- Netherlands (16.1%);
- France (11.9%);
- Luxembourg (9.6%);
- Spain (6.5%);
- Italy (5.8%);
- USA (4.3%);
- Austria (4.0%); and
- Cyprus (3.8%).

(OECD, 2014).
Santander Trade (2016) reported that the "strong points" for investing in Poland included:
"A fast-growing economy, a location in central Europe, a multilingual and skilled workforce whose productivity is rising rapidly and cheap labor costs make Poland an internationally attractive country. Poland also enjoys a well-managed economy, which was able to withstand the crisis better than other European countries. Unlike other Central European countries, its population did not have to resort to loans in foreign countries, in particular Swiss loans, a fact which has protected the population from maximum debt." (Santandertrade.com, 2016).

Have All of the Results Relating to FDI Been Positive For Poland?
From 1989 through 2015, successive Polish governments "more or less" followed policies which tracked the basic philosophy that Minister Balcerowicz had laid down in the early days of the transition. However, a fundamental change occurred with the Presidential and

Parliamentary elections which took place in 2015. Criticisms were raised relating to several of the fundamental assumptions of the transition itself that related to the participation of foreigners and foreign capital in the Polish economy.

The *Sarmatian Review* (2016) encapsulated many of these criticisms and reported the following negative aspects of foreign investment in Poland:

- The percentage of factories engaged in manufacturing in Poland owned by foreign entities in 2016 reached more than 50%;
- More than 60% of Poland's banks were at one time foreign owned—although the ratio is now nearer to 50/50;
- 90 billion zlotys (or about 25 billion dollars) are transferred from Poland "abroad" each year because of the structure of ownership of Polish enterprises.

There are several other negatives as well. (Connectusfund, 2015). Critics argue that one of the main reasons Poland had experienced so much growth in the private sector through FDI could be attributed to the tax incentives associated with FDI offered by successive Polish governments. In addition to generous tax exemptions and grants, the Corporate Income Tax (CIT) rate was reduced from 40% in 1991 to 19% in 2004 and was further reduced to 15% for small businesses in 2016. (Trading Economics, 2016; Zygulski, 2017). These incentives offered to foreign investors ironically removed much needed revenues from the domestic economy that would be necessary to affect reforms and assure the viability of Poland's troubled and underfunded social safety net. (BMI Research, 2017).

Enter the PiS

With this backdrop, the new Polish government, now under the direction of Law and Justice (PiS), which gained control of both the Polish Presidency and Parliament in 2015, launched a program specifically designed to "regain control and revitalize the country's economy which has long been plagued by foreign domination...." (Strybel, 2017, p. 2).

PiS has long held that the changes that had occurred in Poland since 1989, and most especially those carried out under the Balcerowicz Plan, had done little to return economic sovereignty to Poland following 123 years of foreign Partition, a difficult interwar period, and nearly 45 years of "communist misrule and mismanagement." (Strybel, 2017).

The criticism was direct and pointed. Instead of concentrating on rebuilding Poland's economic base *from within* by restructuring and revitalizing Poland's industrial base, the PiS argued that successive Polish governments in the twenty five years after 1989 essentially engaged in a program of selling off important Polish assets—often for a quick infusion of cash which was used to bolster Poland's budget. (Strybel, 2017). This strategy was accomplished in a process known as *privatization*, which along with economic *stabilization*, were the two cornerstones of Poland's economic policies begun in 1989. (Jermakowicz, 2001).

Critics argued that the initial push towards removing state control of the economy, now known derisively as "spontaneous privatization," was often no more than the theft of public assets, accomplished through "crony capitalism," as well as clear incidents of insider trading, which favored members of the former *nomenklatura*, Poland's discredited communist bureaucratic class. (Hunter & Ryan, 1998, p. 112).

Critics also pointed out that in the past quarter century, some of Poland former "banner" state-owned-industries (or SOEs) such as mines, Baltic ship building facilities (the former Lenin Ship

Yard in Gdansk, for example), steel making facilities (Nowa Huta) were closed or employment significantly scaled back when the government failed to directly intervene in their deteriorating finances or was unable to procure a foreign buyer willing to invest the sums necessary to modernize operations in order to assure that the businesses would remain open. As a result, tens of thousands of Polish workers became permanently unemployed. At the same time, the economy became dominated by foreign-owned banks, retail giants, and assembly plants controlled by foreigners, which in turn funneled most of their profits abroad to the benefit of foreign investors.

Robert Strybel (2017, writing in the *Polish American Journal*, provided several examples which include Wyborowa (vodka/owned by Pernod/France), Zywiec (beer/owned by Heineken/The Netherlands), Okocim (beer/owned by Carlsberg/Denmark), Wedel (confectionary and chocolates/owned by Lotte Group/Korea), Pudliszki (food stuffs, tomato ketchup/owned by Kraft-Heinz, US/multinational), Amino (food products/soups/owned by Unilever/British/Dutch) and Winiary (food processing/owned by Nestle/Switzerland). The last Polish car make, the Polonez hatchback, disappeared in 2002. Most surprisingly (and perhaps disappointingly), Krakus brand canned hams (exports of which were the major source of cash into the Polish economy in the 1960's through the 1980's) is now owned by China's WH group, the world's largest producer of pork.

The PiS critique is both philosophical and practical. On policy grounds, PiS is strongly opposed to what it calls Poland's current "neocolonial status" which offers foreign companies a comparative advantage through cheap manpower, lower labor costs than Western European economies, and low cost assembly plant sites—many heavily subsidized indirectly through tax abatements and concessions, entry concessions, R&D Grants, and other short term incentives-all at the expense of Polish society. (U.S. Department of State, 2013).

The Morawiecki Plan

The new strategy is embodied in the *Morawiecki Plan,* named for Deputy Prime Minister Mateusz Morawiecki. It represents sharp and concerted departure from the approach of the Balcerowicz Plan. In a pointed critique of the free market liberalism that has guided Poland since its movement away from its central planning past, Morawiecki noted: “We have been in this [economic] model for 27 years. We have reached the trap of dependent development. To a huge extent we are dependent on foreigners.” (Foy, 2016).

Interestingly, Morawiecki is no stranger to issues relating to foreign ownership of Polish assets. Morawiecki resigned as CEO of a Polish subsidiary of a Spanish-owned bank (Santander) where he had worked for eight years in order to accept the position the leader of both development and finance in the government. Morawiecki has assumed responsibility for industrial development, the budget, the continued infusion of European Union funds, and overall economic policy—holding positions of responsibility not seen since those exercised by Minister Balcerowicz in the initial period of transformation.

Morawiecki has made it clear that is not a believer in Polish autarchy or in isolating Poland from foreign investors. However, he has indicated his preference for attracting foreign investors who will bring with their cash investments advanced industrial technologies so that Poland is not regarded, as many do China, as the home of a "dollar shop" manufactured goods.

The key objective of the Morawiecki Plan is to boost Poland’s internal investment rate to 25 per cent of GDP. The strategy is based upon alleviating “risks” to long-range growth which the government has identified as “falling into the middle income trap, lack of balance (excessive foreign involvement in the Polish economy), insufficient investment of businesses, unfavorable demographic trends and weak institutions (low VAT and CIT collection rates, lack of coordination of public policies." (Borowski & Jaworski, 2016).

These risks are to be resolved through activities described as Morawiecki's "*five pillars of economic development of Poland*":

- "Reindustrialization – i.e. focusing on industries in which Poland can gain competitive advantage and attract foreign investment.
- Development of innovative companies, which involves, among others, drawing up a Business Constitution to simplify regulations, helping develop and launch innovative products, and higher spending on research and development.
- Capital for development – aiming for a significant increase in capital expenditure, and an improved efficiency of institutions supporting investment; the establishment of the Polish Development Fund.
- Foreign expansion – support for Polish exports aimed at new markets, conducting foreign trade missions and developing a network of economic diplomacy posts.
- Social and regional development - a proposal of a comprehensive demographic program, the reform of the education system and support for the development of Polish regions." (Borowski & Jaworski, 2016).

As described by Borowski and Jaworski (2016), the plan delineates several policy objectives to be met by the year 2020. These include an increase in both industrial output and Polish exports at a faster pace than expected GDP growth; a rise in spending for Research and Development activities to 2 per cent of GDP; a reduction in the current at-risk-of-poverty rate below 15.5 per cent of the population; and an increase in per capita GDP to 79 per cent of the EU average by that date as well. In the assessment of Borowski and Jaworski (2016), "the key objective of the program is to raise the investment rate (capital expenditure in relation to GDP) to 25 per cent from the 20 per cent observed in 2015."

The government has stated it would set aside 1 trillion zlotys ($252.58 billion) available to boost investments, "a figure that was already criticized by economists as unrealistic." It should be noted that this amount includes 500 billion zlotys from anticipated European Union funds, expected loans from international institutions, and an infusion of private investments. (Financial Times, 2016).

In addition, Minister Morawiecki has been urging the creation of a "new spirit of Polish entrepreneurship" with an emphasis on fostering opportunities in economic sectors (both goods and services) that would be export sensitive, the creation of new Polish brands ("Polish Champions") which could compete worldwide with high-quality recognizable products, and which would assure the return of many of Poland's "best and brightest" who had emigrated in the search of economic opportunity in Western Europe, the United Kingdom, and the United States. (Strybel, 2017).

In order to facilitate private entrepreneurship, Morawiecki has promised to slash red tape and other bureaucratic interference with creating Polish businesses (Poland ranks 24th in the World Bank's "doing business" survey (World Bank, 2016)—surprisingly with Krakow, Warsaw, and Gdansk *at the bottom* of the list), reduce waiting period for registrations of new businesses, streamline licensing and permit requirements, and reduce unnecessary government inspections that slow down the opening of business operations.

The Morawiecki Plan has been termed *Polonization* (or re-Polonization) which will include buying back businesses previously privatized. However, where the funds will come from to accomplish this objective remains to be seen. Poland is still a country that "lacks capital," although no longer "capitalists." A policy announced by the government under which a tax on large, mainly foreign-owned retail chains and banks has been questioned by the European Union. (Martewicz & Krasuski, 2016; Foy, 2016). The tax on banks not meeting its expected target of 5.5 billion zl. and instead was projected to raise only 3 billion zl. in revenue. The tax on large retailers was questioned on grounds that it amounted to "unacceptable state aid for small [Polish enterprises" and had to be shelved until 2018. (Zygulski, 2016/2017).

SOME BRIEF CONCLUDING COMMENTS

In 2014, *Bloomberg.com* had named Poland the "best country" in Eastern Europe and Central Asia with which to do business. (Bloomberg, 2014; Skolimowski, 2014). Just a year later, the election results for both the Presidency (BBC.com, 2015) and the Parliament (Sejm), which resulted in a fundamental change in both policy and tactics, were not viewed with unanimous approval either within Poland (Reuters, 2016) or within the broader European Union. Many have concluded that the sixth largest economy in Europe is now faced with major challenges posed within its own borders.

Since the conservative, religious, right-oriented political party PiS came to power in the fall of 2015, many believe that Poland has slowly begun transitioning from Europe's "poster child" of success of post-communist nations to Europe's potential "problem child." (Hunter & Domanska, 2016). The political changes that the new government has undertaken during its short time in office have shaken the confidence of many foreign investors. Critics cite proposals to limit rights of free assembly; attempts to pass legislation banning abortion under almost any circumstances and criminalizing abortions by providing for prison sentences for women who decide to terminate "non-threatening pregnancies (but is likely to "come up with other anti-abortion initiatives under pressure from the country's powerful Roman Catholic Church (Zygulski, 2016/2017)); limiting press access (Day, 2016) while disallowing video and sound recording on the premises of the Parliament; enacting a new media law (BBC.com, 2016a); and replacing judges on Poland's Constitutional Tribunal (BBC.com, 2016b; Business Recorder, 2016), creating a constitutional crisis (RT International, 2015) and "setting the party on a collision course with EU institutions and the human rights body, the Council of Europe, specifically the advisory panel known as the Vienna Commission." (Zygulski, 2016/2017).

Although unrelated to economic policy in the strictest sense, critics of the current regime fear that Poland may have gone too far in "looking inward" and to discouraging the kind of foreign participation in its economy that at least seemed to have achieved much in the past quarter century. (E.g., Casillas, 2016). They point to several undelivered promises on the part of PiS, including failure to raise the tax-free threshold for the Personal Income Tax or PIT; failure to lower the retirement age, and failure to convert Swiss franc-denominated mortgages into zlotys. (Zygulski, 2016/2017).

Not all are alarmed by recent events in Poland. (Cienski, 2016). There is a strong element of public opinion that sees these actions as essentially restoring Poland's sovereignty over its own economy and establishing the authority of the Polish state over its economic future. And PiS continues to hold the first place among Polish political parties in terms of electoral support—"reaching 40% in some surveys." (Zygulski, 2016/2017).

Which view is correct? Only time will tell!

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Please Note: The outline of this paper was jointly prepared by Professor Hunter and the late Brother Leo V. Ryan, C.S.V., who died in June of 2016. This paper is dedicated to this extraordinary educator, dean, and scholar. +

Archives of Business Research – Vol.5, No.2
Publication Date: February. 25, 2017
DOI: 10.14738/abr.52.2601.
Dalbouh, M. A. A. (2017). Applicated Pricing Strategies In Jordanian Medicine Scoter And There Effects On Customer Satisfaction (View Point Of Mangers). *Archives of Business Research, 5(*2), 31-37

Applicated Pricing Strategies in Jordanian Medicine Scoter and There Effects On Customer Satisfaction (View Point Of Mangers)

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Abstract

The aims of study to know the "applicated pricing strategies in Jordanian medicine sector and there effects on customer satisfaction "according to the perspective of the market medicine, pricing, satisfaction and its importance, it focus on a problems faced by prices, customer income, quality, performance of medicine sector. The study showed pricing strategies and there obstacles to achieve customer satisfaction and how to choose the suitable strategy for pricing the medicines and for test the relation between price and satisfaction. The medicine sector face obstacles' as working capital, cost, patent regulations', laws, customer satisfaction, a suitabl strategy and policies to achieve medicine sector objectives, there are three dimensions' for independent factors (skimming strategy , penetration strategy, expected value strategy) and customer satisfaction. The study population is consist of all companies in medicine sector (106) company in survey and analytical study, view point of managers, concluded that rapid skimming pricing strategy depend on the importance of medicine product but low skimming pricing strategy depend on promotion effort, rapid penetration pricing strategy depend on low price as an entrance for the medicine market. The study showed that: The prices were very high, the market share is low, the customer satisfaction is low the sector, improvement is costly. The study recommended the Jordanian medicine sector must be combining to meet low customer satisfaction by focus on quality, low prices, increase market share, improvement the sector, decrease the cost, reinforce the competition abilities.

Keywords: medicine sector, customer satisfaction, penetration, skimming strategy, prices.

The Study Problem

The Jordanian medicine sector face many obstacles' in the light of communications revolution, opening market's competition, low level awareness of

A: Styles of reducing the cost.
B: Knowledge of patent, innovations regulations.
C: New method of pricing.
D: How to focus on suitable pricing strategy to achieve the customer satisfaction.

METHODOLOGY OF THE STUDY

The researcher adopted the descriptive analysis approach to study the Jordanian medicine sector and apply the study on all companies (106) company, but the response for questionnaire are (81) company.

Data Collection Method

Data were collected by two ways:

Primary data: by questionnaire is adopted, judgments, distributed to the medicine sector managers to find out the extent of there satisfaction about applied pricing strategies and there effect on customer satisfaction.

Secondary data: adoption of references, periodicals, websites, researches.
Questionnaire was sent to a number of professors professionals for arbitration.

Theoretical Framework
The marketing activities need processes of continues development of harmony with the forces of the total and partial dynamic environment, interaction with rapid changes of needs, desires, preferences of customers, and for as to increase the ability of firms in Jordanian medicine sector.

The marketing research, consumer behaviors, analysis the sales, and marketing of opportunities have become necessity preceding the planning of marketing mix process or pricing process or applied strategy and developing pricing strategy for marketing product and achieving full goals of firms in medicine sector by managers view point.

Previous Studies
Ahmed Bader Al _dean (2014) "the future medicine production in Egypt. "Egypt. The study aimed to draw new policies for future production, customer needs and wants, quality, assurance, improvement the medicine, promotion styles focus on customer satisfaction. The study explain the policies and strategies which applied in medicine sector, leak of protection lows, shortage of medicine for many citizens slices, leak of research, leak of government support, low of development in technology part.

The study recommended by: react the pricing policies, cost, researches, laws, government support, promotion policy, spread the medicine coverage.

Hawary, M. Ismail (2010) "effect of information technology for achieving competitive advantage" Jordan.

The study aimed to explore the application of technology y on competitive advantage, the study applied on (14) company, view point of managers. There are effect by information technology, in decision marketing process, the best strategy y is cost leader.

The study recommended by: reduce the cost developed the performance adaptation with it developing focus on research.

Nsoor Abd Al_Hakeem (2009) "competitive performance in Jordanian medicine company" Syria

The study aimed to explore the importance of medicine sector in national economy, knowledge competitive factors, competition, secure medicine product ion of Jordanians, competition ability of competition, scales, of production, rate of reinvestment, supply and demand, roles of government.

The study recommended by increase the ability of competitive advantage, rate of the demand, focus on innovations, develop the performance, support the medicines' industry, develop the new strategies as increasing production.

Amen Jabber (2003) "effect consolidation on Jordanian medicine industry " Jordan.
The study aimed to: the effect of consolidation on medicine competition, market share of medicine in national economy, analyze the competition factors the study explore; the effect of investment by working capital, amount of production competition abilities.

The study recommended by: the Jordanian medicine industry is very good consideration suitable for ordain companies, focus on competition abilities, increase the technology expansures, increase the market share more attraction, more satisfaction.

Rahala Nassem (1997) "Jordanian medicine industry" Jordan.

The study aimed to explore the role of medicine industry in Jordan, effects of patients, equities, sales, demand of medicine, decrease the market share of medicine industry between 1975–1995, decrease labor opportunities, high prices, limitations of demand.

The study recommended by: develop the styles of production, decrease the prices, increase employee usages, focus on demand limitations, motivate the external demand, increase the market share in GDP.

Jordanian Medicine Sector

This sector has been deal with external sector in many countries (60) and cover most needs in local market, register more than (80) patent, it has (106) firm in Jordan, (18) firm outside Jordan, depend on low cost compare with external countries, its export was (600-620) million J.D yearly for 2012-2014. This sector respect the laws, regulation in Jordanian economy, share about (5%) of national economy (Global industrial committee report 2014).

The Jordanian medicine production is become a competitor in regional markets because have a good management, senseve belongingness, social responsibility, ethics, applied international criteria in production (European report 2012). This sector begin in 1962, but today has (106) firm in medicine their related, it consider the pioneer sector. In Arab world and share in industrial sector by (8%) 2004 -2010, but (75 %) from production is oriented for export.

This sector has opportunities to expansion depend on regional countries which extended the insurances converge part, increase the degree of medicine culture, increase the demand, and has about (8000) employees most of them professionals' or has a high graduated and efficiency. It try to achieve competition advantages (moalla 2014).

The Medical Production

1. Medicine
2. Consumption medical
3. Biotechnology
4. Pharmaceutical medicine
5. Veterinary drug master
6. Medical supplies
7. Reagents , solutions

The Marketing Strategies

In whole the strategy is plan, tool, way, manner of application to saturate customer needs, wants, preferences and achieving the firms goals to exist, continuous, growth (kilter 2006).

Pricing Strategies

Its the operation which determine the prices depend on plan, tool, way, manner applicated to achieves the goals of firms by satisfying the customer needs, wants and save the firms sustainable. How we will achieve the medicine acceptance, we ought to motivate the customer in target market and focus on competition abilities (moalla 2007). That we know the prices is what paid instead of acquisition any thing with main request to achieve revenues.

STRATEGIES KINDS

Skimming Strategies

They are two strategy in this kind it depend on launching medicine production in high prices to achieve a big part of revenues (skim the cream). It consist of two shapes rapid skimming, low skimming, the suitable situation of applicative it if the degree of customer sensitive for prices is low and high prices is mean high quality thus strategy depend on elements (prices, promotion).

Penetration Strategy

There are two kind of strategy in this type, it depend on launching new medicine production in low prices to achieve part of revenue in long term and accept the production slowly (skim the cream finally). It consist of two shapes, rapid penetration, low penetration, the suitable situation of applicative it. If the market is huge, customer sensitive of prices is high, the time is wide, the strategy depend on two element (price, promotion).

Expected Value Strategy

There are many level for customer expectations (perceptions) if the perceived value equal his expectation or above that or below that, in this strategy the prices care with value and what mean for the benefits of binging the production in low way, and what the opportunities to achieve benefits continuously. Medicine production (new, necessary, valuable….) what the degree of prices sensitive by customers, what is the values of quality. The marketer should care with the customers and understanding them view points and there perceptions, expectations, need, wants, preferences, its necessary to planning the prices as they want and they understanding to achieving satisfaction gradually and completely.

The Customer Satisfaction

Its very necessary to understanding the customer needs because the customer have a great purchasing power, benefits depend on customer satisfactions, the firm achieve loyalty for its production. Keeping the customers, attractive new customers, their are many principles to consider. It when we planning for achieving the customer satisfaction as: value, worth, quality, changes of customer behavior, benefits, revenues, growth, goals. We should remember the cost of new customer is more than constant customer, the level of competition market, target market. (Zyadat, Awmmra 2012).

Pricing Methods

The pricing competition require changing the pricing policies depend on statuee of market, competition customers product (Michael 2002).

A. Market oriented pricing
B. Pricing based cost
C. Latent pricing
D. Pricing based competition
E. Multiple Stage Pricing
F. Pricing Based on Production

Effecting Medicine Pricing Factors

A: External Factor: strategies lows and regulation, customer, competitors, intermediars
B: Local Factors: competition, government support goals, cost, marketing mix, management, policies.

The Study Population and Sample

The study population consist of all the managers in Jordanian medicine sector by (106) firm the researcher selected a survey a sample of study population by view point of manager who response (81) manager.

Model of Study

The study aimed to identify the level of customer satisfaction in Jordan medicine sector about pricing strategies, to achieve this a model was designed for the study that is described the relationship between independent variables represented in the (dimension of pricing strategies) and the dependent variables represented in (customer satisfaction).

Independent factor		**Dependent factor**
1. Skimming strategy A. (rapid) B. (low) 2. Penetration strategy A. (rapid) B. (low) 3. Expected value strategy	→	customer satisfaction

Study Hypothesis

The study hypothesis have been formulated based on the problem and variables of the study:

1. There is no statistically significant relationship at (a<=0.05) between medicine pricing strategy its dimensions (Rapid skimming, low skimming, rapid, penetration, low penetration, expected value) and the customer satisfaction in Jordan.
2. There is no statistically significant relationship at (a<=0.05) between (Rapid skimming strategy) in medicine sector and customer satisfaction in Jordan.
3. There is no statistically significant relationship at (a<=0.05) between (low skimming strategy) in medicine sector and customer satisfaction in Jordan.
4. There is no statistically significant relationship at (a<=0.05) between (rapid penetration strategy) in medicine sector and customer satisfaction in Jordan.
5. There is no statistically significant relationship at (a<=0.05) between (low penetration strategy) in medicine sector and customer satisfaction in Jordan.
6. There is no statistically significant relationship at (a<=0.05) between (expected value strategy) in medicine sector and customer satisfaction in Jordan.

The Study Tool

To answer the questions of sudy and test hypotheses the researcher prepared questionnaire for this purpose on market research, the first part of the questionnaire is contained independent variables (dimensions of strategy: skimming, penetration, expected value) but the second part deal with dependent variable (customer satisfaction).

Statistical Treatment

After the researcher had finish from collecting data on variable of study, some statistical indicator and method in the statistical package for social science (SPSS) used:

A. Reliability of scales
B. Descriptive Statistics
C. Correlation
D. Co linearity
E. R, R^2
F. ANOVAs
G. Coefficients

RESULTS OF TESTING THE STUDY HYPOTHESES

The detail explanation of the results of testing:

The suitable strategy for pricing the medicine production as possible as the customer orientations. The test validity of first hypotheses (strategies) the simple correlation coefficient (spearman) was used in order to measure the relationship between pricing strategies and customer satisfaction and each of dimensions as table(3). The results presented indicated the presence relations that are statistical y significant, what supports this is the (P-value) which equals (0.000) for all dimensions which than the level of significance (a=0.05)

In order to measure the relationship between skimming strategy and customer satisfaction as table (4), the results are statistically significance which equals (0.000) for dimensions (Rapid, Low). Which more than level of significance (a=0.05) because the medicine is necessity, healthy and the government, firm support the cost mostly and the although dimensions of strategy in penetration, expected).

In order to measure the reliability of scale as which achieve a good degree of validity (0.84) as table (1) and there are internal consistency between variable as table (4) mentioned depend on (VIF) indictor. But the standard deviation for customer satisfaction becomes middle of table (2).

In the same time the correlation lay between (0.05-0.01) which mean significances as table (3), and calculated (F) values becomes (426,775) bigger the (F) spread sheet which means significances as table (6), finally the variables of study becomes effectively as (Beta) co-efficient indicates in table (7).

The Results of Study explain the following

1. Rapid skimming strategy depend on the importance of the medicine at its necessity.
2. The penetration strategy is the suitable way for enter level of the medicine need.
3. Expected value strategy depend on customers perceptions and target markets.
4. The medicine prices now is very high.
5. Lock of government support.
6. Leak of the for demand market share regionally and globally.

7. Low of customer satisfaction about many medicines prices.
8. The cost of the medicine sector developing very high. Depend on technology changes.

RECOMMENDATIONS

The study recommended the following:

1. Achieving the customer satisfaction, increasing loyalty.
2. The Jordan medicine sector ought to focus on a suitable pricing strategy.
3. Decrease the cost of productions about importance of health medicine.
4. Develop the customer's perception about the importance of health medicine.
5. Increasing the level of government support.
6. Develop the medicine sector, quality, technology, health, care, changes.
7. Rehabilitating, training, raising the efficiency of employees.
8. Reinforcement of export and competition abilities.
9. Increase the Jordan medicine sector share.
10. Focus on comprehensive health care in Jordan.

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Archives of Business Research – Vol.5, No.2
Publication Date: February. 25, 2017
DOI: 10.14738/abr.52.2700
Semiz, G. & Berger, P. D. (2017). Determining the Factors that Drive Twitter Engagement-Rates. *Archives of Business Research, 5*(2), 38-47

Determining the Factors that Drive Twitter Engagement-Rates

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Abstract
Twitter is one of the most important social networks and is a micro-blogging site where users send short messages, often called, "tweets." In this paper, we explore the determination of variables that affect the engagement rate of a tweet. We utilize data during the first 11 months of 2016 from TurkishWIN's Twitter Handle, and use Excel and SPSS to analyze several variables with respect to their impact on engagement rate. These variables includes the day of the week, the time of day, the length of the tweet, the number of mentions, the number of hashtags, and the language of the tweet among other variables. Using stepwise regression analysis, we find that several variables have a highly significant relationship to the engagement rate of a tweet. We discuss each significant variable in terms of the exact relationship it has with tweet engagement, and the implications of these relationships. Lastly, we note the limitations of our study and suggested directions for future research.

KeyWords: Twitter, Tweet, Engagement-Rate, Hashtags, Mentions, Stepwise regression.

INTRODUCTION

The way brands interact and engage with their audience has changed significantly with the use of social media. Today, brands are present in several different social networks and each has a different definition of success criteria in order to measure the engagement between brands and target audiences.

Twitter is one of the most popular social networks and also is a micro-blogging site in which users are allowed to send short messages, what are called "tweets," of up to 140 characters. Twitter has 317 million monthly active users on average as of the third quarter of 2016 [1]. Therefore, it's one of the important social networks where people, companies, and non-profits can make their voice heard. There are several metrics collected by Twitter which show different types of attributes that users can interact with, and engage with, a tweet. We will consider a number of them.

This paper aims to determine the most important variables that affect the engagement rate of a tweet. The engagement rate is defined as the number of engagements divided by the number of impressions; in other words, it indicates the proportion (or, if multiplied by 100, the percentage) of the people who saw the tweet who, indeed, engaged with it. Since the core value-proposition of social networks is creating an interaction among users, the engagement rate on Twitter is a metric that illustrates how well the content resonates with the people who see it (i.e., the targeted audience).

METHODOLOGY

The data used in these analyses were exported directly from TurkishWIN's Twitter Handle [2], edited on Excel and utilized on SPSS. The time period of the data is from January 1, 2016 to November 30, 2016, and the data contains 1,489 tweets along with metrics such as impressions, engagements, engagement rate, profile clicks, media engagements and so on (all to be defined later), for each tweet. Although the most important determinant of the engagement rate is likely the message, itself (i.e., the content,) there may be other variables that potentially are related to, and thus, predict, the engagement rate.

Following are the "independent variables" that we consider as possibly associating with the engagement rate:

- The number of hashtags – see definition in Table 1.
- The number of handles mentioned (i.e., "mentions") – see definition in Table 1.
- The time of the day the tweet was sent; 3 categories: Morning; Afternoon, Evening.
- The day of the week the tweet was sent; 7 categories: Monday, Tuesday, Wednesday, and so on.
- Including a medium, such as video or image; 2 categories: Yes, No
- The length of the tweet text without counting the URLs (24 character per each). – see definition in Table 1.
- Including a link (URL) of another site; 2 categories: Yes, No
- The main language used in the tweet; 2 categories: English, Turkish.

Table 1 defines general terms used by Twitter and in this paper.

Table 1: Definition of General Terms*

- **Username:** A username, or a **Twitter handle**, is how users are identified on Twitter, and is always preceded immediately by the @ symbol. For instance, Katy Perry is @katyperry.
- **Follower:** A follower is another Twitter user who has followed someone to receive his/her Tweets in the Twitter feed.
- **Hashtag:** A hashtag is any word or phrase immediately preceded by the # symbol. When you click on a hashtag, you'll see other Tweets containing the same keyword or topic.
- **Like (n.):** Liking a Tweet indicates that you appreciate it. You can find all of your likes by clicking the likes tab on your profile. Tap the heart icon to like a Tweet.
- **Mention:** Mentioning other users in your Tweet by including the @ sign followed directly by their username is called a "mention." Also, refers to Tweets in which your @username was included.
- **Re-tweet (v.):** The act of sharing another user's Tweet to all of your followers by clicking on the Re-tweet button.
- **Tweet (n.):** A Tweet may contain photos, videos, links and up to 140 characters of text.
- **Tweet (v.):** The act of sending a Tweet. Tweets get shown in Twitter timelines or are embedded in websites and blogs.
- **URL, URLs:** A URL (Uniform Resource Locator) is a web address that points to a unique page on the internet.

Source of the definitions: [3] https://support.twitter.com/articles/166337#

Since Twitter-exports include only the basic metrics - impressions, clicks, engagements etc., along with the tweet text, we need to create some of the variables listed above, that are not present directly. In addition, we need to define selected variables in a way that is amenable to having them appropriately represented in a multiple regression analysis.

The date and time of the tweet is present in the Twitter export. The number of hashtags, the number of mentions, and the number of links that each tweet has, as well as the length of the tweet text, are analyzed from the tweet-text via Excel, by using the IF, COUNTIF, SUBSTITUTE, and LEN formulas. All of these variables are ratio-scale (i.e., interval scale, along with having a true zero point.)

The variables such as the day of the week and the time of the day the tweet was sent, whether the tweet included a medium or not, the language used in the tweet, and whether the tweet included a link to another site, are nominal scale variables. Dummy variables were constructed to represent each variable in a regression analysis; all were created as (0, 1) variables. Table 2 contains a list of the variables eligible in the stepwise-regression analysis.

Table 2: A list of variables eligible for the stepwise-regression analysis (variable name in bold)

Variables	Definition
The day of the week – **Sunday**	1 if Sunday, 0 otherwise
The day of the week – **Monday**	1 if Monday, 0 otherwise
The day of the week – **Tuesday**	1 if Tuesday, 0 otherwise
The day of the week – **Wednesday**	1 if Wednesday, 0 otherwise
The day of the week – **Thursday**	1 if Thursday, 0 otherwise
The day of the week – **Friday**	1 if Friday, 0 otherwise
The day of the week – **Saturday**	1 if Saturday, 0 otherwise
The time of the day - **Morning** (6:00am to 11:59am)	1 if Morning, 0 otherwise
The time of the day - **Afternoon** (12:00pm to 5:59pm)	1 if Afternoon, 0 otherwise
The time of the day - **Evening** (6:00pm to 11:59pm) o *(Tweets from 12:00am to 5:59am are excluded from the data set)*	1 if Evening, 0 otherwise
The **Length** of the tweet without URLs	Actual value
The number of **Mentions**	Actual value
The number of **Hashtags**	Actual value
Medium	1 if Medium included, 0 otherwise
Link (to another site)	1 if Link to another site is present, 0 otherwise
Language (of the tweet) *(Tweets in other languages excluded from data set)*	1 if English, 0 if Turkish;

It should be noted that, since we are performing a stepwise-regression analysis, and not a "regular" multiple-regression analysis, there is no need to limit the number of dummy variables in a set to one fewer than the number of categories being captured. For two-category variables, we have created one dummy variable; however, for the variables with more than two categories (i.e., day of the week tweet sent, time of the day tweet sent), we have included a variable of each category.

In this research, we are trying to determine the best model to predict the engagement rate. Therefore, we have performed a stepwise regression. The stepwise regression contains *engagement rate* as the dependent ("output") variable and the 16 variables listed in Table 2 as potential independent variables. We used the default settings on SPSS, with the "p-value to enter" = .05, and the "p-value to delete" = .10. Table 3 provides the official definition of engagement rate, along with selected other metrics that Twitter has defined.

Table 3: Definition of a variety of Twitter metrics, including Engagement Rate.

- **Detail expands:** Clicks on the Tweet to view more details
- **Embedded media clicks:** Clicks to view a photo or video in the Tweet
- **Engagements:** Total number of times a user interacted with a Tweet. Clicks anywhere on the Tweet, including Retweets, replies, follows, likes, links, cards, hashtags, embedded media, username, profile photo, or Tweet expansion
- **Engagement rate:** Number of engagements divided by impressions
- **Follows:** Times a user followed you directly from the Tweet
- **Hashtag clicks:** Clicks on hashtag(s) in the Tweet
- **Impressions:** Times a user is served a Tweet in timeline or search results
- **Likes:** Times a user liked the Tweet
- **Link clicks:** Clicks on a URL or Card in the Tweet
- **Replies:** Times a user replied to the Tweet
- **Retweets:** Times a user retweeted the Tweet
- **Shared via email:** Times a user emailed the Tweet to someone

Source of the definitions: [4] https://support.twitter.com/articles/20171990#

ANALYSIS AND DISCUSSION OF RESULTS

Table 4 provides the demographics of the population from which our sample was drawn. The table was provided by Twitter.

Table 4: Demographics of population of TurkishWIN's Twitter handle

Gender

Male	Female
34%	66%

Household income categories

Income category	% of audience
$75,000 - $99,999	15%
$175,000 - $199,999	12%
$125,000 - $149,999	12%
$150,000 - $174,999	12%
$250,000+	12%

Values based on 6.0% match rate from Twitter partners

Languages

Turkish	English	Arabic	Spanish	French
84%	51%	1%	< 1%	< 1%

Age

Age category	% of audience
13 to 17	1%
18 to 24	28%
25 to 34	38%
35 to 44	24%
45 to 54	7%
55 to 64	2%
over 65	< 1%

Country

Country name	% of audience
Turkey	84%
United States	6%
United Kingdom	3%
Germany	1%
France	< 1%
Canada	< 1%
Switzerland	< 1%
Netherlands	< 1%
Spain	< 1%
Belgium	< 1%

Region

State or region	% of audience
İstanbul, TR	46%
Ankara, TR	6%
Beşiktaş, TR	4%
İzmir / Smyrna, TR	4%
Kadıköy, TR	4%
Şişli, TR	3%
Çankaya, TR	3%
England, GB	3%
Sarıyer, TR	2%
Üsküdar, TR	2%

Table 5 shows the Model Summary of the 9 steps of the stepwise regression. At each step, a variable entered the model. There were no "deletion" steps.

Table 5: Stepwise-regression model summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.376[a]	.141	.141	.013868300900
2	.502[b]	.252	.251	.012946425600
3	.533[c]	.284	.282	.012674441700
4	.545[d]	.297	.296	.012556100700
5	.556[e]	.309	.307	.012456584600
6	.560[f]	.314	.311	.012416980300
7	.562[g]	.316	.313	.012399057100
8	.565[h]	.319	.315	.012376932300
9	.568[i]	.323	.319	.012347580700

a. Medium
b. Medium, Mentions
c. Medium, Mentions, Language
d. Medium, Mentions, Language, Evening
e. Medium, Mentions, Language, Evening, Saturday
f. Medium, Mentions, Language, Evening, Saturday, Sunday
g. Medium, Mentions, Language, Evening, Saturday, Sunday, Hashtags
h. Medium, Mentions, Language, Evening, Saturday, Sunday, Hashtags, Links
i. Medium, Mentions, Language, Evening, Saturday, Sunday, Hashtags, Links, Length

We can see that 9 variables entered the stepwise regression models, and, as noted earlier, none were deleted – all "survived." Table 6 provides the ANOVA table for the final (step 9) model.

Table 6: ANOVA Table results for final step of stepwise regression analysis

		SSQ	DF	MSQ	F	SIG.
	Regression	.107	9	.01189	77.8	.000
	Residual	.224	1469	.00015		
	Total	.331	1478			

Our final piece of output is in Table 7, and displays the "coefficients table" for the last (9th) step of the stepwise-regression analysis (Engagement Rate as the dependent variable.)

Table 7: Coefficients table for last step of the stepwise-regression analysis

		Unstandardized coeff.		Standardized		
		B	Std. Error	Beta	t	Sig.
	(Constant)	.021	.002		10.497	.000
	Medium	.013	.001	.373	16.914	.000
	Mentions	.003	.000	.272	11.212	.000
	Language	-.005	.001	-.167	-7.542	.000
	Evening	.006	.001	.107	4.836	.000
	Saturday	.006	.001	.110	4.964	.000
	Sunday	.006	.002	.068	3.148	.002
	Hashtags	-.001	.000	-.074	-3.098	.002
	Link	-.002	.001	-.075	-3.134	.002
	Length	-4.383E-5	.000	-.066	-2.828	.005

As can be seen from Table 5, the R-squared for the final model is 0.323; in other words, (we estimate that) 32.3 percent of the variability in engagement rate can be explained by its linear relationship with the 9 variables that survived the stepwise-regression process. As noted earlier, the engagement rate measures the quality of the tweet, which, likely, is mostly driven by the emotional factors that we can't analyze with the available data. These emotional factors include: point of the view of the users reading the content, relationship with the tweet owner, the mood of the users at the moment they see the tweet, etc. Therefore, one can make an argument, that to explain over 30% of the variability in engagement rate, *without any data on these emotional factors,* is a considerable achievement.

We now discuss the 9 variables in our final stepwise-regression model: whether including a medium, the number of mentions, the language used in the tweet, whether the tweet was sent in the evening, whether the tweet was sent on a Saturday, whether the tweet was sent on a Sunday, the number of hashtags, whether the tweet included a link to another site, and the length of the tweet text without URLs. When we discuss coefficients, we always are referring to the change in engagement rate, holding the other 8 variables in the model constant; in selected explanations, we explicitly remind the reader of this appropriate interpretation.

One inference is that the variable, *medium*, which entered first, is the variable, which by itself, is most predictive of engagement rate. It has a positive coefficient, implying, of course, that including a medium in the tweet increases the engagement rate (by an estimated .013 when holding the other variables in the final model constant; it happens to have the same coefficient of .013 [rounded to 3 digits] in a simple regression also.) This makes sense, because people may be more likely to click a tweet to see the image - therefore, to engage.

A second inference is that variables such as the time of the day and the day of the week have a bearing on engagement rate. The engagement rate has a positive relationship with each of the variables: *Evening*, *Saturday*, and *Sunday*. It is a coincidence that each of the three respective coefficients is .006 (again, to 3 digits.) So, the engagement rate is predicted to be .006 higher if the tweet is sent in the evening, compared to being sent at one of the other times; also, the engagement rate is predicted to be .006 higher on a Saturday and a Sunday, as compared to the average of other 5 days of the week. The common point of all three of these variables may be that these are times when people often rest, so they may pay more attention to a tweet during these particular periods of times.

The language of the tweet is another factor that shows up as affecting the engagement rate. In our research, we defined a dummy variable coding English as 1, and Turkish is 0. The coefficient of this variable is negative. This is likely related to the demographics of the followers. In this case, as seen in Table 4, 84 percent of the followers of the Twitter handle we analyzed are Turkish speakers, while only the 51 percent of the followers are English speakers. Hence, it makes sense that the followers are more likely to engage with the tweets written in Turkish than in English. There is likely nothing "special" about Turkish, as opposed to the more general language point that tweets should be easy to read and understand if they are going to get people's attention and generate engagements. This happens in the most natural way if the tweet speaks "the same language" as the followers.

The number of mentions also has a positive relationship (i.e., positive coefficient) with the engagement rate. This may be a spontaneous instinct, since, when Twitter handles are mentioned, it is natural that the reader will click, like, or re-tweet the original tweet in which they have been mentioned - thus, engaging with the tweet.

When it comes to the number of hashtags, the situation is somewhat different. The hashtag is the most characteristic feature of Twitter; it connects tweets by making words clickable by simply putting the hashtag sign (#) at the beginning of the word. Twitter is known by its hashtags. Most of the blog posts suggest to use the appropriate hashtags [5]. However, in our case, the number of hashtags has a negative relationship with the engagement rate, which means that when we increase the number of hashtags (holding all other 8 variables in the model constant), we see a lower engagement rate.

The length of the tweet is another factor that has a negative relationship with the engagement rate (again, holding the other 8 variables in the model constant.) Although there is a 140-character limit, the longer the tweet, the lower the engagement rate is. This would seem to make intuitive sense.

Finally, including a link (URL) of another website also has a negative relationship to the engagement rate. This would seem to indicate that when they are checking their Twitter feed, people are not especially interested in clicking a link to go another website.

Limitations and Directions for Future Research

From January 1, 2016 to November 30, 2016, Twitter had 2 official announcements. The first announcement was about a change in its algorithm [6]. We note this, even though the change is unlikely have had any impact on this research.

In addition to that change, Twitter also has announced that they changed the 140-character limitation by not counting some of the attachments such as the rich media URLs and the Twitter handles replied [7]. As a result of this change, we may, on average, have slightly longer tweet texts in our data set.

Also, tweet followers' behavior may change from handle to handle and/or region to region. Hence, one may wish to view the results of our study as specific to the handle that we've analyzed. However, we believe that, by and large, our results will generalize to different handles and regions. We encourage, as a direction for future research, that our study be duplicated for other handles in other regions.

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Archives of Business Research – Vol.5, No.2
Publication Date: February. 25, 2017
DOI: 10.14738/abr.52.2681.
Glukhov, G. V., & Gromova, T. V. (2017). Features of Joint Activity of Students and Teachers in Distance Learning System. *Archives of Business Research, 5(*2), 48-55

Features of Joint Activity of Students and Teachers in Distance Learning System

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Abstract
Extensive use of distance education which is equivalent to traditional forms of education, implementing information and communication technologies are recognized as one of the priority tasks of education. Distance education in different forms contributes to the creation of a unified educational space, ensuring the possibility of obtaining standardized education to any person at any point in the educational space, regardless of his/her location, social and material status, physical condition, etc. Of great importance in the development and implementation of distance learning (DL) in educational institutions of various levels is the availability of teachers able and willing to carry out activities in the DL system. Characteristics, models and features of joint activities of teachers and students in the DL system, models of distance education as well as means and forms of DL are the subject of study in this article. The obtained results can be used in the preparation or professional development of DL teachers to work in educational establishments of various profiles.

KeyWords: distance learning, distance learning teacher, distance education, models of distance learning.

INTRODUCTION

It should be noted that the problems of distance learning in the context of the development of the world educational space in recent years developed quite actively [1-5]. In soling these problems the availability of teachers, prepared professionally and psychologically to work in DL, as well as a system of training/retraining of such teachers is essential. In this regard, the study of features of joint activity of students and teachers in distance learning is of particular importance. In the literature devoted to DL one can found such a notion as "a model of distance education" [6-8]. Knowledge of DL models is important, especially when setting up the DL system of a University, as each model has its own characteristics, implementation conditions; and the specifics of the University, its material and technical base and its students determine the choice of a particular model, the analysis of which follows below.

RESEARCH METHODS

Problems related to training/ retraining/ professional development of DL teachers are complex and multifaceted and involve many tasks. In particular: justification of the concept of designing the training of teachers; identification of specific areas of activity of the DL teacher and the development of his multidimensional model of personality and professional competence; the design of the content of teachers' preparation to work in the DL system (DLS) and creation of scientific-methodical support of implementation of the content in the format of guidelines and training manuals, programs and guidelines; development and testing of technology for the training of teachers for work in the DLS; the working out of criteria and indicators of the teacher's readiness for the DL activities, testing the effectiveness of the authors' technology. To solve the problems in the study the following methods were used: theoretical - study of the scientific-pedagogical, psychological and methodical literature on the problem of training teachers, as well as domestic and foreign pedagogical experience; modeling, design and analysis; empirical - observation, testing and questioning of participants of the educational process; diagnostic and formative experiment, statistical processing of the results. These and other aspects are covered in the work [9].

In this very article the task will be focused on the analysis of characteristics, patterns and features of joint activities of teachers and students in the DL, models of DL and the peculiarities of the means and forms of DL.

RESULTS

General characteristics of joint activity of students and teachers in distance learning system

Models of distance education.

As noted earlier the knowledge of the DL models is very important, especially when creating a DL system at a particular institution, as each model has its own characteristics, implementation conditions, and the specifics of the University, its material and technical base, enrollment, etc. determine the choice of a particular model.

The bases of the classifications of DL models are different. So, E. S. Polat considers that the current practice of distance education is based on the six models using a variety of traditional and new information technologies (NIT) [10]:

1. The training is focused on students, who for various reasons are unable to attend educational institutions.
2. Training at one University where the students study remotely on the basis of NIT.
3. Training on the basis of several educational institutions.
4. Training in specialized educational institutions (e.g. the British Open University).
5. Self-learning system. The training is conducted with the use of TV and/or radio, using the CD - ROM, teaching materials on paper.
6. Informal learning for self-education on the basis of the multimedia programs.

A. V. Gustyr has a different approach to the classification of models. He believes that there are two different basic models of distance education, formed on the basis of two types modern DL - correspondent (part-time) learning and classroom learning using information and computer technology (ICT) [7].

The model of mutual activities of students and teachers in the DL system.

General characteristics of the model are interrelated activities of students and teachers in the DL system.

Following the system approach, let's focus on the characteristics and peculiarities of activities of teachers and students in the DL system.

Joint activities of students and teachers in the DL system involve the processes of learning and teaching will demonstrate in a model that includes five basic stages:

1. The acquaintance, communication, motivation
2. Information exchange
3. Understanding
4. Application
5. Construction of knowledge and development.

First give a General characterization of the model. A prerequisite for effective activities of students in the DL system is the motivation of students, the decision to get an education (to improve skills) through the distance learning system (the first step). This stage involves the introduction of the teacher and students. From that moment starts the support of students by DL teacher: identifying their needs, difficulties, level of knowledge. At the second stage students learn information provided by the teacher or they themselves look for material related to the course content.

Pedagogical support at this stage is through counseling (when searching for information, selecting sources, etc.). The third and fourth steps involve assimilation of received information, group discussion and cooperation, support of which takes place in the course of practical work, consultations, tracking the dynamics of students' development. The fifth stage is the generalization of acquired knowledge and skills.

At each stage, students need certain skills. Each stage requires certain skills of the DL teacher. When organizing practical training with future DL teachers one should be aware that at the first stage they interact usually with only a few students. After the second stage the number of students with whom they collaborate and the frequency of interactions are gradually increasing, while the fifth step involves a large share of independent work of future DL teachers.

Five stages of joint activities of students and teachers in the DL system

The activities of students and teachers in the DL system can be presented through the 5 stages that characterize the interaction of these two subjects of the educational process. Let's discuss the characteristics of each stage in more detail.

First stage: acquaintance, communication and motivation

Throughout the training, and especially at the beginning when the student may be faced with unfamiliar systems and ways of working, it is important to acknowledge the support of the DL teacher. At the first stage motivation, the success of learning depends greatly on vision of the student perspectives of learning, objectives and possible difficulties. The task of the teacher is to help students to learn and to offer assistance (via phone, e-mail). At this stage the teacher facilitates the group cohesion, on his initiative there can be organized self-help groups.

The teacher should give the most information about the course, time, schedule of face-to-face meetings (if these are meant) and sending control tasks. It is also necessary to clarify the role of the home and the final tasks in the course of the study and the requirements to them. In other words, the teacher must "remove" the likely questions of the students, which can lead to difficulties in learning.

It is obvious that this stage will be in full-time mode, the so-called orientation session. The first stage ends when the students are comfortable in the group and starts to send the first message to each other and the teacher.

The second stage: information exchange

At this stage students get used to a new learning environment, there emerges a society of people working on common tasks. When students learn at this stage they get acquainted with the etiquette of communication and technology, they are ready to accept and search for information. Speaking of communication at this stage it is worth noting that the teacher needs to make every effort to make students have the desire to communicate. Group discussions often reveal the level of understanding of participants in how quickly and efficiently the group works. At this stage the teacher is to encourage the development of mutual respect among students, to eliminate imminent conflicts, to help students engage in better communication.

One of the requirements for methodological support of DL states that the course (multimedia, textbook) should be self-sufficient from the point of view of availability of information. Often the course content is available to students in the form of well-designed and prepared print materials, videotapes, CD-ROMs, in text format on the Internet. Students independently study theoretical materials, in consultation if necessary with the teacher. The teacher, in turn, should stimulate the students' search for additional information to specify the necessary references and sources. The skills of independent information search, selection of the necessary content of students at this stage can be developed not enough, so the teacher should guide the information search of students. By the beginning of this stage the DL teacher should consider the techniques and working methods - discussions, participation in computer conferences, etc.

The third stage: understanding

At this stage there occurs the reproduction of the learned knowledge by trainees. Students apply their knowledge for solution of typical educational tasks, they begin to interact more among themselves. To achieve this objective tutorials are effective where under the guidance of a DL teacher can be used different active teaching methods that can be used to eliminate the knowledge gaps.

At this stage the competent management by the teacher of students' cognitive activity is important. The technique of involving students as "experts" may be justified here - different people have different experiences, knowledge from different fields and this experience, vision and ideas can contribute to a better assimilation of theoretical knowledge, solving problems, etc. The teacher should focus students on the analysis of the activity (What parts were the most difficult and why? What skills are missing?).

The fourth stage: application of acquired knowledge

At this stage, students perform tasks related to the application of acquired knowledge to solve non-standard tasks. They formulate their understanding of the subject. What they are learning is not so much the result (information) as cognitive creative process that involves the exchange of opinions, the evaluation, and the opportunity to correct them during the discussion or work in pairs. Training at this stage is not only active but also interactive.

The teacher - adviser plays an important organizational and managerial role. He organizes groups and supports their activities, controls the discussion - for example, summarizes the statements of students and relates them to the concepts of the theoretical material; stimulates the exchange of opinions, directs the discussion in the right direction, raises new challenges and offers alternative approaches to their solution. Work in pairs and groups allow solving tasks, considering different points of view, coming to a consensus, etc. A student is involved in the discussion with other students and experts in the process of communication.

The teacher can perform on a par with the students; offer his/her solutions to the tasks. Much depends on his/her behavior - an authoritarian style, participation on an equal basis, relying on one's own experience and so forth. At this stage a range of active learning methods can be used: role play, business games, game design (it is based on a combination of individual and joint work of students), case studies. An important role at this stage also plays a reflection activity.

The fifth stage: construction of knowledge and development

At this stage there is a kind of generalization of acquired students ' knowledge and skills. They are given the opportunity to develop their own approaches and to apply them in their activities. Construction of knowledge occurs when students investigate a problem, come to a definite opinion, discuss it with others and assess their positions, i.e. participate in reflection.

It is possible that students will need less support and help from the teacher-adviser. In this period the teacher does not provide ready answers; students become more authors but not just carriers of information. At this stage the ability to think critically, to evaluate the results of independent activity are being formed. Students and teachers can use the so-called constructivist approach which encourages students to think independently and to explore the process of knowledge accumulation [11, 12]. The 5th stage is mainly reflection: evaluation of process and results of training and its effectiveness, the impact of technology on the learning process. The teachers in turn must be willing to offer the students exercises and assignments, developing critical thinking (e.g., written comment of each other's works; presentation of their final projects, topics, which are specified in the previous stages). At this stage it is appropriate to conduct business games as the most difficult, synthetic form of active learning.

On the 4th and 5th stages there is no training in lecture form. DL gives students the chance of self-search and analysis of information instead of proposed by teacher ready knowledge. The students themselves construct knowledge through working in pairs and groups under the guidance of the teacher. The teacher here must have the ability to respond quickly to the game or discussion, summarize, evaluate and come to the assessment activities together with the students, in other words - the ability to manage the cognitive activity of students. Through the whole process of learning there should be continuous communication among students and with the teacher.

If in the process of studying students get sufficient support from the teacher, the transition from stage to stage and achieving higher levels will be fast and efficient.
In the description of this model we used the terminology of the learning process with the notions “student”, “teacher ". However, this model can be taken as a basis in the preparation of DL teachers, which in this case are in the role of trainees.

Features of means and forms of distance learning

Methods and forms of organization of educational-cognitive activity of students are important components of the DL system. The analysis of numerous sources, including [13-16], as well as the generalization of the results of the investigations showed that the DL means of education can be classified as follows:
- books on paper;
- training materials on CD-ROM;

- electronic educational publications;
- audio training and information materials;
- video training and information materials;
- devices with remote access;
- database of information and knowledge with remote access.

The most common means are: books on paper, e-mail, video conferencing, CD, Internet, etc.
One of the problems in DL is the control the students' activities. Despite the fact that, as noted above, the backbone of the learning process in DL is intensive independent work of the student (which in our opinion implies a rather high motivation to studying, the desire to acquire knowledge and subsequently to apply them in practice), the value of the controlling component can hardly be overestimated. When carrying out various tests and examinations in the conditions where teachers and students cannot see each other, there may be situations of dishonest attitude of students towards their work. To avoid such situations especially important control points should be conducted face to face or by video - conferences.

DISCUSSION

It should be noted that the problems of distance learning in the context of the development of the world educational space in the conditions of new educational paradigm in recent years have been developed quite actively. Main trends of education development concerning informatization are considered in the works of [2, 3, 4, and 18]. The issues of state and prospects of development of DL in the system of continuous education in Russia, its theoretical support raise in their works [19 - 22]. Issues of organization of continuous education, technical and didactic support of DL in the sphere of higher education are dedicated the work of such researchers as [1, 23 – 25]. Questions of psycho-pedagogical aspects of DL are analyzed in the works of [26 – 30].

However, despite the theoretical and practical significance of these studies, their importance in the task of improving the quality of education through the use of information and communication technologies it should be noted that until now, the design and implementation of scientifically based pedagogical system of training of University teachers to work in DL system remains one of the unexplored problems of theory and methodology of professional education.

CONCLUSION

In conclusion, it should be noted that as a result of the work done and the generalization of the obtained data there was presented characteristic of joint activities of students and teachers in the DL system, as well as models of DL and the main stages of joint activities of students and teachers in the DL system as well as means and forms of DL.

The continuation of further studies of this problem lies in developing a model of personal and professional competence of the DL teacher aimed at the creation of professionally significant qualities of the DL teacher and the development of technology for DL teachers' training.

RECOMMENDATIONS

The material presented in the article can be valuable for DL teachers (current and future), professionals working in continuing education, researchers of problems of theory and methodology of professional education.

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Archives of Business Research – Vol.5, No.2
Publication Date: February. 25, 2017
DOI: 10.14738/abr.52.2602.
Herminingsih, A. (2017). The Influence of the Organizational Justice and Trust to the Leaders on Employee Engagement with Job Satisfaction as Intervening Variable. *Archives of Business Research, 5(*2), 56-69

The Influence of the Organizational Justice and Trust to the Leaders on Employee Engagement with Job Satisfaction as Intervening Variable

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Abstract
This study aimed to analyze the influence of organizational justice and trust to the leaders on employee engagement, with job satisfaction as an intervening variable. The research was conducted by taking samples of employees from Jabodetabek companies. Primary data were obtained by questionnaire filled by the respondents, then analyzed with simultaneous equations models and processed by AMOS program. The results showed that organizational justice has a significant effect on trust to the leaders. Organizational justice and trust to the leaders have a significant effect on employee job satisfaction. Employees' satisfaction influences significantly employee engagement, while organizational justice and trust to the leaders do not significantly influence employee engagement. It can be concluded that organizational justice and trust to the leaders do not directly influence employee engagement, but through job satisfaction as an intervening variable.

KeyWords: employee performance, simultaneous equation model, significant effect

PRELIMINARY BACKGROUND

One of the employees' attitudes that is very much concerned is engagement which is defined as a cognitive condition, emotion, and behavior of an employee which is directed to achieve the desired results of the organization. Research results show that organizations with employee engagement have positive and significant impacts, as the results of research by Medlin and Green Jr (2008), Robertson et al. (2012), Bagyo (2013), as well as research by Warongan et al (2014). In line with Saks (2006), research by Rashed et al. (2013) shows that employee engagement has a significant correlation with the OCB. Robertson and Cooper (2010) research shows that there is a strong correlation between employee engagement and psychological health conditions of employees.

On the one hand, it is believed that employee engagement is important, but only few studies on the level of employee engagement globally; in 2015 it was showed that only 62 percent of employees who have engagement (Hewitt, 2015). This is supported by the results of research by Fahrani et al. (2015) which states that PT. Semen Gresik, only 49 percent is engaged employees, while the 51 percent is not engaged. Based on these studies, how to build employee engagement still gets much attention and attracts researchers to study the factors that influence it, so they can provide suggestions for the development of employee engagement in the field of human resource management.

Researchers have discovered that high levels of employee engagement are found in employees who have immediate managers with relationship-oriented behavior (Kahn, 1990; May et al., 2004; Saks, 2006). The findings make sense because of the immediate managers (supervisors) usually interact with their employees on a daily basis, which means that they mostly influence employees in the workplace. The immediate manager is an executive function of integration which is one of the operational functions of human resource management (Hasibuan, 2010). The manager can also be a key factor in creating the disengaged employees, primarily through inconsistent management style which leads to the perception of injustice to the employees (Maslach et al., 2001). The results also state that the trust of employees to their supervisors determine the level of their engagement. (MacLeod and Clarke, 2009; Menguc et al, 2012).

The relationship between job satisfaction and employee engagement has been found by some researchers; and there are classified into two groups. The first group states that job satisfaction is the result of the employees' engagement, among others by Lee (2012), while the second group states that job satisfaction is the factor that encourages employees' engagement, as Robinson et al. (2004: 23), and supported by the research of Abraham (2012).

Based on these descriptions, this study will examine and analyze the employees' perception on their immediate supervisors, and focus on trust and justice as the determining factors of employee engagement, and job satisfaction variable has intervening role of both factors to employee engagement.

RESEARCH PURPOSES

The purpose of this study is to determine the level of justice perceived by employees, trust to leaders, job satisfaction and employee engagement levels among employees. The study also aims to:

1. To analyze the influence of organizational justice on trust to the leaders.
2. To analyze the influence of organizational justice on employee job satisfaction.
3. To analyze the influence of the trust to the leaders on employee job satisfaction.
4. To analyze the effect of job satisfaction on employee engagement of the employees.
5. To analyze the influence of perceptions of organizational justice on employee engagement.
6. To analyze the effect of trust to the leaders on employee engagement.

REVIEW OF THEORIES, FRAMEWORK AND HYPOTHESES

Employee Engagement

Engagement is defined as a positive attitude, full of meaning and motivation, which is characterized by vigor, dedication and absorption (Schaufeli, 2002 in Breso, Schaufeli, & Salanova, 2010). Vigor is characterized by high levels of energy, resilience, willingness to try, and not giving up facing challenges. Dedication is marked by feeling valued, enthusiastic, inspiring, rewarding and challenging. Absorption is marked by full concentration on the task or assignment, (Schaufeli & Bakker, 2003). IES defines employee engagement as a positive attitude held by the employees of the organization and its values. An employee having engagement is aware of the context of business, and works with colleagues to improve their work performance for the organization. Organizations should also work to develop and nurture engagement, which requires a two-way relationship between employers and employees, namely, (Robinson et al., 2004). From the various definitions stated by some of the above figures, it can be deduced that employee engagement is a positive attitude that employees have with full of meaning, energy and high motivation, resilience and willingness to try, and not giving up facing the challenges with full concentration to accomplish a task tailored to the values and goals of the organization.

Dimensions or aspects of employee engagement consist of three (Schaufeli et al, 2003), namely: 1) Vigor is an aspect that is characterized by high levels of strength and resilience of mental work, the desire to strive at the work, persistent in facing difficulties (Schaufeli & Bakker, 2003). 2) Dedication aspect is characterized by a feeling of meaningful, enthusiasm, inspiration, pride and challenge in the job (Schaufeli and Bakker, 2003). 3) Absorption aspect is characterized by the concentration and deep interest, serious in work, feeling that time passes so quickly and employees find it difficult to break away from work and forget everything around it, (Schaufeli & Bakker, 2003).

Factors of Employee Engagement

Psychological meaningfulness involves a sense of return on investment of oneself in a role of a performance (Kahn, 1992). According to Kahn (1990, 1992), the psychological significance can be achieved by the characteristics of the task such as challenging work, variation, allowing the use of different skills, personal wisdom, and the opportunity to make an important contribution.

Kahn (1990) reports that people vary in their engagement as a function of their perception about benefits they receive from the role. Maslach et al. (2001) also suggests that the lack of appreciation and recognition can lead to fatigue. Recognition and appreciation right is important for the engagement. When employees receive appreciation and recognition from their organization, they will feel obliged to respond with a higher level of involvement.

Psychological security involves a sense of capabilty and self-employed without negative consequences (Kahn, 1992). An important aspect of security comes from the amount of care and support provided by their organizations as well as their immediate supervisor. In fact, Kahn (1990) found that supportive interpersonal relationships and trust promoted psychological security. Members of the organization feel secure in a working environment characterized by openness and supportiveness. A supportive environment allows members to experiment and try new things and even fail without fear of consequences (Kahn, 1990). In their empirical test models Kahn, May et al. (2004) also finds that the supervisors' relationship has positive relationship to psychological safety.

Security dimension is identified by Kahn (1990) as involving social situations that are predictable and consistent. Rhoades et al, 2001). A research of organizational justice found that perceptions of fairness are related to organizational outcomes such as job satisfaction, organizational commitment, organizational citizenship behavior, withdrawal, and performance (Colquitt et al., 2001). However, previous studies have not examined the relationship between perceptions of fairness and employee involvement. Influence perceptions of fairness on various outcomes may be partly due to the involvement of employees. In other words, when employees have a high perception of fairness in their organizations, they are more likely to feel obliged to also be fair in how they perform their role by giving more of themselves through a greater degree of involvement. On the other hand, a low perception of fairness is likely to cause employees to withdraw and disengage from their job role. Justice and fairness are also some of the working conditions in Maslach et al. (2001) model of engagement. The lack of justice can worsen fatigue and while a positive perception of fairness can improve engagement (Maslach et al., 2001).

The Consequences of Employee Engagement

The driving force behind the popularity of employee engagement is that it has positive consequences for the organization. As indicated earlier, there is a general belief that there is a correlation between employee engagement and business results (Harter et al., 2002). However, engagement is to build individual-level and if it causes business results, it must first influence the outcome of an individual level. In line with this, there is a reason to expect the employee engagement related to individual attitudes, intentions, and behavior. Although it is not, Kahn (1990) or May et al. (2004) includes the results in their studies, Kahn (1992) suggests that engagement leads to both individual outcomes (i.e. the quality of people's work and their own experience to do the job), and the level of the organization results (i.e., growth and productivity of the organization). Additionally, Maslach et al. (2001) Model treat engagement as a mediating variable for the relationship between working conditions and work a variety of results like fatigue, and it should be linked to outcomes such as increased withdrawals, lower performance, job satisfaction, and commitment (Maslach et al., 2001).

There are a number of reasons to expect the results the engagement and work results. As a starter, the experience of involvement has been described as satisfactory, positive work experiences and state of mind (Schaufeli and Bakker, 2004; Sonnentag, 2003) and it has been found to be associated with good health and positive work influence (Sonnentag, 2003).

Organizational Justice

Distributive justice is related to personal gain from the allocation of resources within an organization. During the period between the 1950s and 1970s, most studies on organizational justice had focused on the distributive justice, which is based on the theory of social exchange (Colquitt et al., 2005). According to Homans (1958), people develop normative expectations for future exchanges. Individuals involved in the exchange relationship with other people are sensitive to the possibility that one party might be getting more than the other.

Colquitt et al., (2005) states that procedural justice come from the legal dispute (Thibaut & Walker, 1975). Basic assumption underlying this theory is that individuals are not only influenced by the results they receive, but also by the naturalness of the process used to plan and execute the decision. They suggest six procedural rules that must be observed in the context of allocation. The procedure should: a) follow consistent procedures (consistency), b) be without any self-interest (bias suppression), c) be based on accurate information (accuracy), d) give an opportunity to improve decision (correct ability), e) take into consideration the interests of all represented parties (representation), and f) follow moral and ethical standards (ethicality) .While equity theory is mainly related to private interests that focus on responses to the perceived injustice of the allocation of resources and results in organizations (Greenberg, 1991), the main interest of procedural fairness lies in the rules and procedures that dominate the allocation of external interest results. In this phase, procedural fairness can be called social justice; different from distributive justicewhich can be called private equity. Lind and Tyler (1988) argue that the more one considers the process is fair, the more tolerant the people about the consequences of the process, although the results are considered to be detrimental to them.

Trust to Leaders

Rousseau et al. (1998) defines trust as "a psychological state comprising the intention to accept vulnerability based on positive expectations of the intentions or behavior of others" (p. 395). As shown in this definition, a willingness to be vulnerable is seen as a core component in defining trust. In addition, risk taking has been discussed as a core introduction or the result of the trust (Mayer et al, 1995 ;. McAllister, 1995; Rousseau et al, 1998). Although trust is often interchanged with the cooperation, trust is distinguished from similar concepts, such as cooperation and confidence, that those concepts do not put others at risk (Mayer et al., 1995). The third necessary condition of trust is interdependence, where the interests of one party cannot be achieved without dependence on others. Although both the risks and interdependencies required for the trust arise, the nature of risk and trust to interdependence change increases (Rousseau et al., 1998). The degree of interdependence actually determines the level of trust.

Consequences of Trust

As the benefits of trust, a number of studies have suggested that companies with a relationship of trust between top management and employees are considered to have an advantage over companies without such relationships (Bromily & Cummings, 1992; Hosmer, 1995). Nonaka and Takeuchi (1994) argue that trust is the basis for organizational learning through the sharing of knowledge between people. As a consequence of mutual trust, both sharing knowledge and creating knowledge across the facilitated boundaries (Nonaka, 1991). However, trusting the core people sometimes creates organizational crisis. Some people take advantage of the trust of top management to sell the core knowledge to other companies. As Webb (1996) shows that some of them have transformed into a corporate spies, although risk-taking behavior is necessary for the organization. As a consequence of trust to an organization or top management, the desired employee attitudes, such as job satisfaction, organizational citizenship behavior, and organizational commitment, has been reported increase significantly, while the employee negative attitude, such as the desire to move, defensive behavior, and monitoring behavior, has been reported to decrease (Aryee et al, 2002 ; Costa, 2003; Deluga, 1994; Dirks & Ferrin, 2002; Hopkins & Weathington, 2006; Konovsky & Pugh, 1994).

Trust to the top management is closely related to employee perceptions of procedural fairness. Korsgaard et al. (2002) finds that managerial trustworthy behavior is significantly correlated with organizational citizenship behavior through moderation role of justice in HR policies. Spreitzer and Mishra (1999) states that the performance of the organization increasingly relies on employee involvement of lower echelons in the decision-making process because they can make better decisions than their superiors with regard to how their work should be done. According to their findings, the trust of supervisors causes delegation of tasks, which will lead to increased organizational performance.

There are several dimensions that can be used to measure trust. Robbins (2002) dimensions of the trust consist of:
1) Integrity
2) Competence
3) Consistency
4) Loyalty
5) The disclosure

Mayer in Burke et al. (2007) suggested that the dimensions of trust are:
1) Capability
2) Kindnss
3) Integrity

Misra in Nyhan (2000) states that the trust has the dimensions:
1) Competent
2) Open
3) Care
4) Reliable

Employee Satisfaction

The job satisfaction construct is generally defined as a positive emotional state that reflects the affective response to the employment situation (Locke, 1976). The focus is on task-oriented and short-term in nature (Mowday, Porter, & Steers, 1982). Some common perspectives which describe job satisfaction with all these approaches having been examined show some degree of supporting evidence. However, there is no concurrent testing of these competing models in the path of comprehensive models.

Two important outcomes of job satisfaction will be explored - absenteeism and turnover. Job satisfaction has been widely examined as a predictor of absenteeism in the literature, including clear models (Brooke & Price, 1989). The meta-analysis concludes that the relationship is negative and relatively weak (Hackett and Guion, 1985; Farrell & Stamm, 1988). However, Scott and Taylor (1985) meta-analysis find a strong negative relationship between overall job satisfaction and the frequency of being absent. Other testing result is the turnover. Job satisfaction has been studied as an antecedent for separation in some early big turnover models (Price & Mueller, 1981; Bluedorn, 1982). The results of empirical tests have shown modest negative relationship between job satisfaction and turnover (Price, 1977; Mobley, Griffeth, Hand, & Meglino, 1979). Job satisfaction has also been found to have a significant correlation with turnover (Cotton & Tuttle, 1986).

PREVIOUS RESEARCHES

Studies on the development of employee engagement have been conducted, but have not found an integrated research between the trust to the leaders, organizational justice and job satisfaction and employee engagement. The importance of employee engagement to obtain positive results for the organization and employees support by Saks (2006), Gill (2012), and Lockwood (2007). Kuang and Dung (2015) found that ethical leadership and organizational justice significantly affect employee engagement. It also found that organizational justice positively affect trust to the leader. Kristanto (2013) found that organizational justice significantly affects employee job satisfaction, in line with the research conducted by Aslam et al. (2010), Akbolat et al. (2015), Amalia (2012), Iqbal (2013), Sareshkeh et al.(2012) and Suhartini and Hakim (2010). Alfifah (2013), and Saputra (2013) found that trust to the leader significantly and positively affects employee job satisfaction. Previous researchers found that job satisfaction significantly have positive effect on employee engagement, as stated by Abraham (2012) and Aabdeen et al. (2016). Organizational justice and trust to the leader have positive relationship with employee engagement stated by Khan and Mubashar (2016) and He et al. (2014).

Framework and Research Hypotheses

Based on the study of theories of human resource management, leadership, organizational culture and engagement as well as earlier researches then it is prepared the conceptual framework of this research as in Figure 1. Figure 1 illustrates that thare are four variables of the study, namely: organizational justice (X1), trust to the leaders (X2), job satisfaction (Y1), and employee engagement (Y2). The fourth variable is a construct that cannot be measured directly, but is measured using indicators, as illustrated in Figure 1.

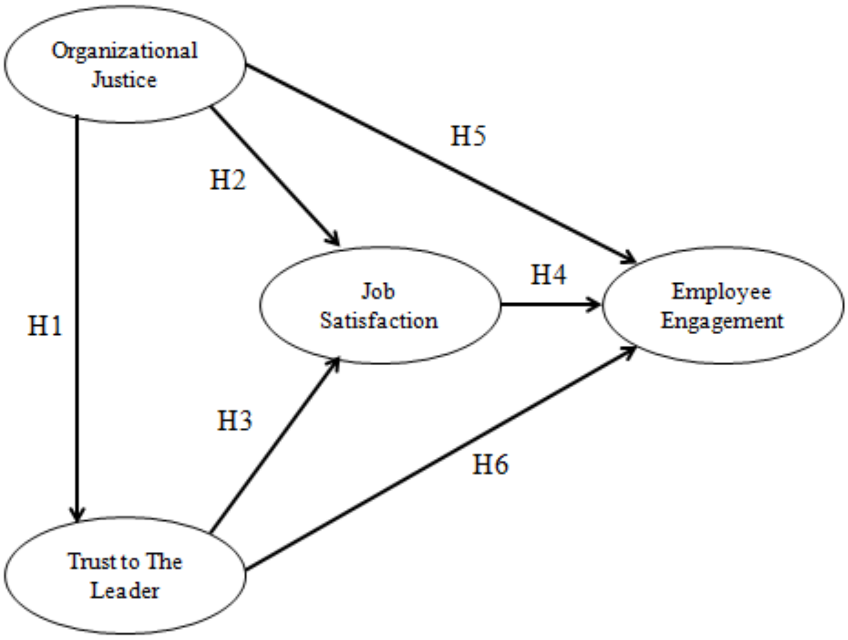

Figure 1. Conceptual Framework

Based on this conceptual framework, the research hypotheses are as follows:
H1: Organizational Justice has a significant effect on trust to the leaders.
H2: Organizational Justice has a significant effect on job satisfaction.
H3: Trust to the leaders has a significant effect on job satisfaction.
H4: Job satisfaction significantly influences employee engagement.
H5: Organizational Justice has significant effect on employee engagement.
H6: The trust to the leaders has a significant effect on employee engagement.

RESEARCH METHODS

Research Design, Population and Research Samples

This research is an explanatory research as it aims to explain the influence of variables through hypothesis testing. It is related to human behavior, an explanatory research on the perception of respondents (explanatory perceptional research). The study population is employees of companies from Jabodetabek region that study at Magister Program of Mercu Buana University Jakarta. The samples are taken randomly, as many as 150 employees.

Operational Definition of Research Variables

Primary data were collected by questionnaire. The questionnaires were distributed directly to the respondents by enumerator who explained how to fill out the questionnaire. By using this technique, it is expected to reduce the differences in interpretation between respondents and the researcher.

Variables of organizational justice (X1); the justice perceived by respondents about the various exchanges that occur in organizations where they work. Likert scale is used to measure (a score of 1 to 5) the dimensions of organizational justice namely: 1) distributive justice (X1.1), 2) procedural justice (X1.2), and 3) interactional justice (X1.3).
Variable trust to the leaders (X2); is defined as a psychological state of a person to accept based on positive expectations of the intentions or behavior of others. This variable is measured by the trust of subordinates or respondents' perception to the leaders with Likert scale (a score

of 1 to 5) on the dimensions of trust to the leaders, namely: 1) Ethical (X2.1), 2) Ability (X2.2), and 3) realiabilty (X2.3).

Job satisfaction variable (Y1) is a positive emotional state that reflects the affective response to the employment situation (Locke, 1976). Job satisfaction variables are measured with Likert scale based on the perceptions of employees (a score of 1 to 5) on the dimensions of job satisfaction which consists of: 1) Satisfaction with the work itself (Y1.1), 2) Satisfaction with the supervisor (Y1.2) , 3) Satisfaction of compensation (Y1.3), 4) Satisfaction with work colleagues (Y1.4), and 5) Satisfaction of the employment conditions (Y1.5)

Variable employee engagement (Y2), the employees' perceptions of commitment, pride and willingness to work hard at work at the company where he works. This variable is measured by using a Likert scale (points 1 to 5) using a three dimensional Schaufeli et al. (2009): 1) Vigor (Y21), 2) Dedication (Y22), and 3) Absorption (Y23).

DATA ANALYSIS

Data were processed by using structural equation (SEM) by using the program package AMOS (Analysis of Moment Structure) version 7. SEM testing can do testing together on: 1) the structural model of the relationship between independent constructs and dependent construct, and 2) relationship relating to the measurement model, which can be seen from the loading value of the indicator and construct (latent variables) .With such testing, measurement error becomes an integral part of the model, so that factor analysis could be done jointly by hypothesis testing.

Goodness-of-Fit creteria measure the suitability of observation or actual input (covariance or correlation matrix) with the predictions of the model proposed (proposed model). There are three types of measures Goodness-of-Fit that are used in this research. This testings were conducted to determine whether a variable can be used to confirm that these variables together with other variables can describe a latent variable. The criteria used to assess are the value of loading factor and regression weight.

Statistical test is done by testing whether the regression coefficients equals to zero. The testing is carried out by using t-test. The level of significance of the relationship between variables is done by looking at the value of P (level of significance) and CR relationship between variables respectively. The significance can be seen from the value of the critical ratio or CR; if CR is greater than or equal to 2.00 then the relationship between variables is significant.

RESULTS AND DISCUSSION

Descriptive statistics

Descriptive statistics on respondents' answers about the research variables, together with the average score of variable dimensions is shown in Table 1. The average score of 3.4258 where justice variable of procedural fairness dimensions has a higher score than the dimensions of distributive justice.

Table 1. Descriptive Statistics, Loading Factor dan Construct Reliability

No.	Variabel Dimension	Mean	Loading Factor	Validity	Construct Reliability	Reliability
Organizational Justice		3,4258				
1.	Distributive Justice	3,3051	0,69596	Valid	0,881	Reliable
2.	Prosedural Justice	3,5249	0,65494	Valid		
Trust to the Leader		3,3082				
1.	Ethics	3,2524	0,71272	Valid		
2.	Reliability	3,0304	0,72851	Valid	0,877	Reliable
3.	Capability	3,3669	0,62974	Valid		
Job Satisfaction		3,3082				
1.	Compensation	3,1886	0,79441	Valid		
2.	Job	3,3687	0,84087	Valid		
3.	Promotion	3,2655	0,80682	Valid	0,993	Reliable
4.	Supervision	3,3167	0,77616	Valid		
5.	Coworker	3,3162	0,81413	Valid		
6.	Facility	3,3941	0,81702	Valid		
Engagement		3,4027				
1.	Vigor	3,5186	0,60849	Valid		
2.	Dedication	3,4595	0,66940	Valid	0,811	Reliable
3.	Absorbtion	3,2293	0,68026	Valid		

Source : Research Data Processed (2016)

Trust variable in the leaders has an average score of 3.3082 where the capability dimension has the highest score compared to the ethical dimension and the reliability dimension. It means taht the respondents have the perception that their superiors have the capacity to execute their tasks. Job satisfaction variable has an average score of 3.3082, where the dimension of satisfaction with the facilities has the highest score, while satisfaction with salary has the lowest score. Engagement variable has an average score of 3.4027 where the vigor dimension has the highest score, while absorption dimension has the lowest score.

Confirmatory Factor Analysis

The results of significance analysises of confirmatory factor, as presented in Table 1 show that these indicators significantly explain the variables measured. Those are presented in Table 2. loading factor value of each indicator against the variables measured.

The validity and reliability testing of the research instrument was done by using criteria loading factor and construct reliability as presented in Table 1. The criteria used to evaluate the validity of research instrument are the loading factor of 0.6 (Gozali, 2007). Based on these loading factor criteria, instrument used to measure the research variables are all valid because it has a loading factor greater than 0.6.

Reliability was tested with criteria of reliability construct greater than or equal to 0.70 (Ferdinant, 2006), and the results are presented in Table 4.2. The construct reliability value of the four variables is greater than 0.70, so it can be concluded that the measurement of research variables is reliable, so that the overall measurement of the variables is reliable, making it feasible to do further analyses.

Assumptions and Fit Model

a. Normality

The testing of normality assumption was carried out with the skewness and kurtosis, which consists of normality test univariate and normality test multivariate. The test results indicate that there is greater value than two for capability dimension from the variable of trust to the leaders. But considering only one dimension that does not meet the standard, it is still used in the model analysis. Normality test using Mahalanobis was also carried out, in which test results indicate that as many as 10 respondents have Mahalanobis index of less than 0.2 indicating not meet the assumptions of normality or outlier occurs. However, since the amount is less than 10 percent of the data, so it can still be used in the data analysis.

b. Test of Fit Mode

The fit model in this study was measured with the criteria of significant probability, Chi-Square, RMSEA, GFI, TLI, CFI, AGFI and CMIN/DF. The results of the test indicate that the model is good, since six of the eight criteria are good and the others are moderate.

Results of Hypothesis Test

The hypothesis tests is presented in Table 2, which tests the hypotheses of research using P value criteria. If the P value less than 0.05 then the hypothesis is accepted and when greater than 0.05, then the hypothesis is rejected. There are six research hypotheses, and the 4 hypotheses were accepted; the hypothesis of the influence of organizational justice and trust to the leaders towards the employee engagement through an intervening variable job satisfaction. Hypotheses regarding the effect of organizational justice andtrust to the leaders towards the employee engagement were rejected. The discussion of the results of the testing of hypotheses is presented below.

Tabel 2. Result of Hypothesis Test

			Estimate	S.E.	C.R.	P	Result
Trust	<---	Justice	0,858	0,085	10,068	***	Hypothesis accepted
Satisfactionn	<---	Justice	0,328	0,154	2,128	0,033	Hypothesis accepted
Satisfactionn	<---	Trust	0,576	0,163	3,539	***	Hypothesis accepted
Engagement	<---	Satisfactionn	1,137	0,331	3,433	***	Hypothesis accepted
Engagement	<---	Justice	-0,059	0,217	-0,273	0,785	Hypothesis rejected
Engagement	<---	Trust	-0,507	0,295	-1,720	0,086	Hypothesis rejected

Sources : Research Data Processed (2016)

HYPOTHESIS 1: JUSTICE HAS A SIGNIFICANT EFFECT ON TRUST

The first hypothesis, that justice has a significant effect on trust to the leaders is accepted, with positive direction. It means that the higher the score organizational justice consisting procedural justice, distributive justice felt by the respondents, the higher the trust to the leaders score, which is reflected in the ethical, reliable, and capable dimensions. The results support previous research conducted by Kuang and Dung (2015), which shows that justice affects the employees' trust to the leader.

HYPOTHESIS 2: JUSTICE HAS A SIGNIFICANT EFFECT ON JOB SATISFACTION

The hypothesis that justice has a significant effect on trust to leaders is accepted, with a positive direction. It means that the higher the score of justice perceived by the respondents, the higher the score trust to leaders, which is reflected in the ethical, reliable, and capable dimensions. The results of this study support the research by Kris (2013) who conducted research at PT. Power Indonesia. Other research results by Aslan et al. (2015) also show that organizational justice, procedural, distributive, and interactional, has positive and significant impact on job satisfaction. Studies evaluating the effect of organizational justice on job satisfaction have been widely conducted and show the results that support one another, such as the research conducted by Suhartini and Hakim (2010), Akbolat et al. (2015), Amalia (2012), Iqbal (2013), as well as Sareshkeh et al. (2012). The results of this research suggest that organizational justice is an important factor in achieving employee satisfaction.

HYPOTHESIS 3: THE TRUST TO THE LEADERS INFLUENCES SIGNIFICANTLY ON EMPLOYEE SATISFACTION

The hypothesis that justice has a significant effect on trust to the leaders is accepted, with a positive direction. It means that the higher the score of justice perceived by the respondents, the higher the score of trust to the leaders, which is reflected in the ethical, reliable, and capable dimensions. As stated by Robbins (2010) that trust is the foundation of leadership. Based on trust, the employees will have the spirit in achieving the organizational performance. The results of this study also support the results of previous studies conducted by Alfiah for example (2013) which states that trust to leaders has positive and significant impact on job satisfaction, and mediates the effect of the conflict on job satisfaction. This research also supports research conductedby Saputra (2013) which states trust to leaders has a direct positive and significant influence on employee satisfaction.

HYPOTHESIS 4: EMPLOYEE SATISFACTION INFLUENCES SIGNIFICANTLY ON EMPLOYEE ENGAGEMENT

The hypothesis that justice has a significant effect on trust to the leaders is accepted, with apositive direction. It means that the higher the score of justice perceived by the respondents, the higher the score of trust to the leaders, which is reflected in the ethical, reliable, and capable dimensions. The relationship between job satisfaction and employee engagement has been discovered by some researchers, but in this case there are two groups. The first group states that job satisfaction is a result of the employee engagement, among others by Lee (2012), while the second group states that job satisfaction is a factor that encourages employee engagement, as Robinson et al. (2004: 23), and research by Abraham (2012).

HYPOTHESIS 5: JUSTICE HAS A SIGNIFICANT EFFECT ON ENGAGEMENT

The hypothesis that justice significantly influences employee engagement is not accepted, then justice has no significant effect indicated by the P value smaller than P value table and the significance level is greater than 0.05. The results of this study do not support previous research by Alfiah (2013) and Saputra (2013), which both say that justice influences employee engagement. These results indicate that the effect of justice on employee engagement is indirect, through variable job satisfaction. It means that justice will make employees satisfied and satisfied employees will have higher engagement.

HYPOTHESIS 6: THE TRUST TO THE LEADERS INFLUENCES ENGAGEMENT

The hypothesis that justice significantly influences employee engagement is not accepted. It means that the trust to the leaders does not influence significantly the employee engagement. This is indicated by the value P value less than P value table and the significance level is greater than 0.05. The results of this study do not correspond with the results of the previous studies such as MacLeod and Clarke (2009) and Menguc et al, (2012) which state that the trust of employees to their leaders determines the level of their engagement. The leaders should be the people who are trusted by their men because the trust to the immediate supervisors should be the factor that most influences the attitudes and behavior of employees. The effect of trust to the leaders affects directly the employee engagement through intervening variables job satisfaction, so trust your leaders will increase customer satisfaction, and satisfied employees will have high engagement.

CONCLUSIONS AND RECOMMENDATIONS

CONCLUSION

1. Organizational justice influences significantly employees' trust to their immediate superiors.
2. Organizational justice influences significantly on employee job satisfaction.
3. Trust to the leaders has a significant effect on employee job satisfaction.
4. Employee satisfaction influences significantly the employee engagement.
5. Organizational justice has no significant effect on employee engagement.
6. The belief in the leadership had no effect on employee engagement.

7. Based on the conclusion number 6 above, justice and trust to the learders has a positive and significant impact on employee engagement, but through job satisfaction as a mediating variable.

Suggestion

The research suggests that organizational justice and trust to the leaders should always be maintained so that the morale and the positive outcomes of the organization can be achieved.

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Archives of Business Research – Vol.5, No.2
Publication Date: February. 25, 2017
DOI: 10.14738/abr.52.2477.
Balaba, J. M. L. (2017). Minority Shareholdings in European Union Merger Control. *Archives of Business Research, 5(*2), 70-84

Minority Shareholdings in European Union Merger Control

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Abstract
From the perspective of competition policy, which looks into how the competitive field in industry markets are enhanced or threatened, mergers and acquisitions are closely observed especially with regard to how they disrupt the level playing field of otherwise competitive industries. That is, there are laws in many countries that enforce anti-trust competition policies and the application of these policies are strictly enforced in many major mergers and acquisitions in market-based nation-state economies and regional economies such as the European Union and its component countries. This research looks into merger control in the European Union and the important focus that the EU has put on minority shareholdings in mergers and acquisitions and full joint ventures. Specifically, the central issue is the lack of mechanism at the EU level to effectively deal with undue decisive influence that minority shareholdings bring to the table of merger strategic, and therefore, competitive decision-making.

KeyWords: Merger control, minority shareholdings, European Union, Merger Regulation

Minority Shareholdings in European Union Merger Control

INTRODUCTION

Mergers, acquisitions and joint ventures are three of the different ways by which a business enterprise may structure or restructure its organizations in response to changing market dynamics or business organizational thrusts, such as expansion into new markets or attaining scale efficiencies to improve profitability. Mergers may also enhance technological progress by promoting the diffusion of technology or increasing the incentives for research and development activities.[1] In general, mergers of businesses mean a reduction of players in an industry (that is, there is some concentration of businesses) and this has implications on the industry output, (higher) prices of goods or services or even (diminished) incentive to innovate as the market becomes more concentrated.[2]

A merger is a structural or organizational integration of two firms that result in a common ownership and management structure. Mergers are executed typically through stock swaps. An acquisition is a type of merger in which a firm with more resources and market strength may acquire another firm through a combination of equity infusion (purchase of stocks) or debt for equity swaps. On the other hand, a joint venture is a strategic business alliance where two firms share resources, equity, revenues, expenses and management to pursue a common goal.

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[1] European Commission, The Efficiency Defence and the European System of Merger Control (European Economy, Reports and Studies, European Union, 2001)
[2] John Rill and others, Coordinated Effects Analysis Under International Merger Regimes (ICN, 2004)

Each firm retains its own corporate identity in a joint venture, even as that joint venture has its own corporate identity.

Mergers can be horizontal or vertical integration of businesses. Horizontal integration brings together competitor firms into a single enterprise and essentially implies reduced market competition with attendant market dominance concerns (monopoly hold or oligopoly power of few dominant firms). Vertical integration essentially consolidates in one enterprise those firms which have customer-supplier relationships.[3]

From the viewpoint of competition policy, which looks into how the competitive field in industry markets are enhanced or threatened, mergers and acquisitions are closely observed especially with regard to how they disrupt the level playing field of otherwise competitive industries. That is, there are laws in many countries that enforce anti-trust competition policies and the application of these policies are strictly enforced in many major mergers and acquisitions in market-based nation-state economies and regional economies such as the European Union and its component countries. This research looks into merger control in the European Union and the important focus that the EU has put on minority shareholdings in mergers and acquisitions and full joint ventures. Specifically, the central issue is the lack of mechanism at the EU level to effectively deal with undue decisive influence that minority shareholdings bring to the table of merger strategic, and therefore, competitive decision-making.

Merger Control Overview

Competition policy, especially anti-trust laws which relate to the regulation of industry market structures in order to delimit the ill effects of monopolies and oligopolies, commonly provide for the control or even the consummation of merger transactions. The regulatory function is often performed by national (such as the US or EU member-states) or supra-national bodies which give the go-signal for mergers to take place or to effectively block such mergers when these organizational integrations result in eliminating competition or are disadvantageous to public interest.[4] Merger control is the process of reviewing mergers and acquisitions and their compatibility or compliance to the provisions and intent of anti-trust or competition law. More than 100 countries now have a form of merger control review where mergers and acquisitions come under close scrutiny when these are perceived to be inimical to public interest and subverting anti-trust provisions of existing laws.

Merger control reviews are entrusted to national or supra-national regulatory bodies such as the U.S. Federal Trade Commission and the EU European Commission which oversee merger control regimes instituted to block the anti-competitive effects of industry concentrations (referring to the few-ness of players in a particular industry) that mergers and acquisitions may bring. That said, most merger control regimes follow exhaustive analysis and procedures to perform any of the following evaluative tests:[5]

- Whether the concentration significantly impedes effective competition (European Union)
- Whether the concentration substantially lessens competition (United States, United Kingdom)

[3] ICT Regulation Toolkit, Anti-Competitive Conduct (infoDev, 2014)

[4] OECD, Anti-Trust Issues Involving Minority Shareholdings and Interlocking Directorates, (OECD DAF/COMP(2008)30, 2009)

[5] Wikipedia, Merger Control (wikipedia, 2013)

- Whether the concentration leads to the creation of a dominant position within the industry (Germany, Switzerland)

According to the International Competition Network (ICN), the acquisition of shares or other ownership interests such as partnership equity interest or LLC equity are considered as mergers that may qualify for merger review purposes if this results in an acquisition of control of the target company. Under merger control regimes, a prospective merger review is in order whenever the buyer obtains a controlling equity interest in the target company such that it can exercise a decisive influence over the target's business operations. On the other hand, an acquisition of control is presumed to arise whenever the buyer acquires a majority of the target company's shares, allowing the buyer voting rights through which it influences the target's corporate board, management and/or strategic direction.

Rationale for Merger Control in the EU

Globalization and the dismantling of non-tariff barriers have had significant roles in the emergence of a system of merger control in the EU. The rise of regionalised and integrated and single market economies, of which the EU has been a model for other world regions, resulted major corproate reorganisations within the EU, particularly in the form of cross-border mergers.[6] Within the European Community, the European Commission was given specific powers to control mergers having an EU or Community dimension. Even without such an EU dimension, the powers of the European Commission to render prohibitions against the operation of proposed mergers may extend in extraordinary circumstances.

European Commission Merger Regulation

The European Commission Merger Regulation (EMR) is the European Union's principal legal instrument for the control of mergers and acquisition at the EU or Community level. The European Commission is tasked with the authority to implement the regulations governing merger control and merger reviews for qualified threshold and geographic coverage cases.[7] All other significant merger cases that do not qualify as having an EU or Community dimension are within the jurisdiction of the respective National Competition Authorities (NCAs). That is, NCAs retain merger control jurisdiction over merger proposals that fall below the turnover thresholds set forth in the EMR. In some cases, where a number of NCAs are involved, a merger case may be referred to the European Commission for resolution.

Adopted in 1989, the current amended version of this Regulation was enforced on May 1, 2004.[8] The EMR allows the European Commission the authority to control and conduct merger control reviews on certain concentrations (mergers or acquisitions) that meet the relevant jurisdictional threshold tests. Only when the European Commission has done its investigation and stamped its approval of the merger shall such merger transactions be put into effect within the scope of the EU. However, the EMR also grants that when a merger transaction does not have the EU dimension, these transactions may in turn be scrutinized by national competition agencies (NCAs) under national merger control rules.[9]

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[6] European Commission DG Economic and Financial Affairs, Mergers and Acquisitions Note (European Commission, 2005)

[7] Council Regulation (EC) No 139/2004 on the Control of Concentrations Between Undertakings (the EC Merger Regulation), 2004 OJEU Series L 24/1, 2004

[8] Slaughter and May, The EU Merger Regulation: an Overview of the European Merger Control Rules (Slaughter and May, 2012)

[9] Council Regulation (EC) No 139/2004 on the Control of Concentrations Between Undertakings (the EC Merger Regulation), 2004 OJEU Series L 24/1, 2004 (EC Merger Regulation)

Under the EMR, merger or joint venture transactions have an EU dimension when certain turnover or revenue thresholds are met, namely:

(1) according to the original thresholds set in 1989 which applies the concept of one-stop shopping at the EU level to any merger deal that meets any of the following tests:[10]

A. Worldwide turnover threshold where the combined worldwide turnover of all the undertakings concerned must be more than 5 billion euros;
B. EU-wide turnover test where each of at least two of the undertakings concerned must have EU-wide turnover of more than 250 million euros;
C. Two-thirds rule where a concentration or merger transaction does not have an EU dimension if each of the undertakings concerned achieved more than two-thirds of its EU-wide turnover in one and the same EU member-state.

(2) according to alternative thresholds that seek to extend the one-stop shop EU principle to those transactions what would be evaluated for merge control review by three or more NCAs in the EU; these thresholds evaluate those deals that do not meet the original thresholds as still having an EU dimension if they meet all of the following tests:[11]

A. Lower worldwide turnover threshold with combined worldwide turnover of all the undertakings concerned of more than 2.5 billion euros;
B. Lower EU-wide turnover test where each of at least two of the undertakings concerned must have EU-wide turnover of more than 100 million euros;

(3) Three member-states threshold: In each of at least three EU member-states,

A. The combined national turnover of all the undertakings concerned is more than 100 million euros; and
B. Each of at least two of the undertakings concerned has a national turnover of more than 25 million euros; and

Two-thirds rule: A merger transaction does not have an EU dimension if each of the undertakings concerned achieved more than two-thirds of its EU-wide turnover in one and the same EU member-state.

Under the EMR, joint venture transactions may be covered my merger control reviews when they display structural merger characteristics such as when the venture between two or more companies allow the venture undertaking itself to take over part of its parent company's existing activities or it may represent a new start-up venture.[12] In which case, such full function joint ventures need to notify to the European Commission under the EMR if these ventures have an EU dimension. Joint ventures that do not fall under the EMR regime may still be reviewed under the general Articles 101 and 102 procedures, to include the benefit of obtaining the European Commission's block exemption when it is deemed that the transaction is actually pro-competitive and beneficial to consumers.[13] When such joint venture or strategic alliance is not covered under the EMR and also does not qualify for a block exemption, the parties to the undertaking need to consider whether the proposed transaction (1) significantly

[10] EC Merger Regulation
[11] Council Regulation (EC) No 139/2004 on the Control of Concentrations Between Undertakings (the EC Merger Regulation), 2004 OJEU Series L 24/1, 2004
[12] Slaughter and May, The EU Merger Regulation: an Overview of the European Merger Control Rules (Slaughter and May, 2012)
[13] Slaughter and May, The EU Merger Regulation: an Overview of the European Merger Control Rules (Slaughter and May, 2012)

restricts the competition that would have existed between the parties either at the research and development, production or manufacturing and/or commercialisation or supply stages, (2) appreciably affects the competitive position of third parties (suppliers, customers or competitors), or (3) forms part of a wider network of cooperation between the parties or with third parties, especially if in highly concentrated markets with very few sellers.[14]

Articles 101 and 102 of the Treaty on the Functioning of the European Union

The rules of competition in the EU and among its member-states are outlined in the Treaty on the Functioning of the European Union (TFEU) which, as amended and consolidated with the Treaty of the European Union (TEU), comprises what is commonly known as the Lisbon Treaty. Specifically, reference is made to Articles 101 of the TFEU which explicitly identifies the conditions which merit the prohibition of merger agreements or concerted practices that restrict or distort competition within the EU market. However, Article 1 of the TFEU does grant the prohibition inapplicabe when such merger transactions or agreements of undertakings contribute to improving the production or distribution of goods or promote technical or economic progress.[15]

Under Article 1, the following transactions are deemed incompatible with the workings of the internal market, when these are included or a result of any or all agreements between undertakings, decisions by associations of undertakings and concerted practices which affect trade between EU Member-States and which have as their intent or effect to prevent, restrict or distort competition within the integrated regional market:

1) Direct or indirect fixing of the buying or selling price;
   Controlling or limiting the production, markets, technical development or investment in the industry;
2) Sharing of markets or sources of supply;
3) Creating competitive disadvantage for other trading parties through trade discrimination on equivalent transactions;
4) Making contracts conditional to the acceptance by other parties of supplementary obligations that are unrelated to such contracts.

On the other hand, Article 102 prohibits undertakings that constitute an abuse of a dominant position within the EU market or in a substantial part of it. Abuse of dominant position may consist in any of the following:

1) Direct or indirect fixing of the buying or selling price or other unfair trade practices;
2) Controlling or limiting the production, markets, technical development or investment in the industry;
3) Creating competitive disadvantage for other trading parties through trade discrimination on equivalent transactions;
4) Making the conclusion of contracts subject to the acceptance by other parties of supplementary obligation which have no connection with the subject of such contracts.

Block Exemptions under the EC Merger Regulation

The merger block exemptions provided in the EC Member Regulation are derived from the provisions of the Articles 101 and 102 procedures set forth in the TFEU. When the Articles 101 and 102 procedures apply, the European Commission may issue a block to prevent the

[14] Slaughter and May, The EU Merger Regulation: an Overview of the European Merger Control Rules (Slaughter and May, 2012)

[15] Consolidated Version of the Treaty on European Union and the Treaty on the Functioning of the European Union, 2012, OJEU Series C326/01, 2012

consummation or operation of the merger within the EU. However, there are four conditions that allow a block exemption to be granted by the European Commission[16], and these occur when:[17]

1) The merger transaction contributes to improving the production or distribution of goods or to promote technical or economic progress;
2) The merger allows its consumers a fair share of the resulting benefit;
3) The merger does not impose restrictions that are not indispensable to the attainment of (a) or (b); and
4) The merger does not afford the possibility of eliminating competition in respect of a substantial part of the products in question.

The Concept of Industry Concentration and Management Control in the EU

According to established economic theory, the degree of concentration in an industry's market structure depends on the number of players that serve that particular market. A highly-concentrated industry is characterised by the presence of very few players or some form of oligopolistic or even a monopoly type of market structure. Clearly, competition policies are wary of highly-concentrated industries because any effort to restrict competition among few sellers puts consumers at the mercy of collusive pricing and/or inefficient service. Under the EMR, a concentration is deemed to emerge when a non-temporary change of ownership and control results from any of two conditions:[18]

1) Merged operations of two or more previously undependent undertakings or parties to undertakings with the parties either dissolved as separate legal entities or one undertaking absorbs another and retains its legal identity in the merger, or
2) The acquisition by one or more persons already controlling at least one undertaking (or by one or more undertakings) of direct or indirect control of the whole or parts of one or more other undertakings through purchase of securities or assets by contract agreement or by any other means.

The EMR defines control, or the change of control, as constituted by rights, contracts or any other means which separately or in combination confer the possibility of exercising "decisive" influence on an undertaking through:[19]

1) Ownership or the right to use all or part of the assets of an undertaking;
2) Rights or contracts which confer decisive influence on the composition, voting or decisions of the organs of an undertaking.

Control is vested on persons or undertakings which are holders of the rights or entitled to rights under the contracts concerned, by virtue of having majority stockholdings for example. Alternatively, control may still be acquired by such parties even without being holders to such rights or entitlements when they are vested with derived power to exercise those rights. In some cases, evidence of indirect control through formal holders of rights may be inferred from information on shareholdings, contractual relations, source of financing or family links.[20]

[16] Slaughter and May, An Overview of EU Competition Rules (Slaughter and May, 2012)

[17] Consolidated Version of the Treaty on European Union and the Treaty on the Functioning of the European Union, 2012, OJEU Series C326/01, 2012

[18] Council Regulation (EC) No 139/2004 on the Control of Concentrations Between Undertakings (the EC Merger Regulation), 2004 OJEU Series L 24/1, 2004

[19] European Commission DG Competition, EU Competition Law: Rules Applicable to Merger Control. Situation as at 1 April 2010, 2010 (European Union, 2010) (EU Competition Law)

[20] EU Competition Law

Acquisition of Minority Shareholdings in EU Mergers

Minority shareholdings are an increasing focus in merger control reviews in the EU, especially when such equity stake combined with other shareholders allow a change in control of the target company or enable the minority stockholder to block the adoption of strategic decisions which can be carried out through the exercise of veto rights. Even with a minority stake in the merger, such shareholders may still exercise de facto decisive influence over the target company.

There is at present an initiative to seek a review of the EMR, the guidelines that set forth merger control in the EU, in order to ensure better regulation this time with the aim of soliciting comments on what are seen as two main issues:[21]

1) The application of merger control rules to deal with the anti-competitive effects stemming from certain acquisitions of non-controlling minority shareholdings;
2) The effectiveness and smoothness of the case referral system from Member-States to the Commission both before and after the notification.

Rationale for Merger Control in Non-Controlling Minority Shareholdings Acquisition

Many merger review regimes extend merger control over share acquisitions that do not really constitute the purchase of outright majority of a target company in merger cases but where such minority acquisitions have the potential ability to exert a significant influence over the company. In Japan, separate notifications are already required for share acquisitions beyond 10%, 25% and 50% shareholding levels. Canada requires merger review notification on merger cases involving acquisitions of more than 20% of the shares in public companies and more than 35% of the shares in private companies.[22]

Other than the acquisition share percentage test, other merger control regimes consider additional factors with which to assess whether minority equity stakes may result in giving such shareholders the ability to influence the business direction of mergers.
In Germany, for example, the Act Against Restraints of Competition (ARC) requires not only notification of any acquisition of 25% or more of the capital or voting rights of another undertaking, but also notification of acquisitions that fall below the specified 25% threshold to the extent that the transaction would enable the buyer to exercise "a competitively significant influence" over the target company.[23]

Under merger control guidelines in the United Kingdom, acquisitions of minority shareholdings between 10%-15% may be subject to merger review to the extend that such shareholdings may result in granting the ability to exercise "material" influence over the target company. The factors that will define what constitutes material influence range from whether the minority shareholder is accorded special voting rights or veto rights, board representation and/or financial interdependence.[24]

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[21] European Commission, Towards More Effective EU Merger Control (Commission Staff Working Document, SWD(2013) 239 final. Part 1/3, European Union 2013)
[22] International Competition Network, Defining Merger Transactions for Purposes of Merger Review (ICN, 2007)
[23] International Competition Network, Defining Merger Transactions for Purposes of Merger Review (ICN, 2007) (ICN Defining Merger Transactions)
[24] ICN Defining Merger Transactions

In South Africa, notification requirements are in order for acquisitions of minority stakes when shareholder agreements or similar agreements give the buyer the ability to "materially influence" the business policy of the target company.[25]

Even for these merger review procedures on acquisitions involving minority shareholdings, exemptions are granted or rather special rules apply for share acquisitions mainly in financial services industry. Those shares acquired by securities underwriters as passive passive investments without intent to influence the target company and normally performed with a view to resell the investment within a year are generally exempt from merger review notification. This is true in the United States, South Africa and the EU.[26]

Ultimately, the attention given to minority shareholdings stems from the recognition that such shareholdings, even if of purely passive nature, may carry anti-competitive effects in certain situations. In particular, such minority interest may have the ability to influence the target company to compete less aggressively, or it may decide to behave less competitively so as not to affect its financial interest in the target company. There is therefore an urgency to consider whether merger control should cover as well to review minority shareholdings with respect to their tendency to undermine competition policy.[27]

Merger Control Rules for Minority Shareholdings in the EU

The European Commission has recognised that effective competition policy requires having the means to police and regulare all sources of harm to competition and consumers. The chief argument on the increasing focus on structural links, referring to the acquisitions of non-controlling minority shareholdings in merger and acquisitions proposals, is that such equity participation may lead to anti-competitive stances that may lead to harmful welfare effects on consumers. That said, the European Commission acknowledges that the EU does not have the procedural resort to systematically prevent the anti-competitive effects coming from those structural links.[28] Particular attention is given to the ability of the European Commission to extend merger control over acquisitions, especially with respect to acquisitions of minority shareholdings, in problematic merger cases of the horizontal nature (between competitors) or in vertical relationships (supply chain relationships).

In pacing its call for comments on the issue of merger control over minority shareholdings acquisition, the European Commission harps on established economic theory to support the anti-competitive effect that such structural links in mergers may imply in competition policy. There are said to be three ways by which structural links may lead to adverse competitive effect:[29]

1) Reduced competitive pressure between competitors (horizontal unilateral effects);
2) Substantially facilitating coordination, or collusion, among competitors (horizontal coordinated effects);
3) Allow companies to hamper competitors' access to inputs or customers in the case of vertical structural links (vertical effects).

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[25] ICN Defining Merger Transactions
[26] International Competition Network, Defining Merger Transactions for Purposes of Merger Review (ICN, 2007)
[27] OECD, Definition of Transaction for the Purporse of Merger Control Review (DAF/COMP(2013)25)
[28] European Commission, Towards More Effective EU Merger Control (Commission Staff Working Document, SWD(2013) 239 final. Part 1/3, European Union 2013)
[29] European Commission, Towards More Effective EU Merger Control (Commission Staff Working Document, SWD(2013) 239 final. Part 1/3, European Union 2013)

Sole and Joint Control and Structural Links

Under EMR clarificatory discussions, sole control is defined as having acquired when one undertaking alone exercises decisive influence on an undertaking. There is said to be sole control when the acquirer of such sole control in an undertaking enjoys the power to determine the strategic commercial decisions of the other undertaking. This normally is the result of acquiring majority of the voting rights in a company. The other case of sole control involves situation where only one shareholder is able to veto strategic decisions in an undertaking, but this shareholder does not have the power on his own to impose such decisions (known as negative sole control). Under these circumstances, a single shareholder holds the same level of influence as that enjoyed by an individual shareholder which jointly controls a company, that is, vested with th epower to block the adoption of strategic decisions. However, unlike in a jointly-controlled company, there are no other shareholders enjoying the same level of influence and the shareholder with the negative sole control does not have to cooperate with specific other shareholders in determining the strategic behaviour of the controlled undertaking. The ability of the negative sole control shareholder can produce a deadlock situation which enables it to have a decisive influence and therefore control of the undertaking as defined in the EMR.

Sole Control

Sole control is legally obtained where an undertaking acquires the majority of the voting rights of a company. An acquisition that does not include a majority of the voting rights does not automatically grant control even if it involves the purchase of a majority of the share capital.[30] In cases where company statutes require a supermajority for strategic decisions, the acquisition of a simple majority of the voting rights may be insufficient to determine the strategic directions but sufficient to confer a blocking right on the acquirer (negative control).
In the presence of structural links, or the acquisition of minority shareholdings, sole control may be legally vested in situations where specific rights are attached to this shareholding.[31] These rights may be tied up with preferential shares of stocks that enable even minority acquirers of such stockholdings to determine the strategic commercial behaviour of the target company. An example would be the power to appoint more than half of the members of the supervisory board or the administrative board.

It is also possible for a minority shareholder to exercise sole control when that shareholder is vested with the right to manage the activities of the company and to determine the business policy on the basis of the organisational structure (for example, as a general partner in a limited partnership which often does not even have a shareholding).[32] A negative sole control may likewise occur in structural links when there is one shareholder owning 50% in an undertaking while the remaining 50% is held by several other shareholders, or where there is a supermajority required to enable strategic decisions which technically confers a veto right upon only one shareholder, whether that shareholder be a majority or a minority shareholder.[33]

A minority shareholder is considered to have sole control on a de facto basis when that shareholder is likely to achieve a majority at the shareholders' meetings, given the level of its

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[30] Council Regulation (EC) No 139/2004 on the Control of Concentrations Between Undertakings (the EC Merger Regulation), 2004 OJEU Series L 24/1, 2004 (EC Merger Regulation)
[31] EC Merger Regulation
[32] EC Merger Regulation
[33] Council Regulation (EC) No 139/2004 on the Control of Concentrations Between Undertakings (the EC Merger Regulation), 2004 OJEU Series L 24/1, 2004 (EC Merger Regulation)

shareholdings. Under EMR, such foreseeable gaining of sole control by structural links will be assessed in terms of how widely dispersed the remaining (non-majority) shares are, whether other important shareholders have structural, economic or family links with the larhe minority shareholder or whether other shareholders have a strategic or a purely financial interest in the target company.

Joint Control

Joint control can emerge when there is possibility of exercising decisive influence by two or more undertakings or persons over another undertaking, in this case the target company. Decisive influence is taken to mean the power to block executive actions which determine the strategic commercial behaviour of an undertaking. Joint control renders the possibility of a deadlock situation resulting from the power of two or more parent companies to reject proposed strategic decisions, especially when they are at opposite sides over strategic issues. As a result, it is imperative for these shareholders to come to a common understanding and cooperation scheme in order to determine the commercial policy of the joint venture.[34]

Joint Control and Veto Rights of Minority Shareholders

Joint control is one area of concern for merger control review to extend to minority shareholdings because of the possibility that it may lead to the exercise of decisive influence over executive decisions. This is because joint control may still arise even when there is no equality between the two parent companies in either votes or in representation in decision-making bodies or in cases where there are more than two parent companies.[35] Here, the role of minority shareholdings may be crucial. There are cases when minority shareholders carry with their acquisition additional rights that allow them to veto decisions which are deemed essential for the strategic commercial behaviour of the joint venture.[36] Such veto rights may be granted in the statute of the joint venture of conferred by agreement between its parent companies. Veto power may operate through the holding of a specific quorum required for decisions made at the shareholders' meeting or by the board of directors to the extent that the parent companies are represented on this board. It may also be that strategic decisions are subject to approval by a supervisory body where the minority shareholders are represented and form part of the quorum required to undertake the decision-making.

The relevant veto rights that can be vested on minority shareholders must be related to strategic decisions on the business policy of the joint venture and must go beyond those veto rights that normally go with such shareholdings to protect their financial interests as investors in the joint venture. Typically, this normal protection of the rights of minority shareholders is related to decisions such as changes in the statute, an increase or decrease in the capital or liquidation. An example of such veto right that does not confer joint control on minority shareholders is when it allows such shareholders to prevent the sale or winding-up of the joint venture.[37]

Those veto rights that confer joint control on minority shareholders cover those decisions on business issues like the budget, business plan, major investments or the appointment or senior management.

[34] EC Merger Regulation

[35] Council Regulation (EC) No 139/2004 on the Control of Concentrations Between Undertakings (the EC Merger Regulation), 2004 OJEU Series L 24/1, 2004 (EC Merger Regulation)

[36] EC Merger Regulation

[37] EC Merger Regulation

As far as minority shareholdings are concerned, the acquisition of joint control does not require that the acquirer has the power to exercise decisive influence on the day-to-day management of the undertaking. Rather, what is crucial is that the veto rights are sufficient to enable the parent companyies to exercise such influence in relation to the strategic business behaviour of the joint venture.[38] In addition, it is not necessary to establish that an acquirer of joint control in the joint venture will actually make use of its decisive influence. The mere possiblity of exercising such influence and the mere existence of the veto rights is sufficient to establish decisive influence at the strategic level.

Accordingly, in order for a minority shareholder to acquire joint control, it is not necessary to have all the veto rights mentioned above. It may be sufficient that only some or even only one such right exists. The precise content of the veto right itself and its importance in the context of the specific business of the joint venture will determine if it is sufficient or not.[39]

Joint Exercise of Voting Rights of Minority Shareholders

Under the EMR, two or more undertakings that acquire minority shareholdings may still obtain joint control even in the absence of specific veto rights. This happens when the combined minority shaeholdings provide the means for controlling the target undertaking. This means that when combined, minority shareholders will gain the majority of the voting rights and will act together in exercising these rights. This can result from a legally binding agreement or it may be established on a de facto basis.

The legal manner of obtaining joint exercise of voting rights may be in the form of a jointly-controlled holding company to which the minority shareholders can transfer their rights, or an agreement by which they undertake to act in the same way (pooling agreement).
In rare cases, collective action can occur on a de facto basis where strong common interests exist between the minority shareholders so that they would not act against each other in exercising their rights in relation to the joint venture. However, this will be less likely when there is a greater number of parent companies involved in the joint venture.[40]

Minority shareholders may exercise joint control when there is a high degree of dependency of a majority shareholder on a minority shareholder. This happens when the joint venture depends economically and financially on the minority shareholder, or where only theminority shareholder has the required know-how for the operation of thejoint undertaking while the majority shareholder is only a financial investor.[41] Under these circumstances, the majority shareholder may notbe able to enforce its position, but the joint venture partner may be able to block strategic decisions so that both parent undertakings are required to cooperate permanently. This leads to a de facto situation where joint control prevails over legal arrangements under which the majority shareholder would have sole control.

[38] Council Regulation (EC) No 139/2004 on the Control of Concentrations Between Undertakings (the EC Merger Regulation), 2004 OJEU Series L 24/1, 2004 (EC Merger Regulation)
[39] EC Merger Regulation
[40] Council Regulation (EC) No 139/2004 on the Control of Concentrations Between Undertakings (the EC Merger Regulation), 2004 OJEU Series L 24/1, 2004 (EC Merger Regulation)
[41] EC Merger Regulation

Structural Links Case 1: Aer Lingus vs Ryanair

The case of Aer Lingus and the acquisition of minority shares of stock by Ryanair is a landmark example of the limitations of current EU merger control procedures[42]. By official recount, Ryanair had acquired a significant non-controlling minority stake in Aer Lingus' outstanding share capital when Ryanair notified in 2006 the proposed acquisition of control of Aer Lingus in a parallel move. The European Commission prohibited the acquisition of control in June 2007, after having considered the serious competition harm that would result from the merger. However, after the European Commission's prohibition, Ryanair maintained a minority stake in Aer Lingus representing 29.4% of outstanding share capital. Because the EMR only provides ex ante review of operations leading to the acquisition of control, the European Commission was proscribed from enforcing applicable remedies under EU merger control procedures against the minority shareholdings of Ryanair in Aer Lingus. This reasoning was confirmed in 2010 by the General Court.[43] Even then, Aer Lingus had argued that Ryanair's minority stake would have significant negative effects on competition between the two air passenger carriers. Ryanair was said to have used its minority stake to obtain access to Aer Lingus' confidential strategic plans and business secrets, block special resolutions and request extraordinary general meetings with the intent to reverse already-adopted strategic decisions. The idea presented is that Ryanair's minority shareholdings effectively weakened Aer Lingus' capacity to be an effective competitor of Ryanair. On the other hand, Ryanair's value of its investment in Aer Lingus could have reduced Ryanair's incentive to compete effectively.

Structural Links Case 2: Siemens vs VA Tech

A second case involves the acquisition by Siemens of a minority stake in SMS Demag, a competitor of VA Tech in the market for metal plant building.[44] Here, the European Commission found competition threatened at the horizontal level. Even as Siemens had already exercised a put option to sell its stake in SMS Demag, the sale had not yet become effective due to on-going litigation. The European Commission found that the influence which Siemens had via the still existing minority on the competitive conduct of SMS Demag could reduce competition in this highly concentrated market. The European Commission approved the merger following a commitment by Siemens to transfer its rights as shareholder of SMS Demag to a trustee pending the divestiture.

Structural Links Case 3: IPIC vs MAN Ferrostaal

The case of IPIC and MAN Ferrostaal in the Eurotecnica merger is an example of a vertical merger concern for the European Commission.[45] MAN Ferrostaal acquired minority participation in Eurotecnica, which is an important supplier of a licence and engineering services essential for the parties' and third parties chemical production. The remedy applied to this merger control issue and so pave way for the merger was to secure IPIC's commitment to divest its participation in Eurotecnica.

Options for the European Commission

Within the EU, it is generally acknowedged that the existing merger control regime is inadequate to deal with the participation of minority shareholdings in mergers and

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[42] Pedro Caro de Sousa, Minority Shareholdings and the Competing Merger Control Jurisdictions of the EU and National Competition Authorities: The Ryan Air / Aer Lingus Case (Competition Policy International, 2012)

[43] European Commission, Towards More Effective EU Merger Control (Commission Staff Working Document, SWD(2013) 239 final. Part 1/3, European Union 2013)

[44] European Commission, Towards More Effective EU Merger Control (Commission Staff Working Document, SWD(2013) 239 final. Part 1/3, European Union 2013)

[45] European Commission, Towards More Effective EU Merger Control (Commission Staff Working Document, SWD(2013) 239 final. Part 1/3, European Union 2013)

acquisitions that otherwise would apply for merger review. In fact, the European Commission's ability to use Article 101 or 101 of the TFEU to intervene against anti-competitive structural links, or those minority shareholder interests, is limited and even then does not cover all categories of anti-competitive structural links. In the past, the Court of Justice has ruled that structural links may fall under Article 101 of the TFEU and yet it is still unclear under which circumstances a structural link may constitute an agreement that carries the intent or effect of restricting competition within the context of Article 101 of the TFEU, especially when the structural link is set up through acquisition of a series of shares in the stock exchange.[46]

On the other hand, the requirements that are outlined in Article 102 of the TFEU, where the acquiring undertaking should already be dominant and that the acquisition should be a case of abuse of dominance, only allows the European Commission a very narrow jurisdiction over deals that may result to competitive harm arising from such minority shareholdings.
Accordingly, two options for a review of merger control rules applying to minority shareholdings are considered:

1. Extend the current system of merger control review to minority shareholdings.
2. This option requires that all relevant acquisitions of minority shareholdings be notified in advance to the Commission and would not be implemented before the Commission has cleared them. The Commission would decide in each case under a notification system whether or not the transaction could be authorised.

Allow the European Commission to have the discretion to select cases of critical minority shareholdings for investigation.

This second option could either be achieved by a self-assessment system, where obligation to notify a transaction to the Commission in advance would not apply to structural links, but instead the parties would be allowed to proceed with the transaction. The European Commission would have the option whether and when to open an investigation. The Commission would have discretion to investigate such structural links under the self-assessment system, but would have to rely on own market intelligence or complaints to become aware of structural links that may raise competition issues.

It is proposed that the substantive test laid out in the EMR for the examination of full mergers, that is, determining whether such merger transactions do significantly impede effective competition, should apply to acquisition of or participation of minority shareholdings, with additional clarification in the relevant European Commission guidelines.[47] As far as joint ventures are concerned, the European Commission should also be able to assess whether the structural link has the object or effect of coordinating or influencing the parent companies' conduct. If and when this is the case, such coordination should be assessed as infringement of the rules under Article 101 of the TFEU similar to the requirement under Article 2(4) of the EMR.

In any event, the turnover thresholds that are already set forth in the EMR as guidelines to establish the European Commission's jurisdiction over full merger control cases should be applicable as well to cases involving minority shareholdings.

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[46] European Commission, Towards More Effective EU Merger Control (Commission Staff Working Document, SWD(2013) 239 final. Part 1/3, European Union 2013)
[47] European Commission, Towards More Effective EU Merger Control (Commission Staff Working Document, SWD(2013) 239 final. Part 1/3, European Union 2013)

CONCLUSION

Even with a few Member-States already having enforced procedures on the influence of minority shareholdings on merger control issues, there is still much reworking of merger control procedures to be done at the EU level. Lengthy discussions on the impact of minority shareholdings and their possible influence on the strategic directions and control in target companies or proposed mergers have shown the many different ways such a minority shareholding can actually undermine competitive practice and competition policy on the whole. This explains current initiatives to give teeth to the European Commission to effectively address, as it has for majority shareholdings in mergers and acquisitions and in full joint ventures, the role that minority shareholders are foreseen to play in proposed mergers that in any way may be construed or likely to result in the restriction of competition, the kind that is disadvantageous to consumers and the general public.

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Archives of Business Research – Vol.5, No.2
Publication Date: February. 25, 2017
DOI: 10.14738/abr.52.2768.

Cox, P. L. & Khan, R. H. (2017). Country Culture and National Innovation. *Archives of Business Research, 5*(2), 85-101

Country Culture and National Innovation

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Abstract
Innovation, the implementation of creative ideas, is not only vital to growth but also to survival as companies and nations must innovate to compete in a rapidly changing global economy. Researchers are just beginning to understand the relationship between country culture and innovation. In a number of studies, cultural dimensions have correlated significantly with measures of innovation and creativity. However, it is difficult to compare findings across studies as multiple frameworks have been used to operationalize culture. Likewise, measures of innovation vary widely across studies. This paper proposes using a new index, the Global Innovation Index (GII), and Hofstede's cultural dimensions to explore the relationships between country culture and innovation. We begin with definitions and a discussion of innovation and national culture. Then, measures of national culture, innovation, and creativity are critically discussed, and followed by a review of existing research on country culture and innovation. Hypotheses are proposed and tested using Hofstede's dimensions and the Global Innovation Index. Our results indicate support for four out of the six hypotheses and suggest that innovative societies are characterized by the following cultural values: individualism, low masculinity, pragmatism, and indulgence.

KeyWords: innovation, country culture, national culture, creativity, Global Innovation Index, Hofstede's cultural framework

INTRODUCTION

Innovation has been defined as the "successful implementation of creative ideas" [1]. Innovation is not only vital to growth but also to survival as companies must innovate to compete in a rapidly changing global economy [2]. Creativity is not only critical for companies but also for the economic development of societies [3]. State Westwood and Low in their discussion of the culture, creativity and innovation connection [2]:

"Given the globalization of business, the increasing interpenetration of businesses across cultures, the international mobility of managers and other forms of labor, and the trend toward the dispersion of innovative activity across national boundaries, it has become increasingly important that there is an informed understanding of the extent to which creativity and innovation processes vary around the world" (p. 236).

Researchers are just beginning to understand the relationship between country culture and innovation. In a number of studies, cultural dimensions have correlated significantly with measures of innovation and creativity. Unfortunately, it is difficult to compare findings across studies as multiple frameworks have been used to operationalize culture. Likewise, measures of innovation vary widely across studies.

This paper proposes using a new index, the Global Innovation Index (GII), and Hofstede's cultural dimensions to better understand the relationships between country culture and innovation. We begin with definitions and a discussion of the following terms: innovation and national culture. Then, measures of national culture, innovation, and creativity are discussed critically, and followed with a review of existing research on country culture and innovation. Finally, hypotheses are proposed and tested.

LITERATURE REVIEW

Innovation

Innovation has been defined as the "successful implementation of creative ideas" [1] and as a "non-linear, complex, ambidextrous process which includes components of exploration and exploitation" [4]. Creativity is part of the innovation process; for innovation to occur, creative ideas that have economic value need to be recognized, validated, and implemented [5].

Culture

Culture has been defined as a system of shared meanings, beliefs, and values that have resulted from a group's successful response to problems in the environment [6, 7] and a set of basic and shared beliefs and values among individuals within a nation [8, 9]. Shared values distinguish one cultural group from another [10, 11]. "What differentiates one culture from another are its institutions and its ways of dealing with the variety of universal problems (p. 395)" [5] and include unique approaches to work behavior, conceptualization of management and leadership, and openness to changes in the status quo (p. 395) [5].

The Culture, Innovation, and Economic Prosperity

According to Williams and McGuire [5], a country's culture influences the way its citizens think and behave with respect to risk, opportunities, and rewards. The authors propose a process whereby a culture's response to risk, opportunities, and rewards influences entrepreneurial activity and economic creativity (innovation), and national innovation influences national prosperity. State the authors: "We believe a predisposition to support innovation and make capital and resources available is in itself a reflection of shared cultural values" (p. 396).

National prosperity can be viewed as a by-product of innovation [5]. "Countries that improve their standards of living are those in which firms are becoming more productive through the development of more sophisticated sources of competitive advantage based on knowledge investment, insight and innovation (p. 17)" [12]. Innovative solutions have an impact on the revenues of a firm and, in turn, on the prosperity of nations [12, 13].

Measures of Innovation and Creativity

Researchers have used a variety of methods to operationalize a nation's capacity for innovation. These measures include self-employment rates, royalty and license fees, and trademarks [5], patents and per capita income [14], and adoption rates for technological products [15]. Traditional measures of innovation have included number of PhDs, number of research articles, research centers created, patents issued (patent intensity), and R&D expenditures [5]. Two studies have used innovation indices [8, 9, 16]. Sun [16] used the National Innovation Capability Index developed by Porter and Stern [17]. Rossberger and Krause [8, 9] used the Global Innovation Index [18] that utilizes 80 indicators of national innovation.

The Global Innovation Index (GII) project [19] was launched to find metrics, measurements and approaches to capture the whole picture of innovation in society. The GII integrates information from the World Bank, UNESCO, and other sources. The GII consists of two sub-indices: innovation-related inputs and innovation-related outputs. Each sub-index has separate components called pillars. Innovation-related inputs (pillars) are as follows:

- Institutions – political, regulatory, business environment
- Human capital and research – education, research and development
- Infrastructure – information and communication technologies, energy supply, and general infrastructure
- Market and business sophistication – credit, investment, trade, competition
- Worker knowledge, innovation linkages, knowledge absorption

Innovation-related outputs (pillars) are as follows:

- Scientific outputs
- Creative outputs

The conceptual and statistical coherence of the GII has been analyzed and validated by the European Commission Joint Research Center [18]. This analysis reports that the GII is statistically coherent, has balanced structure (i.e., is not dominated by any pillar or sub-pillar), and has offered statistical justification for the use of simple averages at the various levels of aggregation from the sub-pillar's onwards. Country rankings are in most cases fairly robust to methodological assumptions. Rossberger and Krause [8, 9] investigated whether the three published editions of the GII are stable and reliable measures of innovation, showing internal consistency and correlations over the years. They also analyzed whether they show consistency with a different and unassociated measure of national innovation. For this purpose, they chose the Porter and Stern Index [17]. The correlation between the indices ranged from r =88 to r=95. These findings indicate that the indices can be considered as reliable and consistent measures of national innovation. Our research uses the GII as the dependent variable because the index includes a variety of measures of innovation (eighty different indicators) rather than a single measure (e.g.—number of patents and trademarks) thus capturing a more complete picture of societal innovation, and because previous research indicates the GII can be considered a reliable and consistent measure of national innovation.

Measures of National Culture

Measures of national culture include Kluckhohn and Strodtbeck [20], Hofstede [6], Trompenaars [21], the GLOBE research consortium model [22], and McGuire et al. [23]. See Williams and McGuire [5] for a complete discussion of these models, and their relative usefulness. They conclude that Hofstede's model has the most replicable, predictive support and includes the most countries. In addition, Hofstede's dimensions have proven to be stable over time.

Hofstede [6] is the widest used model in part due to consistent research support that the proposed dimensions are replicable and predictive of economic outcomes, and because Hofstede offers the most complete country coverage [5]. Two major studies reviewed empirical research carried out with Hofstede's variables: Kirkman et al. [24] reviewed 180 published studies and Sondergaard [25] reviewed 61 empirical studies. Both found overwhelming confirmation of Hofstede's dimensions. While Hofstede's model is perhaps the most influential and widely used, it has been criticized as being outdated despite consistent support that the dimensions are stable over time [5]. The GLOBE project [22, 26] research was intended to correct some of the criticisms of Hofstede. The research identified nine dimensions of national culture, five of which were adapted from Hofstede's original five dimensions. One of the GLOBE

Project's criticisms leveled at Hofstede was that he failed to measure what he thought he was measuring; the GLOBE project was intended to correct that problem [27]. The GLOBE project was presented by its authors as an improvement on Hofstede's five-dimensional model.

Hofstede [28] responded to the GLOBE project's criticisms of his research with a factor-analysis of GLOBE's data that suggests there are five independent dimensions rather than nine. He further outlined the differences between his research and the GLOBE project including the following:
(1) Hofstede's research was based on the re-analysis of an existing database while the GLOBE project used new data.
(2) GLOBE's subjects were all managers rather than using a variety of employees (Hofstede used employees in seven occupational categories).
(3) Hofstede's research was action-driven versus the GLOBE's theory-driven research largely based on Hofstede's 1980 book.
(4) Hofstede conceptualized national wealth as something separate from national culture while the GLOBE researchers did not control for national wealth
(5) GLOBE's operationalization of values and practices was not fully divulged and, therefore, impossible to verify.

Smith [29] identified the same differences as House. He also discussed Hofstede's exclusive use of self-reports versus GLOBE's additional use of respondent's characterizations of their own and others' nations. The GLOBE project researchers' use of such characterizations has been criticized as emphasizing stereotyping, and the validity of respondents rating their own nation has also come under criticism [29]. Both Hofstede and Smith question whether nine dimensions is an optimal number for progressing cross-cultural research and contend that that many dimensions may be overly complex. Finally, there are substantial correlations between four of the GLOBE dimensions: Future Orientation, Uncertainty Avoidance, Performance Orientation, and low Power Distance. Smith [29] concludes that both models have inherent errors and that neither can be considered as providing the one best way to measure the dimensions of national culture.

Other research examining the differences between the GLOBE dimensions and Hofstede's dimensions has focused on the similarities and differences among the dimensions. For example, Venaik, Zhu & Brewer [30] focused on the similarities and differences between Hofstede's Long-term Orientation (LTO) dimension and GLOBE's Future Orientation (FO). Their research suggests the two dimensions focus on different aspects of the time orientation of society. The LTO focuses on societal values, capturing the perseverance and thrift aspects of the future whereas GLOBE's FO dimension focuses on planning. The LTO scale items are more multidimensional and focus on multiple aspects of the time dimension; (perseverance and thrift versus tradition and stability); GLOBE's FO is more unidimensional and focuses on planning for the future versus living for the present**.** Venaik et al. [30] conclude LTO and FO are not interchangeable. Venaik & Brewer [31] also compared the Hofstede and GLOBE Uncertainty Avoidance dimensions and concluded they are measuring different things (p. 1310). The Hofstede Uncertainty Avoidance dimension appears to measure the stress experienced by societies what faced with uncertainty, while the GLOBE Uncertainty Avoidance dimension appears to be related to a societal preference for rule adherence.

Rossberger & Krause [8, 9] examined the relationship between the GLOBE cultural dimensions and innovation using the GII. They found a significant relationship between three of the GLOBE dimensions (In-group Collectivism, Uncertainty Avoidance, and Human Orientation); and no relationship for the other six dimensions (Institutional Collectivism, Power Distance, Future

Orientation, Gender Egalitarianism, Assertiveness, and Performance Orientation). Our research examines the relationship between Hofstede's dimensions and the GII in order to determine whether there are different results when Hofstede's dimensions are used as the independent variable in place of the GLOBE project's dimensions. Given the criticisms leveled at both Hofstede's and the GLOBE researcher's frameworks, we conclude that there are problems with both. With respect to the GLOBE Future Orientation dimension, it appears to measure a different dimension of time than Hofstede's Long-term Orientation dimension. Therefore, examining the relationship between LTO and innovation seems warranted. The same holds true for Hofstede's Uncertainty Avoidance if it is measuring a different aspect of culture than the GLOBE dimension with the same name [31]. There does not appear to be a direct GLOBE equivalent to Hofstede's Masculinity/Femininity dimension, although Assertiveness does seem to capture one aspect of the dimension. The Hofstede Indulgence/Restraint dimension does not have an equivalent GLOBE dimension and its relationship to innovation using the GII has never been measured. Therefore, we conclude that examining the relationship between Hofstede's cultural dimensions and the GII measures of innovation is warranted and will make a useful contribution to the literature.

An expanded model of Hofstede's cultural dimensions was selected for use in this study as the independent variable [32]. The expanded model includes a fifth dimension (Long-term Orientation/Pragmatic versus Short-term Orientation/Normative) based on research by Hofstede and Bond [33] and Minkov [34], and a sixth dimension (Indulgence versus Restraint) based on Minkov's research [34]. For further details consult Hofstede's website http://geert-hofstede.com/national-culture.html.

HYPOTHESES

The following sections review the research that examines the relationship between Hofstede's dimensions and various measures of innovation. Six hypotheses are outlined.

Power Distance and Innovation

Power distance is the degree to which a society adheres to formal power and status differences among group members. Individuals in low Power Distance cultures may be more apt to challenge assumptions, procedures, and authority figures [5]. Hofstede [6] suggested that lower power distance societies exhibit a greater tendency to innovate. Shane [35, 36] found that Power Distance was negatively related to patents and trademarks. In low Power Distance cultures, innovators may be able to more easily manage relations across hierarchical borders, challenge authority, and build independent networks of support [37]. Other studies that found empirical support for a relationship between low Power Distance and innovation using various measures of innovation include Van Everdingen and Waarts [38] and Sun [16]. Rossberger & Krause [8, 9] did not find a relationship between the GLOBE measure of Power Distance and innovation using the GII. That is contradictory to other research and may be due to the use of a more robust measure of innovation.

In low Power Distance cultures, innovators may more easily manage relations across functional and hierarchical boundaries. They may challenge authority, build independent networks of support [37], be more likely to minimize the importance of a superior's acquiescence, and go outside the immediate hierarchy for support [39]. On the other hand, in high Power Distance cultures, creative people may be expected to work through hierarchical organizational channels [14] with only support for the ideas endorsed at the top [5]. Thus, one would expect low Power Distance cultures to be more innovative.

H1: Societies with low power distance will be more innovative than high power distance societies.

Individualism versus Collectivism and Innovation

Individualistic societies place a higher value on personal goals; collective societies place a higher value on group goals. Creativity is essentially the act of an individual, sometimes in opposition to the prevailing norms of a group [1]. In collective societies, individuals tend to subordinate their self-interests to the interests of the group. Individuals in collective societies may choose not to advance new ideas that challenge members of the group or society and jeopardize relationships [5]. Shane [14] found individualistic societies to be more innovative. Lynn and Gelb [15] found individualistic cultures were more apt to adopt technologically innovative products. Other studies that found a relationship between high individualism and innovation measures include Van EverDingen and Waarts [38] and Sun [16]. Rossberger & Krause [8, 9] found a significant negative relationship between In-group Collectivism and innovation (measured by the GII). In-group Collectivism is similar to some aspects of Hofstede's Individualism dimension.

The types of innovation that are acceptable may differ among individualistic and collectivist cultures. Individualism is associated with a predisposition to accept novelty. Individualists are more likely to champion new ideas in the face of resistance [36] while collectivists may foster solutions that are acceptable to all stakeholders [11] even at the expense of innovation.

H2: Individualistic societies will be more innovative than collectivist societies.

Masculinity/Femininity and Innovation

Masculine cultures are more achievement oriented and exhibit less gender egalitarianism. Feminine cultures are more relationship oriented and exhibit greater gender egalitarianism. Masculinity combines an emphasis on traditional gender roles with a high material achievement orientation [32]. Van Everdingen and Waarts [38] found a negative relationship between higher degrees of masculinity and adoption of innovations. Their innovation measure was the adoption of innovative enterprise resource planning systems. The authors offered the following explanation: enterprise resource planning systems focus on sharing of information and collaboration, values associated with feminine cultures. Steensma et al. [40] found that in countries with high masculinity, small and medium sized firms were less likely to use alliances for technological innovation. Wilhelm & Wilhelm [41] examined the relationship between masculinity, employee empowerment, and innovation. The authors found a significant relationship between low masculinity and the willingness for managers to delegate or empower employees, and a significant positive relationship between employee empowerment and a country's capacity for innovation. Shane [14] demonstrated that masculinity has no effect on the number of trademarks per capita. Williams and McGuire [5] found no significant effect of masculinity on the economic creativity of a country.

Rossberger & Krause's [8, 9] research examining the effect of culture (using GLOBE) and innovation (using the GII) found no significant relationship between Assertiveness and innovation, and no relationship between Gender Egalitarianism and innovation. The GLOBE project splits the Hofstede Masculinity/Femininity dimension into Assertiveness and Gender Egalitarianism [26]. Hofstede [28] found a relationship between the GLOBE Assertiveness dimension and Hofstede's Masculinity/Femininity dimension, but no relationship between Gender Egalitarianism and Masculinity/Femininity. However, Assertiveness is only a part of the Masculinity/Femininity dimension; Masculinity/Femininity is a much more complex dimension [28].

The results of studies examining the relationship between Masculinity/Femininity and innovation have been mixed with either no relationship found between the two variables or some indication that feminine cultures may be more apt to foster organizational norms that are more favorable to innovation (i.e. – alliance building, employee empowerment, sharing of information). Prior research examining the relationship between Masculinity/Femininity and innovation used output-oriented measures of innovation (patents, adoption of innovations). The GII adds an input-oriented measure of innovation that may be related to some aspects of the Hofstede Masculinity/Femininity dimension. For example, in feminine societies where the focus is on people and cooperation, a more supportive climate for innovators may occur. Feminine cultures may exhibit a preference for cooperative environments that may facilitate innovation. We propose a positive relationship between femininity and innovation, based on evidence that feminine cultures may be more apt to empower employees [41], form the alliances necessary for innovation to occur [40], and the use of a more robust measure of innovation that captures innovation inputs as well as outputs.

H3: Feminine societies (low Masculinity) will be more innovative than masculine societies.

Uncertainty Avoidance and Innovation

Uncertainty Avoidance differentiates societies on willingness to assume risk. Hofstede [6] suggested that societies exhibiting low uncertainty avoidance are more willing to take risks and to accept opinions other than their own, both of which encourage innovation and entrepreneurship. Culture scoring high on Uncertainty Avoidance are more apt to adapt rules to minimize ambiguity. In such cultures, innovators may be less likely to violate societal norms even when doing so would increase the likelihood of innovation implementation [36]. Lynn and Gelb [15] found a relationship between low uncertainty avoidance and higher adoption rates for technological products using Hofstede's dimensions and Readers Digest Euro data (to measure innovation). Other studies that found empirical support for a relationship between low uncertainty avoidance and innovation using various measures of innovation include Van Everdingen and Waarts [38] and Sun [16]. Rossberger and Krause [8, 9] found a significant positive relationship between the GLOBE project Uncertainty Avoidance measure and innovation (using the GII). However, there is some dispute as to whether the GLOBE project Uncertainty Avoidance measure and Hofstede's Uncertainty Avoidance are equivalent dimensions [31].

In high uncertainty avoidance cultures, innovators may be less likely to violate organizational procedures or societal norms, even when doing so would protect or further their project or new venture [5]. Cultures scoring low on uncertainty avoidance are more accepting of risk and ambiguity. Thus, one would expect low uncertainty avoidance cultures to be more innovative.

H4: Societies with low Uncertainty Avoidance will be more innovative than societies with high Uncertainty Avoidance.

Pragmatic (long-term orientation) versus Normative (short-term orientation) and Innovation

A fifth dimension was added to Hofstede's framework in 1991 based on research by Michael Harris Bond [33]. That dimension (based on Confucian thinking) was called Long-term/Short-term orientation. The Long-term/Short-term Orientation dimension represents a range of

Confucian-based principles and basically reflects the difference between a dynamic, future-oriented society (positive Confucian dynamism—longer term perspective) versus a more static, tradition-oriented one (negative Confucian dynamism—shorter term perspective). In societies exhibiting a longer term perspective, values such as perseverance, hard work, shame, and savings may predominate. Shorter-term societies tend to have values indicative of a more present- and past-oriented perspective, including the concepts of "face" and reciprocation, concerns for traditions and fulfilling social obligations [33, 42]. Values associated with the positive (Long-term Orientation) pole of the Confucian dynamism dimension, including the focus on hard work and perseverance, should be associated with higher levels of innovation [43]. Van Everdingen and Waarts [38] investigated the effects of national culture on the adoption of innovations using the Hofstede dimensions. They found that higher degrees of Long-term Orientation were related to increased adoption of innovations.

The Long-term/Short-term dimension was originally applied to 23 countries. In 2010, Michael Minkov generated two cultural dimensions using the World Values Survey. One of the dimensions is similar to the Long-term/Short-term orientation dimension: Pragmatic versus Normative. The utilization of Minkov's research allowed Hofstede's fifth dimension to be extended to 93 countries. Normative societies score low on this dimension and favor time-honored traditions and norms; societal change is viewed with suspicion. Pragmatic societies encourage thrift and efforts in modern education as a way to prepare for the future. People in pragmatic societies believe that truth depends on the situation, context, and time, and tend to have an ability to adapt traditions easily to changing conditions. Pragmatism is related to school math results in international competition. Student achievement in reading, mathematics, and science has been linked to pragmatic societies [44]. Thus, one would expect pragmatic societies to be more innovative than normative societies.

H5: Pragmatic societies will be more innovative than Normative societies.

Indulgence versus Restraint

In 2010, a sixth dimension was added based on Minkov's analysis of World Values Survey data [34]. This new dimension is called Indulgence versus Restraint and can be defined as the extent to which people try to control their desires and impulses, based on the way they were raised. Indulgent societies are characterized by a desire to gratify basic and natural human drives related to enjoying life and having fun. Restrained societies suppress gratification of needs by means of strict social norms. People in indulgent societies tend to be more optimistic; people in restrained societies tend to be more pessimistic and cynical. A study by Syed & Malik [45] found that cultures with low Uncertainty Avoidance and high Indulgence tend to adopt new technology more readily than cultures with high Uncertainty Avoidance and low Indulgence. Indulgent societies may encourage innovation as a way to continually satisfy drives related to having fun and enjoying life.

H6: Indulgent societies will be more innovative than Normative societies.

METHODOLOGY

Sample

The Global Innovation Index (GII) for 2012 consisted of 176 countries, while Hofstede's cultural dimensions were available for 101 countries. Merging the two lists along with data from the World Bank reduced the sample to 96 countries. However, missing values for the control variables and the new Hofstede dimensions further reduced the sample and we were left with 77 usable data points for this study. The variables for the study are discussed next.

Dependent Variable

The Global Innovation index (GII) from 2012 [46] was used as the dependent variable for this study. The GII is published by Cornell, INSEAD and the World Intellectual Property Organization (a unit of the United Nations) and ranks countries of the world on their innovation capabilities. The scores for the countries in our sample ranged from 22.2 to 68.2. We used the 2012 index because data from the World Bank was not available for more recent years.

Independent Variables

The independent variables for this are Hofstede's cultural dimensions [47]. We used the scores for each of the six dimensions in the model. Power Distance (PD) measures the inequality in power between the members of society and how the inequality is accepted. High scores for PD signify the acceptance of power differences and inequality. Individualism (IDV) is the next dimension and a high score signifies a society where the focus is only on the individual and their immediate family. Lower scores signify a focus on groups and decision are based on group welfare. High scores on Masculinity (MAS) represent a society that is focused on achievement, competition and assertiveness, while lower scores suggest a cooperative society focused on relationships and quality of life. Uncertainty Avoidance (UA) captures how a society feels about uncertainty and ambiguity. Higher scores represent an aversion to uncertainty. Pragmatic (PRA) societies take a long-term approach and focus on the future. They focus on modern education and less on time honored traditions to prepare for the future. Indulgence (IDG) represents a society that allows free fulfillment of human needs, enjoying life and having fun. Lower scores represent a society governed by strict norms that believes in suppressing gratification.

Hofstede provides scores for each of these dimensions and these scores range from 0 to 100. We used the reported scores for each country in our sample to capture the overall national culture of a country. By including all the cultural variables in a single model, we hope to capture the complete effect of national culture. Using individual dimensions in isolation might make differentiating between countries difficult, since many countries score similarly on one dimension but may differ along other dimensions. Table 1 below provides an example of countries that score very similar on Power Distance, but have varying scores along the rest of the dimensions. By including all the dimensions at once in the model we hope to capture the true effect of national culture.

Table 1. Comparing Dimensions Across a Sample Group of Countries

Country	Power Distance (PD)	Individualism (IDV)	Masculinity (MAS)	Uncertainty Avoidance (UA)	Pragmatism (PR)	Indulgence (IDG)
Bhutan	94	52	32	28		
Iraq	95	30	70	85	25	17
Panama	95	11	44	86		
Philippines	94	32	64	44	27	42
Russia	93	39	36	95	81	20
Saudi Arabia	95	25	60	80	36	52

Control variables

Research has shown that foreign direct investment (FDI) leads to spillover learning and innovation. Therefore, we use FDI as a control variable. The FDI variable was taken from the World Bank database [48]. We calculated the average FDI from year 2004 to 2011 and then took the log of the variable (FDILog) to scale it. The second control variable was the average R & D Expenditure (RDE) as a percentage of GDP for the period 2004 to 2011 also based on the World Bank database. As countries spend more on R&D innovation should increase.

ANALYSIS AND RESULTS

The descriptive statistics and correlations for the sample variables are given in Table 2 and Table 3 respectively. We analyzed the data using a stepwise regression analysis. Since innovations take time after investments have been made, we used lagged values for the control variables in the model. We also used average values for the control variables to capture the long-term trends rather than just a one-time short-term effect. Since the value for the cultural dimensions is unchanged over extended period of time, and Hofstede has only provided singular values we used these values for the cultural dimensions.

The correlation table shows that both the control variables are significantly correlated with the dependent variable. The regression analysis was carried out in two steps. In both steps we utilized stepwise regression with backward elimination. In the first step only the control variables were included. The regression model was significant and both control variables were significant and in the expected direction, FDI and R&D Expenditure both increase innovation, however, R & D expenditure variable is more influential. The control variable model had an Adjusted Rsq of 69.9%.

Table 2. Descriptive Statistics

Variable	N	Mean	StDev
GII2012	96	40.29	12.52
FDI_Log	95	9.62	0.7808
RD_Expenditure (RDE)	83	1.04	1.009
Power Distance (PD)	96	61.98	21.16
Individualism (IDV)	96	39.08	22.463
Masculinity (MAS)	96	47.7	18.78
Uncertainty Avoidance (UA)	96	63.86	21.21
Pragmatism (PR)	83	43.53	23.54
Indulgence (IDG)	78	48.31	23.11

Table 3. Correlations

	GII2012	FDILog	RDE	PD	IDV	MAS	UA	PR
FDILog	.639**							
RDE	.803**	.468**						
PD	-.540**	-0.196	-.567**					
IDV	.697**	.495**	.570**	-.595**				
MAS	-0.091	0.161	-0.08	0.138	0.062			
UA	-0.107	0.017	-0.159	0.074	-0.121	0.026		
PR	.401**	.263*	.385**	-0.1	.225*	0.084	0.084	
IDG	0.146	0.148	0.186	-0.221	0.111	-0.049	-0.124	-.453**

† P <0.10, *P <0.05, **p <0.01, ***p <0.001

The independent variables were added to the regression model in the second step. The model was again significant but Power Distance and Uncertainty Avoidance were not significant and were dropped from the final model. The coefficients for variables that remained in the model were in the expected direction and provided support for the hypotheses. The adjusted RSq for the complete model was 75%. The regression results are presented in Table 4. Since some of the independent variables were correlated we checked the Variance Inflation Factors (VIF) and all the VIF values were well below 10, with the maximum being under 3; thus, there is no multi-collinearity problem and we can assume that the coefficients in the regression are showing the correct relationship.

Table 4. Regression Results

Predictor	Controls Standardized Beta	Stepwise All Variables Standardized Beta
Constant	-10.752	-1.881
FDILog	0.281***	0.153*
RDE	0.672***	0.451***
PD		
IDV		0.255**
MAS		-0.149*
UA		
PR		0.244**
IDG		0.168*
RSq	0.706	0.771
RSq(adj.)	0.699	0.75

† P <0.10, *P <0.05, **p <0.01, ***p <0.001

The results for the hypotheses are summarized in Table 5. All the hypotheses were supported except for Hypothesis 1 and 4. Power Distance was negatively correlated and significant (Table 3) as was predicted (Hypothesis 1) but did not come out significant when it was included with all the other variables in the regression model and was dropped from the model along with Uncertainty Avoidance (Hypothesis 4) which was also expected to have a negative relationship with innovation.

Table 5 - Summary of Results

Hypothesis	Result
H1: Societies with low power distance will be more innovative than high power distance societies.	Not Significant
H2: Individualistic societies will be more innovative than collectivist societies.	Supported
H3: Feminine societies (low masculinity) will be more innovative than masculine societies.	Supported
H4: Societies with low uncertainty avoidance will be more innovative than societies with high uncertainty avoidance.	Not Significant
H5: Pragmatic societies will be more innovative than normative societies.	Supported
H6: Indulgent societies will be more innovative than normative societies.	Supported

According to the standardized coefficients reported in Table 4, Individualism (0.255) had the strongest effect in the model among the Hofstede variables followed by Pragmatism (0.244), Indulgence (0.168) and Masculinity (-0.149). These coefficients are all in the expected direction. These results support our hypotheses that Individualistic, Pragmatic/Long-term Oriented, Indulgent, and Feminine societies are more innovative, while countries focused on values tied to Collectivism, Normative/Short-term Orientation, Restraint, and Masculinity are lower in innovation.

DISCUSSION

The results provide support for four out of the six hypotheses. The results suggest that cultural dimensions do influence the decisions that affect the innovation capabilities of a country. It is clear that all dimensions are not equally important with respect to innovation. Power Distance which deals with inequality between members of society was not significant in the model. How countries deal with uncertainty does not seem to influence innovation either. While the analysis of the Variance Inflation factors does not show a multicollinearity problem, it is possible that negative correlation between Power Distance and Individualism may be negating the link between Power Distance and the dependent variable. Our results suggest that innovative societies are characterized by the following cultural values: Individualism, low Masculinity, Pragmatism/Long-term Orientation, and Indulgence. Societies with these four cultural characteristics may be more apt to have environments where creativity and innovation can flourish.

Contributions to Research

This study examines the relationship between Hofstede's cultural dimensions and the Global Innovation Index (GII). Previous studies of Hofstede's cultural dimensions and innovation used more simplistic measures of innovation (self-employment rates, royalty and license fees, trademarks, technology adoption rates, patents, R&D expenditures, number of research centers, etc.). The GII utilizes 80 different indicators of innovation and includes both innovation-related inputs and innovation-related outputs. Therefore, we believe it is a more robust measure of innovation. Rossberger & Krause [8, 9] also used the GII, but measured culture using the GLOBE project.

With regard to the Hofstede Power Distance variable, our results differ from previous research in that we found no significant relationship between Power Distance and Innovation.

Rossberger & Krause [8,9] found no significant relationship between the GLOBE power distance variable and the GII. The use of the GII (a more complex measure of innovation) by our study and by Rossberger & Krause may be the reason for the results differing from previous research.

Our results for the Individualism/Collectivism dimension support prior research examining the relationship of the dimension with various measures of innovation. Rossberger & Krause [8, 9] found a negative relationship between the GLOBE project In-Group Collectivism dimension and innovation but no relationship between Institutional Collectivism and innovation. In-Group Collectivism and Institutional Collectivism are proposed by House et al. [26] to represent two different aspects of Hofstede's Individualism/Collectivism variable. In-Group Collectivism is the degree to which individuals express pride, loyalty, and cohesiveness in their organizations or families. Institutional Collectivism is the degree to which organizational and societal institutional practices encourage and reward collective distributions of resources and collective action. Hofstede's Collectivism represents a preference for a tightly-knit society in which individuals can expect their relatives or members of their in-group to look after them in exchange for unquestioning loyalty. There is a great deal of debate in the literature as to whether the two GLOBE dimensions are the equivalent of the Hofstede dimension [28, 29]. Nonetheless, our findings for the Hofstede Individualism/Collectivism dimension and innovation are supportive of the In-Group Collectivism and innovation finding by Rossberger & Krause [8, 9]. Societies that are more individualistic are more apt to be innovative than societies that favor cohesive family-oriented collectivism.

Our results for the Hofstede Uncertainty dimension and innovation are not supportive of Rossberger & Krause's [8, 9] finding that the GLOBE Uncertainty dimension is related to innovation as measured by the GII. There is debate as to whether the two variables are equivalent [31]. The results of this study provide support for the contention that the Uncertainty variables from the two frameworks (GLOBE and Hofstede) are, in fact, measuring something different. Our findings do not link Uncertainty Avoidance to innovation and are contradictory to previous research examining the Hofstede Uncertainty Avoidance dimension and innovation. However, previous research used a less sophisticated and robust measure of innovation. Venaik & Brewer's research [31] suggests that Hofstede's Uncertainty Avoidance index represents the "stress" dimension of uncertainty avoidance, while the GLOBE Uncertainty Avoidance index represents the "rule orientation practices" dimension of uncertainty avoidance. It may be that rule orientation inhibits innovation, but the stress created by uncertainty does not.

While Rossberger & Krause [8, 9] examined the relationship between the GLOBE project Future Orientation variable and innovation and found no relationship, our results showed a positive relationship for the Pragmatic/Long-Term Orientation dimension. Future Orientation has been proposed as the equivalent to Hofstede's Pragmatic/Long-Term Orientation dimension. One would predict that if the two dimensions are equivalent, our results would be the same as the Rossberger and Krause study. Our research suggests that the two dimensions are not equivalent, supporting the Venaik et al. [30] conclusion that the two dimensions are not interchangeable. Their research suggests the two dimensions focus on different aspects of the time orientation of society. The Hofstede Pragmatic/Long-term Orientation dimension focuses on societal values, capturing the perseverance and thrift aspects of the future whereas GLOBE's Future Orientation dimension focuses on planning. Our findings suggest that perseverance is related to innovation but planning for the future in not.

Our results for the Hofstede Masculinity/Femininity dimension and innovation is supportive of prior research that found a relationship [38, 40, 41] and differs from prior research that found no relationship [5, 35]. Prior research examining the relationship between Masculinity/Femininity and innovation used output-oriented measures of innovation (patents, adoption of innovations, etc.). The GII adds an input-oriented measure of innovation that may be related to some aspects of the Hofstede Masculinity/Femininity dimension. For example, in feminine societies where the focus is on people and cooperation, a more supportive climate for innovators may occur. Feminine cultures may exhibit a preference for cooperative environments that may facilitate innovation.

Rossberger & Krause [8, 9] found no relationship for Gender-Egalitarianism and Assertiveness and innovation using the GII as the innovation measure. Gender Egalitarianism and Assertiveness have been proposed as equivalent to the Hofstede Masculinity/Femininity dimension. Our findings suggest that the two GLOBE dimensions are not interchangeable with Hofstede's Masculinity/Femininity dimension. Hofstede [28] found a relationship between the GLOBE Assertiveness dimension and Hofstede's Masculinity/Femininity dimension, but no relationship between Gender Egalitarianism and Masculinity/Femininity. Assertiveness is only a part of the Masculinity/Femininity dimension; Masculinity/Femininity is a much more complex dimension [28]. Hofstede's Masculinity is defined as a preference in society for achievement, assertiveness, and material rewards for success. Masculine societies tend to be more competitive than feminine societies. Hofstede's Femininity dimension applies to societies that emphasize cooperation, modesty, caring for the weak, and quality of work. While assertiveness may not be related to innovation, the cooperative aspects of femininity appear to be related. Societies that emphasize quality of work and cooperation may be more predisposed to innovation than masculine societies that emphasize competition and material rewards.

Finally, we found support for a relationship between Indulgence and GII. Prior research [45] found a relationship between adoption of new technology and indulgence but did not use the GII as an innovation measure. The GLOBE project has no dimension that is similar or the equivalent of the Hofstede Indulgence dimension. Indulgent societies may encourage innovation as a way to continually satisfy drives related to having fun and enjoying life.

We add to the literature by comparing Hofstede's dimensions to innovation using the Global Innovation Index. Our research expands the research of Rossberger & Krause [8, 9] by suggesting that in addition to Globe's Uncertainty Avoidance, In-group Collectivism (similar to Hofstede's Collectivism), and Human Orientation dimensions, the following Hofstede dimensions are related to innovation as measured by the Global Innovation Index: Pragmatism/Long-term Orientation, Masculinity/Femininity, and Indulgence/Restraint. Societies characterized by individualism, a human orientation, feminine values like cooperation, a pragmatic/long-term orientation, low uncertainty avoidance (as measured by the GLOBE index and related to rule-orientation), and indulgence may be more predisposed to innovation.

Limitations and Future Research

This research is limited by a small sample size due to missing values for some countries on some of the new Hofstede dimensions. Future research is needed to further explore whether some dimensions work against each other (for example, the strong correlation between Power Distance and Individualism). In addition, there may be clusters of countries with similar cultural tendencies—further research is needed to address this question. Rossberger & Krause [8, 9] conducted a cluster analysis but did not use Hofstede's dimensions. Our research may bring some light to the continuing debate of whether or not the Hofstede and GLOBE dimensions are interchangeable. With respect to innovation as measured by the GII, the Power distance, and Individualism/In-group Collectivism dimensions yielded similar results. With respect to Hofstede's Masculinity/Femininity dimension and GLOBE's suggested equivalents (Gender Egalitarianism and Assertiveness) the results were different, suggesting that at least with respect to innovation, the dimensions are not equivalent. The GLOBE Uncertainty Avoidance dimension was related to innovation; the Hofstede Uncertainty Avoidance dimension was not—suggesting the two dimensions are not interchangeable. While Hofstede's Pragmatism/Long-term Orientation (LTO) dimension was found to be related to the GII measure, GLOBE's Future Orientation (FO) measure was not related. LTO and FO may be measuring different aspects of the cultural time dimension. Further research is needed to further clarify the differences between the GLOBE and Hofstede dimensions.

CONCLUSION

This research extends prior research by examining the relationship between Hofstede's framework and the Global Innovation Index. Our results indicate support for four out of the six hypotheses and suggest that innovative societies are characterized by the following cultural values: individualism, low masculinity, pragmatism/long-term orientation, and indulgence. This research has implications for government policy; governments may want to develop policies that overcome cultural tendencies that inhibit innovation. Without a change in government policy, countries with cultures negatively predisposed to innovation may not be able to grow economically and compete effectively with more innovative societies. Our results may also have implications for foreign direct investment; companies may wish to consider country culture when considering where to invest. Additionally, the relationship between culture and innovation may have implications for organizational culture. An organizational environment where innovation can flourish may be characterized by the following:

- Challenging the status quo (high Individualism)
- Sharing of information and the promotion of collaboration (low Masculinity)
- Encouragement of achievement and long-term thinking (Pragmatism)
- Creating new technology as a way to improve life (Indulgence)

Companies with goals of becoming more innovative may want to develop policies that encourage the above cultural values.

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Archives of Business Research – Vol.5, No.2
Publication Date: February. 25, 2017
DOI: 10.14738/abr.52.2780.
Kozyr, Y. V. (2017). Overview Of Additional Issue Of Shares And Debt In The Process Of Value Appraisal Of Shares And Planning Of Additional Issue Parameters. *Archives of Business Research, 5*(2), 102-125

Overview of Additional Issue of Shares and Debt In The Process Of Value Appraisal of Shares and Planning of Additional Issue Parameters

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Abstract
The article contains a theoretical analysis of the impact of additional issue of shares on the value of the invested and stock capital. The present analysis encompasses aspects of redistribution of capital between the old and new shareholders, as well as valuation procedures in different situations, both in terms of the volume of additional issue of shares and of payment methods. The income approach is used in the value appraisal. The principal place under the income approach is given to the shareholder value added model (model SVA). This article may be useful in solving a number of practical problems related to the issues of restructuring of the company's capital. Investment analysts will find in this article a tool of benefit-sharing analysis of the capital structure changes between "old" and "new" company's shareholders and will be able to make a calculation of the parameters of the additional issue of shares.
GEL classification numbers: D 460, G 120, G 320.

KeyWords: Additional issue of shares (SPO), value of shares prior to the additional issues, value of shares after additional issues, share in the company's capital.

INTRODUCTION

In 2006 the author of the present article attended a seminar in Moscow conducted by a well-recognized in the evaluation world Guru. A seminar attendee asked the spokesman: "How should the shares be valued, when an additional issue of shares takes place?", and the Guru replied: "I don't know." It must be noted that this question bothered me even before the seminar, but after the seminar I got down to it more closely and within a couple of months managed to obtain the first results (Kozyr, 2007). However, afterwards some routine affairs kept me away from this topic for a whole decade until I finally attempted to reconsider the obtained results, systematize them and present them in a more comprehensible way. While working on this question I came upon some new ideas, which made me extend the scope of my research. The attempt to study the background of the problem became a special challenge for me. I cannot state that there is nothing on this topic - of course there is. Nevertheless, the valuation of shares during the additional issue thereof cannot be considered a well-studied subject. The majority of publications on this topic touch upon the questions of recapitalization accounting in the cost of capital assessment. The author found just one work (Brealey, Myers, 2004) that covered the aspects of valuation related to the additional issue of shares. Let us take a closer look at these aspects in the way they were presented in this work.

When the share issue takes place, the *existing* company shares can be evaluated in two ways. The first is to discount the net cash flow that is received by the current shareholders, if they buy *all* of the newly issued shares. In this case the shareholders supply the issuing company with money [for example, in the periods when negative cash flow balance is expected – note by Yu.K.] and then receive all subsequent dividends, which means they pay for and receive the whole free cash flow in all future periods. Consequently, the share price equals to the gross free cash flow of the company's shareholders, including both negative and positive values, divided by the amount of the existing shares.

The second way is to discount the amount of dividends subject to payout once the cash flow is positive. But in this case *the only* dividends that should be taken into account are those paid on the *existing* shares. The new shares issued to finance the negative free cash flow in the forecast period also claim part of future dividends.

Both introduced shares valuation methods should give the same result. It should be noted that under these approaches the amount of new (issued) shares is to be defined as the quotient of the funds raised as a result of additional issue and the market value of a single share[1]. It should also be noted that the net present value of investments of the new shareholders buying the issued shares should amount to zero, i.e. the purchase price for them should equal to the expected net income flow from their shares.

The two stipulated methods can be applied to the situation, when a company uses its free cash flow for redemption of its own shares. In such cases several important issues should be taken into account. Firstly, all other conditions being equal the value of the company does not depend on the decision to replace cash dividends with redemption of shares. Secondly, when evaluating the equity value both cash distributed as dividends and cash intended for redemption of shares should be considered. Thirdly, inclusion of both the expected dividends per share and the funds received by the shareholders from share redemption when calculating the cash flow per share would mean double count (if you sold your share back to the company, you would receive no dividends in the future). Fourthly, the company redeeming its shares instead of paying out dividends reduces the amount of shares in circulation, but compensates it by raising earnings and dividends per share.

As stated above, there are many publications on the influence of recapitalization on the fund raising costs. These include the following publications and evaluation methods.
One way of evaluation during the recapitalization is the method offered by R. Brealey and S. Myers in their monumental work "Principles of Corporate Finance" (Brealey, Myers, 2004)). This method is applicable to capital cost correction when the structure of capital changes (namely, when the proportion between owners' and debt capital changes). According to this method, a three-step algorithm should be applied for the capital cost correction. At step one a debt load clearance of a weighted-average cost of capital is made or, in other words, alternative costs of debt capital are calculated as:

$$r = r_D \frac{D}{V} + r_E \frac{E}{V},$$

where r - an alternative cost of capital fund raising into the project with similar risk level,
r_D - the cost of rising debt capital,
r_E - the cost of rising stock capital,
D - the amount of debt capital,
E - the amount of stock capital,
V - total capital (V = E + D).

[1] This means of calculation of the amount of new shares implies that the raised funds are invested into projects with such profitability and risk parameters that correspond with profitability of previously invested assets of the company and with the level of risk previously accepted by the company.

At step two debt and stock capital costs are evaluated in a new capital structure (new debt to capital and debt to stock capital ratios) using the second Modigliani-Miller proposition to calculate the cost of stock capital:

$$r_{E2} = r + (r - r_{D2})\left(\frac{D}{E}\right)_2,$$

where r_{E2} - the adjusted cost of equity in a new capital structure,
r_{D2} - the adjusted cost of debt in a new capital structure,
$(D/E)_2$ – the new capital structure ratio.
At step three weighted average cost of capital is calculated, taking into account the new capital structure ratios and new cost of capital.

The above mentioned estimation method is appropriate, when the capital structure changes slightly once or twice within the affected period. However, if the company is planning a significant capital structure change, the weighted average cost of capital concept (the WACC formula) will not work. In such cases the Adjusted Present Value method (hereinafter referred to as "APV"), developed by Stewart Myers in 1974, should be used. (Myers, 1974). The APV model separately from the major project measures the total impact of such project effects as tax shield, change in the company's debt service capacity, as well as flotation costs. The APV model has proved to be successful when used for evaluation of parameters of transactions characterized by substantial change in capital structure (leveraged buyout (LBO) and management buyout (MBO)). At the same time it should be mentioned that as R. Brealey and S. Myers note, the APV method is applicable when the debt supported by a company or a project is linked to the balance value of the company (or the project) or when this debt is to be repaid under a fixed schedule. The authors do not claim the possibility to use this method unless these conditions are satisfied.

The method to evaluate the cost of capital upon the capital structure change proposed by K. Ferris and B. Pety (Ferris, Pettit, 2003) should also be mentioned. According to this valuation method calculation is made with the help of a discounted cash flow model, however, here a special technique is used to determine the discount rate for every forecast period starting from the last year and ending with the first forecast year. This method is logical and fairly universal, although it is fairly time-consuming in terms of execution of calculations. It should also be noted that this estimation method is only applicable in connection with minor changes in capital structure.

Extensive overview of balance between the cost of capital and various capital structure is introduced in the work of T. Copeland, T. Koller and J. Murrin (Copeland, Koller, Murrin, 2005). This work presents different ratios of weighted-average cost of capital to cost of unlevered capital, cost of levered equity capital to cost of unlevered equity capital, as well as levered "beta" and unlevered "beta" to debt "beta".

Extensive and probably the most detailed analysis of existing methods covering the estimated capital structure is introduced in the recently published work of P. Fernandez (Fernandez, 2015), who presents not only his own evaluation of Tax Shield (Fernandez, 2004), unlevered beta and unlevered company, but also the evaluation methods of Damodaran (Damodaran, 1994), Miles-Ezzel (Miles, Ezzel, 1980), (Miles, Ezzel, 1985), Myers (Myers, 1974) and Harris-Pringle (Harris, Pringle, 1985). An interesting work of P. Fernandez (Fernandez, 2007) is also worth mentioning, where the APV and a WACC models are analyzed and compared.

Finally, option-pricing models (Brealey, Myers, 2004), (Damodaran, 1994) should be mentioned, as those protected from changes in capital structure.

As mentioned earlier, the above approach refers to reporting of change in capital structure mainly when the *cost of capital* is estimated. In that context the author of this paper has set an aim to conduct a more detailed theoretical study of the way a company's capital structure changes influence the opportunities to estimate equity capital (but not the *cost of capital*). For this purpose the discounted cash flow method, shareholder value added model (SVA) and capitalization of added share revenue model were used. These models allow to reflect the effect of return on shareholders' equity connected with expectations of return from shareholders' invested funds raised due to additional issue of shares.

Another aspect that is worth noting is how the gain from the capital structure change will be distributed between the "old" and the new shareholders and how the expected company's stock value may change. Once again, we should note that application of SVA and capitalization of added share revenue models [by another name, *capitalization of economic return to shareholders*] allows to represent these questions in valuation calculations.

The information below reflects the author's attempt to present his own vision of the above estimation questions linked to the additional issue of shares and debt.

METHOD

Influence of additional issue on the company's capital

Let us analyze the way additional issue of shares influences the invested and stock capital and changes the price of a single share. To avoid additional complexity we shall restrict to cases without hybrid capital sources – privileged shares, convertible bonds, warrants, stock options, etc.

At first we shall examine the case, when an additional issue is made without attracting real cash (or any other assets) – by reducing the retained earnings with a simultaneous increase in the charter capital. As is well known charter capital may be increased by raising the nominal value of outstanding shares (without changing quantity thereof) and by increasing the quantity of shares without changing their nominal value (i.e. via additional issue). Since the capital of the company remains unchanged when additional issue is performed without attracting any new funds (assets), the total value of the outstanding shares also remains unchanged, however, the value of each single share should drop, because in cases where there is a constant dividend and an increased divisor the quotient inevitably drops[2]:

$$p_{fin} = p_0 \times \frac{N_0}{N_0 + N_{ad}}, \quad (1)$$

where p_{fin} - the price of a single share after additional issue,
p_0 – the price of a single share prior to additional issue,
N_0 – the amount of outstanding shares prior to additional issue,
N_{ad} – the amount of additionally issued shares.
Now let us analyze cases of capital change resulting from additional issue covered by the funds (assets) attracted from investors.

Identification of the appraisal object

[2] We shall note that this way of additional issue is technically possible only with free distribution of additionally issued shares among the current shareholders in proportion to their participation interest and when there is no direct statutory prohibition for such way of placement of additionally issued shares.

The first thing to be mentioned at the beginning of research of the declared topic is the problem of correct identification of the appraisal object in the situation, when the decision to make an additional issue has already been made and will be carried out in the near future. Usually when the value of shares is being appraised double identification of the appraisal object named "share package" is performed:
its part in the charter capital of the company and

- quantity of shares in units.

When additional issue is carried out the former shareholders can waive their right to acquire the issued shares, which will lead to a reduction of their initial participation interest in the capital of the company. Therefore, in such situations when economic calculations are performed it makes sense to refuse the traditional "double" identification of the appraisal object approach and concentrate on one of the parameters, provided that:

- if the appraisal object is the participation interest in the charter capital of the company, after the additional issue the only part of the cash flow to be taken into account during calculations is the one attributed to the original share[3];
- if the appraisal object is a share package nominated in quantity thereof (in units), after the additional issue the only part of cash flow to be taken into account is the one attributed to the evaluated number of shares (indicated in units)[4].

Influence of additional issue of shares on the invested capital
When additional issue of shares takes place, changes in value of the invested capital (ΔV_{IC}) will depend on the volume of net raised capital (M)[5], expected profitability and risks of investment of raised funds:

$$\Delta V_{IC} \leq / \geq M, \text{ if } ROIC_n \leq / \geq ROIC_o, WACC_n \geq / \leq WACC_o, \qquad (2)$$

where «≤/≥» means that correlation between mentioned amounts can be characterized as "less or equal" or "more or equal",
$ROIC_n$ – the expected return on invested capital gained as a result of additional issue of shares,
$ROIC_o$ – the return on previously invested capital,
$WACC_n$ – the weighted-average cost of capital after the additional issue of shares,
$WACC_o$ – the weighted-average cost of capital prior to the additional issue of shares.
When paid by monetary assets (M) and upon assumption that return on invested capital gained as a result of additional issue of shares ($ROIC_n$) would be equal to return on previously invested capital ($ROIC_o$) and the cost of added capital ($WACC_n$) would also be equal to the cost of previously raised capital ($WACC_o$), the change of value of total invested capital (increase in value thereof - (ΔV_{IC})) would be equal to the total net raised capital. If the above assumptions are not observed, changes to value of invested capital conditioned by placement of additional issue of shares may differ from this amount.

[3] This type of calculation should be used when the issuing company attracts additional funds from the current shareholders and the appraised participation interest does not change.
[4] This type of calculation should be used when the issuing company attracts additional funds from outside investors who become the company's new shareholders.
[5] Here the net raised capital means the difference between the funds raised as a result of additional issue of shares and the cost of arranging the additional issue.

Influence of additional issue of shares on equity capital

In case additional issue of shares takes place, changes in value of the equity capital (ΔV_E) will depend on the volume of raised capital *M*, as well as return and risks related to investment of raised funds:

$$\Delta V_E \leq / \geq M, \text{ if } ROE_n \leq / \geq ROE_o, r_n \geq / \leq r_o, \quad (3)$$

where «≤/≥» means "less or equal" or "more or equal",
ROE_n – the expected return (for shareholders) on investment of raised funds (expected return on equity),
ROE_o – the return on previously invested equity capital,
r_n – the expenses on shareholders' capital after additional issue of shares,
r_o – the expenses on shareholders' capital prior to additional issue of shares.
In the same manner, when paid by monetary assets (M) and upon assumption that return on investment of equity capital raised via additional issue of shares (ROE_n) would be equal to the return on previously invested equity capital (ROE_o) and that expenses on raising of additional equity capital (r_n) would also be equal to expenses of previously raised equity capital (r_o), change of value of total invested equity capital (increase in value thereof –(ΔV_E)) would be equal to total net raised capital. If the above assumptions are not observed, changes to value of equity capital conditioned by placement of additional issue of shares may differ from this amount.

Influence of additional issue of shares on distribution of profits between "old" and new shareholders

When performing additional issue of shares in the general case[6] several situations are possible.

Situation 1. The price of placement of additionally issued shares is lower than their current share (market) price. This is a very rare situation, but it is nevertheless possible if the following conditions or circumstances are present:

- There is low demand on these shares and high demand on raised funds;
- The company's management intentionally dilutes existing shareholding packages in favor of affiliated parties. In this situation while other parameters remain the same, old shareholders "concede" (lose) a part of value of their assets in favor of new shareholders (of course, if the whole new issue of shares is not placed with previous shareholders);
- In certain cases when there exists a well-grounded prognosis of super effective return on funds of strategic investors (new shareholders) invested as a result of additional issue of shares – in this situation "old" shareholders could offer investors a discount from the current market value of shares since in the case at hand "old" shareholders can raise the value of their assets (even considering the discount provided in relation to additionally issued shares);
- When immediately prior to effectuating the additional issue of shares the market value of the shares of this issuer (V_m) is higher than their internal or intrinsic price ($V_{internal}/V_{intrinsic}$) and this difference is large enough to "cover" the effect of concession of part of assess of the "old" shareholders[7] (i.e. $V_{internal} < P_{placement} < V_m$) and it is known to a particular group of interested solvent investors[8].

[6] Without considering statutory restrictions currently in effect.
[7] If such effect takes place.
[8] Essentially, this situation is a combination of the first and the third above mentioned conditions with the first one being dominant. In other words, it may mean an "overheating" of the market of these shares.

Situation 2. Price of placement of additionally issued shares exceeds the current market value ($V_m < P_{placement}$).
This situation is possible if the following conditions or circumstances are present:

- High demand on shares being issued;
- Market expectations concerning development and functioning of the issuing company are mainly positive;
- When upon additional issue of shares the market value of shares (V_m) is lower than their internal or intrinsic price ($V_{internal}/V_{intrinsic}$) and this is known to a particular group of interested solvent investors.

In this situation, with all other parameters remaining unchanged, the "old" shareholders will be in a favorable position at the expense of new shareholders (only if all or part of the new issue of shares is placed with new shareholders). However, even in this case the old shareholders could lower the value of their assets (wealth) if expected net present value (NPV) of funds invested due to additional issue of shares appear to have a substantially negative value or such law positive value, that funds received over the market (by the old shareholders) from additional issue of shares would be lower than the change of monetary assets expected as a result of deduction of their share in the capital upon the issue of new shares[9]. The same situation will take place if at the moment of carrying out the additional issue of shares the market price of shares is considerably lower than their internal (or intrinsic) price, and the difference is so substantial that the bonus to the market price that appeared upon placement of the additional issue does not exceed the difference between internal and current market value of the equity capital (i.e. $V_m < P_{placement} < V_{internal}$).

Let us review in more detail the effect of distribution of profit derived from additional issue of shares between shareholders upon placement of new shares. The following designations should be introduced:
p_0 – the market price of one share before placement of additionally issued shares,
p_n – the price of placement of each additionally issued share,
Δp – the difference between the price of placement of one share as part of additional issue and the market value of one share immediately before the commencement of placement of the additional issue ($\Delta p = p_n - p_0$),
N_0 – the number of previously placed shares,
N_{ad} – the number of shares additionally placed during the additional issue of shares,
M – the volume of monetary assets drawn by the issuing company as a result of placement of additionally issued shares, or monetary equivalent of non-monetary assets raised by the company as a result of additional issue of shares,
MC_A – the market capitalization of the issuing company after placement of the additional issue of shares,
MC_{est} – the estimated (calculated) value of capitalization of the issuing company after placement of the additional issue of shares,
p_{est} – the estimated value of price per share of the issuing company at the moment of termination of additional issue.

Taking into consideration the above designations, let us perform a theoretical and practical evaluation of "distributing" effects conditioned upon the additional issue.

[9] This change by itself will be conditioned upon the reduction of the former shareholders' share in the capital of the company (unless they purchase all the additionally issued shares) and probably by a change in total ROIC.

Theoretical effect: After new shares are placed with the price of p_n the price of such shares on the secondary market remained unknown. In this situation it is difficult to make a conclusion as to the volume of market capitalization of the whole company – in this regard only an evaluative estimation could be made, based on information on the former (before the additional issue) volume of market capitalization of the issuing company and volume of raised funds as a result of placement of new shares:

$$MC_{est} = p_0 N_0 + M = p_0 N_0 + p_n N_{ad}. \quad (4)$$

In this situation one could try to evaluate the estimated value of price of one share (p_{est}) of the issuing company at the moment of termination of additional issue:

$$p_{est} = \frac{p_0 N_0 + p_n N_{ad}}{N_0 + N_{ad}} = p_0 + \Delta p \cdot \frac{N_{ad}}{N_0 + N_{ad}}. \quad (5)$$

According to this evaluative calculation the "old" shareholders will change (raise at $\Delta p > 0$) the level of their wealth for $\Delta p\ N_{ad} / (N_0 + N_{ad})$, and the "new" shareholders will become "poorer" for $(1 - \Delta p\ N_{ad} / (N_0 + N_{ad}))$ – all calculations are done in relation to each single share owned by them.

Real effect: In reality after placement of additionally issued shares the price of shares on the market will settle at some new level (p_{fin}). Thus, the effect of placement of additionally issued shares when calculated per one share shall constitute:

- For former shareholders - – $(p_{fin} – p_0)$; (6)
- For new shareholders - – $(p_{fin} – p_n)$; (7)

Let us analyze two particular cases as parts of the real effect described above.

***Particular case 1*:** after placement of new shares at the p_n price, the price of these shares on the secondary market (p_{fin}) remained the same (unchanged): $p_{fin} = p_0$.

In this situation the market capitalization of the issuing company after placement of all the additionally issued shares shall constitute:

$$MC_A = p_0 N_0 + p_0 N_{ad} = p_0 (N_0 + N_{ad}). \quad (8)$$

In this case the "old" shareholders will not change the level of their wealth and the "new" shareholders will become "poorer" for Δp (with $p_n > p_0$) calculated as per each share acquired by them for the price of placement (p_n) thereof.

***Particular case 2*:** after placement of new shares at the price of p_n, the price of these shares on the secondary market has settled at a new level: $p_{fin} = p_0 + \Delta p = p_n$.
In this situation the market capitalization of the issuing company after placement of all additionally issued shares shall constitute:

$$MC_A = p_n N_0 + p_n N_{ad} = p_n (N_0 + N_{ad}). \quad (9)$$

In this case those who derive a whole benefit from the placement of the additional issue are the "old" shareholders: they will become wealthier at Δp calculated as per each of their shares.

Let us note that with substantial volume of additional issue (comparable to previously raised share capital or exceeding it) the process of additional issue could be compared to the accession of one company to another company, when the shares of the absorbed (acquired) company are converted into the shares of the absorbing company (being the consolidation center) with a certain exchange coefficient (conversion). However, unlike the process of accession, in the additional issue process the funds of the new shareholders are used as payment for the transaction instead of the shares of the absorbed company. Essentially these funds are converted into shares of their new company.

Situation 3. The price of placement of additionally issued shares is equal to the current market value.
This situation is possible if the following conditions or circumstances are present:

- There is a balance of demand and supply on the secondary market of these shares;
- There is a considerably small volume of placed shares and the secondary market for them is dynamic.

In this situation a lot depends on the expected return of the invested funds received as a result of the additional issue and (for the old shareholders) on how justly the market evaluated the issuer's shares as of the moment of the additional issue.

Let us note that in a situation with previously achieved market balance with small volume of additional issue and absence of information on expected profit from additionally issued shares, the quantity of shares planned for issue can be calculated in the following manner:

$$N_{ad} = \frac{M}{p_0}. \qquad (10)$$

Let us also note that the possible effect of maximization of profits expected by the old shareholders from gaining funds could consist of allocation of these funds to payment of dividends (to themselves). If such is the case, the old shareholders could enlarge the value of ownership of their shares (of course, only if reduction of the present value of the expected cash flow appears to be lower than the current dividends received by them). This is possible if in the years to come no receipt of profit and/or payment of dividends is contemplated, or if expected dividends are too low[10].

Evaluation of the new shareholders' share in the capital of the company

Let us determine the intrinsic share in the capital of the company for the new shareholders that invest additional assets into the company[11]. In order to avoid complicating the description, let us hereinafter presume that the "old" shareholders are a "solid" mass of shareholders that share a single position as regards the necessity to perform additional issue of shares (if this is not the case, we will presume that the parties that initiated the additional issue (majority shareholders) performed all the necessary payments in favor of minority shareholders, who voted against additional issue of shares, before the issue was made).

[10] Please also note that it is only possible if such scheme is technically feasible (as regards terms and procedures of payment of dividends established in the company).

[11] In other words, let us determine the fair size of the package of shares that is to be transferred to new shareholders during investment into the company (via purchase of shares thereof) of additional assets.

Evaluation of the new shareholders' share of participation is usually calculated as follows:

$$Sh_n = \frac{N_{ns}}{N_0 + N_{ad}} = \frac{N_{ns}}{N_0 + N_{ns} + N_{fs}} = \frac{M}{V_{E0} + M + M_{fs}} \quad (11)$$

where Sh_n is the share of the new shareholders in the capital of the company,
N_0 – the number of previously issued shares (before additional issue),
N_{ns} – the number of additionally issued shares purchased by new shareholders,
N_{fs} – the number of additionally issued shares purchased by former ("old") shareholders (or received by them via privileged subscription),
N_{ad} – the total number of additionally issued shares equal to (N_{ns} + N_{fs})[12],
M – the sum of funds (assets) of the new shareholders raised as a result of additional issue of shares[13],
M_{fs} – the sum of funds (assets) of the "old" (former) shareholders raised as a result of additional issue of shares,
V_{E0} – the market value of equity capital of the company *before* the funds received from the additional issue are invested into it.

Let us now consider more fully assess methods the shareholders shares in the capital of the company.

Evaluation of shares in the capital of the company for the cases of redemption of shares additionally issued by the new shareholders

The use of the expression (11) for determining the share of the equity of the company is suitable in all cases where the value of funds introduced new shareholders coincides with the value of the company's growth in market value. This increase is due to the involvement of new capital by placing additional shares issued. In most cases, such a coincidence is observed in payment for the new shares by cash. However, the new shareholders may pay the capital increase not only cash, but also other assets, such as movable or immovable property, lease rights or other intangible assets. In most cases, the value of the contribution to the authorized capital can be determined by an adequate assessment of the market value of the property contributed to the authorized capital. However, in some cases the use of the property contributed to the authorized capital, in the company issuing the shares may be more favorable than the market average, that is, there may be a special (synergistic, investment) value of the property to the company, differs from the market value. In such cases, to evaluate the interest of new shareholders (Shn) instead of the expression (11) should apply different methods of calculation:

$$Sh_n = \frac{\Delta V}{V_0 + \Delta V}, \quad (12)$$

or

[12] If all the shares under the additional issue are acquired by the new shareholders, the following equivalence will be preserved: $N_{ns} = N_{ad}$.
[13] In the general case M can be considered as contribution of the new shareholders into the issuing company's business. For example, it can be a net cash flow growth of the issuer during a certain period as a result of positive participation of the abovementioned parties in the business of the issuer.

$$Sh_n = \frac{M + k \cdot \Delta}{V_0 + M + \Delta}, \quad (13)$$

where V_0 –the market value of the company's capital to implement the additional issue,
ΔV –increase in the market value of the company's capital as a result of the placement of new shares and receive payment in assets, the market value of which is equal to M,
Δ –added value (cost) of the property contributed as payment for the shares to the issuing company (the total cost is equal to M + Δ),
k – part of the added value contributed as payment for the property, referred to the proportion of new shareholders ($0 \leq k \leq 1$); the fair value of this parameter can be calculated using the expression:

$$k = \frac{M + \Delta}{V_0 + M + \Delta}, \quad (14)$$

but in general it is determined in the process of negotiating new and old shareholders.

Evaluation of equity in the company to repurchase an additional cases of issued shares of old shareholders in an amount in proportion to their participation, prevailing prior to the implementation of additional issue.

In this case, the proportion of old shareholders remain unchanged.

Evaluation of equity in the company to repurchase an additional cases of issued shares of old shareholders in the amount disproportionate shares of their participation, prevailing prior to the implementation of additional issue.

In cases where the entire additional share issue of buying back the former shareholders in the amount of disproportionate previously held their shares, estimate the share of participation of each of the shareholders it is advisable to carry out the following:

$$Sh_i^{AFTER} = \frac{Sh_i^{BEFORE} \cdot V_0 + Sh_i^{SPO} \cdot M}{V_0 + M}, \quad (15)$$

where Sh_i^{AFTER} - share of i-th shareholder in the capital of the company after the acquisition of additional shares in the total emission of M,
Sh_i^{BEFORE} - the share of the i-th shareholder in the company before placing additional shares issued,
Sh_i^{SPO} - share acquisition of the i-th shareholder in the total volume of newly placed shares,
V_0 – the market value of the company's capital to implement the additional issue,
M – the amount raised as a result of the additional issue of shareholders' funds.

Evaluation of shares in the capital of the company for the cases of redemption of shares additionally issued by the new and old shareholders

All of the old shareholders redeem shares additionally issued shares in proportion to the prevailing earlier, and the rest of the shares buy back the new shareholders

In cases where all the old shareholders buy back part of the additional shares issued in proportion to available shares, and the remainder of the shares issued additionally buys a new shareholder, the evaluation of interests in the company it is advisable to carry out the following:

$$Sh_{oldi}^{AFTER} = Sh_{oldi}^{BEFORE} \cdot TotalSh_{old}^{AFTER}, \qquad (16)$$

$$TotalSh_{old}^{AFTER} = 1 - Sh_n, \qquad (17)$$

$$Sh_n = \frac{M_{new}}{V_0 + M} = \frac{M_{new}}{V_0 + M_{old} + M_{new}}, \qquad (18)$$

where Sh_{oldi}^{AFTER} - the share of the i-th former ("old") a shareholder in the company after the placement of additional shares,

Sh_{oldi}^{BEFORE} - the share of the i-th former ("old") a shareholder in the company before the placement of additional shares,

$TotalSh_{old}^{AFTER}$ - the total share of the previous ("old") of shareholders in the company's capital after the placement of additional shares,

Sh_n - the proportion of new shareholders in the company's capital after the placement of additional shares,

M_{new} - the amount of money spent by the new shareholders for the acquisition of additional shares issued,

M_{old} - the amount of money spent by the former ("old") shareholders to acquire additionally issued shares,

M - сумма денег, привлеченных в процессе размещения дополнительно эмитированных акций,

V_0 - the market value of the company's capital prior to the additional issue of shares.

The old shareholders buy back part of the additional shares issued disproportionately prevailing prior to their shares, the rest of the shares buy back the new shareholders

In cases where the old shareholders buy back part of the additional shares issued disproportionately prevailing prior to their shares, and the remainder of the shares buy back the new shareholders, evaluate interest of i-th shareholder in the company is advantageously carried out as follows:

$$Sh_i^{AFTER} = \frac{Sh_i^{BEFORE} \cdot V_0 + Sh_i^{SPO} \cdot M}{V_0 + M} \times TotalSh_{old}^{AFTER}, \qquad (19)$$

where all the designations are consistent with previously made.

Let us note that if during the negotiation process the shareholders agreed with the investors on distribution of shares at the cost of issue of new shares (i.e. they determined the Sh_n parameter), the number of shares issued in favor of the new shareholders-investors will constitute:

$$N_{ns} = \frac{Sh_n}{1 - Sh_n} \times N_o. \qquad (20)$$

Evaluation of price of shares when information on the forthcoming additional issue is available: application of discounted cash flow method

Let us analyze the procedure of evaluation of the current share package value in a situation when it has become known that in a certain moment of the forecast period (*distanced from the evaluation moment for the period the duration of which cannot be disregarded*) the managers of the company plan to carry out an additional issue of shares. Respective formal requirements of applicable legislation will not be taken into consideration for the purposes of this analysis. When information that in the foreseeable future the company plans to carry out additional issue becomes available *and the volume of such issue is comparatively large (yet substantially lower than the volume of the capital previously placed by the shareholders)*, during the informal evaluation the factor of additional issue can be accounted as follows.

1. At first it is necessary to make an assumption regarding the options of using the funds raised as a result of the additional issue. For example, it is possible to assume that the funds raised from the additional issue will be invested into the main business of the company and not immediately paid as dividends to its former shareholders.
2. Afterwards it is necessary to make an assumption related to the structure of shareholders who will purchase the additionally issued shares. For example, it is possible to assume that the owner of the evaluated share package will or will not purchase additional shares from the placed additional issue.
3. If in the forecast period only one additional issue is contemplated, it is necessary to adjust the expenses related to raising of equity capital (the discount rate) using the following algorithm:

Firstly, it is necessary to determine how the alternative price of the borrowed capital will change upon alteration of indebtedness (r_{DA}). Usually when indebtedness decreases the alternative price of the borrowed capital is reduced as well.

After that, according to the second Modigliani-Miller proposition the evaluation of the adjusted expenses for raising of the company owners' equity is carried out with a new debt ratio:

$$r_{adj} = R + (R - r_{DA})\frac{D}{E+M}, \qquad (21)$$

where R is alternative costs of raising the capital of the company (determined exclusively by parameters of the risk level inherent to the business, not considering the debt load);
r_{DA} – the costs of raising (alternative costs) of the borrowed capital with adjustment of debt to own capital ratio up to level D/(E + M);
r_{adj} – the adjusted costs of raising (alternative costs) of equity capital with the debt to own capital ratio being at level D/(E + M);
D – the market value of the borrowed capital after the additional issue (i.e. in the general case, with possible changes not only of expenses related to raising of the debt financing, but also of the total amount of debt, if it changes);
E – the market value of the equity capital before the additional issue;
M – the volume of funds raised as a result of additional issue.

4. Price of the evaluated *share package owned by the former shareholders*[14] is determined as the present value of the cash flow in relation to each of them for the period from the date of evaluation to the moment of additional issue and the cash flows related to the share of former shareholders for the period following the additional issue of shares:

$$V_{fs} = sh_0\left(\sum_{i=1}^{k}\frac{FCFE_i}{(1+r)^i} - \frac{EE}{(1+r_f)^k} + \frac{M}{(1+r_f)^k}\right) + sh_A\left(\sum_{i=k+1}^{n}\frac{FCFE_i}{(1+r_{adj})^i} + \frac{TV}{(1+r_{adj})^n}\right), \qquad (22)$$

With V_{fs} – being the price of the evaluated package of shares owned by former ("old") shareholders before the additional issue,
sh_0 – the part of the equity capital held by the owners of the evaluated package of shares before the additional issue,
k – the moment (period) of placement of additionally issued shares,
n – the number of the final year of the forecast period,
sh_A – the part of the equity capital held by the owners of the evaluated package of shares after the additional issue of shares ($sh_A < sh_0$),
$FCFE_i$ – the cash flows of the shareholders in the i period[15],
r – the discount rate applicable to cash flows of shareholders prior to the additional issue of shares (expenses related to raising of equity capital before the additional issue),
EE – the issue-related costs connected with expenses for issue and placement of new shares,
r_f – the risk free discount rate,
r_{adj} – the discount rate applicable to cash flows of shareholders after the additional issue,
TV – the terminal value of the equity capital formed by income flows of the post-forecast period.

If for the purposes of evaluation of the price of the share package the emphasis is made not on the quantity of shares, but on the *share of participation in the capital*, instead of the previous formula a different calculation model should be used[16]:

$$V_{fs} = sh_0\left[\sum_{i=1}^{k}\frac{FCFE_i}{(1+r)^i} - \frac{EE}{(1+r_f)^k} - \frac{M}{(1+r_f)^k} + \sum_{i=k+1}^{n}\frac{FCFE_i}{(1+r_{adj})^i} + \frac{TV}{(1+r_{adj})^n}\right], \qquad (23)$$

where all designations correspond to the previously stated ones.

In order to calculate the present value of cash flows for the period after the additional issue one should construct an adjusted forecast of cash flow of shareholders from the moment of commencement of the additional issue to the moment of termination of the forecast period. If the "old" shareholders do not plan to buy additionally placed shares or if the object of evaluation is a particular quantity of shares placed earlier, during the period of additional issue

[14] It is necessary to make an important elaboration at this point: the object of evaluation within the frame of the valuation method bellow is a *package of shares* categorized by their *quantity* (units, "pieces"), and not their *participation interest* in the charter capital. Isolation of this evaluation object is reasonable in cases where owners of the share package subject to evaluation do not plan to purchase additionally issued shares.
[15] Let us note that according to the presented equation (22) and equation (23) that follows it, the expenses for the issue are not taken into consideration in share flows in the k period, since in these equations they are separately represented by the "EE" entry.
[16] This calculation model should be applied when owners of the evaluated package of shares plan to purchase additionally issued shares in the amount proportional to their share of participation in the charter capital of the company that has formed prior to the additional issue.

it is possible to reasonably expect enhanced cash flows for the amount of cash raised as a result of placement of these shares, but in return in the following periods it will be necessary to consider the reduction of the fraction of income related to their (these) shares. Adjustments that reflect the fact of additional issue should also account for possible changes in total flows of the company conditioned by change in return on new investments raised in the process of the additional issue. On the contrary, if the "old" shareholders purchase all additionally issued shares, their investments will initially trigger an outflow of cash diverted to purchase these shares, and in return the whole return on additional investments will remain with them in the following years.

Both of the above valuation calculations in accordance with equations (22) and (23) can be adapted for purposes of price evaluation of a single share, taking into consideration the planned additional issue of shares. For this purposes it should be borne in mind that the price of the evaluated share package (V_{fs}) shall equal to the product of the market value of one share (v_1) and the total quantity of shares in the evaluated share package ($V_{fs} = v_1 \times N_0$), while the amount of funds raised as a result of additional issue of shares (M) shall equal to the product of the market value of one share and the total number of additionally issued shares ($M = v_1 \times N_{ad}$). The substitution of the stated values of V_{fs} and M in (22) will result in the following equation for the calculation of the expected price of one share using the discounted cash flow model that takes into account the expected effects of the planned additional issue:

$$v_1 = \frac{sh_0 \cdot \left(\sum_{i=1}^{k} \frac{FCFE_i}{(1+r)^i} - \frac{EE}{(1+r_f)^k} \right) + sh_A \cdot \left(\sum_{i=k+1}^{n} \frac{FCFE_i}{(1+r_{adj})^i} + \frac{TV}{(1+r_{adj})^n} \right)}{N_0 - \frac{N_{ad} \cdot sh_0}{(1+r_f)^k}}, \qquad (24)$$

where other designations correspond to the previously stated ones.
It should be noted that equation (24), as well as equation (22), should be used when the owner of the evaluated share or evaluated share package does not plan to purchase additionally issued shares.

A similar substitution of the above stated values of V_{fs} and M into (23) will result in the following equation for the calculation of the expected price of one share using the discounted cash flow model that takes into account the expected effects of the planned additional issue:

$$v_1 = \frac{sh_0 \cdot \left[\sum_{i=1}^{k} \frac{FCFE_i}{(1+r)^i} - \frac{EE}{(1+r_f)^k} + \sum_{i=k+1}^{n} \frac{FCFE_i}{(1+r_{adj})^i} + \frac{TV}{(1+r_{adj})^n} \right]}{N_0 - \frac{N_{ad} \cdot sh_0}{(1+r_f)^k}}, \qquad (25)$$

where all designations correspond to the previously stated ones.

It should be pointed out that equation (25), as well as equation (23), should be used when the owner of the evaluated share or evaluated share package plans to purchase additionally issued shares in the amount proportional to his share of participation in the charter capital of the company that has been formed prior to the additional issue.

It should be noted that receipt of information on the additional issue can by itself trigger certain changes in the price of shares. If we assume that return on monetary funds raised in connection with the additional issue appears to be equal to return on previously invested capital of the company, and that the volume of contemplated issue is comparatively small, such signal effect[17] can usually be ignored.

In cases when a company plans considerable recapitalization (for example, the contemplated volume of additional issue is comparable to or exceeds the previously placed capital of shareholders, or full settlement of existing debt is contemplated), the model based on discounting of cash flows of the company under weighted-average cost of capital method ceases to work. In such cases one should use the adjusted present value method (APV – Adjusted Present Value) developed by Stewart C. Myers (Myers, 1974; Brealey, Myers, 2004).

Evaluation of shares' price upon additional issue: application of Shareholders' Value Added model

Let us analyze the case in which the equity capital of the company is comprised only from ordinary shares and additional issue of ordinary shares is contemplated. Let us assume that the cost of the equity capital of the issuer before the additional issue is $V_{E0} = p_0 N_0$, where p_0 is the market value of a single share, and N_0 is the total quantity of shares. Let us also assume that the shareholders received an offer from an investor(s) related to business development. Investor is ready to invest an amount M. Size of the investor's share could be determined using formula (11). As it was indicated earlier, depending on the anticipated economic effect of the additional issue and the decision on the quantity of newly issued shares, the market price of shares of the company after the additional issue can change ($p_{fin} \neq p_o$) or remain unchanged ($p_{fin} = p_o$). With that in mind if there are grounds to expect considerable economic effect from monetary funds raised as a result of the additional issue, the market value of equity after the additional issue can be calculated using the *Shareholders' Value Added* model:

$$V_{EA} = V_{EO} + M \cdot \left[1 + \sum_{i=1}^{m} \frac{(ROE_i - r_e)}{\left(1 + r_e\right)^i} \right], \qquad (26)$$

where V_{EA} – is the market value of equity after the additional issue,
V_{EO} - is the market value of equity before the additional issue,
ROE_i – the return on equity in the i period,
R_e – the alternative costs for raising share capital,
m – the period in which ROEi ≥ re condition is expected to be completed.

Now let us assume that the evaluator has grounds to believe that in future the correlation between return on the raised equity capital and its alternative value will stay on the same level (equal to ROE_n/r_{en}) for a long time and that the volume of the additional issue is not particularly large. With these conditions observed, it becomes possible to apply *Shareholders' Value Added Capitalization* model (also known as *Shareholders' Economic Profits Capitalization* model). In this case equation (18) could be extended and indicated as follows:

[17] Signal effect is the effect of adjustment of the stock exchange share prices upon receiving information on the forthcoming additional issue. Usually as a result of this effect the price of shares of the issuer that prepares the additional issue falls (if the shares are listed on the market), since the typical potential buyer of shares of this company thinks in approximately the following manner: "if main shareholders and top managers of the company want to do this it means that they, while possessing all internal information on the status of the company, decided that the current market value is higher than the internal price of the company, and thus it is reasonable for them to use the occasion to decrease the share of their participation in the company. If this is the case it is unadvisable for me to purchase these shares for the current market price. And in case I decide to purchase them, I will only do so with a discount to their market price".

$$V_{EA} = V_{E0} + M\frac{ROE_n}{r_{en}} = p_0 N_0 + M\frac{ROE_n}{r_{en}} = (E_0 + M) \times < \frac{ROE}{r_e} >, \quad (27)$$

where E_0 – is the capital actually invested by the old shareholders. Connection of this index with expected return on equity that was placed earlier (ROE_0), investment costs (r_{e0}), market value of a single share (p_0) and quantity of previously placed shares (N_0) is as follows:

$$E_0 = \frac{p_0 N_0 r_{e0}}{ROE_0} \quad (28)$$

<ROE/r_e> in (27) signifies the weighted average (as regards the volume of equity of the old and the new shareholders) return on equity to the cost of capital ratio:

$$\langle\frac{ROE}{r_e}\rangle = \frac{E_0}{E_0 + M} \times \frac{ROE_0}{r_{e0}} + \frac{M}{E_0 + M} \times \frac{ROE_n}{r_{en}} \quad (29)$$

Taking into consideration equations (26) and (27) let us analyze the conditions in which the price of shares after the additional issue will remain the same or change.

Conditions of change and immutability value per share in case of additional issue

Let us return once again to equations (26) and (27) and write them down in a somewhat amended manner. For equation (26) we have:

$$V_{EA} = p_0 N_0 + M \cdot \left(1 + \sum_{i=1}^{m} \frac{(ROE_i - r_e)}{(1 + r_e)^i}\right) = p_{fin}(N_0 + N_{ad}) =$$
$$= (p_0 + \Delta p)(N_0 + N_{ad}), \quad (30)$$

With Δp being the volume of change in price of one share conditioned by the additional issue, p_{fin} – the market price of one share after placement of additionally issued shares, from which follows:

$$p_{fin} = \frac{p_0 N_0 + M\left(1 + \sum_{i=1}^{m} \frac{(ROE_i - r_e)}{(1 + r_e)^i}\right)}{N_o + N_{ad}}, \quad (31)$$

and

$$\Delta p = \frac{M\left(1 + \sum_{i=1}^{m} \frac{(ROE_i - r_e)}{(1 + r_e)^i}\right) - p_o N_{ad}}{N_0 + N_{ad}}. \quad (32)$$

For equation (27) we have:

$$V_{EA} = p_0 N_0 + M\frac{ROE_n}{r_{en}} = p_{fin}(N_0 + N_{ad}) = (p_0 + \Delta p)(N_0 + N_{ad}), \quad (33)$$

With Δp being the volume of change in price of one share conditioned by additional issue, p_{fin} – the market price of one share after placement of additionally issued shares, from which follows:

$$p_{fin} = \frac{p_0 N_0 + M \dfrac{ROE_n}{r_{en}}}{N_o + N_{ad}}, \quad (34)$$

and

$$\Delta p = \frac{M \dfrac{ROE_n}{r_{en}} - p_o N_{ad}}{N_0 + N_{ad}}. \quad (35)$$

It can be derived from equations (32) and (35) that in order for the price of one share after the additional issue to remain the same the number of issued shares (N_{ad}) should constitute accordingly:

$$N_{ad} = \frac{M\left(1 + \sum_{i=1}^{m} \dfrac{(ROE_i - r_e)}{(1 + r_e)^i}\right)}{p_0}, \quad (36)$$

and

$$N_{ad} = \frac{M \dfrac{ROE_n}{r_{en}}}{p_0}. \quad (37)$$

If the above conditions are not observed, the price of one share should change when the additional issue is executed.

Determining the quantity of issued shares

Earlier we determined the means for calculation of number of placed shares with known number of placed shares and share of participation in the capital of new shareholders-investors (see equation (20)). Let us determine the number of issued shares with other parameters being known. To receive the necessary calculation formulae let us use equations (31) and (34) and draw from there in an apparent manner the necessary parameter (N_{ad}):

When Shareholders' Value Added model is applied, the number of shares necessary for the additional issue will be determined using the following equation (31):

$$N_{ad} = \frac{(p_0 - p_{fin})N_0 + M\left(1 + \sum_{i=1}^{m} \dfrac{(ROE_i - r_e)}{(1 + r_e)^i}\right)}{p_{fin}}. \quad (38)$$

When Shareholders' Economic Profits Capitalization model is applied, the number of shares necessary for additional issue will be determined using the following equation (34):

$$N_{ad} = \frac{(p_0 - p_{fin})N_0 + M \dfrac{ROE_n}{r_{en}}}{p_{fin}}. \quad (39)$$

Example

For the purposes of this example the share capital of the company prior to the additional issue consisted of N_o = 100 ordinary shares. The market price of one share (p_o) constituted 1.5

a.v.[18]. Investors are ready to invest M = 50 a.v. into a new business line of the company. The expected return on this invested capital and capital expenses constitute: ROE_n = 30%, r_{en} = 15%.
It is necessary to determine the equity capital value of the expanded (after the additional issue) company (V_{EA}), the new shareholders' participation interest in its charter capital (Sh_n), the number of issued shares (N_{ad}) and the price of one share after the additional issue (p_{fin}).

Solution

Let us presume availability of all grounds for application of the Shareholders' Value Added Capitalization model. In this case in accordance with (33) the price of equity capital of the expanded company shall constitute:

$$V_{EA} = p_o N_o + M \frac{ROE_n}{r_{en}} = 1.5 \times 100 + 50 \times \frac{0.3}{0.15} = 250 \text{ a.v.}$$

In order to determine the share of the new shareholders it is necessary to know the quantity of shares which they will be offered to purchase. Of course, if the parties somehow agreed about this from the start (i.e. determined it empirically), the matter of quantity of shares issued in favor of the new shareholders would be easily determined using the formula (20).

For example, if parties agreed upon the volume of share of the new shareholders using formula (11): Sh_n = 50/(1.5×100 + 50) = 0.25, then, as it follows from (20), it will be necessary to issue N_{ad} = 0.25/(1 – 0.25) × 100 = 33 shares in favor of the new shareholders. In this case the price of one share shall constitute $p_{fin} = V_{EA}/(N_o + N_{ad})$ = 250/(100 + 33) = 1.88 a.v.

Let us note that if there were no grounds to expect the return on equity capital raised via the additional issue (according to the condition of the example – 0.3) to exceed more than twice the cost of capital (according to the condition of the example – 0.15), the market price of the equity capital could be evaluated differently: 150 + 50 = 200 a.v., and the price of one share – 200/(100 + 33) = 1.5 a.v., meaning that in this case the price of one share would remain unchanged[19].

Let us also note that while planning additional issue parameters the shareholders can simultaneously consider resolution of other matters (for example, raise or drop the price of one share). In order to do this it is necessary to research several possible options. Algorithms suggested in this work allow to consider at least two such options.

1. Let us assume that the shareholders wish the market price of a single share to remain practically unchanged after the additional issue. In this case taking into consideration the above conditions the quantity of shares necessary for the additional issue should be determined according to (37):

$$N_{ad} = \frac{M \frac{ROE_n}{r_{en}}}{p_0} = \frac{50 \times \frac{0.3}{0.15}}{1.5} = 67 \text{ units.}$$

In this case the price of purchase of additionally issued shares by new shareholders should constitute 50 (a.v.)/ 67 = 0.75 a.v.

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[18] a.v. – «abstract value».

[19] In this connection the simplest recommendation for the participants of the market that do not possess information on the expected return on investment of funds raised via the additional issue of shares is to purchase shares at their current market price or at a lower price.

In this scenario the price of one share after the additional issue shall constitute:
$p_{fin} = V_{EA}/(N_o + N_{ad}) = 250/(100 + 67) = 1.5$ a.v.
(taking into consideration the measure of inaccuracy of the N_n definition),
i.e. the price will remain the same, as the shareholders wanted.

Now, when we know the quantity of shares received by the old and the new shareholders, let us determine their share and value.
According to (11) the share of the new shareholders shall constitute:

$$Sh_n = \frac{N_{ns}}{N_0 + N_{ad}} = \frac{50}{100+67} = 0.4 = 40\%.$$

The price of this share shall constitute:
$V_{ns} = p_o N_n = \mathrm{Sh_n} \times V_{EA} = 1.5 \times 67 = 0.4 \times 250 = 100$ a.v.
Accordingly, the share of the old shareholders shall be equal to: 1 - 0.4 = 0.6, and its price shall be equal to:

$$V_{fs} = p_o(N_o + N_{fs}) = (1-Sh_n) \times V_{EA} = 1.5 \times 100 = 0.6 \times 250 = 150 \text{ a.v.}$$

(price of the sum of shares is equal to the price of the 100% share = 250 a.v.)

2. Let us now assume that shareholders plan to increase the price of their shares up to 1.75 a.v. per share. In this case the number of shares necessary for the additional issue should be determined using (39):

$$N_{ad} = \frac{(p_0 - p_{fin})N_0 + M\dfrac{ROE_n}{r_{en}}}{p_{fin}} = \frac{(1{,}5 - 1{,}75)\cdot 100 + 50 \cdot \left(\dfrac{0{,}3}{0{,}15}\right)}{1{,}75} = 42{,}857 \approx 43.$$

The price of purchase by the new shareholders of additionally issued shares in this case should constitute 50 (a.v.)/ 43 = 1.16 a.v.

In this scenario the price of one share after the additional issue shall constitute:
$p_{fin} = V_{EA}/(N_o + N_{ad}) = 250/(100 + 43) = 1.75$ a.v.
(taking into consideration the measure of inaccuracy of the N_n definition), meaning that it will rise up to the target value.

Now that we know the quantity of shares received by the new shareholders let us determine their share and value.

According to (11) the share of the new shareholders shall constitute:

$$Sh_n = \frac{N_{ad}}{N_0 + N_{ad}} = \frac{43}{100+43} = 0.3 = 30\%.$$

The value of this share shall constitute:

$$V_{ns} = p_{fin} \times N_{ad} = Sh_n \times V_{EA} = 1.75 \times 43 = 0.3 \times 250 = 75 \text{ a.v.}$$

Accordingly, the share of the old shareholders shall be equal to 1 - 0.3 = 0.7, and its price shall be equal to:

$$V_{fs} = p_{fin} \times N_o = (1 - \mathrm{Sh_n}) \times V_{EA} = 1.75 \times 100 = 0.7 \times 250 = 175 \text{ a.v.}$$

(the price of the sum of shares is equal to the price of the 100% share = 250 a.v.).

The above example clearly demonstrates the capabilities and limitations of manipulations with the volume of issued shares.

Evaluation of the equity capital upon issue of debt obligations

During the process of additional issue of shares the company's capital structure is changed: the share of equity capital is increased (with the amount of debt obligations remaining the same), or, otherwise speaking, the share of debt obligations is reduced. The contrary takes place when the company performs issue of debt obligations or redeems a debt: the share of debt in the structure of its capital is changed. Let us analyze in more detail the possible means of evaluation of equity capital with considerable changes to debt obligations. Below you will find several typical situations representing the respective calculation methods.

1. If it is expected that the company's capital structure will change once due to debt growth, and from the evaluation moment t_0 to moment t_1 the company will have no interest-bearing debt, the evaluation could be performed using the following procedure:

$$V_E = V_E(t_o, t_1) + V(t_1, \infty) = \\ = \sum_{i=1}^{t1} \frac{FCFE_i}{(1+r_e)^{i-0.5}} + \frac{\sum_{i=t1+1}^{\infty} \frac{FCFF_i}{(1+WACC)^{i-0.5}} - Debt(t_1)}{(1+i)^{t1}}, \tag{40}$$

where

V_E – the equity capital value of the company,

$V_E(t_0,t_1)$ – the equity capital value of the company formed from shareholders' cash flow or the (t_0 - t_1) period,

$V_E(t_1,\infty)$ – the price of the equity capital of the company formed from shareholders' cash flow after the t_1 period,

t_1 – the moment of time when the shareholders incur a debt in the amount of $Debt(t1)$,

r_e –the expenses on raising shareholders' capital,

$WACC$ – the nominal weighted average cost of capital after the moment of t_1 when the active debt of the company is expected to be at level $Debt(t1)$,

I – the expected inflation level for the (t_0, t_1) period,

$FCFEi$ – Free Cash Flow to Equity – the volume of cash flow of the company's shareholders in the i period,

$FCFFi$ - Free Cash Flow to Firm – the volume of nominal cash flow of the company's shareholders and borrowers in the i period.

2. If it is expected that the company's capital structure will change once due to debt growth, and from the evaluation moment t0 to moment t1 the company's debt will constitute Debt1, and at moment t1 it will be equal to Debt2, the evaluation could be performed using the following procedure:

$$V_E = V_E(t_o, t_1) + V_E(t_1, \infty) = \\ = \sum_{i=1}^{t1} \frac{FCFF_i}{(1+WACC_1)^{i-0.5}} - Debt_1 + \frac{\sum_{i=t1+1}^{\infty} \frac{FCFF_i}{(1+WACC_2)^{i-0.5}} - Debt_2}{(1+i)^{t1}}, \tag{41}$$

where

$WACC_1$ – the weighted average cost of capital with debt volume at $Debt_1$,
$WACC_2$ – the weighted average cost of capital with debt volume at $Debt_2$.

3. If it is expected that the structure of the company's capital will change twice due to debt growth, and from the evaluation moment t_0 to moment t_1 the company will have no interest-bearing debt, at moment t_1 the company will raise debt obligations for the amount of ***$Debt_1$*, *and*** at moment t_2 the amount of interest-bearing debt shall be equal to $Debt_2$, the evaluation could be performed using the following procedure:

$$V_E = V_E(t_o, t_1) + V_E(t_1, t_2) + V_E(t_2, \infty) =$$
$$= \sum_{i=1}^{t1} \frac{FCFE_i}{(1+r_e)^{i-0.5}} + \frac{\sum_{i=t1+1}^{t2} \frac{FCFF_i}{(1+WACC_1)^{i-0.5}} - Debt_1}{(1+i_1)^{t1}} + \frac{\sum_{i=t2+1}^{\infty} \frac{FCFF_i}{(1+WACC_2)^{i-0.5}} - Debt_2}{(1+i_1)^{t1}(1+i_2)^{t2-t1}}, \quad (42)$$

where
$V_E(t_1,t_2)$ – the equity capital value of the company constituted from the shareholders' cash flow for the t_i - t_2 period,
t_2 – the moment of time when the interest-bearing debt of the shareholders constitutes $Debt2$,
i_1- the **expected inflation level for the (t_0, t_1) period,**
i_2- **the expected inflation level for the (t_1, t_2) period,**
$WACC_1$ – the average weighted cost of capital with debt volume at $Debt_1$,
$WACC_2$ – the average weighted cost of capital with debt volume at $Debt_2$.

RESULTS

The results of this work are:

- the theoretical methods for evaluating changes in the value of one share as a result of additional issue of shares;
- new methods for assessing the proportion of shareholders' participation in the capital of companies;
- the methodology of calculation of value per share during the additional issue of shares, based on the discounted cash flow method, and added shareholder value;
- methodology for valuing equity when debt issuance.

If during the additional issue of shares cash is raised in the amount of M, then according to (37) the market value of one share of the company in the general case can change, and it will remain unchanged only if the following condition is met[20]:

$$\frac{M}{N_{ad}} \times \frac{ROE_n}{r_{en}} = p_o. \quad (43)$$

In all other cases the price of one share will change.

If raised assets are not cash, their market value in the general case will differ from the investment value determined using component value (ROE_n/r_{en}). This is why investment of non-monetary assets (performed via contribution into the charter and added capital of the due volume of such assets) usually changes the price of one share. The price of one share may remain unchanged only if the market value of non-monetary assets is equal to their investment

[20] This follows from equation (37).

cost, which is achieved with component value (ROE_n/r_{en}) being equal to "one" or in cases, in which evaluation of market value of the non-monetary asset is performed exclusively on the basis of the income approach taking into consideration the component value (ROE_n/r_{en}).

Taking into consideration the opportunity for investment of *cash* its *investment value*[21] may differ from the *current market* value (which is equal to its nominal value), determined without considering such opportunities. Thus, everything depends on what is meant under the market price of shares – their price determined without taking into consideration the influence of consequences of the planned additional issue or taking into consideration these consequences. If the decision to make the additional issue has been adopted and will be brought into life in the near future, from the economic point of view the consequences of the additional issue should be considered (unless the market has absorbed them already). The proposed methodology in this paper make it possible to consider it.

Another moment that should be noted is the impact of information about the planned additional issue on the current value of the already issued shares[22]. Since information regarding the planned additional issue cannot spread immediately and market operators have asymmetric information regarding this matter, the quotes of the previously placed shares may change: by leaps and bounds at first (depending on the awareness level of the most informed investors and their interpretation of the related information), and more smoothly afterwards (depending on the dominating interpretation of this information by the market participants) during the whole period from the moment the issuer publishes the respective announcement and up to the moment the additional shares are issued and placed.

DISCUSSION

Taking into consideration the fact that conditions of functioning of the issuing company, the quantity of shares thereof and the shareholders themselves undergo changes during the period of issue and placement of additional shares, it is pretty difficult to make a definitive conclusion on correlation between the price of placement of new shares and price of previously issued shares for a particular moment of time. When additional shares are issued by an issuer the shares of which are not listed on the stock exchange, no casual observer can say for sure how the price of placement of new shares correlates with the price of previously issued shares[23].

When performing additional issue by an issuer the shares of which are listed on the stock exchange, prices (and quotes) of previously placed shares are adjusted in the period from the moment of announcement of the future additional issue and up to its actual effectuation. Thus, by the moment the additional issue is carried out, the current market prices of the previously issued shares have already actually absorbed (into themselves) its impact.

[21] According to International Valuation Standards (see IVS-2011 principles), *investment value* is the price of an asset that is being considered as a separate investment or intended for use in operational purposes for its owner or future owner thereof (International Valuation Standards, 2011).

[22] "Tail wagging the dog" one may think and he would be absolutely right: indeed, future expectations often determine the present. This is the very basis of the discounted cash flow method and of the income approach. George Soros took another step forward in this direction and created the reflexivity theory according to which the price of shares is determined by prevalent expectations of majority of participants of the market – note.

[23] Since any evaluation has a degree of subjectivity to it, it is always possible to say that one of the two things could happen during evaluation of non-listed shares for the purposes of the additional issue: "*calculated price of a single share in the package of newly placed shares was adjusted to the price of a single share in the previously issued package of shares*" or "*calculated price of a single share in the previously issued package of shares was adjusted during evaluation to the expected price of placement of a single share belonging to the package of the additionally issued shares*".

Considering the mentioned factors it is possible to make a conclusion that practical accounting of possible changes in share prices with an expected additional issue of shares or debt needs to be taken into consideration in the following cases:

- A major issue of non-listed shares is contemplated, and the expected return on the invested funds received from the additional issue differs from the expected expenses for raising additional equity capital;
- There are reasons to believe that raising funds from new shareholders will allow to substantially change the return on previously placed shareholders' capital;
- A major issue of listed shares is contemplated, but only insiders know about it (i.e. when there has been no respective official announcement yet and the evaluation should be made at that moment);
- A considerable issue of debt obligations is contemplated;
- It is necessary to justify the decision to invest in other companies;
- It is necessary to evaluate the distribution of profits from change in the capital structure between the "old" and the "new" shareholders.

In cases of evaluation of listed shares for the purposes of additional issue as of the date prior to which a respective official announcement was made by the issuer (and there is little time left before the moment of placement) the evaluator should rely upon the respective market share quotes[24].

One should also take into consideration that if volume of the additional issue is comparable to or exceeds the value of previously placed assets, the traditional method of discounted cash flow cannot be used in the income approach – instead one should apply the method of adjusted present value.

The author would like to point out that this article does not provide a decisive answer about conditions of preferability of application of the suggested methodology in comparison with the method of adjusted present value (APV): the terms of application of the suggested calculation method (primarily, as regards the volume of issue) appear to be somewhat blurred. According to the author, on this account there are no precise boundaries of applicability and preferability of the mentioned evaluation methods, however, according to the information available to the author as of the moment of preparation of this article the *APV* method has been more actively used in evaluations connected with considerable shifts in companies' capital structure (perhaps due to the fact that other methods taking into account the special aspects of additional issue of shares were not well developed).

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Archives of Business Research – Vol.5, No.2
Publication Date: February. 25, 2017
DOI: 10.14738/abr.52.2784.

Poh, L. M., & Sabri, M. F. (2017). Review of Financial Vulnerability Studies. *Archives of Business Research, 5*(2), 127-134

SOCIETY FOR SCIENCE AND EDUCATION

Review of Financial Vulnerability Studies

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Abstract
Financial vulnerability has become an emerging concern to many parties and a number of factors in households' financial vulnerability are believed to influence households' financial well-being. Financial vulnerability is a status of financial instability or a situation to the exposure of financial risk and shock. Thus, the focus of this paper is to overcome the problem of how to justify the variables of financial vulnerability in order to achieve the financial well-being among the households. Moreover, this current paper concludes the financial vulnerability studies in eight countries which provide the similarities and differences in measuring financial vulnerability. Hence, the evidence review revealed that high financial vulnerable households are characterized by low income or low liquid assets, high balance sheet leverage, disability to cope with financial stress and financial crisis.

KeyWords: Financial problem, Financial vulnerability, Financial well-being, Indebtedness

INTRODUCTION

The lately economic and financial crisis around the world stressing out the downturn of households' economic and financial condition; households often find themselves carrying with large amount of loans or mortgage debt and such debt burden increase the difficulties of households from accumulate wealth to sustain their life and thus become more financial vulnerable. Financial vulnerability is becoming increasingly important and concern by various parties because individuals as well as households need to overcome with numerous financial challengers in today's demanding financial environment and financial mistake made in life can be costly. The word "vulnerability" at household level, is commonly defined as household ability to cope with risk, shocks, and their attitude towards undertaking risks (Swain & Floro, 2007). In other words, vulnerability is the risk of exposure to potentially harmful event. Hence, studies have conceptualized financial vulnerability as an inability to repay financial debt (Jappelli, Pagano & Di Maggio, 2013).

High financial vulnerable households are households who experienced low income and unemployed. Inadequacy of income and unemployed working status are significantly correlated with the level of financial vulnerability and thus affect the households' current financial situation. Low incomes households having high probability to be difficult and disable to coping with emergency and to pay for their household living expenses (Al-Mamun & Mazumder, 2015; Rodrigo, 2016; Yusof, Rokis & Jusof, 2015). However, adequate income and gainfully employed households reference person able to decrease the households' level of economic and financial vulnerability. Moreover, lacking of financial security is one of the factor contributes to the financial vulnerability among the households. Financial vulnerability of households is shown to be increase with the increase of inadequate of the welfare. Failed to develop sufficient financial security and disability to generate adequate post retirement income contributes to the unsecure post retirement life and high economic vulnerability (Lin & Grace, 2007; Rodrigo, 2016).

On the other hand, the extant literature demonstrates a strong association between financial vulnerability and poverty (Al-Mamun & Mazumder, 2015; Lewis & AV Lewis, 2014). Therefore, people are said to be living in poverty if their income and resources are inadequate as to preclude them from having a standard of living considered acceptable in the society in which they live (European Commission, 2004). Poor households' economic decision making and financial outcomes are significantly influences by the level of risk exposure and the level of capability to cope with risks. Thus, poor households are said to have higher level of exposure to risk. Hence, financial vulnerability of households increased with the rate of poverty. In Malaysia, households are defined in two groups which are poor group and hard core poor group based on Poverty Line Income (PLI) by the Malaysia government in order to assess the households' poverty status. Households' Poverty Line Income is measured based on the households' minimum requirement on the basis necessities which based on the standards set by the Department of Social Welfare (EPU, 2012). A few studies' findings revealed further that Malaysia urban households are financially vulnerable as compared with households in rural area (Yusof, Rokis & Jusof, 2015). Malaysia urban households with more than a fifth of the members are financially vulnerable; urban households are not able to survive for at least three month if their income is cut off. One of the core reasons of high poverty rate among urban households is due to the cumulative growth of urbanization. Level of urbanization was 34.2% in 1980 and reach 71% in 2010.

Nevertheless, a few studies have emphasized and highlighted financial vulnerability as important concept and significant component in measures the households' financial conditions regardless in the country or outside the country. Households are examined in term of their risk coping ability, credit rationing and attitudes towards shock in order to measure households' level of financial vulnerability (Al-Mamun & Mazumder, 2015; Emmons & Noeth, 2013; Guarcello, Mealli & Rosati, 2010). Likely, Amanah Ikhtiar Malaysia's (AIM) microcredit programme emphasized on the concept of financial vulnerability among the low and poor income households in order to access their economic and financial condition. The findings show that the participated households have high level of financial vulnerability due to low risk coping ability and weak credit rationing. AIM's microcredit programme leads the participated households an increase in their income, ability to cope with external shocks and credit rationing, thus reduces their poverty rate and economic vulnerability. The literature revealed further and found that households with undesired repayment rate are contribute to the increasing number of poor households, however, more female households' reference person compared to male households' reference person are practising such undesired behaviour (Al-Mamun&Mazumder, 2015).Therefore, various finance and economic programs must be embarked to assist households to manage their finance effectively in order to help them to be in better financial position to protect households against any form of risk.

An Overview of Studies Conducted on Financial Vulnerability of Household

In recent decades, financial vulnerability as a research topic has increased in popularity, due mainly to it great effect on a country's economic development in term of growth and poverty reduction. Identified and understand about financial vulnerability able to improve households' financial management and reduce rate of poverty. Life expectancy in near future is increasing, therefore there is a need for households to have adequate wealth to support increasing period of time. Households facing high vulnerability rate if they cannot managed to finance their retirement needs. Thus, high financial stress will occurs among the low wealth asset households especially if there is a big amount of expenses to be finance in the coming period. Specifically, there is a slightly different in the meanings for the word "vulnerability" in both disaster terminology and also financial terminology. In disaster terminology, vulnerability has a meaning of "The characteristics and circumstances of a community, systems or asset that make it susceptible to the damaging effects of a peril" (UNISDR, 2009b). Whereas in financial terminology, vulnerability defined as "The vulnerable conditions that exclusion and marginalization individuals from participating in economic, social and cultural activities" (Lewis & AV Lewis, 2014).

A few studies have defined the financial vulnerability to the condition of poverty such as living in a low nutritional environment and health levels and also unable to coping with unexpected financial crisis. Likely, one of the precise definitions of financial vulnerability which present by Anderloni and Vandone (2012) are as following:
"Households consider as financial vulnerable due to over commitment to excess indebtedness and also other financial instability's condition, such as the inability to overcome daily life expenses, difficulties in paying utility bills and unable for rental payment."

Researches carried out mainly in developed countries have shown financial vulnerability is commonly defined as risk of exposure to potentially unfavourable financial event. In Austria, Italy, England, studies have conceptualised financial vulnerability as income poverty (Albacete & Lindner, 2013; Guarcello, Mealli & Rosati, 2010; Lewis & AV Lewis, 2014). Low income poverty households possess diverse physical, mental, social and economic condition that generates to the reduction of the households' capacity and well-being. Households with limited income can't access to the capital market and they may face resources constraint to take care of their family daily necessities needs. While in Ireland, study has conceptualized financial vulnerability as asset poverty (Murphy & Scott, 2014). Households possess high rate of financial vulnerability because of the localities of the household in an oversupply housing areas during the recent speculative housing bubble. Higher financial vulnerable households are located in the areas of greatest housing oversupply while the less financial vulnerable household are located in areas with the lowest level of oversupply. Thus, these show a correlation relationship between rate of households' financial vulnerability and asset poverty.

Meanwhile, various variables are used to examine the financial vulnerability of the households. For instance, household's income, credit rationing, economic, social and external effect. However, financial vulnerability cannot be measured simply by looking at these few variables. It is encompass multiple determinants of the financial vulnerability and should be look from different angles. Thus, each country may have different variables which are better to define and examine their own country's financial vulnerability. Therefore, the Table 1 shows a summary of reference variables, sample, methods or sampling techniques and findings presented by various countries:

The first study is done in Europe by Finney and Jentzsch (2008) in order to establish a baseline measure of financial vulnerability to map households in financially fragile situation. The research conducted compiled a dataset comprising of 12 groups of respondents with age between 18 and above. Financial vulnerability of households measured using six different variables, includes age, family type, occupational status of household reference person, number of earner, gender and country. Thus, this study combined questions related to present and future in order to measure households' financial vulnerability. The cluster analysis was applied for the purpose of segmenting the population. The findings show that financial vulnerable household is one who tends to have often been in difficulties in the past 12 months and feel that their situation is unlikely to improve.

Next, the second study is done by using the data from the Survey of Consumer Finances in order to examine a family's endowments and its economic and financial outcomes. This study determines the cognitive ability, social and chronological of the households to measure the family's economic vulnerability and financial fragility. Sample for this study was comprised by 18 groups of respondents.

In addition, the sample was defined based on the characteristics of the reference person of the households which are age and educational attainment. Thus, questionnaires was carried out for the research study with constant control variables of the sample, whereas, interview was conducted if that is a different in the control variable of the research such as race or ethnicity of the sample. The research results show that, in Malaysia, financial vulnerable households are characterized by low levels of liquid assets and high balance sheet leverage. The study revealed further that one of the main reasons was because of legacy of discrimination. Legacy of discrimination in housing, education and employment may weaken the translation of cognitive ability and education of the family members into human capital (Al-Mamun & Mazumder, 2015).

The third study (Schofield, Percival, Passey, Shrestha, Callander & Kelly, 2010) is conducted in Australia. The result of research shows that financial vulnerable individuals possess characteristics of low wealth asset bases and disability to cope with any financial stress. Thus, financial vulnerability rate was high especially for those who have retired earlier due to health condition compared to those who are in full time employment with no health condition. Money related variables (amount of wealth accumulation and predictor of income) were used to measure the individual's financial vulnerability. Thus, this research sample was comprised by 8,864 people between aged 45 to aged 64. The logistic regression and multiple linear regression models were applied in the research. Logistic regression model was used to compare the odds of owning wealth. Whereas, the multiple linear regression model used to analyses the differences between the wealth such as total wealth, income producing assets and non-income producing assets.

The fourth research study was carried among the residents of England by the Lewis and AV Lewis (2014). Economic, social and psychological contributors were examined in order to measure the place, poverty and susceptibility vulnerability of the households in England. Moreover, methods such as observation and questionnaire were use to explained the causes, possible contributors, indicators and consequences of the vulnerability. The study found that households' financial vulnerability increase with the pervasive poverty. Vulnerable households with poverty having less capacity for coping with unexpected crises and possess insufficient resources to be commanded with.

Furthermore, the fifth study is done in Ireland by Murphy and Scott (2014) in order to examine the extent of rural household vulnerability in rural Ireland. The research conducted compiled a dataset comprising of 900 respondents with 180 respondents within each case study location. Financial vulnerability of households measured using three different variables, includes housing crash, economic crisis and austerity conditions. Thus, questionnaire survey was applied in this study and questions specifically related to the mentioned vulnerability indicators and measures were asked. ANOVA test was used to test the relationship between the residential location and age. The result shows that there was a significant relationship in between of the residential location and age; more financial vulnerable households are located in the areas of greatest housing oversupply.

The sixth study is done by using the data from the Household Finance and Consumption survey (HFCS) in Austria with the purpose to investigate the various groups holding debt and estimates the exposure of banks to potentially vulnerable households (ECB, 2013). Hence, this study determines the indebtedness, potential risk of debt and potential exposure at default and loss given default of the households to measure the households' vulnerability. Sample for this study was comprised by 2380 households. Additionally, two-stage stratified probability sampling was choosing as the research method and questionnaire section was conducted for this study. The research results show that, in Austria, financial vulnerable households are characterized by low income and low wealth.

The seventh study (Hahm, Shin & Shin, 2013) is conducted in Korea. The result of research shows that households' financial vulnerability increase with house price appreciation and account deficit. Finance related variables (rate of depreciation in local currency, rate of decrease in central bank international reserve and rate of increase in money market interest rate) were used to measure the family's financial vulnerability. Thus, this research sample was comprised by 165 countries with 105 countries which have measure of banking sector liabilities to the foreign sector and 60 countries with liabilities of banks to nonbank financial sectors. Besides, this research primary data source is the International Monetary Fund's International Financial Statistics (IFS) database.

Last but not least, the eighth study was carried among the households in rural and urban areas by the Guarcello, Mealli and Rosati (2010).This research is representative at the national and regional level as well as in urban and rural area. Thus, this research study comprised a total of 7,276 households with 3,852 rural households and 3,424 urban households. Moreover, the aim of this study is to assess to what extent capital market imperfections and the inability of households to insure themselves and the family members against risk. Thus, effect of shocks, credit rationing and insurances of the households were examined in order to measure the financial vulnerability of the households in Italy. Methods applied in this research study, includes econometric methodology, multinomial logit model and questionnaire. The study revealed further that households' vulnerability is characterized by high application for credit.

SUMMARY

Based on the review of these findings, topic about the financial vulnerability of the households is increasingly concern globally. The review of study at hand provides a deeper investigation of the various countries and revealed further that households who tends to have low income or low liquid assets, high balance sheet leverage, disability to cope with financial stress and financial crisis were identified as high financial vulnerable. Similarities, most of the countries such as Australia, Austria and Korea applied money related variables in order to measure the level of financial vulnerability among the households. However, Malaysia look it at different angles with more emphasize towards the social and psychological perspectives. Thus, the research study in Malaysia develop variables such cognitive ability, social and chronological variables in order to measure about the financial vulnerability of the households. The core definition of this term, "financial vulnerability" is personal feeling of being in a financially instable situation and one of the early indicators of financial stress of households. Households should always concern and be alert with their finance status; households should immediately take some corrective action when deficit or negative balance sheet leverage occurs. Thus, in order to achieve financial well being, financial vulnerability needs to be mitigates. Hence, this current paper allowed us to overview and get deeper understanding of the financial vulnerability among the households.

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Table 1: Summary of Financial Vulnerability Studies

Country	Variables	Sample	Methods/Sampling Technique	Findings
Europe	IV 1. Age 2. Family type 3. Occupational status of household reference person 4. Number of earner 5. Gender 6. Country • DV 1. Financial Vulnerability	• 12 groups of respondents with age 18 and above	• Questionnaire • Cluster Analysis	Financial vulnerable households are one who tends to have often been in difficulties in the past 12 months and feel that their situation is unlikely to improve.
Malaysia	• IV 1. Cognitive ability , social, chronological • DV 1. Economic vulnerability and financial fragility	• 18 groups of respondents	• Interview • Observation • Data source of Survey of Consumer Finance	Financial vulnerable households are characterized by low levels of liquid assets and high balance sheet leverage.
Australia	• IV 1. Amount of wealth accumulation 2. Predictor of income • DV 1. Financial vulnerability	• 8,864 people aged 45-64.	• Logistic regression • Multiple linear regression	Financial vulnerable individuals have low wealth asset bases and disability to cope with any financial stress.
England	• IV 1. Economic, social and psychological contributors • DV 1. Place, poverty, susceptibility vulnerability	• Residents of England	• Observation • Questionnaire	Households' financial vulnerability increase with the pervasive poverty, thus less capacity for coping with unexpected crises.

Notes: IV = Independent Variable
DV = Dependent Variable

Country	Variable	Sample	Methods/Sampling Technique	Findings
Ireland	• IV: 1. Housing crash 2. Economic crisis 3. Austerity conditions • DV: 1. Household vulnerability	• 900 respondents	• Questionnaire • ANOVA test	• More vulnerable households are located in the areas of greatest housing oversupply.
Austria	• IV 1. Indebtedness 2. Potential risk of debt 3. Potential exposure at default and loss given default • DV 1. Household vulnerability	• 2380 households	• Questionnaire • Data Source of Household Finance and Consumption Survey (HFCS) • Two stage stratified probability sampling	• Financial vulnerable households are characterized by low income and low wealth.
Korea	• IV: 1. Rate of depreciation in local currency 2. Rate of decrease in central bank international reserves 3. Rate of increase in money market interest rate • DV: 1. Financial vulnerability	• 165 countries	• Panel probit study • Data source of International Monetary Fund's (IMF's) International Financial Statistics (IFS) data.	• Households' financial vulnerability increase with house price appreciation and current account deficit.
Italy	• IV 1. Effect of shocks 2. Credit rationing 3. Insurance • DV 1. Financial vulnerability	• 7276 households (3852 rural and 3424 urban)	• Questionnaire • Econometric methodology • Multinomial logit model	Households' vulnerability is characterized by high application for credit.

Archives of Business Research – Vol.5, No.2
Publication Date: February. 25, 2017
DOI: 10.14738/abr.52.2773.
Diane D. Galbraith, D. D., & Sunita Mondal, S. (2017). The MBA Factor: A Study of Progression. *Archives of Business Research, 5*(2), 135-146

The MBA Factor: A Study of Progression

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Abstract

Many students are flocking to business schools for more advanced degrees than in any other concentration. In what some call, a one to two-year hiatus, these students are trying to reverse the recent trend of a downwardly mobile generation with fewer opportunities and more accumulated debt. Master of Business Administration graduates are seeking a better future, upward mobility and satisfying jobs upon graduation. A 2015 Bloomberg study of the best business schools reveals that 88% are hired within 3 months of graduation, with a substantial jump of up to 81% in compensation before school. This study utilizes survey data to follow the graduates of a Mid-Atlantic University as their careers progress after graduation to determine whether there is a tangible return on their educational investment and an increase in their respective skill development. Results confirm the usefulness of the MBA degree in career progression.

KeyWords: Graduate studies; career outcomes; progression; educational investment

JEL Classification: A23

INTRODUCTION

In 2011-2012, there were 191,571 students who graduated from U.S. universities with advanced degrees in business, which accounts for 25.4% of all the Master's degrees conferred. The Master of Business Administration (MBA) is listed as one of the most successful degrees in the last century, due to the normal return on investment and the widespread acceptance by employers (Byrne, 2014). Students in the MBA programs often delay their enrollment in graduate school after completing their Bachelor's degree. They acquire work experience and most continue working full time while earning the MBA degree. Students enrolled in the MBA program face challenges of rigorous curriculum, financial resources, and managing to find the balance between full-time work and family obligations (U.S. Department of Education, 2011).

Nationally, MBA students acquire an average debt of $56,157 (U.S. News, 2015). This study will analyze the returns and benefits to such educational investment utilizing a public Mid-Atlantic university data as a case example. In particular, this paper will review students' job placements following graduation, and change of position within current work place upon successful completion of the graduate program. The study aims to describe whether the employment opportunities and career options of the students are enhanced with a MBA degree and commensurate skill development. Research toward a better understanding of opportunity in postgraduate education is needed to measure the postgraduate academic success and employment opportunities.

LITERATURE REVIEW

The economy is changing and labor demand is far surpassing supply particularly for high –skill labor. McKinsey Global Institute (MGI) in a 2012 study predicts that the global labor force will reach 3.5 billion in 2020. This report lists the following challenges:

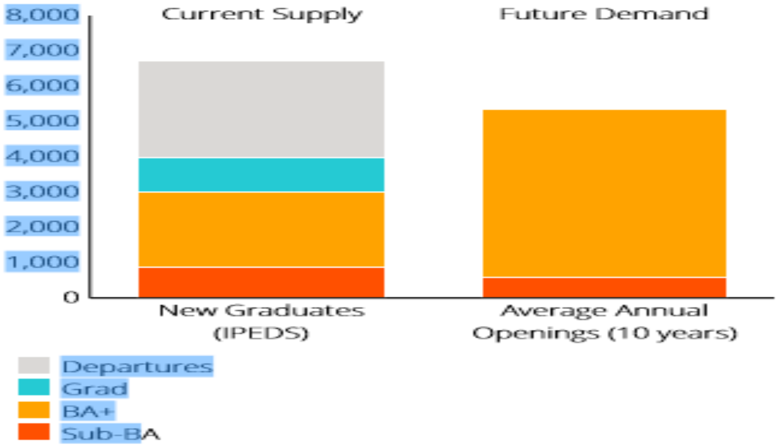
- 38 million to 40 million fewer workers with tertiary education (college or postgraduate degrees) than employers will need, or 13 percent of the demand for such workers
- 45 million too few workers with secondary education in developing economies, or 15 percent of the demand for such workers
- 90 million to 95 million more low-skill workers (those without college training in advanced economies or without even secondary education in developing economies) than employers will need, or 11 percent oversupply of such workers.

Richard Dobbs, one author of this report comments, "Unemployment for less skilled workers is currently running two to three times that of those skilled workers with university or post-graduate degrees. The demand for high-skilled workers defined as a college degree or higher is projected to be 166-168 million workers vs. the supply of 150 million. This will only intensify the global war for talented workers.

From a U.S. News and World Report article, (Bidwell, 2013), universities are unable to keep pace with available job openings. As a result, there will be a shortage of 5 million workers with essential training and education by 2020 in the U.S. Job growth is outpacing post-secondary and graduate rates. Regionally, the data is similar. In a 2016 study entitled, *Inflection Point: Supply, Demand and the Future of Work in the Pittsburgh Region,* from the Allegheny Conference on Community Development, the report projects a shortage of 80,000 workers by 2025 due to massive Baby Boomer retirements also termed the, *silver tsunami*, and insufficient post-graduate rates to fill the gaps in the workforce. In Business and Finance, 89% of the new positions require at least a Bachelor's degree (p. 26). These occupations are growing at a rate of 5%, but there is not enough local talent in the area to fill these positions. The gap is more pronounced at the bachelor's and graduate level, where there are 4,000 annual openings being met by only 3,000 new graduates (p.26). As noted, the demand is much higher than the available and qualified workforce.

A partial explanation of the shortage of supply of skilled labor could be attributed to the higher cost and increased debt burden (illustrated in figure 1 below). The increasing costs of higher education and the resulting mount of debt discourages pursue of advanced degrees. Eventually this leads to a shortage of skilled workers and explains the gap in labor supply-demand.

Figure 1: Supply and Demand of Business and Finance workers from



Source: Alleghenyconference.org., May, 2016

MBA programs can help to reduce this imbalance by providing curricula for students that is directly aligned with business needs and skill sets. Although, the MBA degree continues to grow in popularity and value, it does not seem to be a competitive differentiator anymore. Rather this degree is viewed as the next natural credential in one's career. Just as undergraduate degrees are as ubiquitous as high school diplomas were in the past, the MBA now serves as a baseline for career progression. Byrne, (2014) reveals that advanced degrees today are as common as bachelor's degrees were in the 1960s, according to The Department of Education. More than 16 million people in the U.S., roughly 8% of the country's population, have a master's degree, a 43% increase since 2002.

Graduate degrees have also proven to have a positive return on investment. A recent study by the Urban Institute in (Byrne, 2014) depicted that the average earnings for fulltime workers ages 35-44 with master's degrees in 2002 were 8% higher than those for similar workers in the same demographic group, whose highest degree was a bachelor's. The difference ballooned to 21%, just 10 years later.

Table 1 from the Employment Bureau of Labor Statistics and the Allegheny Conference, (2016) report, indicates a relatively healthy growth rate in the region.
Most of the Business and Finance occupations illustrated have a positive future outlook. Noteworthy are the median salaries and the requirement of an advanced degree including accountants that need at least a Bachelor's degree for employment.

The need for higher education is clear with the impending skills shortage, but the next challenge is the debt associated with advanced degrees that has tripled in the last decade
The information from the Federal Reserve (figure 2 below) depicts that school loan debt is higher than motor vehicle debt.

Table 1: Business and Finance Occupational Summary

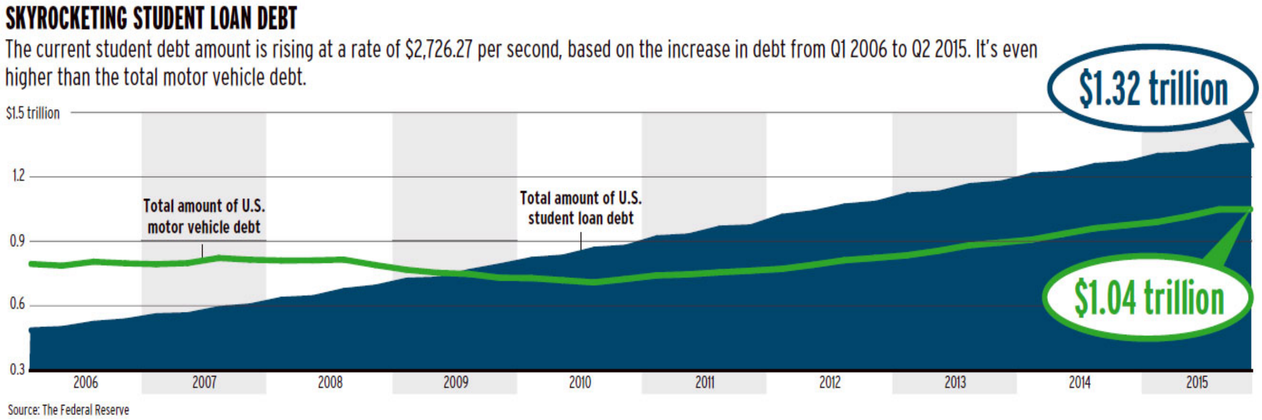
DATA TABLES

Table 18: Business and Finance Occupational Summary Table

Occupation	Employment 2015	Median Salary	Projected Growth Rate	Projected Annual Openings, 2015-2025	% Requested BA	LQ
Accountants & Auditors	14,232	$62,560	7%	1,206	99%	1.23
Market Research Analysts & Marketing Specialists	5,654	$60,230	15%	544	80%	1.20
Management Analysts	4,542	$73,220	7%	371	96%	0.76
Business Operations Specialists, Other	4,441	$69,490	2%	354	84%	0.46
Human Resources Specialists	4,153	$58,970	3%	336	72%	1.02
Financial Analysts	3,584	$68,200	6%	288	100%	1.21
Purchasing Agents	3,319	$58,460	-1%	247	76%	1.24
Training & Development Specialists	2,823	$54,270	5%	222	66%	1.14
Loan Officers	2,577	$51,880	1%	197	51%	1.31
Claims Adjusters, Examiners & Investigators	2,420	$59,210	3%	194	62%	1.06
Cost Estimators	2,354	$61,850	5%	188	64%	1.24
Personal Financial Advisors	2,217	$84,440	23%	216	50%	1.02
Compliance Officers	2,042	$63,350	2%	144	89%	1.17
Wholesale & Retail Buyers	1,313	$52,080	5%	117	92%	0.85
Financial Specialists, Other	1,088	$72,750	4%	86	98%	0.93
Grand Total	**64,767**	**$61,070**	**5%**	**5,354**	**89%**	**1.01**

Sources:
Employment: Bureau of Labor Statistics and Burning Glass model
Median Salary: BLS Occupational Employment Statistics
Growth Rate: See methodology; projections based on Burning Glass job postings, Bureau of Labor Statistics projections, and Pennsylvania Department of Labor projections.
% Requesting BA: Burning Glass job postings data
Location Quotient: BLS Occupational Employment Statistics
Table reflects top occupations within the family. Grand totals represent the full occupation family, which can be found in the Appendix.

Figure 2: Student Loan Debt



(Source: The Federal Reserve, 2016)

According to a College InSight 2014 report, 69% of university students, from both private and public institutions, had student loan debt, with an average of $28,950 per borrower. Over the last decade—from 2004 to 2014—the share of graduates with debt rose modestly (from 65% to 69%) while average debt at graduation rose at more than twice the rate of inflation. In Pennsylvania, the state average is $33, 264 for student debt and the Mid-Atlantic university in our case study in 2014 was $30,458, and 86% of the graduates ended up with debt.

In addition, wages for college graduates have not kept pace with inflation after the Great Recession as reported from the Economic Policy Institue (2016). The research concluded that wages were no higher than in the year, 2000. Real average hourly wages of young workers categorized by education and gender were relatively stagnant. The data used college graduates, ages 21-24 who did not have advanced degrees and were not enrolled in further schooling. There are bright spots, though such as in the consulting field. Many MBA graduates look to consulting companies as a career choice upon graduation. Managementconsulted.com (2016) states that since banking salaries have increased (up to 25% at the MBA level), consulting firms needed to remain competitive by raising their base pay for MBAs to $140,000+.

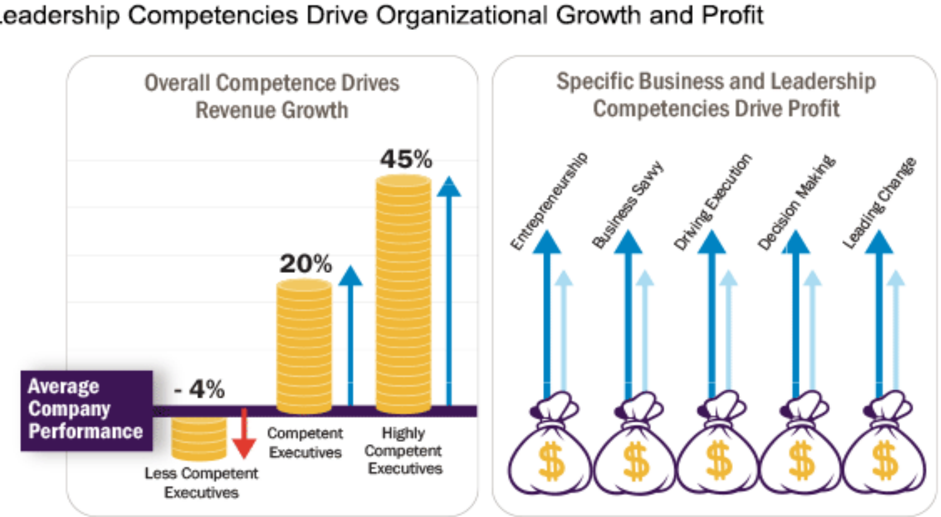
Although, this may look insurmountable in some cases, graduates are adapting by scaling back on purchases like home ownership and other consumer spending with the reality that many will make higher-than-average salaries. In addition, companies like PricewaterhouseCoopers, the Big Four accounting and consulting firm are offering a student loan reduction benefit whereby they will help the employee pay down up to $7200 of loan payments. PwC estimates that 45 percent of its U.S. workforce of 46,000 is eligible for the perk (Strahler, 2016). Naxis Global Asset Management, Fidelity Investments and Chegg educational services also offer loan reduction benefits.

Equipped with this knowledge, what is the allure for students to pursue a MBA degree?
The target market according to Steve James, an Executive Director of a university MBA program in South Florida, are 3 main groups of those seeking MBA degrees:

1. Those in their early to mid-30s who have enjoyed career success, and want to move ahead and set themselves apart from their peers. This group tends to do part-time or online MBA programs.
2. Those in their mid-20s who want to strengthen their academic credentials and focus on a specialty before entering the job market. This group tends to study full time.
3. Those that want or need to switch careers. They are more common during bad economic times. They study full time. "They're looking for a bridge to another career," says James.

In a 2016 study by Development Dimensions International (DDI), analyzing 15,000 people in 18 countries across 300 organization represeting 20 different industries, business education fared relatively well. Profits matter for sustainable businesses. The study reviewed the competencies that fueled organizational growth and profit with specific emphasis on organizations that invested in growing skilled leaders as compared to their competitors. Figure 3 below illustrates revenue and important competencies:

Figure 3: Leadership Competencies Drive Organizational Growth and Profit, and Top and Bottom Ranked Educational Degrees



Top- and Bottom-Ranked Educational Degrees Across Leader Skills

Education	Financial Acumen	Business Savvy	Compelling Communication	Driving Execution	Driving for Results	Entrepreneurship	Influence	Inspiring Excellence
Business	★	★	—	★	—	★	★	—
Engineering	—	✖	✖	—	✖	✖	✖	✖
Law	★	★	—	✖	✖	—	—	✖
Humanities	✖	✖	★	—	★	★	★	★
Information Technology (IT)	—	—	✖	★	—	—	✖	—
Natural Sciences	✖	—	—	—	★	✖	—	★
Social Sciences	—	—	★	✖	—	—	—	—

★ Strength — Mid-range ✖ Weakness

There are some skeptics though. MBA's have also been much maligned recently for a number of reasons. Navaro (2008), reviewed curricula from top-ranked business schools in America and concluded that there is a deficiency in soft skills, globalization, information technology and corporate social responsibility. Cross-cultural training, culturally-specific soft skills and international curricula are essential for successful careers abroad. MBA programs will need to continue to partner with the business community to ensure that the proper skills are identified and honed in preparation for the workforce to fill the skills gaps that mutually benefit the organizations and the individuals.

Finally, in a post-graduate study, interviewing MBA graduates a decade after their graduation, Wachter, (2014), uncovered a very diverse population. One recurring theme was not a unilateral pursuit of wealth or status, but rather a quest for a career with meaning and balance. The narratives pointed toward an alignment between the person and the position, with twists and turns in the journey, lessons learned and creation of each person's unique story. Other benefits of MBA's include lower unemployment rates, a better work/life balance, more career agility and social mobility.

METHODOLOGY

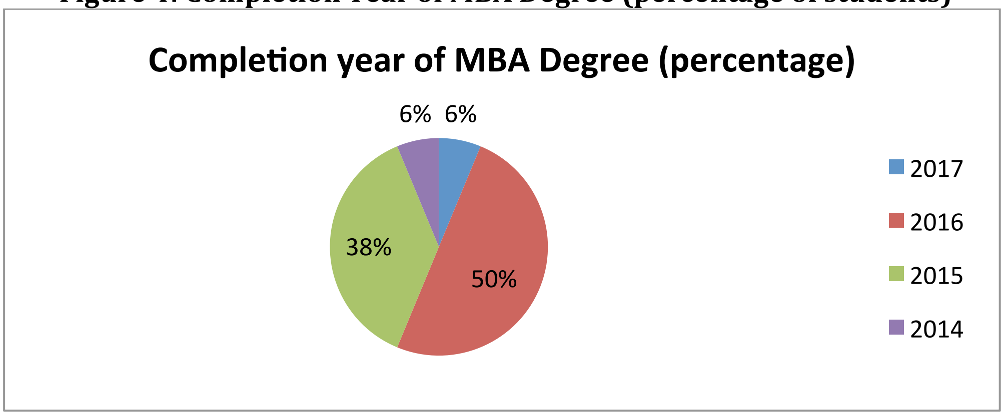
This is a descriptive study to track the progress of recent MBA graduates from a state, public university. The study aims to identify the career progression of individuals who have completed the MBA program. It analyzes whether a graduate degree enables individuals to advance in their respective careers and/or climb up the corporate ladder. A discussion of qualitative variables was undertaken, with the aim of accessing information regarding factors that contribute to a measure of success in the labor market, which could be subjective to personal goals and aspirations. Towards that goal, a survey was prepared which addresses such questions as:

"Do you believe your MBA degree has contributed towards your career progression"?
"Do you think you grew professionally and personally as a result of the MBA program"?
The survey was administered through Survey Monkey, and reached out to all recent MBA graduates from a mid-Atlantic university. The survey results indicate the perceived benefits that the recent graduates attribute to the MBA program, with respect to the cost borne.

DATA AND RESULTS

This study uses a mid-Atlantic university as a case example. This public university is a member of a State System of Higher Education, which enrolls a diverse student body, with a total enrollment of approximately 8,200 students. The university offers a full range of traditional academic programs including Bachelors', Masters' and some Doctorate degrees. In many ways, this sample study reflects the institutional characteristics of a representative major public university in the country. The study utilized individual survey data, administered by the authors, of recent MBA graduates. The data set consists of individuals who responded to the survey on questions related to their career progression following the completion of the MBA degree. The completion years ranged from 2014-2016, with one student expecting to graduate in 2017. Figure 4 below depicts the degree completion year in percentage terms. A majority of the students graduated in 2015 and 2016. In addition, a vast majority (88 percent) of students were registered as full-time towards the completion of the MBA degree. About 75 percent of the survey respondents are male. The survey respondents belong to a variety of industries ranging from finance, real estate, healthcare to education, information technology and athletics.

Figure 4: Completion Year of MBA Degree (percentage of students)



In further analyzing the survey responses, the data indicate about 57 percent of the recent graduates remained within the same organization or company after completion of the MBA degree. Amongst those who remained, about 67 percent were in the same position as before the degree. The remaining 33 percent did remain with the same company; however, there was a change in their position, a progression within the company, following the completion of the MBA program.

Around 44 percent did move from their original organization, during their schooling, and amongst those who moved, a majority of 83 percent obtained a promotion. The remaining 17 percent did change companies, but this did not reflect a work promotion. Table 2 reports the results.

Table 2: Career Change with MBA Degree

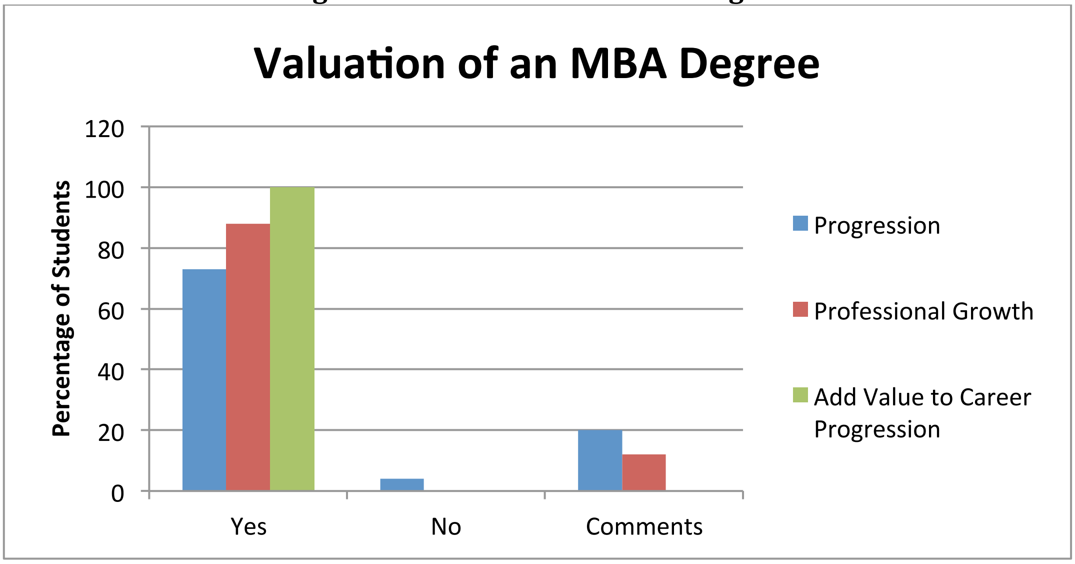
	Yes (percentage)	**No (percentage)**
Same Organization/Company	56	44
If Yes, same position	67	33
If No, changed companies for a promotion	83	17

With regards to the perception of recent graduates on the value-added of the MBA degree, the responses are reported in Figure 5 below. In answer to the question of whether the MBA degree has contributed to the career progression, 73 percent of the respondents agreed, and 4 percent disagreed. The remaining 20 percent respondents did not directly address the question, however, provided positive feedback on the degree through comments which include, "*I believe that it has given me the upper hand in my career progression over other just as qualified candidates because of having that MBA*".

In response to the question of whether there has been a professional growth as a result of the MBA degree, 88 percent of respondents agreed to such growth, and the remaining 12 percent provided written comments attributing their professional success to the MBA degree.

Finally, in response to the question on whether the MBA degree added value to their career progression, the positive response was 100 percent, with all of the survey respondents agreeing to the positive influence of an MBA degree on their career path progression.

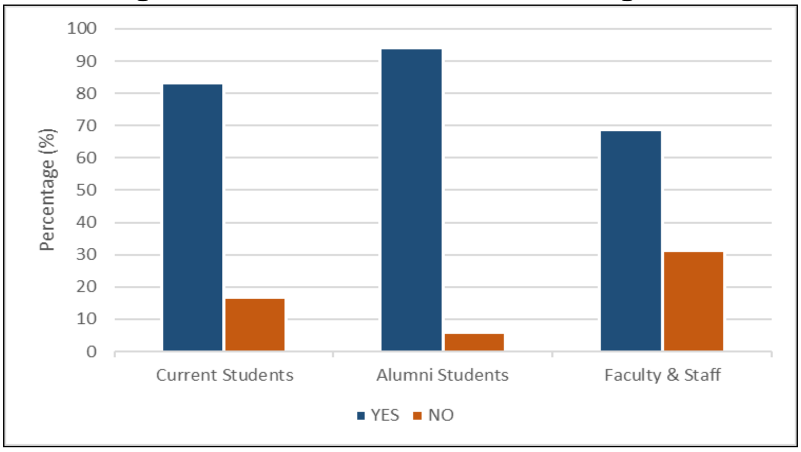
Figure 5: Valuation of an MBA Degree



FURTHER DATA ANALYSIS

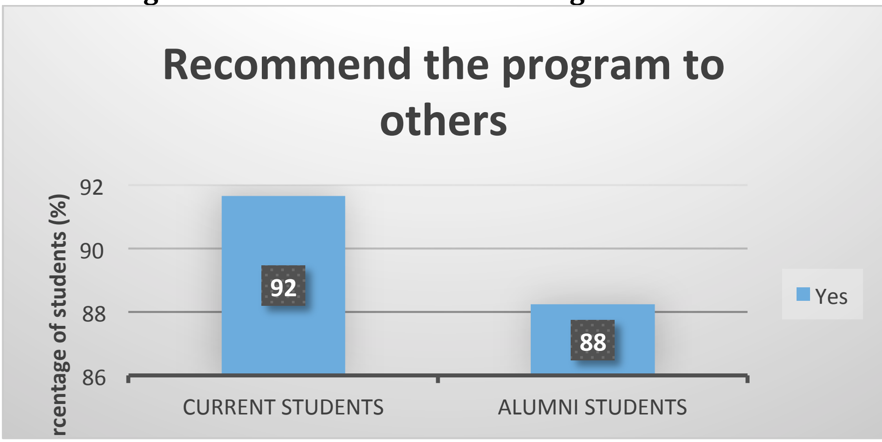
In order to further strengthen our confirmation of the positive impact of an MBA degree by our students, we included an additional dataset in our analysis. This data is based on survey responses from current MBA students in the program, alumni MBA students, and the MBA faculty and staff. There were 12 current students, 17 alumni students and 16 faculty and staff members who responded to the survey. The results from the survey in response to the question, “Overall, the MBA program is an effective program” is reported in Figure 6 below. The results indicate that a majority of current and alumni students confirm the effectiveness of the program. Among the reasons provided by the students for answering no to the effectiveness question, include inadequate time for the rigorous program due to their full-time work responsibilities, and poor placements on the completion of the program.

Figure 6: Effectiveness of the MBA Program



Out of the current and alumni students being asked the question, “would you recommend the program to others”, a majority of students responded positively, as reported in Figure 7 below.

Figure 7: Recommend the MBA Prgoam to others



In response to the survey question regarding the preferred format for the course, about 100% of the current students liked the blended format, while 88% of the alumni students chose the blended format, with the rest, 12% of alumni students preferring a fully online program. The results are reported in table 3 below.

Table 3: Preferred format for MBA course

	Blended (%)	Fully Online (%)
Current Students	92	8
Alumni Students	88	12

CONCLUSION AND DISCUSSION

The survey response data confirms the positive impact of an MBA degree as perceived by the recent graduates of a mid-size public state university. Most of the graduates believe that an MBA degree has enhanced their skills and growth toward their career goals and is helping them in terms of better opportunities and positions, both within and across organizations and industries.

There are a myriad of MBA programs in the US for applicants to choose from. Many have speculated that there are too many and even a glut, resulting in the overall value of these programs being diluted. The benefits from a higher degree, however, are based on supply and demand, educated, skilled talent (supply) and employer needs (demand). The graduates from our study make more than the average Bachelor's degree, confirming the worth of the MBA program in financial terms, notwithstanding the learning process and intrinsic value as well.
In analyzing the results, the point that these are very recent graduates should be kept in mind. The full potential of the MBA degree might take some time to be realized.

Authors believe the results would provide beneficial information to the university regarding the outcomes of graduate MBA program and the likelihood of successful completion rates for these students. In addition, extending this study may also prove valuable. The results will help academic institutions, administrators and policymakers to better understand the different pathways to graduate school success. Also collaboration with the Career Services offices at respective universities should be able to capitalize on this type of research to prioritize their limited resources.

This study supports earlier research results regarding the reasons that individuals chose MBA programs to both strengthen their academic credentials and/or would like to change jobs or careers. Although, the debt burden continues to rise, this sample seems to belie the trend of higher debt with little return. These recent graduates are already realizing substantive economic gains, based on their choice to further their education.

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Archives of Business Research – Vol.5, No.2
Publication Date: February. 25, 2017
DOI: 10.14738/abr.52.2783.
Flynn, D. (2017). Making Fish Culture Sustainable. *Archives of Business Research, 5*(2), 147-162

Making Fish Culture Sustainable

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Abstract

The challenges facing the population of fish throughout the world are critical. Overfishing, physical impediments, and the warming of the world oceans are threatening the population that includes small krill, tuna, trout, salmon, and whales. Some scientists predict that by 2050, the oceans could be fishless. Various solutions are being sought and some have been implemented that include conservation, the removal of dams on rivers, and aquaculture for ocean salmon and tuna. Aquaculture refers to the breeding, rearing, and harvesting of plants and animals in all types of water environments. Marine aquaculture refers to the culturing of species that live in the ocean. Herein, we explore the various threats to fish populations and efforts to mitigate them, especially in Japan.

INTRODUCTION

Since 1880, the National Oceanic and Atmospheric Administration's (NOAA) records show only one other instance when global temperature records were set three years in a row: in 1939, 1940 and 1941. In recent decades, however, that 1941 now ranks as the 37th-warmest year on record. The temperatures in 2016, far exceeded those of the previous two years, each setting a record for the highest world-wide in the respective year (Gillis, 2017: A8). The average temperature across global land and ocean surfaces was 1.69 Fahrenheit (.94 Centigrade) above the 20th century average. This was the highest among 137 years since records began in 1880 (Hotz, 2017: A3). The year 2014 was the warmest year on record and the past 20 years are the warmest on record. Stefan Rahmstorf, head of earth system analysis at the Potsdam Institute for Climate Impact Research in Germany, recently said "…the fact that the warmest years on record are 2014, 2010 and 2005 clearly indicates that global warming has not 'stopped in 1998,' as some like to falsely claim." And, 2015 "far eclipsed" 2014 as .29 Fahrenheit warmer and is the warmest year since records were recorded beginning in 1891. Further, eight of the world's 10 deadliest heat waves occurring since 1997 (Gillis, 2016).

The vast majority of those who study the climate say the earth is in a long-term warming trend that is profoundly threatening and caused almost entirely by human activity. They expect the heat to get much worse over coming decades, but already it is killing forests around the world, driving plants and animals to extinction, melting land ice and causing the seas to rise at an accelerating pace. The vast majority of those who study the climate say the earth is in a long-term warming trend that is profoundly threatening and caused almost entirely by human activity (Gillis, 2015).

In previous research, we have studied the role of water in sustainable development (Flynn, 2014a; 2012a), sustainable rice cultivation in Japan (Flynn, 2014b), and the role of dams in sustainable development (Flynn, 2012b). Dams and sustainable development are especially salient to the topic of sustainable fish (and other sea species) populations, i.e. sea fauna. Herein, we will focus on the bluefin tuna population in Japan, the Atlantic cod and salmon population in the United States, world fisheries in general, and the effect of dams on river and stream fisheries.

In particular, after centuries of unrestrained addiction by government officials to the pursuit of economic development through the construction of huge or super hydro-electric dams, indications are that humankind is waking up to the reality that the economic, political, social, cultural, ecological, moral and environmental costs of this technological choice seem to be consistently outstripping its benefits. To many people, big dams have instead become a nightmare. Nevertheless, more and more superior huge dams continue to be pushed by governments and financiers as the wise choice to development particularly in the poor regions of the world (Oweyegha–Afunaduula, 2000). One controversial example is the Belo Monte river dam project that is being vigorously opposed by indigenous Indian people in Brazil (Jelmayer, 2013). In particular, six indigenous groups from the Xingu, Tapajós and Teles Pires River basins are protesting the building of hydroelectric dams in their territories in the Amazon (Amazon Watch, 2013).

The Ecology of Dams

Rivers possess a delicate ecology that depends on a regular cycle of disturbance within certain tolerances. The plant and animal communities that inhabit the river and river margins have evolved to adapt to their river's own peculiar pattern of flood and drought, slow and fast current. Dams disrupt this ecology.

There are several types of dams. Check dams prevent flooding of small areas. Diversion dams divert river water to irrigate crops. Large dams may be built for flood control or electrical generation, or both. Flood control dams are often earth dams - made of huge mounds of clay, sand, gravel, and rock - but other dams are generally made of concrete. Hydroelectric dams are concrete marvels of engineering. This section will examine mostly the large dams: flood control and hydroelectric dams.

Interrupting Natural Cycles

The first effect of a dam is to alter the pattern of disturbances that the plants and animals of a river have evolved for. Many aquatic animals coordinate their reproductive cycles with annual flood seasons. Every flood is valuable in that it takes nutrients from the land and deposits them in the river, providing food for the stream's residents. Floods also provide shallow backwater areas on vegetated and shaded riversides; the young of many animals depend on these backwaters to protect them from large predators.

As an example, a fish on a certain river may only reproduce during April of every year so that its offspring will have abundant food and places to hide. If the flood never comes because a dam holds the river back (because people want the water for themselves), the offspring may be produced during a time when they cannot possibly survive. If the fish can wait until the next flood, which may be in July or may be in October, its young will be born during the wrong time of year, and will have to contend with the absence of their normal food supply and temperatures for which they are not prepared. Maintaining water flows adequate to sustain fish is a constant challenge in the American West. For example, Oregon's Upper Deschutes River was the site of a seasonal dam release drawdown in mid-October of 2013, resulting in the death of nearly 3,000 fish (Santella, 2013:14).

Vegetation, too, depends upon these regular cycles of flood. Quite often, people will decide that they can spare no water at all and no flooding will occur. Or they may have built the dams specifically to stop flooding, so they can build houses in the floodplains. When this happens, riparian vegetation, the vegetation bordering the river, changes forever. An example of this may be found in much of the Southwest United States, where enormous floodplains of cottonwood and marsh have been replaced by dry, barren areas of tamarisk and grass.

Dams hold back not only sediment, but also debris. 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). This ecological trauma has also been occurring in Malaysia on the Sungai Pahang River, the longest river on the Malaysian Peninsula where clear cutting of forests have clogged the river threatening the fish ecosystem (Boneo Post, 2016:A18).

Recently, it has been discovered that the removal of two dams on the Penobscot has resulted in more than 500 Atlantic Salmon, two million alewives, thousands of mature sea lamprey, many baby eels, dozens of white perch and brook trout. Similarly, in the Elwha River, on Washington's Olympic Peninsula engineers removed two dams from 2011 to 2014. Afterward, chinook, chum and sockeye, steelhead trout quickly moved upriver according to a research scientist at the Western Fisheries Research center of the United States Geological Survey (U.S.G.S) (Carpenter, 2016: D6).

Dams in China

Recently, the Chinese State Council has removed a crucial roadblock to building the Xiaoanhai Dam on the Yangtze River. In a little-noticed ruling made public on Dec. 14, 2011, the council approved changes to shrink the boundaries of a Yangtze River preserve that is home to many of the river's rare and endangered fish species. The decision is likely to clear the way for construction of the Xiaonanhai Dam, a $3.8 billion project that environmental experts say will flood much of the preserve and probably wipe out many species. Chinese environmental groups and the Nature Conservancy have waged a long battle against the Xiaonanhai Dam, one of 19 dams proposed or under construction on the upper reaches of the Yangtze. The dams will turn the river from a swift-running stream that drops from its source in Qinghai Province, three miles high, into a series of large, slow-moving lakes.

The projects are part of a frenetic and much-criticized rush into hydroelectric power by the Chinese government, which, with 26,000 such dams, already has more than any nation in the world. At 1,760 megawatts, the Xiaonanhai project is comparatively small by Yangtze standards, but still three-quarters the size of the Hoover Dam, Scientific American reported in 2009. Critics say the project makes little economic sense except as a temporary job creator. The reservoir will flood 18 square miles of prime farmland and displace 400,000 people, driving the cost of every kilowatt of generating capacity to $2,144 — triple that of the Three Gorges dam, according to Fan Xiao a geologist who has fought the project for years. The national reserve that critics say will be destroyed by the dam was, in fact, established to address concerns that the Three Gorges dam would endanger the fish population. Of the

Yangtze's 338 freshwater fish species, 189 live in the reserve — and many of those are found in no other river basin in China (Wines, 2011: A8).

Arguably, the Three Gorges Dam has also had some deleterious effects on the environment. As discussed previously (Flynn, 2010), a nearly blind white dolphin in China, the baiji, that survived 20 million years has been declared possibly extinct according to Robert Pitman and August Pfluger (New York Times, 2006) who completed a six week search for any surviving baiji. The expedition began on the Yangtze River from the Three Gorges damn and ended in Shanghai. However, recently, a videotape from the Yangtze River in central Anhui Province providing slim hope for the baiji's survival (New York Times, 2007a). The last sighting of this huge sturgeon was in 2003. It has been concluded that sonar that blocks the dolphins ability to find food, pollution, and over-fishing has "functionally" caused the baiji's extinction (or near). Also, importantly, the Three Gorges damn has stopped the dolphin from returning to its breeding ground in the upper Yangtze deep into the Tibetan plateau (Winchester, 1996). Further, in the upper Yangtze River, forest coverage has dropped from 30-40% in 1950 to 10% in 1998. Also, in 2002, 48.5% (approx.) of the southern Yangtze River was unsuitable for human contact (Economy, 2005). A report in China Daily cited that 370 miles and 30 percent of the Yangtze tributaries are seriously, and perhaps irreversibly, polluted. Also, the reservoir created by the Three Gorges Dam was also seriously polluted (New York Times, 2007c).

Sea Life Threatened Worldwide

"We may be sitting on a precipice of a major extinction event," according to Douglas J. McCauley, an ecologist at the University of California, Santa Barbara. He however believes that we are able to avert catastrophe - compared to continents, the oceans are mostly intact, still wild enough to bounce back to ecological health (Zimmer, 2015: A1). Some scientists, however, dourly predict that by 2050, the oceans could be fishless. There is some hope however in the planting and harvesting of sea kelp as has recently been undertaken by Bren Smith off of Stony Creek, Connecticut (Goodyear, 2015: 42-43).

Some of the challenges facing scientists include the vastness of the ocean and the difficulty of studying the well being of a species over the thousands of miles. Also, changes that scientists observe in a particular ecosystem, may not reflect trends across the planet. According to an article in Science, Dr. Pinsky and McCauley and their colleagues sought a clearer picture of the oceans' health by pulling together data from a range of sources, from discoveries in the fossil record to statistics on modern container shipping, fish catches and seabed mining. There are clear signs that humans are harming the oceans to a remarkable degree. Some oceans are overharvested, as discussed below for the cod population in the northeast United States, but even greater damage results from large-scale habitat loss. Mining operations, in particular, are poised to transform the oceans where contracts for seabed mining now cover 460,000 miles underwater. Seabed mining has the potential to tear up unique ecosystems and introduce pollution into the deep sea. Restricting industrialization of the oceans to some regions could allow threatened species to recover in other regions of the sea (Zimmer, 2015: A1 & A3). Recently, Repsol SA, a Spanish oil company, stopped its drilling 3000 meters below sea level off the coast of the Canary Islands. Even though the project was opposed by local officials and environmental groups, the Spanish courts allowed the project. However, the project was scrapped because of the lack of necessary volume and quality oil reserves (Bjork, 2015) (please see Figure # I).

Coral reefs have declined by 40 percent worldwide, partly as a result of warming as a result of climate change. Attempts have been made to restore coral reefs are being implemented as one can see in the transplanted coral reefs off of Java Island, Indonesia. Changing temperatures of the oceans are forcing fish species to migrate to cooler waters as evident by black sea bass migrating from the waters off of Virginia to New Jersey (Zimmer, 2015).

In November of 2014, regulators from the National Oceanic and Atmospheric Administration (NOAA) shut down the recreational and commercial cod fishing in the Gulf of Maine. Recent surveys revealed that cod populations are at record lows, despite decades of regulations to restore them.

As early as the 1850s, fisherman from Maine requested that the government do something about the declining stocks. Yet annual cod landings have declined from about 70,000 metric tons in 1861 to about 54,000 in 1880, to about 20,000 tons in the 1920s, to just a few thousand metric tons in recent years.

In July of 1914, the *New York Times*, ran a story "Extermination Threatens American Sea Fishes – Cost to Consumer Has Risen between 10 and 600 Per Cent Because of Decrease in Supply." Fisherman confronting declining catches developed gear that fished more intensively, taking a larger percentage of the declining population. In 1954, a fisheries economist from Boston charged fishing interests with continuing "to exploit recklessly the limited self-renewing stocks of these species." That was just before the first factory-equipped freezer-trawler arrived at he prime fishing waters around the Grand Banks of Newfoundland from Europe. Such a strategy was clearly not sustainable. Meanwhile, fisherman continued to earn enough to make fishing worthwhile however discouraging their sons to pursue other professions. The Gulf of Maine cod stocks today are probably only of fraction of 1 percent of what they were during George Washington's time.

The recent ban on cod fishing in the Gulf of Maine was an important step toward restoration, though clearly marine systems are very complex and subject to many variables. Considering that ban in light of history, however, is crucial. Historical perspectives provide a vital sense of scale for the sobering restoration challenges we face. Recently, however, a new study says that the quotas were set too high because the effect of an increasingly warming ocean was not taken into account and cod stocks have not recovered. From 2004 to 2014, the temperature of the waters in the Gulf of Maine rose faster than 99.9 percent of the global ocean. Some scientists argue that the decline on cod stocks has occurred because the building of dams has reduced the availability of prey and the disappearance of traditional spawning sites from overfishing in those areas (Goode, 2015). Another important agreement has been made in July of 2015 by the five nations (Norway, Canada, Denmark (on the behalf or its territory of Greenland), Russia and the United States that border the Arctic Ocean pledged to prohibit commercial fishing in the international waters of the Artic until more scientific research could be done on how warming seas and melting ice are affecting fish stocks (Myers, 2015: A6).

The fisheries story, however, also provides a heading into the future, revealing as it does the tragic consequences of decision makers' unwillingness to steer a precautionary course in the face of environmental uncertainties. At every step of the way, decisions could have been made to exploit fish stocks more sustainably (Bolster, 2015) (please see Figure # II).

Another Atlantic fish, the salmon, has received some encouraging news with the approval of genetically engineered salmon by AquaBounty Technologies in Panama. However, at present, the facility has the capacity to produce 100 tons of salmon a year, far below the 200,000 tons of Atlantic salmon imported each year. There are plans to open other facilities in Canada and the United States. The so-called AquAdvantage salmon "contains a growth hormone gene from the Chinook salmon and a genetic switch from the ocean pout, an eel-like creature , that keeps the transplanted gene continuously active, whereas the slamon's own growth hormone is active only parts of the year. The company has said the fish can grow to market weight in 18 to 20 months, compared to 28-36 months for conventionally farmed salmon." (Pollack, 2015: A3).

Fish Culture in Japan

Tokyo's first fish market began life a few miles north of Tsukiji about 400 years ago on a spot next to the original Edo castle (long since razed), and close to Nihonbashi Bridge in today's business district. Fish not consumed by the castle were sold on the streets here, and this is where Edomae-style sushi, now beloved around the world, first evolved. Several Tsukiji companies can trace their histories to this original market, which was lost to the Great Kanto earthquake of 1923. Tsukiji replaced it, opening in 1935.
More than 2,000 tons of seafood pass through Tsukiji's 80-year-old halls every day (Booth, 2014).

The world's biggest wholesale fish and seafood market, Tsukiji, located in central Tokyo, is to move to a new location in two years (please see Figure # III). The 431 billion yen ($4 billion) transfer to more current facilities will free up valuable Tokyo seaside real estate and allow a modernization plan for the site. Among those reportedly eyeing the real estate, after the wholesale fish market is torn down, are resort builders and casino operators who want to build up the spot in time for the 2020 Tokyo Olympics.

Tsukiji, owned by the Tokyo Metropolitan Government, is currently sandwiched between the Sumida River and the expensive Ginza shopping district. Truckloads of fresh products from all over the world arrive as early as 3 in the morning, within easy reach of wholesalers, food processing firms and large retail chains. The market handles hundreds of varieties of seafood from sea urchin to caviar to baby sardines, all weighing some 700,000 metric tons a year. About $20 million worth of seafood and other produce is traded in the market on an average day. Among the daily highlights is the auction of the prized, sashimi-grade tuna whose prices hit a new peak each January. Last year a single bluefin tuna sold for a record $1.7 million. The buyer of the 222 kg (489 lbs.) fish was Kiyoshi Kimura, owner of a Tokyo-based sushi restaurant chain.

The market which has occupied prime real estate in its current site in the heart of Tokyo for eight decades is slated to move to Toyosu, a mile-and-a-half away. Construction of the new set of buildings was to be completed by March 2016. The new space will be nearly twice as big, a more sanitary facility with temperature-controlled buildings, cold chain and processing infrastructure and ample parking for transport vehicles. It will have expressway access. The move has been slowed due to environmental concerns at the former site of a gas plant. It may even affect the plan for a new highway to be built through the original location (Obe, 2016).

Yet, it is a controversial move for more reasons than one. The move has run into trouble. The new location across the river is a parcel of reclaimed land which used to house a gas plant and is said to be heavily polluted, requiring a major cleanup. That is expected to further inflate relocation costs.

Some of Tsukiji's unionized traders have organized protests and are fighting what they call a move to satisfy the greed of real estate developers. A string of lawsuits also questions the move to a site containing toxic materials. Besides, the traders will also have to pay higher rents at the new site.

But the Tokyo government calls the move a 'market need' and lists one main reason: most of the buildings are past their durability period. The market was built to suit railway transportation but since the commodities arrive mainly by trucks, the parking space and traffic congestion are serious problems. The open structure of the market does not lend itself to modern storage facilities. Acknowledging that the transition may be less than smooth, the government said in a written note that the opening of the new Toyosu market will be fixed after discussions with all the "people concerned" (Forbes, 2014).

Japan's Tuna Crisis

A shortage of tuna, discussed in more detail earlier (Flynn, 2015), is forcing Japanese chefs to start using substitutes in sushi and sashimi — cheaper fish, even avocado rolls. The real issue is not the deprivation of Japanese taste buds but the decline of the tuna population. Along with sharks and other ocean-dwelling species, tuna have been in free fall for decades, in part from rapacious overfishing by big industrial fleets, of which Japan's is by far the most aggressive.

Obviously, rising consumption is also to blame. And the Japanese — whose per capita fish consumption is the largest among industrialized nations — are right to point out that the appetite for sushi and sashimi has rocketed in the United States and in increasingly affluent countries like Russia and China.

The primary answer is a system of global discipline. With that in mind, an international commission representing dozens of fishing nations, agreed last year to a 20 percent reduction in annual tuna catches in the eastern Atlantic and the Mediterranean. This only made the Japanese more nervous, though in fact they, should be asking for stricter measures.

Ellen Pikitch, director of the Pew Institute for Ocean Science, and other experts believe that the new limits may not be tough enough to prevent commercial extinction of the much-prized Atlantic bluefin tuna. Ms. Pikitch also points out that in any case illegal and unreported fishing will push actual catches well above those levels causing one-third of the world's fish stock were overexploited. Recently, Secretary of State, John Kerry, said that the biggest challenge to protecting the world's oceans is enforcement, although declaring off-limits to commercial activity may also help. Chile has recently announced their intention to cordon off more than 200,000 square miles of the Pacific Ocean near Easter Island from commercial fishing and oil exploration (Urbina, 2015: A7).

Recognized close to ten years ago, Japan's sushi crisis may be just the wake-up call for both the consuming public and the regulators (New York Times, 2007b).

Japan's Scientists Respond to the Crisis

At least two large-scale scientific attempts at raising bluefin tuna in controlled environments are presently in process at the Seikai National Fisheries Research Institute (Nagano, 2013) and Osaka's Kinki University (Hayashi, 2014). The material that is discussed below was gleaned largely from these two sources, unless otherwise noted.

Tokihiko Okada, a researcher at Osaka's Kinki University, received an urgent call from a Tokyo department store that needed sashimi. Instead of needing to go fishing, he relayed the message to a diver who plunged into a round pen with an electric harpoon and stunned an 88-pound Pacific bluefin tuna, raised from birth in captivity. It was pulled out and slaughtered immediately on the boat.

With a decades long global consumption boom depleting natural fish populations of all kinds, demand is increasingly being met by farm-grown seafood. In 2012, farmed fish accounted for a record 42.2% of global output, compared with 13.4% in 1990 and 25.7% in 2000. A full 56% of global shrimp consumption now comes from farms, mostly in Southeast Asia and China. Oysters are started in hatcheries and then seeded in ocean beds. Atlantic salmon farming, which only started in earnest in the mid-1980s, now accounts for 99% of world-wide production—so much so that it has drawn criticism for polluting local water systems and spreading diseases to wild fish.

Until recently, the Pacific bluefin tuna defied this sort of domestication. The bluefin can weigh as much as 900 pounds and barrels through the seas at up to 30 miles an hour. Over a month, it may roam thousands of miles of the Pacific. The massive creature is also moody, easily disturbed by light, noise or subtle changes in the water temperature. It hurtles through the water in a straight line, making it prone to fatal collisions in captivity.

The Japanese treasure the fish's rich red meat so much that they call it "hon-maguro" or "true tuna." At an auction in Tokyo, a single bluefin once sold for $1.5 million, or $3,000 a pound. All this has put the wild Pacific bluefin tuna in a perilous state. Stocks today are less than one-fifth of their peak in the early 1960s, around the time Japanese industrial freezer ships began prowling the oceans, according to an estimate by an international governmental committee monitoring tuna fishing in the Pacific. The wild population is now estimated by that committee at 44,848 tons, or roughly nine million fish, down nearly 50% in the past decade.

The decline has been exacerbated by earlier efforts to cultivate tuna. Fishermen often catch juvenile fish in the wild that are then raised to adulthood in pens. The practice cuts short the breeding cycle by removing much of the next generation from the seas.
Net pens, originally developed by Teruo Hara in the 1950s. The pens improved the efficiency of fish farming dramatically compared with the preceding era, when fish were kept in much larger spaces in the bay created by simple partitions.

Scientists at Kinki University decided to take a different approach. Kinki began studying aquaculture after World War II in an effort to ease food shortages. Under the motto "Till the Ocean," researchers built expertise in breeding fish popular in the Japanese diet such as flounder and amberjack.

In 1969, long before the world started craving fresh slices of fatty tuna, Kinki embarked on a quest to tame the bluefin. It sought to complete the reproduction cycle, with Pacific bluefin tuna eggs, babies, juveniles and adults all in the farming system.

Two scientists from Kinki went out to sea with local fishermen, seeking to capture juvenile tuna for raising in captivity. "We researchers always wanted to raise bluefin because it's big and fast. It's so special," said one of the scientists, Hidemi Kumai, now 79 years old. "We knew from the beginning it was going to be a huge challenge"(Hidemi Kumai, an emeritus professor at Kinki University and former head of the bluefin tuna farming department) (Hayashi, 2014).

It took nearly 10 years for fish caught in the wild to lay eggs at Kinki's research pens. Then, in 1983, they stopped laying eggs, and for 11 years, researchers couldn't figure out the problem. The Kinki scientists now attribute the hiatus to intraday drops in water temperature, a lesson learned only after successful breeding at a separate facility in southern Japan.

In the summer of 1994, the fish finally produced eggs again. The researchers celebrated and put nearly 2,000 baby fish in an offshore pen. The next morning, most of them were dead with their neck bones broken. The cause was a mystery until a clue came weeks later. Some of the babies in the lab panicked when the lights came on after a temporary blackout and killed themselves. Mr. Kumai and colleagues realized that sudden bright light from a car, fireworks or lightning caused the fish to panic and bump into each other or into the walls. The solution was to keep the lights on at all times.

At last, in 2002, the Kinki team became the first in the world to breed captive bluefin from parents that were themselves born in captivity. The circle was complete. But the survival rate remained low. While farmed Atlantic salmon had developed into a multibillion-dollar business, it seemed doubtful for years that the tuna undertaking could be commercially viable.

Kinki University had funded its project with proceeds from the sale of more common fish raised at its research facilities. That kept the tuna farming alive even after other academic and commercial organizations gave up. One early supporter, however, was a young employee of Toyota Tsusho Corp., a trading company affiliated with the auto maker. Taizou Fukuta was working at a desk job in the company's finance department in Nagoya when he saw a documentary about the tuna project. He was inspired to propose a tuna farming business in a Toyota in-house venture contest and won, according to Mr. Fukuta.

With $1 million in seed money, Mr. Fukuta, now 39, visited Kinki's Mr. Okada, the university's head of tuna research, many times until the academic agreed to team up with Toyota in 2009. Toyota payed the bill for larger facilities where baby fish hatched at the university's labs could be raised in large numbers for about four months. At that point, the juvenile fish are stable enough to be sold to commercial tuna ranches, where they are fattened in round pens around 100 feet in diameter and 30 feet deep for three to four years before being sold for slaughter.

After shipping an average of 20,000 juvenile fish a year over the past three years, Toyota's production is expected to rise to 40,000. That complements Kinki's own capacity for about the same number of fish. Together, they could supply nearly 20% of the demand for juvenile fish at Japanese tuna farms, taking pressure off the wild stock. Tin 2014, Mr. Fukuta says the venture he proposed five years ago is likely to break even for the first time.

Today around one or two in 100 of the baby tuna hatching from eggs at Kinki survive to adulthood, up from one in several hundred a few years ago. By contrast, only about one in 30 million babies hatched from eggs in the wild survive to adulthood. Specifically, a large female Pacific bluefin produces tens of millions of eggs but on average, even in a protected farm environment, only 0.2 percent to 0.3 percent of fertilized eggs will survive the first three months to grow into 30-centimeter fish; and fewer than 0.1 percent will survive to full adulthood. If high-technology methods can significantly raise the survival rate, the commercial consequences will be considerable. By strictly controlling the pool environment, they hope to maximize egg production and survival. The pool water is kept in a constant temperature range, between a maximum of 30 degrees Celsius, or 86 degrees Fahrenheit, in summer and a minimum of 13 degrees Celsius, or 55 degrees Fahrenheit, in winter.

Demand is certainly rising for the farmed tuna from gourmet stores and sushi restaurants in Japan. The university itself runs two restaurants in Tokyo's Ginza district and Osaka, both of them booked months in advance, it says. In Nagasaki prefecture, one of the main areas for domestic tuna farming, shipments of farmed bluefin rose to 3,000 tons in 2013, nearly five times the amount five years earlier.

At Kinki University's restaurant in Tokyo's Ginza district, the most popular lunchtime dish is a sashimi rice bowl. The slices of red meat on the left side are bluefin tuna raised in captivity at one of Kinki's labs (Hayashi, 2014).

Environmental concerns remain. Bluefin tuna require 15 pounds of feed fish to produce 1 pound of meat, prompting the Kinki team and others to look for artificial feed. Benefits of artificial feed include less pollution. With real fish, a large part is left uneaten and sinks to the bottom of the ocean, polluting the water. Artificial pellets are easier to eat so there are fewer leftovers. The team has been able to replace up to 30% of the ingredients with vegetable protein but going further stunts the fish's growth.

With global environmental protection treaties such as the Convention on International Trade in Endangered Species leaning toward listing Pacific bluefin tuna as an endangered species, finding a better way to farm the fish has become of national importance. The farming of Pacific bluefin is not new. Japan has 140 established farms, including 60 in the Nagasaki area alone, growing the fish from age three months to adulthood.

The Nagasaki research center, and a sister facility on Amami-Oshima Island in Kagoshima Prefecture — which has been working on Pacific bluefin research since 1995 - aims to develop improved strains of fish, using classic breeding techniques, rather than genetic modification, to produce fast-maturing, disease-free fish with high survival rates. The goal is to develop a method capable of producing as many as 100,000 three-month-old fish a year to stock the nation's fish farms, Mr. Mushiake said (Nagano, 2013).

CONCLUSION

It has been argued that intervention is necessary in order to provide a healthy sustainable future through aquaculture. Aquaculture refers to the breeding, rearing, and harvesting of plants and animals in all types of water environments. Marine aquaculture refers to the culturing of species that live in the ocean. U.S. marine aquaculture primarily produces oysters, clams, mussels, shrimp, and salmon as well as lesser amounts of cod, moi, yellowtail, barramundi, seabass, and seabream. Marine aquaculture can take place in the ocean (that is, in cages, on the seafloor, or suspended in the water column) or in on-land, manmade systems such as ponds or tanks. Recirculating aquaculture systems that reduce, reuse, and recycle water and waste can support some marine species (NOAA). As mentioned earlier, the planting and harvesting of sea kelp offers some promise in providing sustainable zero carbon emissions. Dulse, a pinkish-red seaweed, also referred to as red kale, has also been grown in bubbling seawater inside of warehouses at the Hatfield Marine Science Center, Oregon State University, in Newport, Oregon (hmsc.oregonstate.edu). The Bay Foundation has also been working to reforest the giant kelp in Santa Monica where three-quarters of the forest has vanished since 1950 (Goodyear, 2015).

For the streams and rivers, we need to restore the natural habitat for fish to migrate without the impediment of dams. Further, efforts are necessary to provide the restoration of rivers and streams as they have become obstructed with sediment and other obstacles.

It is also necessary to moderate our fishing behavior so that fishing stocks can be restored. In some cases, as with cod, this may take decades (Goode, 2015). Dredging and long line fishing must be curtailed and in some cases, banned. As recently reported on National Public Radio (NPR) most of the seafood Americans eat comes from abroad. And a lot of that is caught illegally by vessels that ignore catch limits, or that fish in areas off-limits to fishing. No one knows how much of it is illegal, because the oceans are too big to patrol. Or at least, they were.

Now environmental groups have harnessed satellite technology to watch pirate fishing vessels from space — and they've already caught some of them.

John Amos is one of the pioneers. He runs a small organization in West Virginia called SkyTruth. He started out collecting satellite images of oil spills in the ocean. In 2011, he learned about the automatic identification system, or AIS, which ships use to prevent collisions at sea.

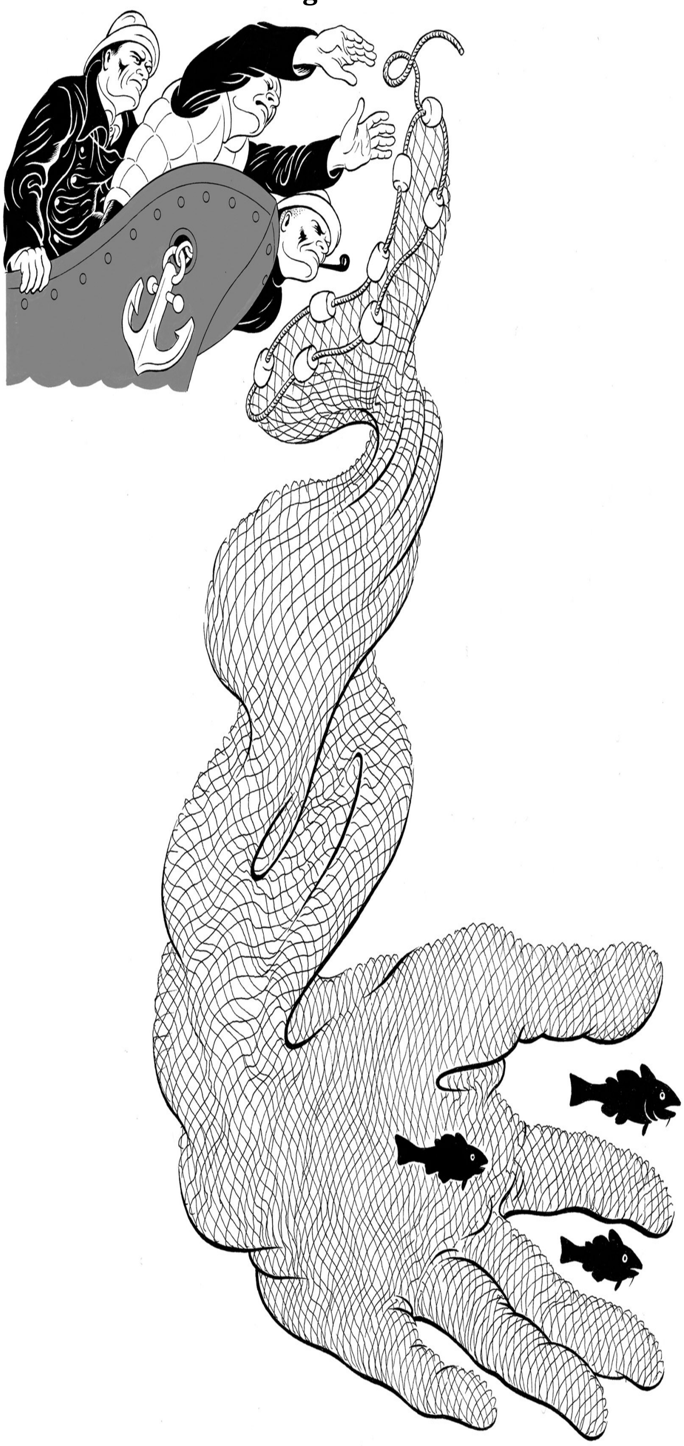
"Those AIS communication broadcasts can be picked up by orbiting satellites," Amos explains. Large ships carry electronic devices that constantly broadcast the ship's location and heading. This signal includes the boat's name and where it's from. Working with Google, Amos developed software that uses AIS signals to track up to 150,000 vessels all over the world. And he's also collaborating with the Pew Charitable Trusts, a nonprofit that's trying to curb illegal fishing with a program called Eyes on the Seas.

Amos learned how to recognize the kind of movement displayed on a map of the ocean that indicates a boat is fishing. "It's kind of a slow back and forth movement that would indicate they've put fishing gear, like long lines with baited hooks, into the water," he says.

Finally, it is worth noting that the Milford Laboratory in Milford, Connecticut has been selectively breeding bay scallops in aquaculture tanks with water pumped in from Long Island Sound. The bay scallop population has been dwindling over the past 50 years when in 1962, 1,433 metric tons of bay scallops were wild-caught. In 2013, 100.4 metric tons were caught (De Avila, 2015:A15).

Figure : I
"No to petroleum drilling, yes to renewables" (Bjork, 2015).

Figure : II



Overfishing is tragically depleting the cod habitat in the North Atlantic (Bolster, 2015*).*

Figure : III

Frozen tuna at the Tsukiji wholesale market in central Tokyo (Booth, 2014).

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Archives of Business Research – Vol.5, No.2
Publication Date: February. 25, 2017
DOI: 10.14738/abr.52.2747.
Kumar, S. (2017). Influence of Product Placements in Films and Television on consumers Brand Awarenes. *Archives of Business Research, 5*(2), 163-179

Influence of Product Placements in Films and Television on Consumers Brand Awareness

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Abstract

Today marketers are hugely making use of product placements in films and television. Product placements are being thought to be more beneficial as they are incorporated in the storyline and therefore this is hard to be missed by the viewers. The objective of the research is to find the reason for people to connect to products, their attitude towards product placements and how this attitude influences their brand awareness and buying. There have been studies before showing why marketers and consumers are preferring product placements over commercial advertisements however this study focusses on the effect of product placements on consumer brand awareness. The data for this research has been collected by a questionnaire that includes questions on general opinion as well as the influence of product placements on Brand awareness. The data has been analyzed using Advance Analytics Methods (Random Forest and Association Analysis). The former method helped in identifying the important factors and later method helped to see the various combination of factors influencing product placements in films and television.

KeyWords: Product placements, Films, Television, Attitudes, Connect, Influence, Consumer buying behaviour, Consumption patterns, Brand awareness

INTRODUCTION

Product placement is an advertising method and tool that includes products in entertainment programs such as movies, TV programs and video games, with a specific objective. Product placements are popularly seen in the following formats:

- visual figures in which the product appears within the content
- actual product use by a celebrity in the film or TV show
- dialogues spoken by an actor that consist of the product /brand name

With every passing day, product placement is popularly growing among marketers for two main reasons. First, product placements that can be seen today are subtle in nature, therefore, they do not distract the viewers' substantial attention from the main content of the program or film. Eventually, the viewer may believe that this placement has been incorporated by the producers of the content themselves and not by the marketers, with the sole aim of promoting their products. This increases the credibility of the placement as well as of the product itself in the minds of the audience.

Secondly, entertainment programming, like television today, is combined with the internet which may facilitate a viewer to buy a product by simply pointing their remote to it, when they see it as a placement onscreen. This will increase the suitability of making purchases and will also increase the role of product placements leading to such purchases and brand awareness.

With this development, product placement may become a dominant marketing strategy tomorrow.

Product placement is a marketing strategy that advanced a few decades ago. However, the advantages of product placements have lead professionals and various companies to involve themselves in product placement activities to obtain various levels of productivity. One of the major differences of product placement in television and films as compared to other advertising media is the significance of factors, such as setting and environment within which the product is displayed or demonstrated.

REVIEW OF LITERATURE

Product placement as an advertising tool has been extensively explored. Belch and Belch (2004) indicated in their study that product placement is most effective when it is used in a combination with marketing communication methods, for example integrating all the strategic approach and coordination of the different communication functions together. The main purpose of this integration is to avoid duplication. Gillespie, Joireman, and Muehling (2012) specified that the major portion of the previous study on product placement has tried to study the impact of product placement on consumer attitude and product (Balasubramanian, Karrh, and Patwardhan, 2006; Karrh, 1998). Past research studies discovered normative influence on product placement effects (Noguti and Russell 2014).

Product placement is also known as brand placement depending on the situation where the product or brand has been emphasised (Karrh, 1998). If we analyse more closely, now Product placement has moved very close to conventional marketing domain as customers are more marketing savvy and even the method has become very noticeable. Product placement is also used with alike objectives as advertising, such as greater than before awareness, interest, target to purchase, and altered behaviour, but with different viewpoints. Among the various uses of product placement in different kinds of media, several studies have talked about the impact of product and brand placement in movies. The effects of product placement have been observed by several studies in a traditional setting (Nelson and Deshpande, 2013), to discover the financial growth of product placement in movies (Karniouchina, Uslay, and Erenburg, 2011), and placement setting and obviousness (Wiles and Danielova, 2009). There have been many other types of research that have measured the effects of product placement in television shows (Gillespie, Joireman, and Muehling, 2012; Hackley and Tiwsakul, 2012) and video-game advertisements (Hang, 2014). Previously, studies have been undertaken to determine the effects on consumers of product placements (Auty and Lewis, 2004; Russell 2002, cited in Noguti and Russell, 2014) by highlighting the on-going decrease in television viewership with the increase in digital media. It is also debatable that these days the impact of traditional marketing efforts, like advertising – on TV, on radio, or on print media – is continuously decreasing due to social and technological changes, which includes the consumers' growing dislike of obvious advertising or increase in the use of DVDs and digital platforms, allowing the consumers to easily avoid the ads being aired on TV (Lawrence, 1989; Alwitt and Prabhaker, 1994; Zazza, 2002; Mack, 2004). Various studies have also recognised the usefulness of product placement with regard to recognition (Brennan and Babin, 2004), recollection and approach (Gupta and Gould, 1997).

The theory of reasoned action (TRA), says that a person's beliefs about the expected results will affect the setting up of attitudes that in turn will affect the behavioural intentions (Ajzen and Fishbein, 1980). Encoding variability theory; establishes that reciting a product placement with small changes can increase the viewer's memory of the product (Singh, Mishra, Bendapudi, and Linville, 1994) and provide learning through the recurrence of product placement. Increasing media exposure also influences consumers' attitudes and behaviours through product placement (Johnstone and Dodd, 2000).

Brand awareness includes two factors- brand recognition & recall; and procurement and the utility of a product. Brand recognition and recall represent the depth while the buying and usage practices of a product represents the breath. Brand image impacts how customers relate themselves with a brand, which positively should be strong (relevance and consistency), favourable (desirability and deliverability), and unique (points-of-parity and points-of-difference) (Keller, 2008). Brand attitudes eventually decide the consequences. For example, brand loyalty represents less exposure to catastrophes and rival engagements, larger margins, more elasticity to decrease in price (gaining more customers) and more inelasticity to increase in price (losing fewer customers), better opinions regarding the product, opportunities for outspreading the brand, greater trade cooperation (value chain), licensing opportunities, and increased marketing communication effectiveness and efficiency (Keller, 2008). The Associative Network Memory Model, is a model for understanding how product placement works (Anderson, 1983; Wyer and Srull, 1989). In the model, recall represents the process by which an individual identifies the product from memory, while recognition refers to being able to differentiate the product from another (Johnstone and Dodd, 2000). Here, memory can be seen as a grid of nodes and connecting links, in which the nodes representing blocks of data and links represent the connections between one piece of information and another. The information may be verbal, visual or contextual in nature (Keller, 2008). There is also a study by Janiszewski, Noel, and Sawyer (2003), which looked into the relationship between advertising repetition and consumer memory, signifying that "understanding how different types of repeated ads are received and remembered can provide insight into how to make advertising more real" (Janiszewski, Noel, and Sawyer, 2003). It was discovered that a repetition of advertisements, along with strategic product placement, will form a reminder in the mind of consumers, which will lead to brand awareness (Belch and Belch, 2004). Also, increasing media exposure increases the chances of subconscious influence from product placements. (Johnstone and Dodd, 2000). Therefore, consumers learn by seeing the protagonist's behaviours leading to the required results, thereby 'experiencing' the product or brand featured in a movie, TV program, or video game (Balasubramanian, 1994). A suitable example would be, Matthew McConaughey's portrayal of Brandon Lane in the movie, *Two for the Money* - getting a Mercedes SL600 to underline his new job position. Such instances could function as a stimulus, which, if complementary with the consumer's self-image, can inform and reinforce the social status of a consumer aspiring to emulate the character displayed. (Markin, 1979).

Product placements that are displayed in movies as well as on television shows grab the attention of the viewers and helps in creating an acceptance for the brand. It eventually leads to brand recall among the consumers while they are shopping and deciding what to purchase. Also, they find out about the other factors that are connected and contribute to product placement which includes celebrity endorsements, references, and emotions. The objective of this study is to identify if product placements affect consumers buying decisions, and how. The research methodology was completed by using 104 respondents who were targeted with a questionnaire with 39 questions about how product placements influenced brand recall. (Sharma & Nayak, March 2015)

Today, all the big brands want to place their products and reach out to their potential customers with the help of mass media. This helps them not only to reach out to a large number of people but also to make a deep and long lasting impact. This article brings out the effectiveness and the impact of repetition of product placements in movies and television. It compares the repetition of the product placements that are bold in nature, with the ones that are subtle. The article brings out the kind of attitude that people have towards highly repetitive product placement ads and compares them to how people react to the less repetitive product placement ads. It has been found that repetition of strong/bold brand placement ads have a negative impact on the attitude that the consumers show towards the brand. On the other hand, subtle placement ads have a positive impact on the brand attitude of consumers. Also, the marketers should evaluate all the available options for placing their products as its repetition will have a huge influence of the brand on the attitudes of consumers. (Homer, 2009)

(Taejun, Yongjun, & Federio, 2011) in their article investigates into the attitudes of the US and Korean students towards product placements via three media i.e. films, TV shows, and songs. They also look into the level of acceptability that the students were found to hold towards the product placement ads depending on the type of media and the nature of the placements. In order to retain the results, an online survey of 471 college students in Korea and US was taken. Korean students were found to more strongly support the government interferences than the American students. The cultural differences were also reflected in the acceptability of the students for the product placements. Here the weak point is that only two countries were taken to show the difference between the various kinds of product placements. The findings also showed that more caution is needed while putting forth a product placement in Korea than in the US.

(Habil, 2015) talks about the indicators and methodologies that are available to the researchers and marketers in order to evaluate product placement shown in a film or a TV show. The first methodology focuses on how a specific placement is perceived as a media appearance. Here, the following factors are considered: number of brand placements, duration of brand placements, full or partial placements, active or passive placements, measuring effectiveness at the consumer level, social media buzz, eye tracking tests, and costs incurred. The broader approach involves the marketing and communication impacts and effectiveness. This approach is measured with the following factors: raising awareness, brand recall, image development, expansion of target audience, development of positioning, internal marketing etc. These methods are not widely acceptable today because they are new, however, they cover all aspects that are useful in theory and in practice. To measure the effectiveness of product placement in Hindi movies as compared to Hindi TV shows. As advertisers are shifting these ads from commercial breaks to product placements in films, they showing that it is the right time to find out which medium and platform (films or tv shows) is more effective in promoting the brand. Data was collected with the help of a questionnaire. Responses were collected from 250 students pursuing their post-graduation who watched Hindi films and TV shows. The research article provides useful results for practitioners such as media planners, advertising agencies, brand managers, film script writers and producers for increasing the positive impacts of their product placements. (Patel & Chauhan, April 2013)

Product Placements are seen to be strongly emerging as a method of marketing communication today. However, a lot of doubts can be raised about the advantages, disadvantages, effectiveness and impacts of product placements. This article explores the pros and cons of product placement as a marketing strategy. It highlights the ways in which product placement helps to create higher value and impact on the viewers as compared to other types of promotions. In researcher opinion, too product placements can be more effective as compared to other forms of promotions, as today there are new ways to capture audience attention with the advancement in technology people are being able to ignore or skip commercials/advertisements which are put forth by other media. The study to evaluate product placement as a marketing communication strategy was also undertaken in the US. (Soba & Aydin, 2013)

The article explores the impact on viewing advertisements and product placements on television and how they impact consumption behaviours and perceived body images. It shows that the effect is dissimilar for males and females. It does not influence the consumption behaviour of males. On the other hand, it increases self-disagreement, which eventually leads to an alteration in consumption behaviour. However, for both sides, it increases body dissatisfaction. To obtain the required results, a questionnaire was used for a sample of 241 students with 58.8% females. (Eised & Moller, 2006)

Product Placement as a marketing tool is majorly used to increase attention, interest and give rise to the purchase motive of the potential consumers. Taking various applications of product placements in automobile brands, the article examines product placements via various forms of media to create familiarity, awareness and to influence the purchase intentions of the consumer. It discovers how brand awareness and brand familiarity from such product placements affect brand image and how this brand image, in turn, affects the purchase intentions of consumers. For this study, the data was collected with the help of a survey and quantitative analyses were used to test the hypotheses. (Guennemann, 2014)

The article talks about how youngsters perceive the commercial breaks and the product placements shown during reality shows. The article takes three aspects into consideration which includes the extent to which youngsters watch reality shows and the extent to which they remember the products advertised during the commercial breaks and product placements during the show. While it is said that commercial breaks have a larger impact, the majority of people skip these breaks and are yet able to retain the product placements viewed during the show. (Mircea & Elena, 2015)

The popularity of product placements, as a practical alternative to traditional commercials, has been increasing rapidly. The aim of this paper is to mainly focus and analyze product placements within movies, television programmes and video games. Researches were undertaken in the US investigating product placement showed that effectiveness through memory related measures and consumer attitudes control product placements. However, studies investigating effects of product placement on measures besides the ones that influence memory and attitudes are exceptionally rare. A total of 73 academic studies on product placement yielded invaluable results and implications of showcasing product placements on each medium. (Karışık, 20 Years of Research on Product Placement in Movie, Television and Video Game Media, 2014)

There have been a number of studies done before on the impact of product placements on the attitudes of the viewers. However, the Research Gap that can be seen here is how people relate to a product after being exposed to a product placement and how a product placement affects the consumer's brand awareness and buying. The research undertaken focusses on this aspect. It has been tried in finding out if consumers make purchase decisions on the basis of a product placement, if they are able to recall a product placement while making a purchase, if they find product placements disruptive as a consumer and if watching more reality shows (as they include more product placements) affects their buying behavior.

RESEARCH METHODOLOGY

Objectives of the study

- To explore the degree of brand awareness created by product placements in the minds of the viewers
- To determine the effect of product placements on the buying and consumption pattern of the viewers

H1: Product Placements endorsed by celebrities have a substantial impact on the brand awareness of the viewers.

H2: Product Placements in electronic media influence consumer buying behaviour

Sample Size

A sample size of **170** participants have been undertaken for this research.
The target sample includes respondents from both genders ageing from 18-50 years as this age group is the most exposed to television and film viewing. This will also give us an idea how different age groups get affected by various product placements.

DATA ANALYSIS

This section details out the various steps taken for data analysis and their respective outcomes. The technology used are R (3.3.2) and RStudio (1.0.44). The Library used for analysis are “random Forest” and “arules”.

Data Understanding and Preparation

The survey data has been acquired from the different locations (Bengaluru, Chennai, Delhi, Mumbai) and through various different channels (Email, online survey, hard copy form). The questionnaire consists of demographic (1-2), frequencies (3-5) of watching movie or TV and the rest are based on brand impact except the last point (19) which is a derived score. The answer has been obtained in a 5 points Likert scale. The question type and data dictionary are listed in the following table.

Table: 1

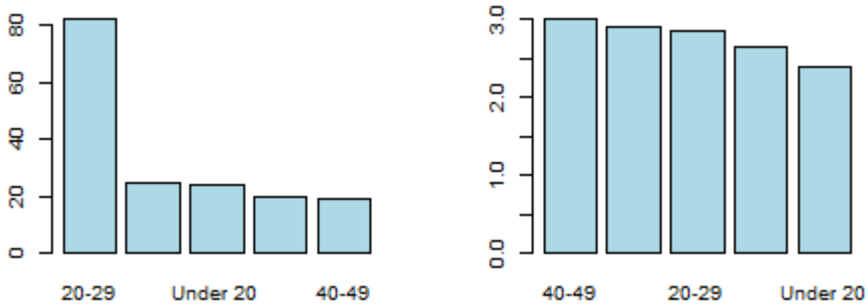
S.N	Features	Missing Count	Type	Top Values
1.	Gender	0	factor	Female, Male
2.	Age	0	factor	20-29, 30-39, Under 20, Above 50, 40-49
3.	How often do you watch films every month	0	integer	Min: 0, Max: 30, Mean: 6.71
4.				
5.	How often do you watch TV shows every month	0	integer	Min: 0, Max: 30, Mean: 18.29
6.	Do you watch reality shows on television	0	logical	NA
7.	Are you aware of Product Placements in films and Television	0	logical	NA
8.	I have no problems with product placements appearing in television and films	0	factor	3, 1, 2, 5, 4
9.	The presence of branded products in movies and TV make it more realistic	0	factor	2, 3, 1, 5, 4
10.	I like to see product placements in my favorite film or TV show	0	factor	3, 2, 1, 4, 5
11.	Product Placements do not damage my opinion against a brand or product	0	factor	3, 2, 4, 1, 5
12.	I do not have a problem when a brand is very noticeable in a movie or TV show	0	factor	5, 4, 3, 2, 1
13.	Product Placements are more acceptable when they are hard to notice	0	factor	3, 2, 1, 4, 5
14.	I prefer when for example a character is shown driving a BMW without the brand being mentioned or focused upon	0	factor	1, 2, 3, 4, 5
15.	I prefer when product placements are a part of the storyline	0	factor	3, 2, 1, 4, 5
16.	I get positively influenced by a product placement when my favorite celebrity is associated with it	0	factor	3, 2, 1, 4, 5
17.	I get inclined to buy a product when I see it in a movie or TV show	0	factor	3, 2, 1, 5, 4
18.	I frequently buy brands that are placed in TV shows and films	0	factor	3, 4, 2, 5, 1
19.	I can easily recall a product placement while making a purchase	0	factor	2, 3, 1, 4, 5
20.	Brand Awareness Score	0	numeric	Min: 1.5, Max: 4.33, Mean: 2.78

Data Dictionary

To understand the distribution of data, exploratory data analysis has been done for each question individually and in the combination with other questions. The graphs (only a few have been pasted here) have been given below.

The following graph is for Age and with an average value of “Brand Awareness Score”. The first graph illustrates that maximum count (around 80) of responses are in age range 20-29 and for the rest of the age range the count is around 20. The distribution is right-skewed. The second graph illustrates the age with respect to “Brand Awareness Score”. The highest mean score (3) is given by age range 40-49 and lowest mean score (2.5) is given by the age under 20. **The overall mean is more or equal to 2.5 signalling the positive trends.**

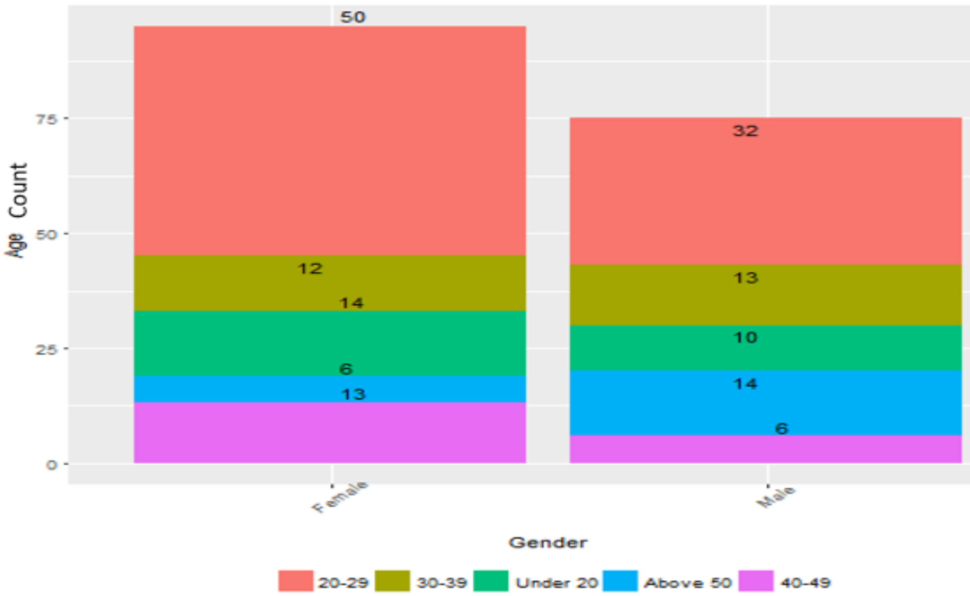
Figure: 1
Count of Age and with average value of "Brand Awareness Score"



- Similarly, all features have been analysed individually and with respect to response variable, "Brand Awareness Score".

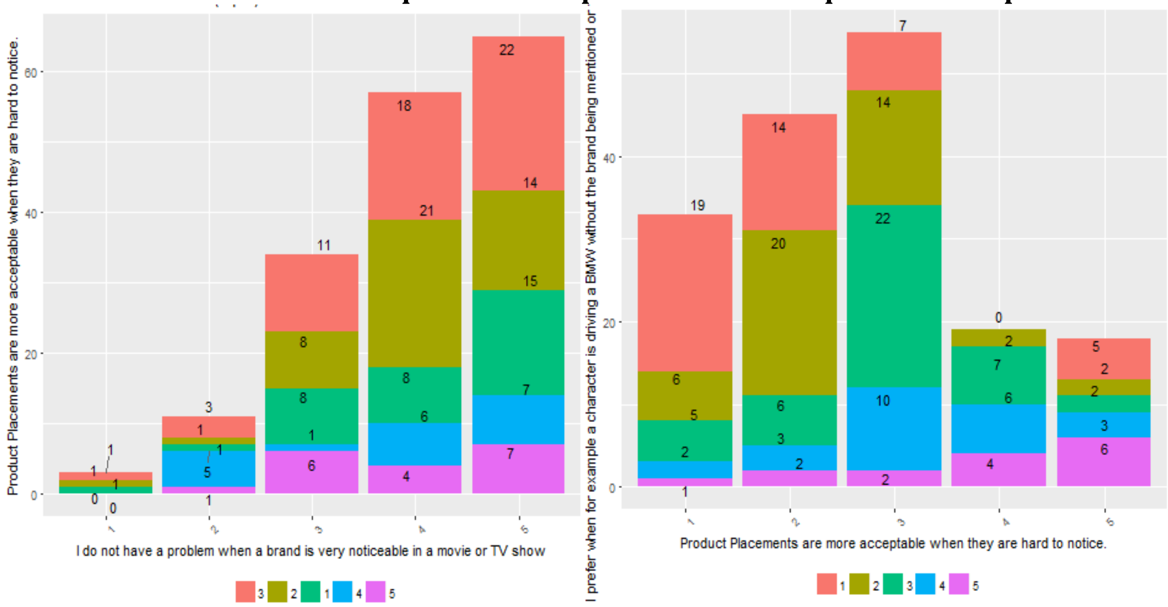
- The following graph shows the Age and Gender's distribution with each other. A maximum number of responses are from Female. In both genders, the count of respondents is higher in the age range of 20-29.

Figure: 2
Distribution of Age with Gender



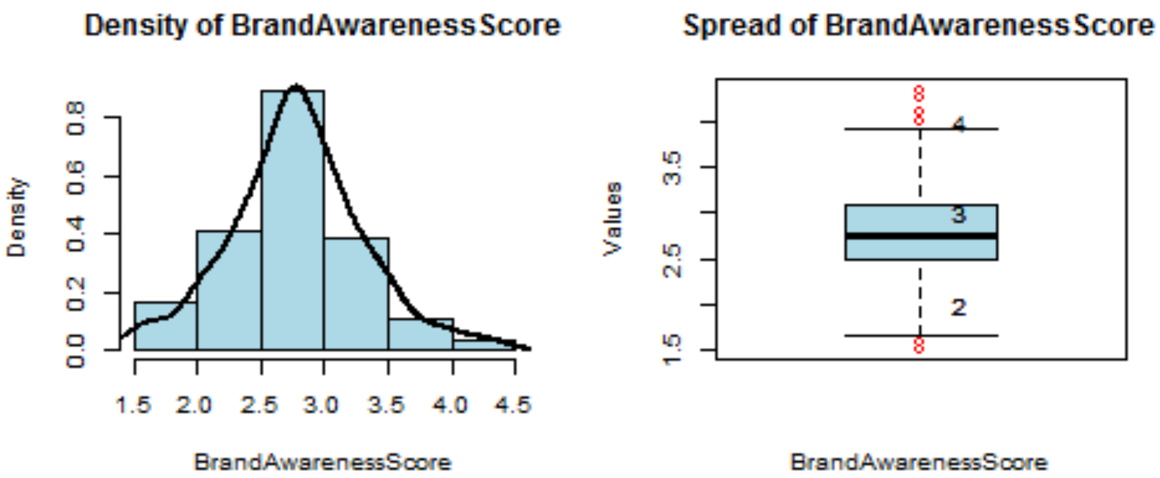
- In this way, all demographic features were analysed together.
- All questions' responses were analysed with other questions' responses. The following graph is one of the example. The first graph illustrates that the maximum number of respondents have chosen 5 "Highly Agree" for a question "I do not have a problem when a brand is very noticeable in a movie or TV show". The same respondents have chosen 3 "Neutral" for the question "Product Placements are more acceptable when they are hard to notice". The second graph illustrates that a maximum number of respondents are chosen 3 "Neutral" for a question "Product Placements are more acceptable when they are hard to notice". The same respondents have chosen 3 "Neutral" for the question "I prefer when for example a character is driving a BMW without the brand being mentioned or focused upon".

Figure : 3
Distribution of two other question's response with other question's response



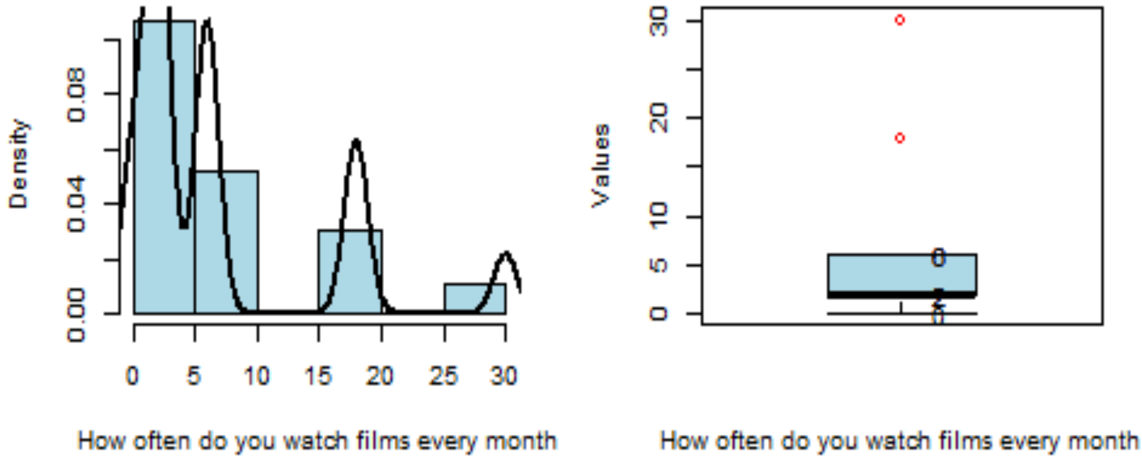
- Similarly, each question was analysed with respect to the other questions.
- The distribution of each independent and dependent variables were analysed. The distribution of Brand Awareness score is Normal and box plot shows few outliers.

Figure : 4
Distribution of Brand Awareness Score



Similarly, distribution of each variable was analyzed. One of the variable distribution is shown below. The first graph shows that distribution of respondents is right skewed for the question, "How often do you watch films every month"

Figure : 5
Distribution of another question's response



Modeling

- Data is now cleaned, transformed, analyzed and ready for modelling. First, we have build a model to assess the importance of each individual feature on the dependent variable "Brand Awareness Score" and then the combination of features on the dependent variable, "Brand Awareness Score" is measured using Association Analysis technique.
- To assess the importance of each individual feature, all independent variables (1-18) have been transformed and scaled as per the algorithm's requirement. The distribution of many independent variables are nonlinear and hence Random Forest from "R" will be used to identify the important features on the dependent variable "Brand Awareness Score".
- To assess the importance of the combination of features, all independent variables, and the dependent variable have been transformed in categories so that the outcome can be read smoothly. The transformation has been done as follows.

fbFeatures\Transformed Value	Low	Medium	High
How often do you watch films every month	<= 2	>2 and < 8	>=8
How often do you watch TV shows every month	<= 6	> 6 and < 22	>= 22
Brand Awareness Score	<= 2	>2 and < 3.5	>=3.5

Table : 2
Transformed value for Association Analysis

The Association Analysis is built with support 30% and confidence 80% and with minimum length 3

OUTCOMES

The degree of importance on dependent variable "Brand Awareness Score" is illustrated in the following table.

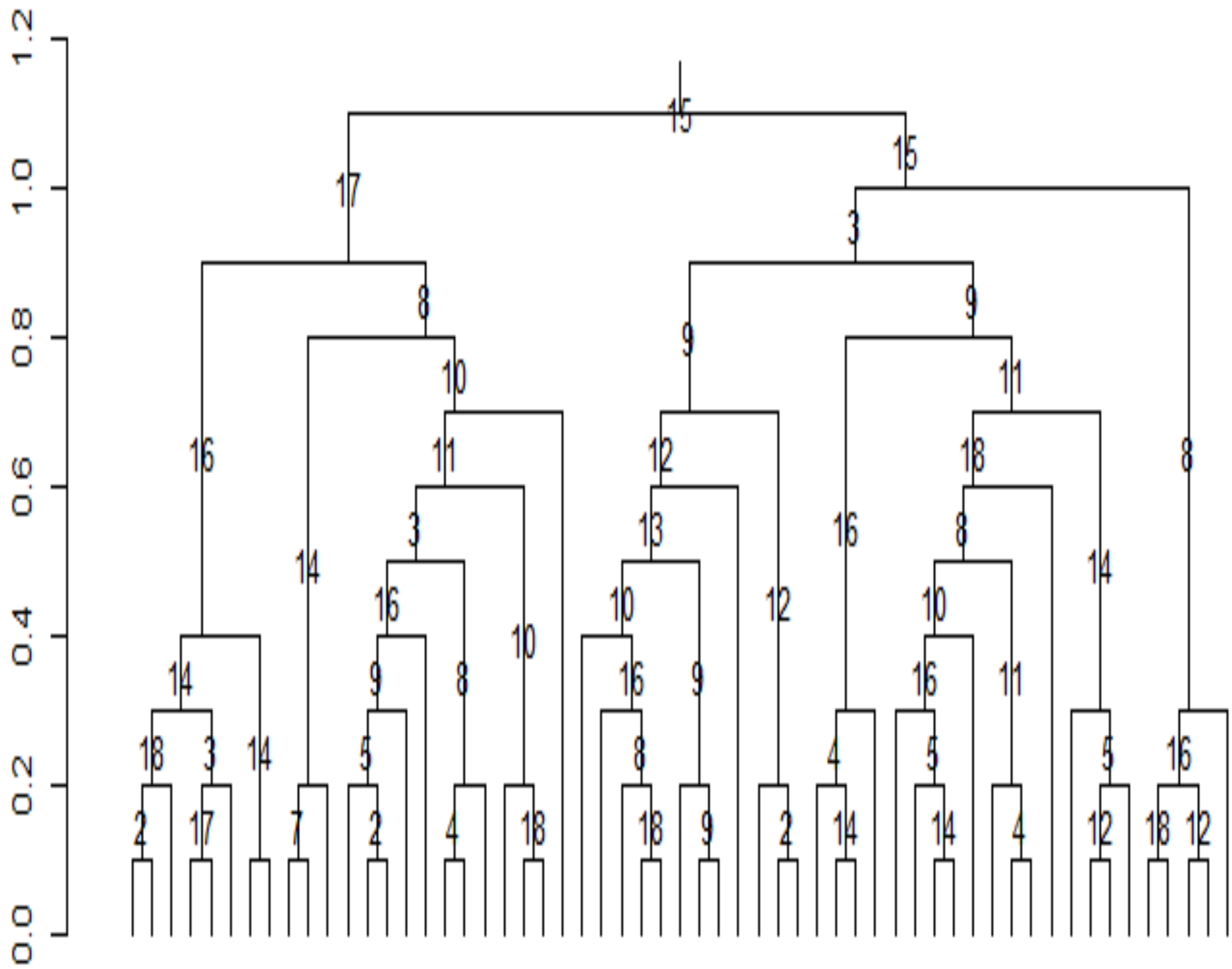
Feature Name	IncMSE	IncNodePurity
I get positively influenced by a product placement when my favorite celebrity is associated to it	17.02	8.62
The presence of branded products in movies and TV make it more realistic	16.39	8.68
I get inclined to buy the product when I see it in a movie or TV show	14.22	7.7
I have no problems with product placements appearing in television and films	11.19	3.59
I can easily recall a product placement while making a purchase	10.48	4.22
I frequently buy brands that are placed in TV shows and films	7.15	2.37
Product Placements are more acceptable when they are hard to notice	6.05	1.42
I prefer when for example a character is shown driving a BMW without the brand being mentioned or focused upon	6.03	1.03
I prefer when product placements are a part of the storyline	5.9	1.3
I like to see product placements in my favorite film or TV show	5.89	1.16
I do not have a problem when a brand is very noticeable in a movie or TV show	5.64	1.19
Product Placements do not damage my opinion against a brand or product	5.22	1.17
How often do you watch films every month	4.2	0.67
Are you aware of Product Placements in films and Television	2.2	0.19
Age	0.14	1.16
Do you watch reality shows on television	0	0.19
Gender	-0.77	0.15
How often do you watch TV shows every month	-0.96	0.39

Table : 3
The outcome of Random Forest Model showing importance of features

- As per the standard definition, the IncMSE is the most robust and informative measure. It is the increase in MSE of predictions (estimated with out-of-bag-CV) as a result of variable j being permuted (values randomly shuffled). The higher number, the more important

- As per standard definition, the IncNodePurity relates to the loss function which by best splits are chosen. The loss function is MSE for regression, as the case here. More useful variables achieve higher increases in node purities, that is to find a split which has a high inter node 'variance' and a small intra node 'variance'.

Figure : 6
The outcome of Random Forest in Tree structure



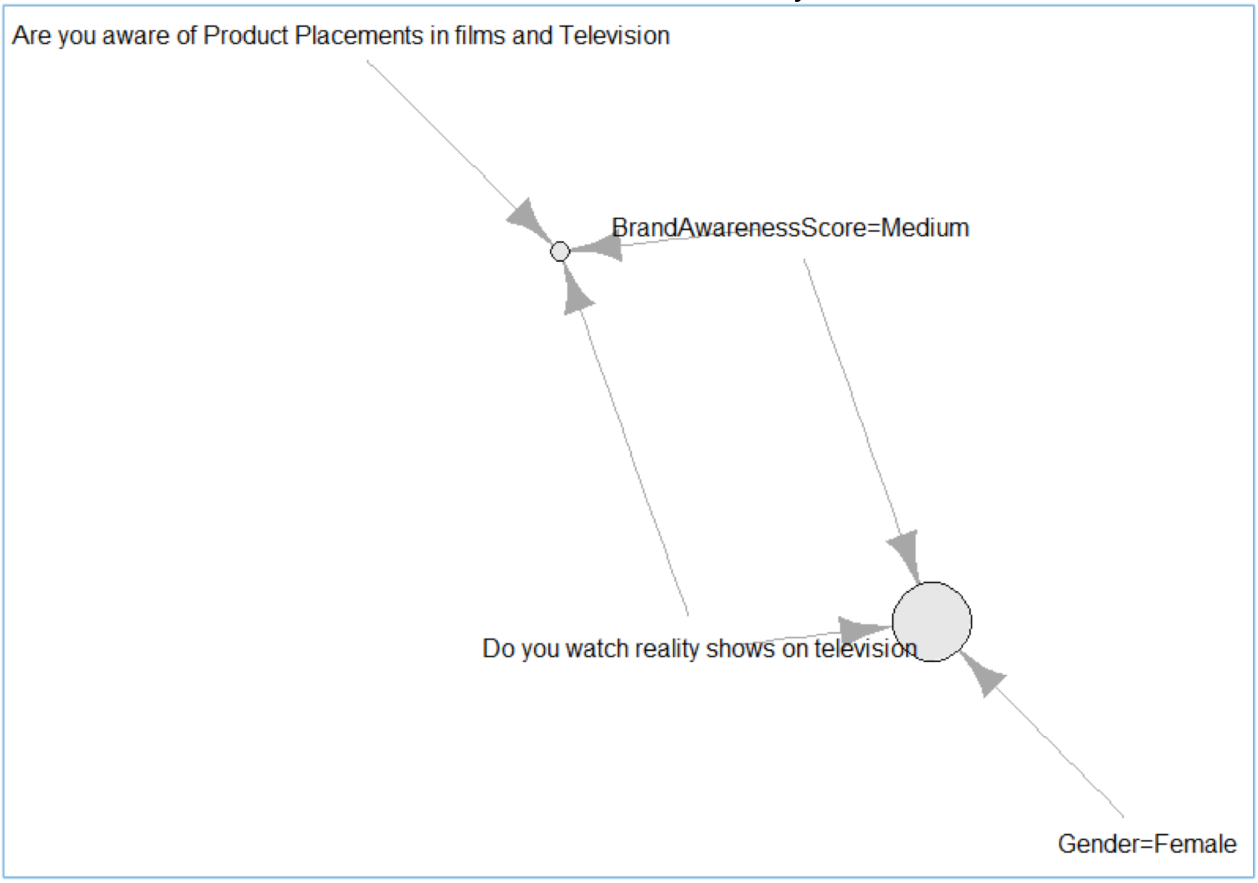
THE OUTCOME OF ASSOCIATION ANALYSIS

Items	Support
• Gender = Female • Do you watch reality shows on television • Brand Awareness Score = Medium	0.34
• Do you watch reality shows on television • Are you aware of Product Placements in films and Television • Brand Awareness Score = Medium	0.31

Table : 4
Top 2 questions that going together

The above is depicted in the following graph.

Figure : 7
Outcome of Association Analysis



The questions “I get positively influenced by a product placement when my favorite celebrity is associated with it” and “The presence of branded products in movies and TV make it more realistic” have the highest impact on Brand awareness. It was further observed that questions “Do you watch reality shows on television and “Are you aware of Product Placements in films and Television” have a similar response from most of the people.

As per responses were analysed from the multiple advance Analytics, we can infer that Product Placements endorsed by celebrities have a substantial impact on the brand awareness of the viewers as well as their buying behaviour.

Hence, the alternative hypothesis have been accepted with the given evidence from the data and null hypothesis have been rejected.

CONCLUSION

The responses are maximum from female gender and in both gender age range 20-29 is dominating. The overall mean is equal to 2.78 that signals a positive trend. The Analysis happened from multidimensional as well as with other questions’ responses. The distribution of Brand Awareness score is Normal with few outliers. It means that general responses have some consistent trends. The top three important responses impacting “Brand Awareness Score” are “I get positively influenced by a product placement when my favorite celebrity is associated with it”, “The presence of branded products in movies and TV make it more realistic” and “I get inclined to buy a product when I see it in a movie or TV show”. The least important features are “Age”, “Do you watch reality shows on television”, “Gender” and “How often do you watch TV shows every month”. The question, “I get positively influenced by a product placement when my favorite celebrity is associated with it” and “The presence of branded products in movies and TV make it more realistic" have the highest impact on Brand awareness. It was further observed that questions, "Do you watch reality shows on television and "Are you aware of Product Placements in films and Television" have similar responses from most of the people.

As we see, the concept of product placements is not only growing at a fast pace but also growing popular among the masses. Marketers prefer using product placements in TV shows especially because people mostly tend to skip the commercial break during the shows. Today, people take notice of these brands and products while watching films or TV shows. Some may ignore it knowing that it's just a promotional strategy. However, they are also now slowly becoming positively influenced by such product placements. They prefer such placements when they are incorporated well into the storyline or when they see their favorite celebrities using it. They prefer it when these product placements are hard to notice or when they do not distract them from the storyline. Therefore, marketers need to bring out unique ways to grab a viewer's attention towards their product placements without causing disturbance to flow of the plot. Otherwise the brand/product may leave a negative impression in the minds of the viewers. Marketers also need to realize the potential of these product placements. As we can notice from the findings of this study most people do get inclined to buy products when they see it as product placements. However, most of theseare not resulting into purchases as of now. Also, viewers may not be sure if their purchases are being influenced by the product placements they see or by other advertising media. Therefore, these product placements have immense potential to influence the viewers, and marketers need to adopt strategies to make optimum use of product placements, which in turn will boost the sales of the company.

Limitations of the study

- Product Placements are minimal in Indian fictional show
- People may misunderstand TV commercials as product placements on television
- Product placements can easily be seen as disruptive marketing tools
- A sample of 170 respondents may be very less for the study

Scope for Further Study

The response count may be increased and outlier may be removed or substituted by max or min values. The same impact should be looked for in other media (Facebook, Twitter, Day to day formal or informal discussion).

For further studies, a detailed research could be done with regard to what kind of product placements are impactful on the viewers and what elements cause disturbance to the viewers. This may also include the variables that are strong enough to induce viewers to buy the product, which is shown as a product placement. Also, care needs to be taken as to avoid what the viewers find completely inappropriate to watch onscreen. This may include a study on their culture and traditions as well. A study could also be done on the various advertising media that induce consumer purchases and how much of these purchases are induced by product placements in films and television. This study may help marketers to develop new kinds of product placements, which are more influential in nature.

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Archives of Business Research – Vol.5, No.2
Publication Date: February. 25, 2017
DOI: 10.14738/abr.52.2743.
Ikenna, E. A. (2017). Impact Of Corporate Governance On Internet Financial Reporting In A Growing Economy: The Case Of Nigeria. *Archives of Business Research, 5(*2), 180-202

Impact of Corporate Governance on Internet Financial Reporting in a Growing Economy: The Case Of Nigeria

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Abstract

The study aims at examining the impact of corporate governance on IFR among listed banks in Nigeria. The review of literatures reveal that IFR is one of the most efficient means of communication with investors and the practices of corporate governance by firms also influence their level of disclosures made through the internet. A quantitative research was carried out where the relationship between corporate governance variables and IFR was empirically examined. The corporate governance variables used for analyzing the impact of corporate governance on IFR include shareholders' voting right, percentage of management ownership, percentage of block ownership and percentage of independent directors. The data on the top ten listed banks in Nigeria was collected from secondary sources from year 2010 to 2015. The findings suggest that the measures of corporate governance have significant influence on the level of IFR of banks in Nigeria, it also shows that shareholders' voting right, percentage of independent directors and banks size have significant positive impact on the IFR of banks. The result of the regression analysis show that a negative relationship exists between managerial ownership and block ownership with IFR of Nigerian Banks. It is recommended that listed Nigerian banks should make frequent disclosures of financial information on their websites if they have high shareholder equity as source of fund in capital structure and also to attract investors and show transparency.

KeyWords: Corporate Governance, Internet financial reporting, Banks, Nigeria.

INTRODUCTION

Background of the Study

Corporate failures in Nigerian banks had resulted due to poor corporate governance mechanisms and bad financial reporting system (Asogwa, 2016). A sound and efficient financial reporting system through the internet will enhance the performance of Nigeria banking sector, increase its access to a global audience and attract more investors through effective disclosure (Abdelsalam *et al*; 2007). A robust disclosure regime brings transparency and serves as a strong tool for enhancing stakeholder management. According to Asogwa (2016), effective and efficient internet disclosure coupled with a good corporate governance structure will attract more capital, reduce fraud and sustain the confidence of investors in the capital market. Nigeria is a middle income, emerging market and mixed economy and currently growing her entertainment, manufacturing, technological, financial service industry and so on.

Besides currently ridden with the scourge of recession, Nigeria was ranked the 3rd fastest growing economy in the world early 2015 by CNN Money with an estimated Gross Domestic Product (GDP) of about $510 billion (Asogwa, 2016) but has significantly dropped to 22nd largest economies in the world according to International Monetary Fund (IMF) ranking in the late 2016 release. With about $492.9 billion nominal GDP and $1105.3 billion Purchasing Power Parity (PPP), Nigeria is not among the top 15 fastest growing economy in Africa in 2016 (Vanguard news). All these back and forth growth, makes Nigeria a country of interest for a study of this kind in order to reflate the economy through efficient banking.

The internet is a disclosure tool which is unique and encourages different types of presentation and allows inexpensive, broad and immediate communications to investors. Most of the practices of Internet Financial Reporting (IFR) in Nigeria are voluntary and unregulated. The majority of the corporations select to disseminate information on their firm's websites voluntarily but the IFR significance varies according to corporations (Ashbaugh *et al*., 1999; Umoren and Asogwa, 2013) Previous studies have indicated that the transparency variation of the financial disclosures online influences the decision process of the investors (Hodge *et al*., 2004). Investors use the internet to get financial information relating to the current and potential opportunities of investment. IFR is the tool which can lead to an enhanced information transparency disclosure since "the ways Banks report has been drastically changed due to the internet" (Kelton and Yang, 2008). In comparison with paper-based and traditional disclosures, IFR helps corporations to disseminate the information to a much bigger and broader audience. It also allows distribution of alternative kinds of disclosures on a timely basis. Moreover, the technologies based on internet allow firms to use alternative presentation formats of information (e.g. PDF, Word, Hypertext and Multimedia) which enhances the way investors understand and access information. Hodge *et al*., (2004) opined that, "technologies which allow the formats alternatives for the dissemination of financial information may support gathering of information from investors, influence decision making process and enhance the transparency disclosures''. Therefore, the corporation can enhance the transparency disclosures with both the presentation and the content format for disclosures on internet.

The mechanisms of corporate governance also influence the disclosure policy of firms (Ho and Wong, 2001). The adoption of corporate governance practices can lead a firm towards making disclosures on internet as it will lead to reduction of agency costs and help in attracting investors by reducing information asymmetry that exists between managers and investors in the market (Asogwa, 2016). The research explores the corporate governance impact on IFR in Nigeria

HYPOTHESES

Agency theory provides a framework that links managerial behaviours to corporate governance. The theory explains that the cost of agency arises due to the interest conflict between the managers and the shareholders. Agency problem occurs when the interest of the principal (shareholders) and the manager (the agent) are in conflict and when the attitude to risk varies. Disclosure is viewed as an agency cost, necessary for the monitoring of management to ensure goal congruence with shareholders. The economic advantages of the costs of agency reduction will be shared by the managers and the shareholders in most of the situations of the market. Due to this, the managers mostly undertake voluntary actions comprising of submissions and disclosures to monitoring.

The mechanisms of governance role in identifying the policy of disclosure may either be substitutive or complementary. The policy disclosure is complementary when the mechanisms of corporate governance strengthen the controls internally for the corporation. This also makes it less likely to withhold information for the managers for their own advantages. This paves the way towards enhancement of comprehensive disclosures and in improving financial statement quality. On the other side, the substitutive mechanism of corporate governance limits information asymmetry and the behaviours of opportunistic in the corporation leading to decrease in the need for more disclosure and monitoring.

The corporation's disclosure transparency of financial information is linked with the information dissemination methods (Kelton and Yang, 2008). Information technology innovations have allowed Banks to enhance their transparency disclosure with alternative processes like IFR. According to Roger, Glen and Asheq (2002), "The management provided the internet the opportunity to provide and access all investors the essential updates of information." Thus, with the help of IFR, transparency disclosure of the firm can be enhanced. So, the hypothesis is stated in the alternate form.

H1: Internet based disclosure of listed Nigerian Bank's is linked negatively with the shareholder rights

In this research, corporate governance is measured by ownership structure, shareholder rights, audit committee characteristics and board composition. The rights of the shareholders vary according to corporations. Some firms (the minority) have less power reserved for management and they quickly and easily allow shareholders to replace their directors. This can be done either through AGM voting or internal or external takeover. On the other hand, other firms have more power reserved for their management and they impose robust restrictions on the replacement of directors by shareholders. When the rights of shareholders decrease, the replacing management costs also increases for shareholders. Because of this, the cost of agency increases. Corporations are expected to respond to the increase in agency costs with the transparency disclosure increase. In consequence to that, the firms which have weak rights of shareholders have more chances to engage in IFR as compared to the firms with robust right of shareholders.

H2: Internet based disclosure of listed Nigerian Bank's is linked negatively with managerial ownership

This study examines the effect of corporate structure of ownership on IFR using block ownership and managerial ownership measures. In situations where management has significant ownership rights, the conflicts of agency are reconciled between shareholders and managers and thus agency costs are reduced. Empirical research has shown that managerial ownership is linked with an increase in productivity and innovation of the corporations in the long term value of firms. As managerial ownership aligns the managers and shareholders' interests, it limits the demands of monitoring for shareholders. Thus, the impact of ownership on IFR is deemed to be substitutive such that the need for more transparent disclosure and more monitoring is reduced by an increased percentage of managerial ownership. This sort of ownership is associated negatively with the disclosure which is voluntary in Nigerian Banks (Conway, 2012). So, according to that, the hypothesis is tested in the form of alternative.

H3: Internet based disclosure of listed Nigerian Bank's is linked negatively with block ownership

Block ownership refers to the outside interests holding more than 5% of shares outstanding. When the ownership of shares is less diffused, there is limited monitoring required. Previous research has indicated a negative relationship between disclosure and block ownership (Sayogo, 2006). So, the impact on IFR of the block holder ownership is substitutive. According to that, the hypothesis is tested in the form of alternative.

H4: There is no link between internet based disclosure of listed Nigerian Bank and its independent director's proportion on the board.

A significant proportion of independent directors on the Board of Directors reduces the opportunism of managerial monitoring and reduces the chance of withholding information for management. Empirical research has suggested that a strong link exists between the independence of board and disclosure of corporation (Xiao and Jones, 2005).

Jiang and Raghupati (2010) showed that the independent board of directors are linked positively to the disclosure decisions of the board. A positive relation exists between the proportion of independent director and the comprehensive disclosure of corporate governance data in context of Nigerian Banks (Ajinkya *et al*. (2005). They showed that the corporations that have a high percentage of external directors are more likely to issue earnings forecasts. In contrast to these findings, Gandia (2005) revealed that, for Nigerian firms, external directors increased presence is linked with the reduction in disclosure. The findings by Gandia (2005) show that the directors which are independent play a role of substitute monitoring which leads to a decline in the additional disclosure demands. So, according to that, the hypothesis is tested in the form of alternative.

RESEARCH QUESTIONS

The relationship between corporate governance practices and the disclosure of the banks for transparency will be examined for the past 6 year's period that is 2010 to 2015. This is used to determine the quality and evaluate the IFR extent of disclosure and the impact of this investigation on economic growth in Nigeria. The research questions are as follows;

- To evaluate corporate governance information disclosure on the website of Nigeria's listed banks.
- To investigate the relationship that exists between corporate disclosure and web-based disclosure.
- To analyse the viability and the ability of Nigeria's listed banks to communicate financial information that is useful for both the analysts and the investors with the help of internet.

LITERATURE REVIEW

Corporate Governance of banks in Nigeria

Corporate governance issues in Nigeria has gained the attention of researchers due to increases in privatization of corporate entities and development of corporate sectors (Ranti, 2011). Banks corporate governance involves methods used by bank shareholders to induce managers for wealth maximization (Asogwa, 2016). Just as the case in many developing economies, the Nigerian banking sectors has recorded a number of cases of fraud, misappropriation and other financial irregularities and ultimately bank failures that adherence to good corporate governance practices could curb. Academic scholars in Nigeria understand the urgent need to develop a sound corporate governance in business following the increases in corporate scandals in the US coupled with the recent bank scandal in Nigeria that led to the recapitalization of Nigerian banks by the Central Bank of Nigeria (CBN) in 2010. In line with Ranti (2011), an efficient and robust corporate governance structure is crucial in Nigeria for proper working of the corporate sectors (Bhasin, 2012). Ogbechie (2006) noted that the Bankers Committee of Nigeria set up a sub-committee for the implementation of the corporate governance mechanism in Nigeria having realized the importance of corporate governance to the success of any business entity. "The pursuance of corporate governance mechanisms ensure the financial viability of corporate businesses as through it all the affairs of the firm are managed effectively and directed towards the creation of value for the shareholders" (Asogwa, 2016). According to Pereiro (2002) and Damodaran (2006), disclosure of corporate financial information on timely basis creates value for the firm and shareholders as the information is spread.

However, Companies and Allied Matters Act (CAMA) 1990, the Investment and Securities Act (ISA) 1999 and the Bank and other Financial Institution Act (BOFI) were the three main bodies that oversees the operations of the corporate sector before the setting of the corporate governance code in 2002. As a result of the challenges the body faced with the provisions, another committee was established in association with the Securities and Exchange Commission (SEC) and Corporate Affairs Commission (CAC) for the development of corporate governance code to be used by corporate entities which by extension guided the operations of the banks in Nigeria.

Internet Financial Reporting

According to Bushman *et al*., (2004), firms in today's world enhance their disclosure transparency through various means. Among the various means of information dissemination, the internet is one of the most valuable tool which provides the firm management an opportunity to daily update their stakeholders about the important corporate information and an ability to access the potential investors as well (Healy and Palepu, 2001). According to Robinson and Munter (2004), the reporting of high quality corporate financials is essential for presenting the fair financial position and operations of corporations. According to them, there are four reasons behind low quality reporting. These include application of standards by selecting those alternatives which lead towards the reporting of results in bias or distorted manner. The accounting principles applied by the firms may have loopholes and the practices of assumptions or estimation done by using inappropriate or unrealistic measures. The firms are said to have low quality financial reporting when the accounting principles are stretched in a firm or the managers are engaged in reporting of financials in a fraudulent way. Outa (2014) emphasized that for enhancing the transparency in financial reporting, firms are required to show compliance with the high quality standards of accounting. These standards are required to be enforced on priority basis for enhancing the relevance, comparability, understandability and reliability of investors on corporate financial information. In order to overcome the problems of accounting frauds in businesses, the regulatory bodies such as SEC has also encouraged corporations to disclose their information on their corporate websites in response to realization of benefits of internet in dissemination of information.

According to Ajinkya *et al*., (2005), the adoptions of various means in dissemination of information by corporation for enhancing the level of transparency proves that strong measures of corporate governance are promoted within the corporations. The firm disclosure of financial information through internet was initially a voluntarily practice and most of the firms disclose their information on official websites voluntarily. Ajinkya *et al*., (2005) observed that disclosures made on the corporate websites are unregulated and varies from firm to firm. However, the use of internet proves as a valuable tool for firm information disclosure (Ettredge *et al*., 2002). The literature on internet financial reporting reveals new insights on the reason why companies are choosing internet as a tool for the information disclosure (Ashbaugh *et al*., 1999; Ettredge *et al*., 2002 and Debreceny *et al*., 2002).

Ashbaugh *et al*., (1999) explored the difference between corporations that use their official websites for dissemination of information to the investors and corporations that do not use it. The findings revealed that the firms which choose corporate websites for dissemination of information are more profitable as compared to others. The authors reported that the main reason behind using internet as a tool for information disclosure is to inform shareholders about the firm performance on time.

Ettredge *et al*., (2002) classified IFR disclosure into two categories. One category include the voluntary disclosure made by the corporations while the second category considers the required filings which include the disclosures in the form of Forms 10 Q and 10-k made mandatory for firms by SEC. Ettredge *et al*., (2002) investigated that dissemination of information through internet by corporations as a voluntary disclosure and required filing is in accordance with the traditional approach followed for voluntary disclosures in incentive theories or not. The findings of the study reveal that required filings are presented on corporate websites as they are found to have an association with information asymmetry and size of corporations. The voluntary disclosures on the corporate websites are made by the corporate managers not due to having association with information asymmetry and size but also due to having a link with earning goodwill and to attract investors for raising external capital. This thought follows the view of Damodaran (2006) and in aligns with the author's view.

Internet Financial Reporting and Corporate Governance

The main area of focus in the earlier literature on IFR was the estimation of the determinants of IFR. Ashbaugh *et al*., (1999); Ettredge *et al*., (2002); Debreceny *et al*., (2002), and Oyelere *et al*., (2003) suggested a number of different firm specific factors, for example financial leverage, firm profitability and size of firm. The recent studies now focus on association between IFR and measures of corporate governance such as board size, type of ownership and other measures of corporate governance with the policy of disclosure for example timing, quality, mandatory disclosure or voluntary disclosure etc (Beasley, 1996; Klein, 2002; Xiao *et al*., 2004; Sengupta 2004; Gul and Leung, 2004; Ajinkya *et al*., 2005).

According to Jensen and Meckling (1976), the link between the corporate governance and disclosure behaviour of firms can be explained by the agency theory perspective. With the viewpoint of agency theory, the agency cost exists between the managers and shareholders due to divergence of interest of both the parties. Pratt and Zeckhauser (1985) stated that the benefits that are achieved through the minimization of this agency cost are shared by both the parties that are agent (managers) and principal (shareholders). Considering the sharing of economic benefits, the managers in a firm take a number of voluntary actions for minimization of agency cost such as disclosure of information and accept the monitoring of their performance (Xiao *et al*., 2004). Ho and Wong (2001) stated that the mechanism of corporate governance determines the disclosure policy of management as the mechanism of governance required by the firm can be complementary or substitutive. The adoption of corporate governance practices in organization will play a complementary role when these practices are found to be the strength for the measures of internal control. In such a situation, it is assumed that the managers in the organization will reserve corporate information not for their private benefits but for benefitting the shareholders. The information disclosed by them in corporate disclosures aims at bringing an improvement in the quality of financial information and to increase its level of comprehensiveness. In contrast to this, the practices of corporate governance will serve a substitutive role in situations where a firm reduce their opportunistic behaviors and tries to lower the level of information asymmetry that exists between managers and shareholders. In the substitutive role of corporate governance, the firms feel less need for making corporate disclosures voluntarily and principles are required to put less effort for monitoring of firm performance.

The study conducted on Chinese firms by Xiao *et al*., (2004) investigated the relationship between IFR and corporate governance as determinants of IFR. The analysis of IFR was made in various dimensions: content displayed on corporate websites, voluntary disclosures and required filings by SEC. The findings show that the internet financial reporting has a significant positive association with institutional ownership in Chinese firms. The results disclosed that there is no significant link between IFR and ownership in the firms of foreign, domestic or private investors.

Kelton and Yang (2008) examined the link between measures of corporate governance and firm disclosure policy by examining the official websites of 248 companies that trade on NASDAQ. The study has used shareholders rights, type of ownership structure, and composition of board and characteristics of corporate audit committees as measures for the corporate governance in these firms. The firm level of internet financial reporting is used as a proxy for measuring the disclosure transparency of selected firms. For that purpose, a disclosure index was constructed in the study. The internet financial reporting index is made up of format of financial presentation, disclosure of corporate governance information and content of information displayed on corporate websites. The findings reveal few characteristics of firms which disclose their information on internet. The characteristics of firm which make IFR disclosures identified by them are weak rights of shareholders, block holders in the firm are in lower percentage, audit committees in a firm are made up of financial experts and a hardworking and committed audit committee, corporate boards are made up of independent directors etc. The authors were of the view that incorporation of corporate governance practices will have a significant influence on disclosure behaviour of firms on internet as it is expected that the incorporation of these practices will lead to reduction of agency costs and help in attracting investors by reducing information asymmetry that exists between managers and investors in the market. It was also noted that the association between corporate governance and IFR also varies with respect to the size of organizations. The study recommends the organizations to work on development of new regulations for corporate governance for enhancing the transparency of corporate financial disclosures made using internet as a tool for information dissemination.

Internet Financial Reporting and Corporate Governance in Nigeria

The literature on the issue of corporate governance and IFR and their influence on each other in Nigeria is limited. The literature provides conflicting results on the measures of corporate governance (for example insider ownership, ownership concentration) and firm performance and influence of corporate governance measures on corporate disclosure practices in Nigeria (Umoren and Asogwa, 2011; Ezi-Herbert and Tesgba, 2010). However, the review of recent literature on IFR and corporate governance is discussed below.

Emmanuel, Oki and Maimako (2015) analyzed the published annual reports of ten Nigerian listed banks. The years selected for the analysis included 2000 to 2009. By applying regression analysis, the authors proved that the disclosure of corporate governance practices in banks annual reports has a positive impact on the performance of banks. The authors said that an increase in level of disclosures by the banks led them to the delivery of better performance.

Kurawa and Kabara (2014) examined the impact of corporate governance measures on the voluntary disclosures of firms belonging to the Nigerian petroleum sector. The period selected for examination of impact was 2001 to 2010. The sample selected for the analysis includes seven firms on which data was collected through secondary sources. The data collected in the study was analyzed by using descriptive statistics and regression analysis. The results obtained from estimations revealed that ownership concentrations hold a significant positive association with the voluntary disclosures by firms in Nigeria. However, the findings revealed an insignificant link with the composition of board. In addition to this, the findings have also showed a negative association of managerial ownership and existence of duality in the firm on the level of disclosures made by firms.

Ejuvbekpokpo and Esuike (2013) in their study on issues and problems arising from corporate governance in Nigeria stated that it is necessary for corporations to bring quality in their disclosures through different means. It is essential for assuring the investors that the information presented to them is transparent and their interest is secured. Ranti (2011) found that the governance mechanism of Nigerian banking sector is weak, despite the policy to consolidate the banks launched in 2004 by the central bank of Nigeria. Sanusi (2010) reported that the banks in Nigeria are involved in doing business through unethical and fraudulent practices. The incidences of malpractices in the banks are reported due to negligence of board as boards are not performing their fiduciary duties in an effective way to boost economic development of Nigeria. In addition to the reason behind the weak governance is that the audit processes in the banks are not effectively carried out as banks that were said to be financially stable after their audit were proven to be in dire financial problems that led to their failures.

The above review of the limited literature available shows that there is a need to conduct a new study for having conclusive findings on the issue of corporate disclosure and its association with measures of corporate governance in Nigeria. This study is based on the examination of association between measures of corporate governance and disclosure transparency using IFR as its measure in the growing economy of Nigeria.

Sample and Data collection

The sample selected for the study will include 10 largest banks listed on Nigerian Stock exchange in Nigeria. The data for the selected variables of the study will be collected from annual reports of the selected banks and from the official websites of the banks. The data on the selected variables will be collected for year 2010 to 2015 and analyzed by running the data in SPSS (Statistical package for social sciences). Table 3.2 presents the list of banks selected for the study

Table 3.2: List of Banks

S/No	List of Banks selected
1	Zenith Bank
2	Access Bank Plc
3	United Bank for Africa
4	Union Bank
5	First Bank
6	GT Bank
7	Fidelity Bank
8	Diamond Bank
9	FCMB
10	Wema Bank

DATA ANALYSIS

The data collected through the secondary sources will be analyzed by running the data in SPSS. The statistical tools used for analyzing the data will include descriptive statistics, correlation analysis and regression analysis. In descriptive, the mean, maximum, minimum and standard deviations for the variables selected in the study will be calculated. Pearson's Correlation analysis will be used for examining the linear relationship that exists between the variables. The regression analysis will be employed in the research for determining the impact of corporate governance on IFR of listed banks in Nigeria. The application of regression analysis helps in testing the hypothesis proposed for the study and for disclosing the relationship between measures of corporate governance and IFR.

RESEARCH MODEL

For determining the impact of corporate governance on IFR of Nigerian banks, the following regression model will be examined by running the data in SPSS.

$$\mathbf{IFR= C+\beta_1Gov+\beta_2MO+\beta_3BO+\beta_4ID+\beta_5logsizeP+\beta_6Loss+\beta_7BIG4 +\varepsilon}$$

Where Gov = Governance, MO = percentage of managerial ownership, BO = percentage of block ownership, ID = Percentage of independent directors on board, size = Size of firm, loss= loss made by a firm in operating year, BIG4 = Auditor of firm, **C =** constant, $\boldsymbol{\beta 1}$ = coefficient of Governance, $\boldsymbol{\beta_2}$ = coefficient of percentage of managerial ownership,$\boldsymbol{\beta_3}$= coefficient of percentage of block ownership, $\boldsymbol{\beta_4}$ = coefficient of Percentage of independent directors on board, $\boldsymbol{\beta_5}$ = coefficient of Size of firm, $\boldsymbol{\beta_6}$ = coefficient of loss made by a firm in operating year, $\boldsymbol{\beta_5}$= coefficient of Big4 and $\boldsymbol{\varepsilon}$= Error term of model.

In the model, IFR will be the dependent variable of the study, the set of independent variables in the study includes Governance, managerial ownership, block ownership, independent directors from year 2010 to 2015. The set of control variables in the model include three variables. These are size, loss and Big 4. The selection of variables for the study is made in accordance with Kelton and Yang (2008).

RESEARCH VARIABLES

Dependent variables

The dependent variable of the study is IFR which was measured by an index made up of content and presentation. The index was constructed by making a list of 10 Items to whom each item was given value 1 on presence and 0 in the case of absence. The data on the IFR will be collected from the official websites of banks selected in the study. The index used for measurement of IFR is presented below in the following table

Table 3.3.1 Dependent variable (IFR)

Format Items	
1	Annual report in multiple file forms
2	Financial data in processible form
3	Hyperlinks established
4	Drop down navigational menu
5	Facility of direct email for investors
Content Items	
6	Annual report for recent year
7	Annual report for last year
8	Quarterly reports for recent year
9	Financial news for the recent period
10	Record of stock prices

Independent variables

The sets of independent variables of the study include governance, managerial ownership, block ownership and independent directors in the board. The governance variable was used in the study as a proxy for shareholder rights in banks. It was given value 1 when shareholders have voting rights and 0 in the absence of voting rights. The variable managerial ownership represents the ownership of management in company shares and is expressed in the form of percentages. The variable block ownership expressed in percentages represents the percentage of shareholders who have equity of more than 5% in the banks. The variable independent directors in the study were measured by percentages and show the percentage of independent directors present in the bank's board. The data on these variables are collected through the annual reports and official websites of the banks.

Research Limitations

The study posed certain limitations like;

- The population representative may not be true to the sample
- The results achieved cannot be applicable globally in its entirety
- The sample size of the population may be biased
- The professionals of business were reluctant to give proper information

RESULTS AND ANALYSIS

Results

The data for examining the impact of corporate governance on internet financial reporting of top 10 banks in Nigeria was analysed using descriptive analysis, correlation analysis and regression analysis. The findings of each analysis performed are discussed in detail as below;

Descriptive Analysis

The basic features of data collected for top ten listed bank in Nigeria for the six years perod were analyzed by performing descriptive analysis. An attempt was made to find the minimum values, maximum values, mean and standard deviation values for IFR, governance, percentage of managerial ownership, percentage of block holders, independent directors, size of firm, loss and big4. The results are presented in Table 4.1. In the table, the IFR value shows the ranking of Nigerian banks on IFR index in six years. The Gov, loss and Big 4 are binary variables, where 0 refers to absence of variable in the selected years and 1 shows the variable presence. The variables MO, BO and ID are measures in percentages while the size is measured in terms of total equity of firm whose unit of measurement is Nigerian naira (000).

Table 4.1:Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
IFR	50	3	10	6.89	2.543
GOV	50	0	1	.80	.404
MO (%)	50	.0160	1.9000	.853040	.6220372
BO(%)	50	.0000	85.0000	29.107800	25.0553974
ID(%)	50	.0000	33.3333	15.730660	10.1581153
SIZE(NGN, 000)	50	13589	277410727	61643195.10	83349048.722
LOSS	50	0	1	.10	.303
BIG4	50	1	1	1.00	.000
Valid N (listwise)	50				

The descriptive statistics presented in Table 4.1 show that the mean value of financial disclosures made by Nigerian Bank on internet is 6.89 on 10 point index. This shows that banks in Nigeria are putting efforts for enhancing their transparency and disclosure of financial information on their website. The maximum value of IFR is 10 for those banks who have all items of content and format selected in the index. The maximum score of 10 is achieved when banks have multiple formats of annual reports, financial data in processed form, hyperlinks established, drop down navigational menu, and have facility of direct email on website. Further, they have annual reports of recent year and previous year, quarterly financial data, recent financial press releases and record of stock prices on their official websites. The minimum value of IFR in the data is 3. The descriptive analysis for IFR shows that banks in Nigeria have more emphasis on disclosing items of content than having focus on format of presentation.

The mean value of governance used as a proxy for shareholders voting rights has a mean value of 0.80. As shown in the model 0 shows absence of shareholders voting rights and 1 represents presence of shareholders voting right, the mean value 0.80 being closer to 1 means that the majority of banks in Nigeria have given voting rights to shareholders. This means that shareholders of Nigerian banks are delegated with a power to vote and are allowed to participate in making financial decisions and decisions related to board of director's appointment or removal (Dallas, 2004). The mean value for percentage of managerial ownership in Nigerian banks is 0.8530% with standard deviation of 0.6220%. The minimum value of percentage of managerial ownership in Nigerian banks is 0.0160% and the maximum value for it in data is 1.9%. The descriptive analysis for managerial ownership shows that managers have low level of ownership in Nigerian Banks which shows that the interest of managers are not streamlined with the interest of shareholders. The percentage of shares held by block holders in the Nigerian banks has mean value of 29.10% with the standard deviation of 25.10% from the mean. The descriptive statistics for block holders' ownership show that maximum value for block holder's ownership in Nigerian banks is 85% whereas as the minimum value for data is 0 as there are few banks in data which have no shareholders with equity more than 5%. The presence of high level of block ownership in Nigerian banks influences the participation of minority shareholders in corporate affairs hence shows that minority shareholding is not advantageous in Nigerian banks.

The minimum percentage of independent directors in Nigerian banks is 0 and maximum percentage for independent directors is 33.33% in their board. The results of descriptive analysis show that banks in Nigeria usually have an average of 15% of independent directors in their boards. However, this value can deviate from the mean with the standard deviation of 10.15%. The low percentage of independent directors in the boards of Nigerian banks show that independent director's presence in the board is not preferred due to weak corporate governance practices in Nigeria. The independent directors act as referee in the board and protect the shareholders rights by forcing managers not to make unbiased decisions (Tomasic and Bottomley, 1993).

The size of Nigerian banks measured in terms of equity has mean value of 61643195.10 NGN. The minimum values of banks size in the data is 13589 NGN and have maximum value of 277410727 NGN. The data for Big4 show that all the selected banks in the analysis have employed Big4 auditors for giving an opinion on the financial disclosures made. Further, the dummy variable for loss show that majority of banks remained profitable in years under analysis.

Correlation Analysis

The correlation analysis was performed for analyzing the existence of linear relationships that exists between the set of independent and control variables with IFR of Nigerian banks. Table 4.2 explains the results of pairwise correlation that IFR holds with the measures of corporate governance which include governance, managerial ownership, block holders ownership and percentage of independent directors in Nigerian bank boards. The results of correlation analysis are presented in the form of symmetrical matrix where diagonal cells have value 1 showing the correlation of variables with themselves.

Table 4.2: Correlation Analysis

		IFR	GOV	MO	BO	ID	LOG(SIZE)	LOSS	BIG4
IFR	Pearson Correlation	1	.125	-.565**	.282	.288	.194	-.048	.b
	Sig. (2-tailed)		.413	.000	.061	.055	.202	.753	.
	N	45	45	45	45	45	45	45	45
GOV	Pearson Correlation	.125	1	.254	-.275	.069	-.458**	-.167	.b
	Sig. (2-tailed)	.413		.075	.053	.632	.002	.247	.
	N	45	50	50	50	50	45	50	50
MO	Pearson Correlation	-.565**	.254	1	-.573**	.185	.237	-.229	.b
	Sig. (2-tailed)	.000	.075		.000	.197	.117	.109	.
	N	45	50	50	50	50	45	50	50
BO	Pearson Correlation	.282	-.275	-.573**	1	-.303*	.231	.052	.b
	Sig. (2-tailed)	.061	.053	.000		.032	.126	.718	.
	N	45	50	50	50	50	45	50	50
ID	Pearson Correlation	.288	.069	.185	-.303*	1	.001	-.329*	.b
	Sig. (2-tailed)	.055	.632	.197	.032		.996	.020	.
	N	45	50	50	50	50	45	50	50
LOG(SIZE)	Pearson Correlation	.194	-.458**	.237	.231	.001	1	-.116	.b
	Sig. (2-tailed)	.202	.002	.117	.126	.996		.448	.
	N	45	45	45	45	45	45	45	45
LOSS	Pearson Correlation	-.048	-.167	-.229	.052	-.329*	-.116	1	.b
	Sig. (2-tailed)	.753	.247	.109	.718	.020	.448		.
	N	45	50	50	50	50	45	50	50
BIG4	Pearson Correlation	.b	.b	.b	.b	.b	.b	.b	.b
	Sig. (2-tailed)	.	.	.	.	.	.	.	
	N	45	50	50	50	50	45	50	50

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).
b. Cannot be computed because at least one of the variables is constant.

The results of correlation analysis presented in Table 4.2 show that the dependent variable IFR holds positive, but weak, correlation with the governance variable that was used as proxy for shareholders rights in Nigerian banks. The results show that the value of correlation coefficient between IFR and governance in Nigerian banks is 0.125. This relationship is however not significant at any level of significance. The presence of insignificant correlation between IFR and percentage of managerial ownership contradicts the findings of Kelton and Yang (2008) who found a positive but significant relationship between the two in their study on impact of corporate governance on IFR. The value of correlation coefficient between IFR and percentage of managerial ownership in banks is -0.565. The correlation coefficient reveals that there exist a negative relationship between IFR and managerial ownership. This relationship is found to be significant at 1% level of significance. The findings show that an increase in transparency of banks by making financial disclosures on website will decrease the level of managerial ownership in the banks. The findings of correlation analysis for Nigerian banks here are in accordance with the Eng and Mak (2003) who also found a negative relationship of managerial ownership with IFR of firms operating in Singapore. The findings of pairwise correlation for IFR and percentage of block holder ownership in Nigerian banks show the existence of positive, but weak, correlation between the two as the value of coefficient is 0.282. This relationship is observed not to be significant at any level of significance. The presence of weak and positive relationship contradicts the findings of Mitchell *et al*., (1995) and Schadewitzand Blevins (1998) who had also observed a negative association of block holder's ownership with the level of IFR.

A positive, but weak and insignificant, correlation was found between IFR and percentage of independent directors as the value of correlation coefficient was 0.288 with no significance at any 1% or 5% level of significance. The findings are against the findings of Beasley (1996), Chen and Jaggi (2000) and Xiao *et al*., (2004) who believe that an increase in level of independent directors in the board will significantly enhance the transparency of banks and lead to an increase in financial disclosures on official websites.

The values of correlation analysis also reveal an insignificant, weak and positive correlation between log of size and dependent variable IFR. The correlation coefficient for these two is 0.194. The results for loss made by the banks in the operating years and IFR show that negative correlation exist between IFR and loss of banks. The value of correlation coefficient for IFR and loss is -0.048.

Among the correlations between the other variables, the correlation analysis shows that a negative but significant relationship exists between the loss made by banks and their governance. The value of correlation coefficient for these two is -0.458 and is significant at 1% level of significance. The results show that the increase in the losses of banks in operating years will lead to decrease in their level of governance. The correlation coefficient in correlation matrix for percentage of managerial ownership and percentage of block holders is -0.573. The value indicates the presence of negative correlation between the two which is significant at 1% level of significance. This negative relationship indicates that the level of managerial ownership in bank decrease with an increase in level of block holders in Nigeria banks. Similar to relationship between percentages of managerial ownership, the percentage of block holders ownership holds a significant and negative correlation with the percentage of independent directors in case of Nigerian banks. The value of correlation coefficient in this case is -0.303 which is significant at 5% level of significance. The findings of correlation analysis also show that percentage of independent directors holds negative but significant with the loss made by the banks in operating year. Here, the value of coefficient is -.329 which is significant at 5% level of significance.

Regression analysis

The regression analysis was performed on the model constructed for the study with IFR as dependent variable in the model. The regression model proposed for the study is based on four independent variables that are used as a measure of corporate governance. The set of independent variables include governance, percentage of managerial ownership, percentage of block holder's ownership and percentage of independent directors in the board. The control variables of the study were loss, big4 and size of banks. Multiple regression analysis was performed for examining the impact of corporate governance on IFR of banks in Nigeria. The findings of model best fit for study are presented below in the followings tables (Tables 4.3 - 4.4)

Table 4.3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.940[a]	.884	.866	.931
a. Predictors: (Constant), LOSS, BO, GOV, ID, LOG(SIZE), MO				

Table 4.4: ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	251.479	6	41.913	48.315	.000[b]
	Residual	32.965	38	.868		
	Total	284.444	44			
a. Dependent Variable: IFR						
b. Predictors: (Constant), LOSS, BO, GOV, ID, LOG(SIZE), MO						

Table 4.3 shows the results of regression obtained after performing strong diagnostics. The table shows that the value of R square for the model with dependent variable IFR is 0.884. This shows that 88.4% of variations in the dependent variable IFR are explained *due to the independent variables of the model. The remaining set of 11.4% of variations remained unexplained by the set of independent and control variables (governance, managerial ownership, percentage of block holders, percentage of independent directors, log of size and loss made in the operating years). The 11.4% of unexplained variations in the model account for the error term in the model. It is generally assumed that value of R square closer to 1 shows that the model is best fit. As the value of R square is 0.884 which is near to 1, so model is best fit and estimates obtained for the variables are reliable. In addition to this, the findings of ANOVA presented in table 4.4 show that the value of F-Statistics is 48.315. This value is significant at 1% level of significance. This significance of F-Statistics further confirms that the model with IFR as dependent variable is reliable and stable.

Coefficients statistics

The value of estimates obtained for the variables from the regression analysis are presented below in coefficient table 4.5.

Table 4.5: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-4.683	1.180		-3.969	.000
	GOV	5.056	.542	.632	9.327	.000
	MO	-4.300	.321	-1.094	-13.388	.000
	BO	-.027	.008	-.274	-3.445	.001
	ID	.090	.015	.378	6.037	.000
	LOG(SIZE)	1.585	.149	.808	10.664	.000
	LOSS	.209	.550	.024	.380	.706
a. Dependent Variable: IFR						

Table 4.5 shows that the value of governance coefficient is 5.056. This coefficient is found to be significant at 1% level of significance. This positive and significant value of coefficient for governance show that shareholders voting rights in the bank of Nigeria has positive impact on the IFR disclosures made by them. A unit increase in shareholders voting rights will bring 5.056 units increase in the level of IFR of Nigerian banks. The findings of the study are consistent with the findings of Kelton and Yang (2008) which gives more credence to my research. These findings leads to the rejection of hypothesis H1 proposed for the study which asserts that the internet based disclosure of a Bank's level is linked negatively with the rights of shareholders. The findings suggest that the banks with strong shareholders right have high level of corporate governance and they provide more financial disclosures on their official websites.

The regression analysis shows that the value of coefficient for percentage of managerial ownership is -4.3. This value is significant at 1% level of significance. This significant value of managerial ownership coefficient shows that an increase in level of managerial ownership in Nigerian banks will lead towards a decrease in their disclosures made on internet sources. The results supports the findings of Eng and Mak (2003) who has also found a negative relationship of managerial ownership with IFR of firms operating in Singapore. The estimates of regression for managerial ownership leads towards the acceptance of hypothesis H2 proposed for the study that the internet based disclosure of a Bank's level is linked negatively with its managerial ownership.

The estimations done for examining the impact of block holder's ownership on IFR of banks in Nigeria also reveal a significant but negative relationship between the two. The value of correlation coefficient for these two is -0.027 and is significant at 1% level of significance. The results show that an increase in block holders ownership will also lead towards a decrease in internet financial reporting of Nigerian banks. The results of the current study are in accordance with the studies of Mitchell *et al*., (1995) and Schadewitzand Blevins (1998) that also observed a negative association of block holder's ownership with the level of IFR hence gives relevance to the research. These findings support the acceptance of hypothesis H3 which states that the internet based disclosure of a Bank's level is linked negatively with its Block ownership.

The regression result for the fourth independent variable that is independent director's show that there exists a positive and significant of independent directors on the IFR of banks in Nigeria. Here the value of estimated coefficient is 0.090 which is found to be significant at 1% level of significance. It can be inferred from the findings of regression estimate that an increase in level of independent directors in board will enhance the transparency of banks and lead towards an increase in financial disclosures on official websites. The results for independent director and IFR further strengthen the findings of Beasley (1996), Chen and Jaggi (2000) and Xiao *et al*., (2004). These results leads towards the rejection of hypothesis H4 proposed for the study. The hypothesis H4 is rejected because it asserts that there is no linkage between internet based disclosure of a Bank's level and its independent director's proportion on the board. Whereas, the estimates of regression show that presence of independent directors in the board has a positive and significant impact on internet financial reporting of banks.

The results for the control variables show that the size of banks measured in terms of shareholders equity has a significant and positive impact on the IFR. The findings show that a unit increase in size of Nigerian banks will lead towards an increase in bank internet disclosures by 1.585 units as value of coefficient is 1.585 which is significant at 1% level of significance. These findings for the relationship between firm size and internet financial reporting in Nigeria is in accordance with literature as the prior studies conducted by Chow and Wong-Boren (1987) and Lang and Lundholm, (1993) has also observed the same association between these two.

The estimates of regression analysis for loss made by firms in operating year and IFR also indicate the presence of positive impact of loss on IFR. However, this relationship is not found to have significant impact on IFR of banks in Nigeria.

DISCUSSION AND FINDINGS

To empirically examine the impact of corporate governance on IFR of banks in Nigeria, the top ten listed banks in Nigeria were selected. The data on the banks were collected through the secondary sources that were official websites and bank annual reports from year 2010 to 2015. The variables selected for analyzing the impact of corporate governance on IFR include IFR made up of 10 Format and content items and four variables as a measure of corporate governance. The variables that were used as measure of corporate governance include governance (proxy for shareholders voting rights), percentage of managerial ownership, percentage of block holder's ownership and percentage of independent directors on board. For empirically testing the impact of corporate governance on IFR of Nigerian banks, the descriptive analysis, correlation analysis and regression analysis was performed.

The findings obtained through descriptive analysis show that the mean level of IFR of banks in Nigeria on the ten item scale is 6.89 which indicates that the banks in Nigeria are required to have focus on enhancing the level of transparency through internet based disclosures as the attention is paid high on content items than the format items. The banks have given the voting rights to their shareholders as mean value for it is 0.80. The mean value of managerial ownership in Nigerian banks is 0.8530% whereas the value is 29.10% for level of block holder's ownership in banks. The boards of banks in Nigeria have an average percentage of 33.33% of independent directors in their board. The descriptive also show that Nigerian banks have mean level of equity 61643195.10 NGN and all the banks have employed BIG4 audit firms for audit. The correlation analysis shows that IFR holds negative and significant relationship with managerial ownership. However the relationship is positive but insignificant relationship with shareholder voting rights, block holders ownership in Nigerian banks. The findings of correlation analysis also show that IFR holds insignificant relationship with the size of banks and loss made by them in the year of operations.

The regression model was also run for estimating the impact of corporate governance measures on IFR of Nigerian Banks. The R square with value 0.884 and significant F-Statistics show that model selected for analyzing the impact of corporate governance on IFR is best fit and estimates obtained from model are reliable. The findings of regression show that banks in Nigeria have offered more disclosures for showing the investors that they have good governance. The results support the signaling theory argument in Nigeria (Kelton and Yang, 2008). The banks in Nigeria are suggested to give more voting rights to the shareholders and are required to disclose more financial information on internet to signal investors that their level of transparency is enhanced and their governance is good as there is low information asymmetry and agency cost between the managers and shareholders. The hypothesis H1 is rejected on the basis of findings of regression analysis. On the basis of regression analysis findings, it can be predicted that increase in level of managerial ownership will leads to decrease in need for IFR in Nigeria. The regression estimates leads towards the acceptance of hypothesis H2 proposed for study that the internet based disclosure of a Bank's level is linked negatively with its managerial ownership. The findings support the Jensen and Meckling

(1976) view that an increase in managerial ownership will reduce the level of agency cost by reconciling the interests of shareholders and managers. Hence the agency problems are resolved and the value of firm is enhanced due to increase in interest of managers on productivity and innovation in business. This in turn generates low demand for IFR as low level of monitoring efforts is required on the part of shareholders.

The research findings also show that block holder's ownership has significant impact on IFR of banks in Nigeria. It is inferred from the regression results that an increase in block holders ownership will also lead towards a decrease in IFR of Nigerian banks. The results of the current study are in accordance with the studies of Mitchell *et al.*, (1995) and Schadewitz and Blevins (1998) and support the acceptance of hypothesis H3 which states that the internet based disclosure of a Bank's level is linked negatively with its Block ownership. The findings suggest the banks in Nigeria with an increase in percentage of block holders with equity more than 5% lowers the level of need of banks for disclosure made through internet as less monitoring is required. In addition to this, the rejection of hypothesis H4 that there is no linkage between internets based disclosure of a Bank's level and its independent director's proportion on the board assert that independent directors have a positive and significant impact on the IFR of banks in Nigeria. The findings contradict the findings of Eng and Mak (2003) who found a negative influence of board independence on IFR in their study in Singapore. The regression estimate proves that an increase in level of independent directors in board will enhance the transparency of banks and lead towards an increase in financial disclosures on official websites. This is because of the reason that presence of independent directors in high percentage on board enhances the reliability of corporate financials and ensures that banks have efficient monitoring of earnings. The level of internet financial reporting in banks with independent directors is enhanced due to decision of independent directors for making voluntary disclosures.

On the basis of the findings, it is obvious that measures of corporate governance have significant influence on the level of IFR of banks in Nigeria. The banks in Nigeria are suggested to have high percentage of managerial ownership and block holders' ownership if they want to have low level of internet financial reporting. In contrast to this, the banks that want to disclose more frequently on their official websites are suggested to have an increase in representation of independent directors on their board or are advised to give more voting rights to shareholders as in such scenarios more information is required to the shareholders for monitoring the activities of management and to reduce agency cost. Furthermore, the banks are also advised to have more frequent disclosures on their websites if they have high level of shareholders equity as a source of fund in capital structures.

CONCLUSION AND RECOMMENDATIONS

The main objective of the study was to examine the impact of corporate governance on IFR among listed banks in Nigeria. For that purpose a review of existing literature was carried out. On the basis of literature review, it is concluded that internet financial reporting is one of the most efficient means of communicating investors (Ashbaugh *et al.*, 1999). The reporting of financial information through the internet is a flexible way of communication as businesses can disclose information in different formats which in turn enhances the level of transparency of firms. The literature shows that the corporate governance practices in a firm also influence its level of disclosures made through internet. (Chen and Jaggi 2000; Eng and Mak 2003; Gul and Leung, 2004 and Kelton and Yang 2008).

Empirically examining the impact of corporate governance practices on IFR in the growing economy of Nigeria, quantitative research was carried out where the relationship between corporate governance variable and IFR was empirically examined. The data on the top ten listed banks in Nigeria was collected from the secondary sources for year 2010 to 2015. The study conducted was deductive in nature. The data was empirically analyzed by employing the following statistical tools; descriptive analysis, correlation analysis and regression analysis.

The findings of empirical investigation suggest that the measures of corporate governance have significant influence on the level of IFR of banks in Nigeria. The findings show that shareholder' voting rights, percentage of independent directors and bank size have significant positive impact on the IFR of banks. The banks in Nigeria make more disclosures on internet when their shareholders have strong voting rights, have high percentage of independent directors on board and greater firm size. However, low level of financial disclosures through internet is evident in case where the banks have high percentage of managerial ownership and high percentage of block holders with more than 5% equity. In such cases, banks make less disclosures as less monitoring is required from the shareholders and there is low need for disclosing the information.

The results of the study leads to the acceptance of two hypotheses (H2 and H3) and rejection of two hypotheses (H1 and H4) proposed on the basis of literature.

From the results, it is concluded that measures of corporate governance has significant influence on the level of IFR of banks in Nigeria. Banks in Nigeria with high percentage of managerial ownership and block holders ownership are associated with low level of internet financial reporting. In contrast to this, banks that have a high proportion of representation of independent directors on their board or give more voting rights to shareholders are associated with higher frequency of IFR. Furthermore, the banks are also advised to have more frequent disclosures on their websites if they have high level of shareholders equity as a source of fund in capital structures

On the basis of the findings and empirical estimations, the study recommends Nigerian banks to make frequent disclosures on websites for ascertaining the investors about their virtual presence and to assure investors that they have high level of transparency as they had incorporated the practices of corporate governance of banks. During the research, it was observed that the banks in Nigeria lay more emphasis on the content items while making disclosures on the official websites and the format items are often ignored. Based on this, the banks in Nigeria are also advised to have focus on the format of presentation. They are suggested to present annual reports in multiple formats with established hyperlinks and drop down navigational menus. The focusing on the format of presentation will help in attracting more investors as it will facilitate the potential investors' manipulation of financial data or information and making investment decisions. (Conway, 2012).

FUTURE RESEARCH

This is an exploratory empirically based research assessing the links between IFR disclosure and corporate governance in Nigerian banks. In the future, the bank communications and the standards will be made solely via the internet. So, it is expected of the banks in Nigeria to be increasingly involved in the disclosure of information on the internet (Kelton and Yang, 2008). This study acts as the IFR benchmark for developing countries in the region and other African countries at large. The collection of data in different countries for more companies especially those with various other regulations for disclosure would improve the results validation in this research and would help in the different identification and similarities in the decisions of policy makers. This research explored banks characteristics which were related to the IFR amount and information disclosure sample for banks in Nigeria which had websites. The research in future might also explore how disclosure and IFR impacts the prices of stocks and the share volume trade in Nigeria. It might also test empirically how the banks in Nigeria are impacted by other factors of IFR like dividends, stock prices and to determine how this reporting provides information valuable to the investors. The banks tend to reveal more information in order to limit the asymmetry of the information between investors and themselves. By attracting more bank investors, the capital cost is reduced and is expected for the banks. Therefore, the IFR and corporate governance relationship and cost of capital disclosures could be analyzed in the future.

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Appendix

Table 4.1: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
IFR	50	3	10	6.89	2.543
GOV	50	0	1	.80	.404
MO(%)	50	.0160	1.9	.853040	.6220372
BO(%)	50	.0000	85.0000	29.107800	25.0553974
ID(%)	50	.0000	33.3333	15.730660	10.1581153
SIZE(NGN, 000)	50	13589	277410727	61643195.10	83349048.722
LOSS	50	0	1	.10	.303
BIG4	50	1	1	1.00	.000
Valid N (listwise)	50				

Table 4.2: Correlation Analysis

		IFR	GOV	MO	BO	ID	LOG(SIZE)	LOSS	BIG4
IFR	Pearson Correlation	1	.125	-.565**	.282	.288	.194	-.048	.b
	Sig. (2-tailed)		.413	.000	.061	.055	.202	.753	.
	N	45	45	45	45	45	45	45	45
GOV	Pearson Correlation	.125	1	.254	-.275	.069	-.458**	-.167	.b
	Sig. (2-tailed)	.413		.075	.053	.632	.002	.247	.
	N	45	50	50	50	50	45	50	50
MO	Pearson Correlation	-.565**	.254	1	-.573**	.185	.237	-.229	.b
	Sig. (2-tailed)	.000	.075		.000	.197	.117	.109	.
	N	45	50	50	50	50	45	50	50
BO	Pearson Correlation	.282	-.275	-.573**	1	-.303*	.231	.052	.b
	Sig. (2-tailed)	.061	.053	.000		.032	.126	.718	.
	N	45	50	50	50	50	45	50	50
ID	Pearson Correlation	.288	.069	.185	-.303*	1	.001	-.329*	.b
	Sig. (2-tailed)	.055	.632	.197	.032		.996	.020	.
	N	45	50	50	50	50	45	50	50
LOG(SIZE)	Pearson Correlation	.194	-.458**	.237	.231	.001	1	-.116	.b
	Sig. (2-tailed)	.202	.002	.117	.126	.996		.448	.
	N	45	45	45	45	45	45	45	45
LOSS	Pearson Correlation	-.048	-.167	-.229	.052	-.329*	-.116	1	.b
	Sig. (2-tailed)	.753	.247	.109	.718	.020	.448		.
	N	45	50	50	50	50	45	50	50
BIG4	Pearson Correlation	.b	.b	.b	.b	.b	.b	.b	.b
	Sig. (2-tailed)	.	.	.	.	.	.	.	
	N	45	50	50	50	50	45	50	50

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

b. Cannot be computed because at least one of the variables is constant.

Table 4.3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.940a	.884	.866	.931

a. Predictors: (Constant), LOSS, BO, GOV, ID, LOG(SIZE), MO

Table 4.4: ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	251.479	6	41.913	48.315	.000[b]
	Residual	32.965	38	.868		
	Total	284.444	44			
a. Dependent Variable: IFR						
b. Predictors: (Constant), LOSS, BO, GOV, ID, LOG(SIZE), MO						

Table 4.5: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-4.683	1.180		-3.969	.000
	GOV	5.056	.542	.632	9.327	.000
	MO	-4.300	.321	-1.094	-13.388	.000
	BO	-.027	.008	-.274	-3.445	.001
	ID	.090	.015	.378	6.037	.000
	LOG(SIZE)	1.585	.149	.808	10.664	.000
	LOSS	.209	.550	.024	.380	.706
a. Dependent Variable: IFR						