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## Relevance Of Max Weber Today

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### Abstract

Max Weber, the greatest social scientist ever, keeps fascinating scholars around the world. His books are continuously republished with new commentaries and the literature on Weber, his life and work, just expands. The genius from Freiburg and Heidelberg mastered everything: politics, economics, history, religion and philosophy of science. Of special relevance to globalisation studies is his theory about the basic difference between the WEST and the EAST - the so-called Weber's thesis about modern capitalism. It summarized lots of his profound inquiries in the world religions, like the religions of India and China, and economic history of Europe and the Middle East. His *The Protestant Ethic and the Spirit of Capitalism (1904)* is the most discussed booklet in the social sciences, endorsed, rejected and falsified, as well as confirmed. I will show that the focus of his comparative studies, viz modern capitalism, is flawed as well as that his major idea in politics, the type of modern legal-rational authority, is more suited for his EAST-WEST civilisation approach, but it needs reformulation.

**Keywords:** capitalism, types of authority, world religions, asceticism, Western versus Eastern religions, rule by law, rule of law.

### INTRODUCTION

What has put Weber directly into the spotlight again is the dramatic rise of the new Islamic fundamentalism, in both theory and practice. "A religion of warriors", phrased around 1910, has turned out to become the exact correct description of Al Qaeda and the ISIS. Below I will mention the crisis of Islam and the Muslim civilisation, so battered by deaths and casualties from political violence by so-called \*religious warriors\*. Yet, the literature on Max Weber is by now large, comprising several biographies and numerous interpretations (Bendix, 1992; Bendix and Roth, 1971; Ringer, 2004). All of his publications have been translated into English, the last ones being his major articles in the philosophy of science (Bruun and Wimsett, 2012).

In this paper, I concentrate at 3 mistakes in Weber (Weber, 2017), which have not been examined profoundly in the huge Weber literature. They are:

1. *Focus exclusively upon modern capitalism.* Why chose something so conceptually amorphous and hard to delineate empirically as the key difference between the West and the East, as characteristic of one civilization and not another? Capitalism does not distinguish among civilisations today and perhaps Weber exaggerated the concentration of "modern" capitalism to the West?
2. *Causal mechanism between religion and capitalism,* in particular his *twofold* distinctions, namely between inner worldly against outer worldly religions on the one hand, as well as between inner worldly and outer worldly asceticism on the other hand.
3. *Ambiguity in legal-rational authority.* It seems that Weber did not make the crucial distinction between the constitutional democracy on the one hand and the modern authoritarian state on the other hand. His other two categories, traditional and charismatic

authority, only coincide with modern dictatorships to a slight extent. Does China have legal-rational authority today like the US or the UK, or to the same extent? Hardly!

Some scholars have argued that Weber in reality sought the sources of Western rationalism, as exemplified in both modern capitalism and the modern bureaucratic state. Today, it seems completely impossible to speak of Western rationality as a specific feature of civilization differences. Where, then, can we find a major social system property that separates between civilization legacies, if capitalism and rationality will not do?

### **Islam Today And Weber's Thesis**

Many countries in the Muslim civilization have now experienced an unprecedented surge in political violence in diverse forms: civil war, insurgency, suicide bombings, attacks on innocent civilians, and murders motivated by politics or religion. The emergence of Islamic terrorism on a large scale is unique when compared with old French or Bolshevik models, as it targets anybody. Also Western countries and Eastern ones like Burma and Thailand have been affected. It has been argued that Moslem terrorists are driven by mental instability or sickness (Kepel) or relative deprivation (Roy). A better approach to the implosion of the Islamic civilization in daily acts of political violence massively is to turn to Weber and find inspiration in his theory of religion and politics.

With so much written about the genius from Freiburg and Heidelberg, it is small wonder that the term "Weber's thesis" stands for a set of themes, not one only (Schluchter, 1992; Albert and Bienfait, 2007). One may clarify this multiplicity by two distinctions:

- Genetic or systematic theme: Weber's thesis may be about the origins or the pervasive traits of social systems;
- Religion or civilization theme: Weber's thesis may deal with the outcomes of religious beliefs specifically, or target the basic differences between the cultural civilisations of the world.

Thus, we have a 2X2 Table, as follows:

	Religion	Civilisation
Genetic	I	II
Systematic	III	IV

Actually one finds these four themes in the various books by Weber himself, as he wrote in an almost encyclopedic fashion about the history of political, economic and social systems. He singled out "modern" capitalism as his dependent variable, which would give the following list of themes:

- Modern capitalism arose in the West due to Protestantism (I);
- Modern capitalism arose in Western rationality (II);
- Modern capitalism has an affinity with Protestant ethics (III);
- Modern capitalism is an expression of Western rationality (IV).

I cannot present a summary of the huge debate about these Weberian themes – see Schluchter 1992. Nor shall I enter any polemics against the critique of Weber from various scholars, economic historians and sociologists for example (Samuelson, 1964; Rodinson, 2009; Tawney, 2016). Instead I focus on his unfinished analysis of Islam – "religion of warrior" – with a few original remarks (hopefully) and its implications for the theme IV above. If the The Protestant Ethic and the Spirit of Capitalism from 1904 (2010) has made Weber's name unforgettable, with so many editions coming even some 100 years after, then there are three difficulties with it that has not been sufficiently underlined.



### **First Problem: What is Modern Capitalism?**

As his dependent variable, Weber had chosen capitalism. It is quite understandable, given that several scholars in German Academia dealt with the subject. And the ascending *Arbeiterbewegung* promised another and better economic system, socialism. Yet, it was hardly a fertile choice, as the concept of capitalism is amorphous and the word itself highly value-loaded. Two meanings should be sharply separated:

1. Capitalistic spirit, or the acquisitive endeavor:
2. Systems of capitalism, i.e. the institutional set-up:

Weber obviously used the word “capitalism” in both the micro sense (incentives) and the macro sense (systems of norms). Perhaps he argued that the micro attitudes of the great Protestant leaders and personalities were different enough compared with the Catholic Church fathers to pave the way for “modern” macro capitalism:

“It is only in the modern Western world that rational capitalistic enterprises with fixed capital, free labor, the rational specialization and combination of functions, and the allocation of productive functions on the basis of capitalistic enterprises, bound together in a market economy, are to be found.” (Weber, 1978: 165)

But the institutions of modern capitalism can be exported and adopted by other civilisations, learned and refined, which is exactly what occurred in the 20<sup>th</sup> century. Thus, even if Protestantism, or the Protestant ethics denying the possibility of magic and accepting rents had something to do with the *origins* of modern capitalism in the West – i.e. economic rationality or even overall rationality (“*Entzauberung der Welt*”), which tough remains an essentially contested issue, it could never guarantee any persisting advantage. It is difficult to chisel out an interesting hypothesis about “modern” capitalism and the world religions that would have much relevance today.

Today, modern capitalism, at least when measured in terms of output, is perhaps stronger in South, East and South East Asia, with a few strongholds also within Islam, like for instance the UEL, Kuwait and Qatar. If “capitalism” stands for a set of institutions, or rules, then one may wish to enumerate a number of different types of capitalisms during known history: ancient, state, feudal, prebendal, modern, oriental, financial, etc. Weber displayed in his historical books that he mastered all these types of capitalism as well as that his emphasis upon mundane incentives meant that he always counted upon the role of the acquisitive spirit.

Perhaps Weber neglected the huge pottery factories, driven capitalistically with huge exports, during various dynasties in China (Vainker, 1995; Glahn, 2016), just as Sombart in his effort to link “modern” capitalism with the finance capitalism of the new merchant class around 1500 (Sombart, 2001) bypassed the Indian Ocean trade. The Arab, Indian and Chinese merchants on the Indian Sea, from Mocha and Aden to Malaka and Canton, were no less capitalistic in spirit or rational in performance! (Kumar, and Desai, 1983; Riaao, 2009; Um, 2009; Chaudury, 2010). “Modern” capitalism was not as exclusively European as some authors have claimed, following Weber (Beaud, 2006; Neal and Williamson, 2015; Kocka, 2016).

### **Second Problem: The Analysis of Religion: What is Inner Worldly and other Worldly?**

As his independent variable, Weber chose religion. The first step was to detail the link between Protestantism and capitalism. The second step involved a huge comparative enquiry into the economic spirit or ethics of several world religions in order to show that his thesis received negative corroboration in Hinduism, Buddhism, Taoism and Confucianism. It

enhanced the study of comparative religion tremendously beyond what Marx and Durkheim accomplished with their simplistic models of “opium of the people” and “mechanic solidarity. But there is a conceptual paradox in Weber’s typology of the world religions. He employed two conceptual pairs:

- Salvation: Inner or other worldly religion;
- Asceticism: Inner or other worldly ascetism.

Combining these two, we have the following classification scheme:

	Salvation	
	“Diesseitig”	“Jenseitig”
Inner worldly	I	II
Asceticism		
Other worldly	III	IV

A religion that is other worldly has an eschatology outlining the real world to come on judgement Day, whereas an inner worldly religion promises redemption within existing universe (Glaser, 1951-52). Asceticism or the perfection of the conduct of performance according to an ideal can be inner worldly here and now or outer worldly as in mysticism. Weber finds the drive for capitalism in the mundanely daily and secular (inner worldly) asceticism of the believers in an other worldly religion – category II! No doubt a complex “sinnsuzammenhaege”. Where does Islam fit in?

The Koran is eschatological, promising the Paradise to its true believers when this world crumbles. But who are the ascetics? Weber replies: “Islam is a religion of warriors”. And warfare and capitalism cannot co-exist for long.

Weber employed his model of the ascetics in Islam – the warriors – to account for the incredibly quick spread of Islam, from Spain to India within a century after 632. Moslem scholars never accepted his model, because the Islamic civilisation stabilised into a fixed patterns that lasted up until after the Second World War:

1. Sunni majority with the 5 peaceful rules of behaviour;
2. The many Shia sects with one dominance in Iran;
3. Saudi Arabic Wahhabism, not accepted outside.

What has given Weber’s model of Islam renewed relevance is the rise of fundamentalism (Davidson, 2013), especially Sunni fundamentalism with three scholars, namely Maududi, Qutb and Faraj (Calvert, 2010; Jackson, 2010; Manne, 2016) – *Salafi Jihadism*. As thousands of young Muslims are attracted to their teachings in madrasa, schools and colleges or even universities but also prisons, the Koranic civilisation faces a dire warfare, resulting in so many deaths from political violence, both inside and outside of Arabia. Al – Zawahiri created Al Qaeda writing a book about the “Knights of the Prophet” and al-Zarqawi put the ISIS into action in US and UK occupied Iraq. Moslem theologian and philosophers have yet to come up with a strong rebuttal of the gang of three (it can be done to save Islam from disintegration):

- Maududi: completely comprehensive Islamisation;
- Qutb: re-invention of the caliphate;
- Faraj: total jihad – the real hidden duty of Islam.

Much has written about Weber’s negative evaluation of Islam and also Muhammed personally. The leading scholar Schluchter (1999) has even ventured to outline how a complete Weberian book on Islam would look like. Some say he was too dependent on the *Orientalist* literature at

that time, missing out on a proper evaluation of Arab science, philosophy, architecture and capitalism (Huff and Schluchter, 1999, Rodinson, 1993, 1994; Risso, 1995).

### Third problem: What is Legal-Rational Authority?

The Governance Project of the World Bank has made a tremendous effort at quantifying the occurrence of rule of law, employing all the indices in the literature – see Appendix in Governance project (Kaufmann et al.). The findings are summarized in a scale ranging from +2 to -2 that is a ratio scale. Table 1 presents the aggregated scores for the civilisations, introduced above.

**Table 1. Civilisations and Rule of Law**

	Mean	Std. Dev.	Freq.
Communist	-.75477454	.38326537	6
Hindu	-.53253257	.64282829	2
Muslem NONARAB	-.72383263	.65613238	21
Africa	-.8007729	.62152836	38
Arab	-.30380348	.71516745	18
Asia	.47479719	.96324657	9
Latin America	-.18484119	.78842261	34
Orthodox	-.50737586	.35506152	8
Pacific	-.18705963	.63026857	16
Western	1.1971701	.66793566	38
Total	-.10664712	.98442144	190

Typical of legal-rational authority is, I would wish to emphasize, government based upon rule of law. Let us first state the definition of “legal authority” from Weber:

“The validity of the claims to legitimacy may be based on: 1. Rational grounds – resting on a belief in the legitimacy of enacted rules and the rights of those elevated to authority under such rules to issue commands (legal authority).” (Weber, 1978: 215)

The key terms in this general definition is rules or institutions.

“Today the most usual basis of legitimacy is the belief in legality, the readiness to conform with rules which are formally correct and have been imposed by accepted procedure. The distinction between an order derived from voluntary agreement and one which has been imposed is only relative.”

The talk about “voluntary agreement” hints at the democratic regime just as the requirement of “accepted procedure”. Yet, as is well-known, Weber moves on to equate legal-rational authority with bureaucracy:

“The purest type of exercise of legal authority is that which employs a bureaucratic administrative staff.” (Weber, 1978: 220).

Yet, bureaucracy, as a mechanism for carrying out the policies of rulers has, historically speaking, never operated according to the Weberian ideal-type. Bureaucracies have been invaded by affective ties, embezzlement, tribal loyalties and opportunistic selfishness in

search of turf. 20th century research into the bureaucratic phenomenon has resulted in numerous findings that question the applicability of Weber's bureaucracy model. As a matter of fact, bureaucracies can support traditional domination, as within Chinese Empires or Ottoman Rulership. It may also figure prominently in charismatic rulership, as with The Third Reich or the Soviet State.

Weber recognized a fourth kind of political regime that he simple regarded as marginal, namely total authority based on naked power, because it could not last. The question then becomes whether legal-rational authority entails a legitimation rendering it stable over time as rule of law or whether it is enough with rule by law. I find no answer with Weber.

The interpretation that Weber was some kind of "fore-runner" to the development of a unique nationalist ideology in Germany in the 1930s, founding a state upon the exercise of naked power, is, in my view, questionable (Mommson, 2004). Legal-rational authority implies a constitutional state respecting Kant's *Rechtsstaat*. As a matter of fact, rule of law trumps democracy, especially plebiscitary democracy.

### **The Key Terms: "Beruf", 'Rationality" and "Authority"**

The link between Protestantism and modern capitalism is theorized in twp different hypotheses, one by economic historians and political scientists and the other by sociologists and globalisation scholars. <thus, we have<.

i) *Call*: Protestantism would have supported the mergence of modern capitalism by its work ethic, underling this wordly asceticism, although the personal goal is other wordly salvation. However, modern capitalism is mich more complex than this, especially institutionally. And similar ideas may be found in Buddhism and Confucianism.

ii) *Rationality*: Protestantism would have inaugurated the crushing of outer wordly asceticism, especially the set of magic behaviours and rites, opening up for secularization. However, Protestantism fought hard against Western secularization and lost. The basic source of Western rationality is Greek philosophy and Roman Law, not Calvinism and Lutheranism. One finds elements of rationality in the other civilisations, like medicine, astronomy and mathematics with Muslims, mathematics with Hindusim and scientific innovations and technology in China. Howver, one does not find the idea of rule of law and limited government outside of Western Europe, due to the predominance of oriental despotism.

### iii) *Authority and Naked Power*

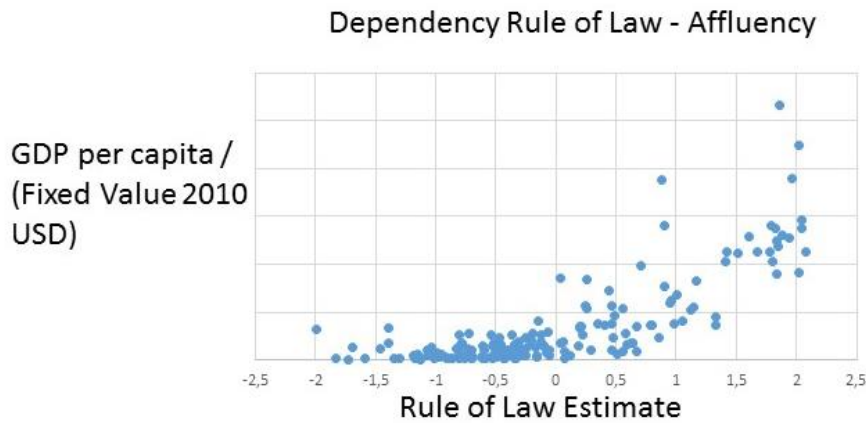
Weber was well aware of the place of power in social systems, as the apacity to impose one's will against another. However, he argued that power is fundamentally instable as well as that the employment of naked power is costly. Thus, his theory of 3 bases of political legitimation, enhancing authority as obedience. This moral dimension could be filled with tradition as in oriental despotism, charisma or the extraordinary gift to give direction and public law, i.e. constitutions and administrative law. In legal-rational authority. But is legal+rational authority rule by law, as in China or Russia, or rule by law, as in Europe and India?

Evidently, Weber underestimated the effectiveness and longevity of naked power. It may last for decades as in North Korea, Syria and Libya or Iraq. Perhaps the only basis of politics that may last is the rule of law, to which we turn now.

**Civilisations Today: Rule Of Law**

One may employ Figure 1 to portray the same findings as in Table 1. It should perhaps be pointed out that poverty accounts to some extent for the disrespect for due process of law – see Figure 1.

**FIGURE 1. Rule of law index (RL) against GDP 2015 (N=167, R<sup>2</sup> = 0,62)**



**Note:** WB: Worldwide Governance Indicators, 2016; See Kaufmann, D., A. Kraay and M. Mastruzzi (2010). "The Worldwide Governance Indicators: Methodology and Analytical Issues". World Bank Policy Research Working Paper No. 5430; World Bank national accounts data; OECD National Accounts data files.

However, culture also matters in the form of civilisations, especially Islam and Buddhism, and Orthodoxy – negatively – as well as Calvinism and Lutheranism – positively.

RL cannot be introduced or upheld in a country with considerable tribalism and clan structures. Similarly, RL is not feasible in a country where Sharia has constitutional status. In many countries in the African and Asian civilisations there is both ethnic diversity and Islam.

One may employ the regression technique in order to examine the impact of these factors upon RL: - Ethnicity: The fragmentation of a country into different ethnic groups (language, race); - Religion: The proportion of Muslims in country population; the proportion of Buddhist/Confucians in the country population; - Affluence: GDP in 2010. Table 2 displays the findings from an estimation of a regression equation.

**Table 2. Regression model for rule of law (RL) (N = 162)**

	Unstandardized Coefficients		Standard Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	-4,216	,471	-8,948		,000
ln2010	,507	,047	,657	10,847	,000
Ethnic	-,474	,222	-,126	-2,139	,034
Muslim	-,003	,002	-,118	-2,192	,030
budd2000	-,002	,003	-,027	-,517	,606
R	R Square	Adjusted R Square	Std. Error of the Estimate		
,771	,595	,584	,621331		

**Sources: Kaufmann, D. A. Kraal and M. Mastruzzi (2012) Worldwide Governance Indicators; Pew Forum (2009) Mapping the Global Muslim Population; World Bank (2012) World Bank Databank; Barrett, D. B. et al. (2001) World Christian Encyclopaedia**

### **Why Rule of Law?**

Rule of law, whether combined with any form of democracy – referendum type, parliamentary type, presidential dispensation – or not, as in semi-democratic countries that are one party states. comprises (Raz, 2009):

*Predictability:* Public law when properly implemented makes it possible for people to increase the rationality of behaviour. They know what rules apply, how they read as well as how they are applied consistently. This is very important for the making of strategies over a set of alternatives of action.

*Transparency:* Societies operate on the basis of norms prohibiting, obligating or permitting certain actions in specific situations. Rule of law entails that these norms are common knowledge as well as that they are not sidestepped by other implicit or tacit norms, known only to certain actors.

*Due Process of Law:* When conflicts occur either between individuals or between persons and the state, then certain procedures are to be followed concerning the prosecution, litigation and sentencing/incarceration. Thus, the police forces and the army are strictly regulated under the supervision of courts with rules about investigations, seizure, detainment and prison sentencing. No one person or agency can take the law into their own hands.

*Fairness:* Rule of law establishes a number of mechanisms that promote not only the legal order, or the law, but also justice, or the right. For ordinary citizens, the principle of complaint and redress is vital, providing them with an avenue to test each and every decision by government, in both high and low politics. Here one may emphasize the existence of the *Ombudsman*, as the access to fairness for simple people. People have certain minimum rights against the state, meaning that government respects obligations concerning the protection of life and personal integrity. Thus, when there is due process of law – procedural or substantive – one finds e.g. the *habeas corpus* rights.

I would dare suggest that most people in the world would want to live in a country where these precepts are respected and enforced. Only human sufferings result when they are not. Even people who adhere to a religion that rejects rule of law regret their absence when trouble starts and anarchy or even warfare comes. Rule of law I the greatest idea in the history of political thought, from Cicero (very underestimated) to Kant.

### **CONCLUSION**

The civilisation that deviates the most from the Rechtsstaat is the Moslem one. This is due to the un-recognised and not fully understood revolution in the mind sets that we call Sunni fundamentalism or radical Islam. It now has started to appear in many Western countries with dire effects. Yet, rule of law is weakly enforced in the Latin American civilisation, non-existent in the Sub-Saharan civilisation and not very frequently occurring in the Buddhist one with its legacy of Oriental despotism (Weber, 2001, 2003), occurring also in the Moslem civilisation as Sultanismus, although not always with a hydraulic foundation (Wittfogel, 1957). Even in Japan and South Korea like in Taiwan and Singapore, rule of a law is not complete, and in the former Soviet republics, the situation could not be worse

Today, Weber would have wished to take rule of law instead of capitalism as his dependent variable. After all, much of his writings belong to political science proper. Thus, let us turn to Weber's chief accomplishment in political sociology, namely that he identified four types of political regimes: naked power, traditional, charismatic and legal-rational authority – a most often used typology also today. However, he was not clear about the nature of the last type, linking wrongly – I wish to argue – legal-rational authority with his ideal-type model of bureaucracy, which may surgit also in the authoritarian polical system.

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# Causal Relationship of Stock Performance and Macroeconomic Variables: Empirical Evidences from Brazil, Russia, India and China (BRIC)

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## Abstract

The rise of BRIC (Brazil, Russia, India and China) in the global investment market is still too mysterious to investors. This paper attempts to investigate the causal relationship among quarterly returns of BRIC's stock market indices using a set of pre-examined macroeconomic variables such as, economic growth (GDP), risk free rates (the U.S. t-bill rates), exchange rates against USD, international oil prices and inflation in order to understand the leading factor of BRIC's stock market returns. This paper covers the sample period from 1996:Q4 to 2013:Q1. The error correction model and Granger causality approach were applied to investigate the relationship among the variables. The results indicate that none of the explanatory variables Granger cause stock market performance in China and India. In homogenous, there is Granger causality from BRIC's stock market performance to the risk free rates and international oil prices. This finding implies that BRIC has strong market impact or purchasing power to influence the key raw input of an economy, as well as the largest risk free investment instrument in the world. Generally, the Fed model, international trading effect and portfolio balance model are inapplicable to BRIC. The safest investment guidance for investors is to follow the changes in oil prices to forecast the movement in stock performance in Brazil. This is because there is an actual sign (from the error correction model) and significant pairwise Granger causality between stock market returns and oil prices in Brazil.

**Keywords:** stock market performance, macroeconomic variables, granger causality, risk free rates; unit root tests, cointegration tests

## INTRODUCTION

Under the conceptual framework of the Keynesians, stock performance is not a reflection of the market value of stocks, but instead a discipline, which acts as an effective mechanism supplying the equity landscape with essential stability and liquidity for investments (Keynes, 1936). In brief, so long as the discipline remains, the capital market will grant investors safety in short-term investments, while the stability circulates the flows of liquidity accordingly. However, as time goes on, the Keynesian elucidation in depicting the vividness and vibrancy of investment has become ever inapplicable in the reality. This is because the revolution in technological support and speculation strategies has been gradually melting the balance of investment discipline. Frequent occurrences of financial crises also make the movement of instrument prices a financial puzzle to both investors and econometricians. Thus, the necessity of forming new tentative hypotheses is pressing for academicians to stabilize and recover the functions of equity market, again.

The random walk hypothesis postulates that stock market prices move in the light of a random walk, and could not be predicted under a predefined specification (Cootner, 1962; Samuelson, 1965). In this conceptual foundation, Fama (1965; 1970) formed the efficient market hypothesis asserting that informational efficiency is the core mechanism of financial markets. Investors are unable to constantly attain excessive returns over the average market returns on a risk-adjusted basis, based on the contemporarily available information at the time the decision is realized. If either hypothesis holds, stock price movements will become unpredictable or less predictable unless one has superior information over the majority of investors involved. However, history has showed that many renowned investors have consistently beaten the market, while numerous empirical evidences have proven that stock market performance is linked to a set of economic forces. Hence, the effort to sort the set of economic fundamentals to explain the stock price movement is not vain, unlike what the random walk hypothesis asserts.

In 1976, Ross held that macroeconomic factors can be significant to forecast the expected return under a linear function, where elasticity to varies in each factor is represented by a factor-specific beta coefficient. According to the arbitrage pricing theory, if the future price diverges from the model-derived output, arbitrage opportunities will be presented and realized to direct the stock price back to correct level. Chen *et al.* (1986) suggested that inflation, gross national products, investor confidence and yield curve are significant in explaining stock market performance. However, low frequency of national statistics is likely to impair the estimation accuracy. Thus, several additional indicators are provided by following researchers, such as influential stock market performance, commodity prices, U.S. 3-month Treasury bill rates and currency exchange rates (Dornbusch and Fisher, 1980; Sadorsky, 1999; Soydemir, 2000; Bilson *et al.*, 2001; Kim, 2003; Quayes and Jamal, 2008).

Generally, the reported results are inconsistent across the different research backgrounds. The same set of variables can be significant to explain the stock price movement in one country, but could be totally irrelevant for another economy. This paper aims at formulating a set of explanatory variables to significantly predict the prospective directions of stock price tendency. Brazil, Russia, India and China (BRIC) are the key research context of this paper. Since these economies are experiencing dynamic growth, an investigation on this background can provide investors some insights regarding the influences of macroeconomic variables to the emerging economies. The most adopted variables, such as gross domestic products, U.S. 3-month Treasury bill rates, currency exchange rates and commodity prices, are inclusive in the model specification. This paper applied a combination of error correction model and granger causality approach to sophisticatedly examine the causality between the variables, and investigate the sensitivity of each variable in explaining the stock price evolution.

### **Research background**

The core research background of this paper is the rapidly growing economic region, which contains Brazil, Russia, India and China, or the abbreviation of BRIC. BRIC was coined by Jim O' Neill (2001) to describe the phenomenon of fast developing countries: Brazil, Russia, India and China. Over the past two decades. BRIC has experienced enormous economic growth owing to the abundance of its natural resources, comparative advantage in labour cost and extensive manpower. This economic condition is similar to the pre-developed economic status of current developed countries, which means from the development of BRIC, we may observe the transversion from a developing economy to a developed economy. Thus, BRIC is considered as a bridge which connects the gap between first world countries

and third world countries. This paper may provide readers a pre-emptive view regarding the future macroeconomic determinants of stock performance for the normal developing countries, such as Vietnam and Philippines. An understanding related to the lead factors of stock performance is pivotal to both investors and country governors since an accurate prediction is able to minimize potential losses associated with the market turbulence.

### **Problem statement**

Due to economic saturation and the prevalence of humanitarian, developed countries are facing the issues of uncompetitive wages and rentals, severe market competition, stringent environmental protection costs, etc. To deal with these problems, numerous sizeable corporations from developed countries have expanded their offshore operations in developing countries. The tide of offshoring actions greatly stimulates economic growth of several countries, for example, BRIC. These countries rapidly absorb the technological transfers and capital flows from developed countries and progressively approach the territory of sound economic development.

Global investors are attracted by the booming condition of BRIC and trying to speculate BRIC's stock market performance. Stock market volatility of BRIC has been elevated to a more fluctuated level while this zero sum game greatly widen the chasm between the wealthy and poor. Besides, insider information is obviously observable in these markets since BRIC's members usually do not have strict regulation prohibiting insider trading. Comparing with huge-size investors, scattered investors are more likely to suffer from the exposure of ignorance. Thus, these issues raise the needs of formulating a set of predefined leading indicators to reduce the imbalanced investment positioning between institute and individual investors.

This paper intends to provide academicians and practitioners two sensible insights regarding the causality and association between macroeconomic variables and stock performance in BRIC. First, although there were many researchers analysing the global phenomenon or regional trend, the regional concordant research pertinent to BRIC was not carried out by any previous researcher. The similarity or homogeneity of variables in explaining the stock price movement has yet to be identified. Second, theoretically, a lack of significant variables might deteriorate the explanatory power or result consistency of a model, while redundancy of exceeding variables could incur the problem of multicollinearity and serial dependence. Aforementioned, the same set of variables can be significant for a country, while it could be totally irrelevant to another economy. The poor generalisation of variables requires a customization process to match the variables with the associated economic characteristics.

Although many empirical researches have proven the long-term leading status of macroeconomic variables to explain stock market performance, this idea is not consistent with the Efficient Market Hypothesis (EMH). According to EMH, an efficient market will rapidly incorporate the value of information associated with the market efficiency level, although the speed to absorb information might vary from one country to another country (Cooray, 2003; Malkiel 2003; Celis 2015). Usually, the velocity of reflecting new information will range from few seconds to few days. The leading status of macroeconomic variables might oppugn the speed of information incorporation for the stock market. The definition of "rapid" in the Efficient Market Hypothesis is questioned by the real world incidences. Thus, the Granger causality test(Granger, 1969), which is a statistical hypothesis test used to make sure whether one time series can forecast another time series under the specification of error correction model is employed to observe the direction and significance of each variable to another variable.

## **Research objectives**

The purpose of generalizing preceding researches and revisiting the existing findings pertinent to BRIC is the core objective of this paper. Since previous researchers have identified the significant variables to explain the variation in stock performance, this paper intends to sort out the causality of the nexus of stock performance, economic growth, risk free rates, real interest rates and exchange rates.

Several secondary objectives of this paper are listed below:

1. To examine the causal relationship between stock performance and economic fundamentals.
2. To explore the homogeneity of explanatory variables in explain the variation in stock performance.

## **Significance of this research**

The formation of BRIC provides this paper an opportunity to analyses the causal impact and economic momentum of macroeconomic fundamentals to stock performance under the research content of a rapidly developing region. The core significance of this study is to identify the relationship among stock market performance and macroeconomic variables in BRIC. Although the BRIC members do share a similar economic condition, different economies might have dissimilar kinds of causality among the variables.

This paper employs the background of BRIC to examine the causality and model specification of the relationship among stock performance, currency exchange rates (Pebbles and Wilson, 1996), economic growth (Ferson and Harvey, 1998), risk free rates (Bilson *et al.*, 2001) and commodity prices (Apergis and Miller, 2009). Since the explanatory power of each variable is subject to the issue of endemcity, the findings from this paper might provide readers a guidance to the factor selection in consistent with the characteristics of the rapidly emerging economies. These variables are not only empirically significant in explaining the variation in stock performance, but also fitted in the theoretical framework. Both the theoretical and empirical relationship of these macroeconomic variables with stock performance will be discussed in the section of literature review. After going through this study, readers could get some insights regarding the impacts of each macroeconomic variable on stock market returns and obtain a set of significant leading indicators on forecasting the future direction of stock market tendency.

This paper applies a comprehensive approach, which combines both the Johansen cointegration test and a Granger causality approach, to examine the nexus as well as the dynamics of each explanatory variable to the variation in stock market performance. Johansen cointegration test (1991) was used to examing cointegration of several time series at 1st difference, and also allows many cointegrating relationships. Throughout this study, readers may understand both the long run and short run impacts of the explanatory variables to the variation in stock performance.

## **LITERATURE REVIEW**

### **Efficient market hypothesis**

According to Fama (1965; 1970; 1995; 1998), stock price movements are independent from their previous positioning, or random walking regardless of human psychological reactions, more precisely. This kind of random behavior in stock price movements could be mainly explained by the unexpectedness of the presence of new information arriving in the market

(Dimson and Mussavienm, 2000; Malkiel, 2005). When the new information has been rapidly reflected in the stock price, this rapidness prohibits late comers to gain any leftover and also disallows early birds to sustain their profits in a long run (Timmermann and Granger, 2004). In other words, using historical data or technical analysis provides no leading symptom on the stock price prediction (Fama, 1991). Therefore, an efficient market follows the risk and return tradeoff on the matter of adjusting investors' profits within the probability mechanism.

Based on the random walk hypothesis, Fama (1965) coined the conceptual framework of the efficient market hypothesis, which suggests that the only adjusting stimuli of stock price movements are the value of new information. Since the value of new information is homogenous to all investors, investors should reasonably react to the new information and reflects their rational judgments in their holding lots. In simple, following the efficiency of the market and the rationality of investors, stock price movements should be only correlated with the magnitude of new information in a blink period. However, the rapidness of incorporating new information in the stock price does not imply an instant response from investors (Fama and French, 1988). Thus, temporary memory or past innovation is transitorily involved in the adjustments of stock prices.

The efficient market hypothesis receives international evidences on the task of explaining the stock market sentiment, for example, the U.S. (Uri and Jones, 1990), Asia-Pacific countries (Groenewold and Ariff, 1998), African countries (Smith et al., 2002), developed European countries (Borges, 2008) and etc. Previous research commonly adopted the multiple variance ratio test and the run tests to observe the randomness of stock price movements in the account of previous lagged terms. In general, developed stock markets have greater market efficiency than developing stock markets because of better investors' rationality, trade openness, liquidity and soundness of the transaction platform.

Nevertheless, the generalization of the efficient market hypothesis has been oppugned by a number of academicians and practitioners over the past few decades (Jensen, 1978; La Porta *et. al.*, 1997; Malkier, 2005). The over-simplistic assumptions of the efficient market hypothesis cause the hypothesis inapplicable to the real world. The lacks of rational investors (Jacobsen, 1999), homogenous expectations (Hunter and Coggin, 1988) and accessibility to information (Green, 2004) in the stock market impairs the practical soundness of the efficient market hypothesis. According to Evans (1968), the active stylish investment strategy is more superior to the passive holding strategy because the market rewards investors with skillful investment techniques. The inherent differences among the investors diverge the action of one investor from the other investors towards the same information, *ceteris paribus*.

In comparison to the supports of the efficient market hypothesis, a greater number of researchers contradicted the actual practicability of the hypothesis in the market (Umstead, 1976; Keim and Stambaugh, 1986; Hawavini and Keim, 1994; Collin and Hribar, 1999; Malkier, 2003; Miambo and Biekpe, 2007; Daniel and Titman, 2012). The most renowned example of the fundamental analyst is Warren Buffet, who has consistently beaten the market via his subtle insight, with or without his market impact. Although some might argue that the presence of outstanding investors is of a pure outlier, this fact is undeniable in the reality.

### **Stock performance and economic output**

Empirical studies suggest that there is a plausible relationship between macroeconomic variables and stock performance, given that the movements of stock price are the present

value discounted from the aggregate sum of future economic benefits. If the inflows of future economic benefits are a function of real economic activity, a causal relationship between economy and stock price should exist (Duca, 2007). If investors hold homogenous expectations towards corporate future economic benefits are accurate, the standard discounted-cash-flow model should be reasonable enough to bridge the linkage between stock performance and economic activities. Currently, there are three theoretical propositions explaining the direct impact of stock performance to economic output.

The first proposition was raised by Tobin (1969). He suggested that high share prices might lead to a correspondingly high replacement cost of the stock of corporate capital. This situation elevates investment expenditures and aggregate economic outputs as firms find it easier to finance their investment expenditures. These lead and lag linkages can be embodied from a coefficient known as Tobin's Q, which is a ratio of the market value of current capital to the cost of replacement capital. This occurs because investment would be easier as it would require a lower share offering in a situation of a high share price.

The second proposition which variation in stock market performance may correlate with GDP was initiated by Modigliani (1971). His proposition holds that wealth is a function of consumption, as an increase in stock prices could elevate the investors' wealth reserves, resulting in higher income in an economy. In Modigliani's (1971) permanent income hypothesis, consumers optimize consumption for the sake of maximizing their utility function. Thus, the positive impacts of permanent income will always adjust the consumption level periodically, in accordance to the changes in permanent income levels/

The last proposition which links stock prices to macroeconomic outputs is lying within the mechanism of financial accelerator (Bernanke and Gertler, 1989; Kiyotaki and Moore, 1997). This empirical view suggests that stock prices are a preliminary view of a firm's financial position and physical fundamental. As the issue of asymmetric information presents in credit markets, lenders usually evaluate a firm's credibility and solvency from the amount of collateral that could be pledged by the firm. Since the value of collateral is always relating to a firm's stock prices, movements in stock prices could adjust the firm's abilities to borrow, which subsequently decide the number of investment opportunities can be executed, and thereby the development degree of an economy can vary.

To substantiate the impact of stock performance to growth, Levine and Zervos (1998) investigated the correlation between stock market development and economic growth in 47 OECD countries, and documented that there is a positive correlation between stock market and economic outputs. However, their approach is subject to the limitation of cross-sectional methods and does not significantly generalize the causal relationship between stock market and economic growth worldwide. According to Salahuddin (2010), the conventional literature was exposing to the problem of over-focus on the stagnant level of manpower or productivity, but not on the improvement in growth, in explaining the growth progress in an economy. Thus, the conventional literature can only act as a reference, but not a conceptual framework, in formulating the relationship between stock markets and economic growth. Thus, a shift in the concerns on the growth function provides some valuable insights regarding the relationship between stock market and economic growth, specifically, the endogenous growth theory postulates that growth is endogenously sustaining and influenced by local conditions. In the context of the endogenous growth theory, the stock market is not an ignorable scheme under the term "*ceteris paribus*", but a vibrant function indirectly reflect the growth in an economy.

However, this framework is not a perfect solution explaining the function of growth. The controversy mainly derived from the view that stock market development improves growth in the long run. Greenwood and Smith (1996) indicated that stock markets promote the mobilization of saving circulating among the companies, which provides funds to the most productive companies and diversify investors' risks. Obstfeld (1994) claimed that international stock market integration facilitates the allocation of scarce resources to the most vibrant countries without compromising the optimal efficiency of international capitals. Bencivenga *et al.* (1996) and Levine and Renelt (1992) suggested that stock market liquidity plays a critical roles in improving economic growth. On one hand, adequate liquidity minimizes transaction costs and spreads for trading stock. These benefits can result in reducing the holding and transactions expenses (and exposures) of investors since their portfolios can be adjusted at a low costs and are subject to lower barrier to exit. On the other hand, investments in productive companies would make investors resisted to realize their profits, and thereby consistent commitments of investors promote the stability of economic outputs (Holmstrom and Tirole, 1993).

Moreover, Atje and Jovanovich (1993) documented that there is strong positive correlation between the degree of financial market development and economic growth in 40 countries over the period from 1970 to 1988. Levine and Zervos (1998) highlighted that economic growth is positively influenced by stock market liquidity and the size of the economy. This causal relationship is also generalized in Asian countries (Fase and Abma, 2003), Belgium (Nieuwerburgh *et al.*, 2005) and the European Union (Wu *et al.*, 2009). Empirical evidences suggested that banking development can be a substitute of stock market development in explaining economic growth since banks have a similar function as a stock market in circulating the saving surplus units (e.g. individuals) to the fund deficit units (e.g. corporate). This implies that economic growth can be facilitated by a sophisticated banking mechanism. Cole *et al.* (2008) found that bank stock returns are positively linking to the degree of economic growth.

Several conceptual ideas about the expansion of stock markets can be abstracted from the literature. Demirguc-Kunt and Maksimovic (1996) stressed that stock markets do not expand in an isolated way, neither, does the development of stock markets directly squeeze out the position of banking and financial intermediaries in the aggregate mechanism of corporate funding. Instead, economic development drives the expansion of stock markets, clearly because of capital accumulation leads to an elevation of liabilities financing to corporate. If economic growth is a function of stock market development, the liabilities financing in an economy will be increasing at low degrees of inboard capital accumulation, and eventually decreasing once the stock market has an adequate capacity to absorb corporate demands in external funds (Atje and Jovanovich, 1993; Beck and Levine, 2001). Therefore, an improvement in economic development will simultaneously facilitate the expansion of stock markets, as well as an increase in the usage of equity financing in the country.

Schwert (1989) investigated the causal relationship between stock market development and economic growth by documenting the correlation stock performance and economic outputs. He suggested that stock performance seriously depends on the stability of an economy and fluctuation in economic conditions could significantly impair overall stock returns. Humpe and Macmillan (2005) lend supports to the impacts of macroeconomic variables on stock market performance in developed economies. They documented that an increase in industrial outputs will result in a positive maneuver in stock prices. In Campbell's (1998) work, he found stock performance has relatively weaker predictive power to economic

growth, while economic outputs are significant to explain the variation in stock movements in 5 developed countries. However, Campbell's results were not agreed by Binswanger (2004) and Stock and Watson (2001) as the relationship could vary as time goes on. Contemporary, stock market performance is a predictive determinant to economic growth to developed economies.

A number of literature hold that there is positive relationship between stock market development and economic growth. The empirical conclusion consistently substantiate the view that economic growth could be a function of stock market performance, as the healthiness of economy could stably improve the economic performance, or broadly, the aggregate form of all corporate within the economy (Korajczyk, 1996; Levine and Zervos, 1998; Blackburn *et al.*, 2005; Rahman *et al.*, 2009). Nevertheless, previous empirical studies have not concluded a monotonic development of stock markets in the financial mechanism. Salahuddin (2010) claimed that the expansion in stock markets is a precedent to the development of the financial system, as well as market efficiency. The evaluation of the determinant of stock market is rooted in a complex and multifaceted macroeconomic puzzle. Therefore, instead of solely investigating the pairwise-relationship between stock market performance and economic growth, more macroeconomic variables should be added to crowd out the gross effect of economic growth on stock market performance, and further sort out the individual impact of each macroeconomic variable on stock markets.

### **Macroeconomic variables and stock market performance**

Apart from the economic output, empirical studies suggest that there are five main significant determinants that affect stock price and its volatility: energy prices, exchange rates, inflation and interest rate. The concept of opportunity cost and allocation of scarce resource explains the reason why these macroeconomic variables affect the stock market in an alternative form (Farnham, 2009; Samuelson, 2010). Since investors do not possess infinite resources for investments, they could only participate in the investment that forgoes the lowest opportunity costs. Namely, an increase in cash flows in the stock market will definitely shrink the capital available for other investment markets. An invisible hand of the markets will adjust the prices of associated investment instruments in accordance to the change in demand and supply in those related instruments. For instance, empirical evidences report a negative relationship between stock prices and gold prices during the recession (Tully and Lucey, 2005), or inverse correlation between stock prices and interest rates during the booming period (Uddin, 2009).

The international integration of economies has also assisted in shifting the local investment behavior to the international ballgame (Garefalakis *et al.*, 2011). The globalization in cross-national financial markets has harmonized the interrelationship among different investment instruments and elevated the accessibility of financial markets to a reasonable approach of global investors regardless their local economic conditions. Besides, a loose in financial regulations liberalizes financial markets from the constraint of governments. As a consequence of these reasons, financial investors have embarked on international trading to reduce their personal exposure via the mean of incorporating alternative investment instruments in their portfolios. The beneficial effect of alternative investments on minimizing the portfolio risk was documented in the studies conduct by Holmes (2006), Gilbert (2008) and Sariannidis (2010).



### ***Oil prices***

Recently, the effect of oil prices on stock returns has received considerable attention. This follows largely from the fact that if oil prices affect economic activities, then it follows that oil prices will affect the stock market. If high oil prices lead to a slower pace of economic activities and higher inflation, this affects consumers and producers alike by dampening consumption and investment, and these adversely affects the stock markets (Chen, 2010). Theoretically, oil price shocks affect stock market returns or prices through their effect on expected earnings/cash flows and/or discount rates (Apergis and Miller, 2009; Miller and Ratti, 2009). Oil price shocks affect cash flows through their effect on dampening demand for firm's products and also because they increase the costs of production. High oil prices can also adversely affect discount rate for cash flows through their effects on expected real interest rates and expected inflation (Miller and Ratti, 2009). This is because the stock price is the present value of expected future cash flows, discounted by the discount rate and movements in both expected cash flows and discount rates will affect stock returns (Mohanty et al., 2011).

The nature of the effect of oil shocks on cash flows depends on the firm's status as either a producer or consumer of oil. For firms whose output is oil, an oil price increase will increase cash flows while for those firms that use oil as an input cash flows will fall. Higher oil prices can lead to higher hurdle rates on investment and this can adversely affect the stock price (Mohanty et al., 2011). The implication of the above is that the exact nature of the effect of oil price increases on stock returns will depend on the net effect of movements in expected cash flow and expected discount rates and it is expected that this effect will be positive for net oil producers and negative for net oil consumers. For oil price decreases, it is expected that the direction of these effects will be converse.

There is no consensus in the empirical literature on the nature of the relationship between stock returns and oil prices. Early studies included Jones and Kaul (1996), Sadorsky (1999), and Papapetrou (2001). In more recent times, there has been an increased volume of research into this issue and studies include Hammoudeh and Choi (2006), Cong et al. (2008), Miller and Ratti (2009), Apergis and Miller (2009), Chiou and Lee (2009), Chen (2010), Narayan and Narayan (2010), Elyasiani et al. (2011), Arouri (2011), Lee and Chiou (2011), Masih et al. (2011), Mohanty et al. (2011), Zhang and Chen (2011) and Jammazi (2012).

### ***Exchange rates***

The first proposition regarding the relationship between exchange rates and stock performance was developed by Dornbusch and Fisher (1980) in 1980. According to Dornbusch and Fisher (1980), business sustainability and financial position of companies in an open economy will be directly affected by the turbulence in exchange rates. In detailed, an appreciation in exchange rate impairs the exporting competency of a country due to the fact that importing products from that particular country is more expensive. In opposite, a country facing depreciation in exchange rate will be more price-competitive in the international market since their products are cheaper. As a result, the appreciation might not be usually good for companies in an exporting country since stock performance could be negatively influenced by the change in exchange rates, vice versa (Kim, 2003).

However, the international trading effect proposed by Dornbusch and Fisher (1980) is theoretically unfitted in the portfolio balance model. Instead of causality running from exchange rates to stock performance, the proponents of the portfolio balance model suggested that stock prices are the key stimuli influencing the exchange rate (Frenkel, 1976; Branson, 1983; Macdonald and Taylor, 1992). When domestic share prices are rising,

international investors will liquidize their foreign holdings to have a position in the domestic stock. To complete the transaction, international investors are required to buy domestic currency in exchange of their local currencies. Hence, domestic currency rate will be elevated against other currencies as a consequence of increases in domestic stock prices. In short, difference in direction of causality and the sign of magnitude disharmonize the theoretical fundamental pertinent to the relationship between exchange rates and stock performance.

Empirical researchers regarding the relationship between exchange rates and stock performance explicitly present a divergence in results. The possible earliest effort to investigate the relationship was conducted by Franck and Young (1972) who concluded that there is no observable association between exchange rates and stock performance. The second clue was provided by Aggarwal (1981) who found a positive correlation between the variables from the observations of U.S. dollar and movements in the U.S. stock indices. He highlighted that the international trading effect could be one of the plausible explanations to substantiate the presence of the relationship, while this result was supported by a later study conducted by Gionanini and Jorion (1987).

Following the model specification of GARCH, Najang and Seifert (1992) documented that fluctuation in exchange rates is derivative of movements in stock prices for Western countries. This result supported the portfolio balance model and disagreed with the international trading effect. Nevertheless, Ajayi and Mougoue (1996) concluded that depreciation in currency power has negative impacts on stock market in both the long and short run in the economy of G7. Mohamad and Mahmood (2001) also found that intraday returns of exchanges rates significantly cause the volatility of stock returns, and this magnitude does not present in the other way round in Malaysia over the period of 1997 to 1999. Thus, there is incongruence between the applicability of the international trading effect and the portfolio balance model in different examination contexts.

Albeit a number of researchers proved the empirical significance of two dominant conceptual frameworks, some researchers found a null relationship between exchange rates and stock performance. Bahmani-Oskooe and Sohrabian (1992) using cointegration analysis and found that there is no long run relationship between the variables, although the variables are bidirectional causally linked. Further, Solnik (1987), Chow et al. (1997) and Bhattacharya and Mukherjee (2003) found no both long run equilibrium and short run dynamics between exchange rates and stock prices in three different pairwise countries. Generally, there is no single theory or model to explain the relationship between the variables since incongruence in economic characteristics diverge one economy from another economy.

### ***Inflation***

Stock investment had conventionally been viewed as a good hedging instrument against price increment, or inflation, as shareholders has the right to claim return from physical asset whose real economic benefits are theoretically undisturbed by inflation (Lee, 2010). According to Fisher (1930), possible inflation in future will be fully incorporated in the contemporary changes in interest rates. Inflation should be uncorrelated with stock prices due to the presence of interest rates. In contrast to this general view, a great number of academicians concluded that there is a negative relationship between inflation and stock returns in the U.S. and other countries in the 1980s (Bodie, 1976; Jaffe and Mandelker, 1976; Nelson and Schwert, 1977; Fama and Schwert, 1977; Gultekin, 1983).

Critics of the null inflation-stock relationship proposed the Fed model to explain the cause and effect between inflation and stock prices (Quayes and Jamal, 2008). The Fed model postulates that bonds and stocks are the main components of an individual's portfolio and these financial instruments are substitutable with each other in accordance to the changes in inflation. Generally, central banks would positively adjust the interest rate in commensurate with inflation to control the inflationary or deflationary pressure on the economy. Namely, inflationary prices would result in an increase in interest rates, vice versa. Hence, inflationary condition will increase the interest rate and the attractiveness of bond investment, while decrease the issuance of bond funding due to higher interest. Further, companies would try to use equities to replace the bond component in their capital structure. A series of increase in equities supply, decrease in bond supply and increase in bond attractiveness inflates bond prices at the expenses of stock prices. Therefore, inflation would cause stock prices moving downwards, or simple, inflation is negatively related to stock prices.

In recent, Gallgher and Taylor (2002) presented that inflation is negatively correlated with stock performance for the reason of supply shock, although demand shocks have little or insignificant impacts on this relationship. Rapach (2002) found no proof that inflation impairs the long-run real value of stock by investigating 16 developed countries. Although most empirical researches for developed economies indicated a negative relationship between inflation and stock performance, this relationship could not be true for emerging economies. Spyrou (2004) discovered that countries from Latin America and Asia show a positive relationship between the variable. Al-Khazali and Pyun (2004) showed that the relationship between inflation and stock returns is only limited to a short run, while these variables have a positive relationship in a long run.

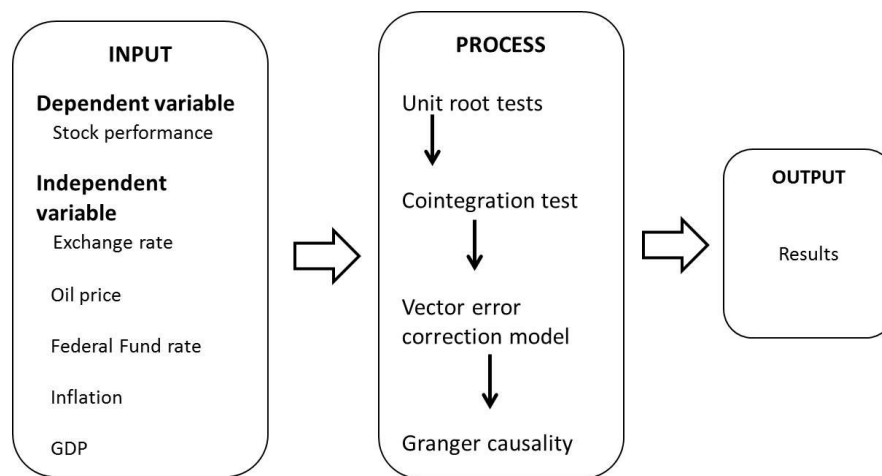
### ***Interest rates***

According to Flannery and James (1984), the changes in interest rates are correlated with the intraday returns of the U.S. stock market indices. The effect of interest rates on stock performance is explained by the Fed model, which was discussed in the earlier part. Apart from the Fed model, Gordon and Shapiro (1956) and Gordon (1959) highlighted that interest rates, especially risk free rates, are parts of the discounting factors on valuing a stock. An increase in risk free rates will decrease the present value of future economic benefits. Although the explanations relating to the relationship between interest rates and stock returns are dissimilar in different theoretical frameworks, they generally believed a negative relationship between interest rates and stock returns. However, the capital asset pricing model does not agree with the negative relationship between the variables since an increase in risk free rates might simultaneously increase the hurdle rate of shareholder's requirement (Bodie et al., 2008; Chong et al., 2013). Thus, the attractiveness of bond investment due to increase in interest rates will be diluted by a later increase in stock returns in the long run.

Pertinent to the empirical relationship between interest rate and stock returns, Yohannes (1994) found a unidirectional causality from stock performance to interest rate by examining the Nigerian stock market. A long run relationship between government t-bill rates and stock performance was filed by Mukherjee and Naka (1995) under the specification of a vector error correction model. Soydemir (2000) found a negative impact of the U.S. t-bill rates on the U.S. stock market, and this relationship is also presenting in Latin America at a weaker significant degree. This negative relationship was proved to be true in the study by Al-Sharkas (2004). In short, the relationship between interest rates and stock performance is consistent in different studies, although the significance levels are various.

### Theoretical Framework:

Summarizing previous theoretical models and empirical findings provides this paper a constructive framework to examine the direction of causality and the presence of long-term relationship between stock market performance and those macroeconomic variables. A mere association between stock market performance and another variable (Duca, 2007) or a relationship established on the assumptions of a linear regression is insufficient to grant external users meaningful evidences to support their practical uses in applying those findings. Thus, this paper takes one step further over those previous studies to combine a number of supposedly significant macroeconomic variables to filter out the gross effect of each variable on the variation in stock market performance, and explore the influences of past innovations on the current variation in stock market performance by embedding economic growth, oil prices, exchange rates, inflation and interest rates.



## RESEARCH METHODOLOGY

### Data collection

The EViews 7.2 is the software use to test the relationships in this paper. Eviews 7.2 can handle time-series-based multiple types of data, which include regression analysis, time series analysis and other basic traditional data analysis and the establishment of conditional heteroskedasticity, vector autoregression complex econometric models and so on.

To investigate the relationship, the paper handles the following tests. The Unit Root Test can estimate whether the time series is stationary. If the result is stationary, then the Cointegration Test (Johansen Test) will be processed whether there is a long-run relationship. If the result is cointegrated, a Granger causality test and a vector error correction model (VECM) will be handled to investigate short-run dynamics and long-run equilibrium between stock market performance, economic growth, living costs, exchange rates, risk-free rates and international oil prices in the research context of BRIC. Granger causality test(Granger, 1969), which is a statistical hypothesis test, and it was used to make sure that whether one time series can forecast another time series. VECM is a multi-factor model was used to test the deviation of the current state from its long-run relationship will be fed into its short-run dynamics. All secondary data pertinent to the causality between stock market performance and macroeconomic variables are collected from World Development Indicator and DataStream. Gross domestic products and inflation are used to measure BRIC's economic development (Bodie *et al.*, 2008). Exchange rates, risk free rates and international oil prices are employed as the proxies of international spill over effects on

BRIC's economies (Farnham, 2009). This paper adopts a quarterly basis on the data collection. The research time span of this paper is the period from 1996:Q4 to 2013:Q1. The main objective of this paper is to examine the causal relationship between stock performance and economic fundamentals, and can explore the homogeneity of explanatory variables in explain the variation in stock performance.

These variables are chosen as the explanatory variable of stock prices because of their theoretical and empirical association with stock prices movements. As mentioned in the section of literature review, economic growth provides an endogenous improvement for the stock investment platform and the stock market's supporting background. Elevation in economic growth implies an increase in companies' outputs, while better economic condition recursively benefit companies in the long run. Oil prices are the core cost component of almost all companies since transportation is the key trigger to inflation in an economy. The Fed model, international trading effect and Gordon growth model explain the impact of interest rate, exchange rate and inflation on stock returns. Generally, previous studies present mixed results regarding the relationship between the variables. However, if the Efficient Market Hypothesis works, none of the lagged explanatory variable will be significant on quarterly stock returns. This paper attempts to figure out the key theory or conceptual framework of explaining the main stimuli of stock performance in BRIC.

## **Model specification**

### ***Unit root tests***

According to Engle and Granger (1987), the presence of a unit root might impair the validity of research outputs. To deal with this issue, this paper simultaneously applies three unit root tests on the task of examining the stationarity properties within the time series of all variables. Applying a stationarity test prevents this research from the issue of inferring wrong data analyses pertinent to the causal relationship between stock market performance and macroeconomic variables (Granger and Newbold, 1974; Engle and Granger, 1987). This paper uses the Augmented Dickey-Fuller (Dickey and Fuller, 1981), Phillips-Perron (Phillips and Perron, 1988) and KPSS tests (Kwiatkowski *et al.*, 1992) investigating the stationarity properties of all the variables. A Schwarz information criterion (maximum lags = 5) is adopted as the principle of selecting the number of lagged term of the Augmented Dickey Fuller test. A Newey and West data-based automatic bandwidth parameter method is used to choose the bandwidth of the Phillips Perron and KPSS tests. Null hypothesis of the Augmented Dickey Fuller and Phillips-Perron tests are that there is a unit root within the examined time series. Rejection of the null hypothesis is necessary to investigate the slope coefficient of one variable to another variable. As the null hypothesis of the KPSS test is opposite to another two unit root tests, it provides a good complementary effect on the evaluation of unit root within a time series.

This paper examines the time series under the measurements of both levels and first differences because economic variables are usually not stationary at levels but stationary at first differences (Perron, 1989). The integration order of the variables can be expressed from the comparison between the level approached and first differenced approach among the variables. A precise integration order is essential for the cointegration test since the Johansen cointegration test is only suitable for the content of first differenced series.

### ***Cointegration test***

Keeping in view the theoretical postulates of the relationship between stock performance and macroeconomic variables, the model has been specified as follows:

$$\ln SP = f(\ln EG, \ln OP, \ln CP, \ln TB, \ln ER) \quad (1)$$

where  $\ln$  stands for natural logarithm; SP stands for stock performance or quarterly returns of BRIC's stock indices, EG, OP, CP, TB and ER are the set of macroeconomic variables which theoretically or empirically influences the variation in stock performance. EG, OP, CP, TB and ER are economic growth (GDP), oil price, inflation rate, the Federal Reserve fund rate and the local currency exchange rate against the USD, respectively.

If the variables are proved to be cointegrated at first differences, or integrated of the order of 1, this paper may proceed to the adoption of the Johansen (1991) cointegration test for examining the long run equilibrium among stock market performance, GDP, inflation, exchange rates, risk-free rates and international oil prices. According to the Granger representation theorem, the vector  $X_t$  has a vector autoregressive error correction representation in the following specification (Alam and Huylbroeck, 2011):

$$\Delta X_t = \Pi X_{t-1} + \sum_{i=1}^{k-1} \Gamma_i \Delta X_t - i + \Phi D_t + \omega_t \quad (2)$$

where,

$\Pi = \sum_{i=1}^p A_i - 1$  and  $\Gamma_i = -\sum_{j=i+1}^p A_j X_t$  is a  $(X^*1)$  dimension vector corresponding to the number of the variables (SP, EG, OP, CP, TB and ER), in which those variables are integrated of the first differenced order. This model will estimate the parameter matrices, which are  $\Pi$ ,  $\Gamma_i$  and  $\Phi$ .  $D_t$  is a vector with deterministic elements (intercept and trend) and  $\omega_t$  is a error term that follows the assumptions of white noise and homoscedasticity. In order to sophisticatedly examine the cointegrating relationship among the variables in terms of the linear and quadratic trends, this paper applies the Johansen maximum likelihood method (Johansen, 1988; Johansen and Juselius, 1990). To select the optimal model for testing the significance of the cointegrating vector among the variables, this paper follows the model selection rules from Osterwald-Lenum (1992). The step is essential to observe whether restriction in intercept and the presence of a time trend is significant in testing the cointegrating relationship.

The Johansen cointegration test is used to measure the  $\Pi$  matrix from an unrestricted vector autoregressive model and to test whether a reduction in rank  $\Pi$  would cause a rejection on the cointegration properties among the variables. The reduced rank ( $\Pi$ ) is primarily investigated by the trace test and maximum eigenvalue. When the number of exclusive cointegrating vector ( $r$ ) is less than or equal to the cointegration vector from a general alternative, the trace statistics' null hypothesis is said to be not rejected. The maximal eigenvalue examines the significance that compares the number of cointegrating vector against the alternative with additional one unit in the cointegrating vector. When both the trace statistic and maximum eigenvalue statistic are larger than the MacKinnon-Haug-Michelis (1999) critical values, the null hypothesis of cointegrating  $r$  vectors against the vector of alternative is rejected.

### ***Error correction model and Granger causality***

If there is a long-run relationship among the variables, this paper will apply the Granger causality approach under a vector error correction modeling framework for documenting the short-run dynamics among the variables. The presence of cointegration among the variables suggests that there is at least unidirectional (could be bidirectional as well) long-run Granger causality from endogenous variables to dependent variables (Mosconi and

Giannini 1992; Dolado and Lutkepohl, 1996). The error correction model for investigating the relationship among variables is:

$$\Delta SP_t = \mu + \sum_{i=1}^{k1} \beta_i \Delta SP_{t-1} + \sum_{j=1}^{k2} \beta_j \Delta EG_{t-1} + \sum_{l=1}^{k3} \beta_l \Delta OP_{t-1} + \sum_{m=1}^{k4} \beta_m \Delta CP_{t-1} + \sum_{n=1}^{k5} \beta_n \Delta TB_{t-1} + \sum_{o=1}^{k6} \beta_o \Delta ER_{t-1} + \alpha ECT_{t-1} + \varepsilon \quad (3)$$

where ECT is an error correction terms which examines the long-run equilibrium among the variables. If ECT is significant in the model, the set of explanatory variables will have explanatory power on dissecting the variation in stock market performance in the long run for BRIC.

This paper also applies the pairwise Granger causality test to investigate the direction of causality among the variables. The pairwise bivariate model of estimating causality between the variables are:

$$\begin{aligned} SP_t &= \mu_1 + \sum_{i=1}^l \alpha_{1i} EG_{t-1} + \sum_{i=1}^l \beta_{1i} SP_{t-1} + e_{1t} \\ EG_t &= \mu_2 + \sum_{i=1}^l \alpha_{2i} SP_{t-1} + \sum_{i=1}^l \beta_{2i} EG_{t-1} + e_{2t} \end{aligned}$$

where EG can be substituted by the other explanatory variables for investigating the presence of Granger causality from the explanatory variables to stock market performance.  $\mu$  is a deterministic component (intercept) and  $e$  is white noise to the model. All variables are presented in the form of first differences in the pairwise Granger causality test. The lag length is selected by the Akaike Information Criterion since the number of observations is less than 60 (Liew, 2004). Null hypothesis of the Granger causality test is that there is no Granger causality between a pair of variables. Rejection of the null hypothesis suggests that the lagged terms of an independent variable are able to explain the variation in dependent variable at the presence of all influential past information from the dependent variable. The Granger causality equations are applicable for all the variables for examining pairwise Granger causality between stock market performance and the sole explanatory variable.

## FINDINGS

Table 1 tabulates the results of the Augmented Dickey-Fuller, Phillips-Perron and KPSS unit root tests. All unit root test equations are tested under the specification of an intercept but no time trend.

The inclusion of a time trend estimate generates no significantly different results. The test statistics indicate that most first differenced data series are significant at the 1% level under the Augmented Dickey-Fuller and Phillips-Perron tests. In contrast, most data series in levels are not significant even at the loosest condition, which is the 10% significance level. The KPSS test results are generally consistent with the test statistics of the Augmented Dickey-Fuller and Phillips-Perron tests. According to Perron (1989), most of the macroeconomic variables are stationary at first difference despite the stationarity properties are absent at levels for the same set of macroeconomic variables.

Albeit there are few variables significant at levels, this condition does not prevent this paper from adopting any first-difference-based cointegration test to observe the cointegration properties among the variables. This is because the unit root tests show that all variables for BRIC are generally integrated of the first order. Thus, the cointegration properties among the variables are investigated under the Johansen cointegration test, which is a first differenced based cointegration test.

**Table 1: Unit root tests**

Variables	ADF		PP		KPSS	
	Level	First difference	Level	First difference	Level	First difference
<b>Brazil</b>						
Stock	-1.5533[0]	-7.5083[0]***	-1.5577[1]	-7.4937[3]***	1.0027[6]***	0.1112[2]
Exchange	-2.1606[0]	-6.6159[0]***	-2.1601[5]	-6.5211[8]***	0.2763[6]	0.3368[5]
GDP	0.6892[0]	-6.2778[0]***	0.5327[2]	-6.2433[3]***	1.0402[6]***	0.1947[2]
Inflation	-0.3109[2]	-5.1909[1]***	-0.4484[3]	-4.4584[7]***	1.0544[6]***	0.1483[3]
<b>Russia</b>						
Stock	-1.6661[1]	-6.5717[1]***	-1.4797[1]	-5.5769[4]***	0.8944[6]***	0.0733[0]
Exchange	65.58[5]***	-4.4494[3]***	-3.7296[8]***	-8.1063[6]***	0.3804[5]*	0.2367[6]
GDP	0.4484[0]	-8.3596[0]***	0.3905[4]	-8.3986[4]***	1.0570[6]***	0.1632[4]
Inflation	1.4614[5]	-3.7626[5]***	1.8949[8]	6.3578[10]***	0.9588[6]***	0.3454[3]
<b>India</b>						
Stock	-0.6214[0]	-7.7413[0]***	-0.6214[0]	-7.7443[2]***	0.9752[6]***	0.0762[1]
Exchange	-2.3175[4]	-5.2441[3]***	-2.0336[3]	-7.5753[3]***	0.5372[6]**	0.0864[3]
GDP	2.9591[4]**	-2.6459[5]*	4.1841[60]***	6.8714[42]***	1.0033[6]***	0.3660[12]*
Inflation	1.7058[0]	-2.4741[3]*	1.6757[5]	-6.7460[5]***	1.0375[6]***	0.4338[1]*
<b>China</b>						
Stock	-2.4427[1]	-6.0020[0]***	-2.4653[3]	-6.0020[0]***	0.6367[6]***	0.0833[2]
Exchange	0.3596[1]	-3.4321[0]***	1.0283[8]	-3.4495[2]***	0.8936[6]***	0.4435[5]*
GDP	0.5564[5]	-2.5776[4]***	-0.7996[13]	28.627[12]***	1.0518[6]***	0.2532[11]
Inflation	-0.3109[2]	-5.1909[1]***	-0.4484[3]	-4.4584[7]***	1.0544[6]***	0.1483[3]
<b>Global</b>						
Oil	-0.9855[0]	-7.8991[0]***	-0.8044[5]	-8.1383[6]***	0.9788[6]***	0.0858[6]
Interest	-0.6323[0]	-7.9546[0]***	-0.6526[3]	-7.9541[3]***	0.7469[6]***	0.1106[3]

The test statistics shown in Table 2 suggest that the hypothesis of no cointegration among the variables is rejected at the 1% significance level. This indicates that there is at least one cointegration vector among the variables for BRIC. According to Engle and Granger (1987), the presence of one or more significant linear combinations between the variables indicates that those non-stationary variables are cointegrated. Since the examined variables are cointegration, these variables are subject to a long-run relationship which drifts the frictions of the variables back to an equilibrium level. The result from the Johansen cointegration test confirms that there is long run equilibrium among the variables for BRIC under both the trace statistics and maximum eigenvalue approaches. Therefore, a cointegrating relationship will be served as the basis for the error correction model pertinent to investigating the relationship among the variables.



**Table 2: Results of Johansen's cointegration test**

Trace statistics							
	r=0	r≤1	r≤2	r≤3	r≤4	r≤5	Lag
Brazil	132.03***	73.172**	41.563	22.219	5.97	0.725	2
Russia	142.63***	86.028***	56.806***	30.118	12.644	1.407	2
India	117.92***	73.064**	44.113	19.993	3.329	0,0544	2
China	189.46***	77.164**	47.195	24.938	11.949	0.419	2
Maximum Eigenvalue statistics							
	r=0	r≤1	r≤2	r≤3	r≤4	r≤5	Lag
Brazil	58.855***	31.609	19.354	16.239	5.245	0.725	2
Russia	56.598***	29.222	26.688	17.473	11.237	1.407	2
India	44.857**	28.951	24.12	16.663	3.274	0.054	2
China	112.30***	29.969	22.257	12.257	11.53	0.419	2

Notes: \*\* and \*\*\* indicate 5% and 1% levels of significance, respectively. r is cointegration rank

Table 3 summarizes the contemporaneous effects among the variables under the examination specification of an error vector correction model. The proxy of global oil price is significant to impact the variation in stock performance for Brazil, India and China over the research time span of 1996:Q1 to 2013:Q1. Since Russia is one of the largest net energy exporters, it does have strong oil reserve to fulfil its local demands. The volatility properties of oil prices majorly influence the mechanism stability of energy importing countries, such as India (Srnivasan, 2012). The findings imply that the energy security does impact the variation in stock performance of developing country (Filis, 2010), although the oil exported could be free from this constraint.

Apart from that, economic growth mainly influences the countries that have no past experiences of practicing the communism authority, such as Brazil and India. When the policy of open economy or lasses-faire is not realized by a country, stock market performance of a country is generally believed to be self-reinforced (Stern, 2007). This condition can be substantiated by the feedback effect or autoregressive function of lagged stock performance to the current variation in stock market performance in Russia. Although this phenomenon is not explicitly significant, it does provide the Granger causality analysis a conceptual framework on investigating pairwise causality among the variables.

**Table 3: Results of vector error correction model**

	Coefficients			
	Brazil	Russia	India	China
Constant	0.1097	-0.0262	0.0333	0.0465
$\Delta SP(-1)$	0.1831	0.3697***	0.0218	0.1238
$\Delta SP(-2)$	-0.0776	-0.3031***	-0.0484	0.1433
$\Delta OP(-1)$	-0.0965	-0.0222	-0.2550*	-0.2001
$\Delta OP(-2)$	0.3381*	0.0506	-0.3468**	-0.2379*
$\Delta TB(-1)$	0.0064	-0.0172	0.0588	0.0204
$\Delta TB(-2)$	-0.0452	0.0106	-0.0241	0.0119
$\Delta EG(-1)$	-4.2858*	1.8214	0.6011**	0.0309
$\Delta EG(-2)$	-0.3778	1.7038	0.1962	0.1157
$\Delta ER(-1)$	-0.3144	-0.0016	-0.4845	1.3159
$\Delta ER(-2)$	0.1183	0.0126	-0.5418	2.3338
$\Delta CP(-1)$	-4.0546	0.3108	-1.0666	-1.1548
$\Delta CP(-1)$	0.2014	-2.3738	-0.2883	-0.2184
ECT(-1)	-0.1203	-0.3112	-0.0817	-0.0116

1. Stock performance is the dependent variable of the proposed vector error correction model.

2. \*, \*\* and \*\*\* indicate 10%, 5% and 1% levels of significance, respectively.

3. SP = Stock performance, OP = Oil prices, TB = Treasury bill rates, EG = Economic growth, ER = Currency exchange rates and CP = Inflation.

Note that none of the error correction terms are significant in the current model specification. This issue was mentioned in the study of Pesaran et al. (2001) who suggested that the Johansen cointegration test is only applicable to variables purely cointegrating of the first differenced order. Thus, the following analysis of Granger causality does not apply the block causality approach under the error correction model for investigating pairwise Granger causality among the variables. Instead, a standard bivariate Granger causality approach is adopted.

Table 4 documents Granger pairwise causalities among the variables for the BRIC members. According to Caporale and Pittis (1997), any omission of plausible explanatory variable could impair the validity of a causality structure. As a robustness check, this paper performs the Granger causality test with a set of empirically proved explanatory variables to sophisticatedly investigate the causal relationship between stock market performance and the variables. In detailed, stock market performance (S) is explained by the exchange rates (E), economic growth (G), inflation (C), risk free rates (I) and oil prices (O). This paper applies two lags as the optimal lag length on investigating Granger causality between the pairwise variables.

**Table 4: Granger causality test**

Brazil		China	
Null Hypothesis:	F-Statistic	Null Hypothesis:	F-Statistic
SP does not Granger cause CP	3.40935**	SP does not Granger cause CP	0.05857
CP does not Granger cause SP	5.3916***	CP does not Granger cause SP	2.46227
SP does not Granger cause ER	4.18529**	SP does not Granger cause ER	5.53659***
ER does not Granger cause SP	0.59471	ER does not Granger cause SP	0.73878
SP does not Granger cause EG	15.1427***	SP does not Granger cause EG	2.2652
EG does not Granger cause SP	2.11459	EG does not Granger cause SP	2.50563
SP does not Granger cause IR	7.2599***	SP does not Granger cause IR	5.84244***
IR does not Granger cause SP	0.78346	IR does not Granger cause SP	1.51612
SP does not Granger cause OP	21.4683***	SP does not Granger cause OP	3.74341**
OP does not Granger cause SP	3.67005**	OP does not Granger cause SP	2.53373
India		Russia	
Null Hypothesis:	F-Statistic	Null Hypothesis:	F-Statistic
SP does not Granger cause CP	4.01204**	SP does not Granger cause CP	2.08947
CP does not Granger cause SP	1.26628	CP does not Granger cause SP	0.25323
SP does not Granger cause ER	2.41298	SP does not Granger cause ER	1.42601
ER does not Granger cause SP	0.89194	ER does not Granger cause SP	6.41151***
SP does not Granger cause EG	0.41878	SP does not Granger cause EG	2.09006
EG does not Granger cause SP	1.68444	EG does not Granger cause SP	3.78506**
SP does not Granger cause IR	4.07858**	SP does not Granger cause IR	6.42587***
IR does not Granger cause SP	0.60228	IR does not Granger cause SP	3.01576*
SP does not Granger cause OP	16.37***	SP does not Granger cause OP	8.78589***
OP does not Granger cause SP	0.31711	OP does not Granger cause SP	5.5876***

### Brazil

The Brazilian stock market performance has a bilateral Granger causal relationship with the degree of inflation at the 5% significance level in Brazil. This result is consistent with the findings of Benjamin (2008), who also reported that the Brazilian stock market performance is interlinked with the changes in inflation. This is because raw materials and primary products consist of around 50% of the Brazilian exports. In comparison to processed goods, the prices of primary products are more susceptible to the impact of volatile inflation (Farnham, 2009). Narayan and Narayan (2010) claimed that oil prices could be significant in explaining the variation in stock performance for a developing country which relies on the receipts from the turnovers of raw materials and primary products. Since the Brazilian production structure is very similar to the theoretical background, it is unsurprising to

document pairwise Granger causality between stock performance and inflation, and between stock performance international oil prices.

Moreover, the empirical findings indicate that the Brazilian stock performance does Granger cause economic growth, exchange rates and international risk free rates. Commonly, stock performance is dependent to the variation in macroeconomic variables (Valeriono and Lin, 1999). However, it is interesting to observe that the Brazilian stock market performance turns out to be the lead indicator of the macroeconomic variables. This situation is opposite to the findings of Benjamin (2008) in Brazil. A plausible explanation to the dissimilarity in results between this paper and previous study is that Brazil has experienced a structural change over the past 10 years and this rapid economic growth was not documented in the research of Benjamin (2008). The influx of foreign capitals and the great amount of hot money have switched the initial trigger of the domino effect from the macroeconomic variables to the stock market in Brazil. Brazilian high reliance on the foreign capital to finance its economy could be another explanation to elucidate this phenomenon (Samuelson, 2007). In other words, the sentiments of Brazilian social actors towards the Brazilian economy are triggered by the Brazilian investment climate at an above average level.

### **India**

In contrast to Brazil, the Indian stock market performance has less explanatory power to Granger cause economic growth and exchange rates. Unilateral Granger causality from the stock performance to inflation in India implies that the investor sentiment in the Indian market is somewhat synchronized with the Indian spending behaviour (Shanmugam, 2003). Ray and Chatterjee (2001) claimed that this phenomenon could be a result of the foreign involvements on the Indian asset prices. Although the research time span is 10 years later than the preceding research, the empirical findings show that the causal relationship between stock performance and inflation is still consistent in India over time.

Besides, none of the macroeconomic variables is significant to Granger cause the Indian stock market performance. This situation suggests that the Efficient Market Hypothesis possibly exists in the Indian stock market, which was previously reported by Sharma and Mahendru (2009). This is because the variation in Indian stock performance could not be explained by the lagged value of any predefined macroeconomic variable. In general, the empirical findings from the Granger causality test are different from the research outputs of the vector error correction model. This result provides future researchers a proof that a difference in the model used could yield dissimilar results.

### **China**

In consistent with the studies by Gabe *et al.* (2010), the findings of this paper also indicated that the Chinese stock market performance does Granger cause the Chinese economy. Gabe *et al.* (2010) provided the explanation that a liberalizing stock market improves the market liquidity of China and the Chinese asset price bubbles are usually correlated with booms in the Chinese stock market. Thus, liquidity provided from the Chinese stock market mechanism boosts the Chinese economy to grow beyond the sole support of local liquidity supply. However, this finding is opposite to the results of Jesus and Yue (2010), which stated that Chinese stock prices are determined by changes in domestic inflation, economic growth, short-term interest rates and the exchange rate.

None of the explanatory variables significantly Granger causes the stock movement in China. This deviation is possibly caused by differences in data frequency and the use of research

time frame. For example, Jesus and Yue (2010) employed monthly data over the period of 1992 to 2008 whilst this paper adopts a quarterly data over the period of 1996 to 2013 in investigating the relationship between stock market performance and macroeconomic variables in China. Thus, the findings suggest that there is a change in the market phenomenon over the past few years, especially after the post-period of the Subprime Mortgage crisis.

### **Russia**

The findings indicate that the exchange rate, economic growth, the U.S. Treasury Bill rate and international oil price do Granger cause the movements of stock prices in Russia. Previously, Alexie and Alexie (2006) and Stanislav (2006) have documented the effect of these variables on the Russian stock market. Generally, they did report a similar finding as the exchange rate, GDP, the risk free rate and oil prices are lead indicators to stock market performance in Russia. Thus, the Russian stock market behaviour is still stable and consistent over the past decade.

### **Overall**

Overall, BRIC's stock markets significantly Granger cause the U.S. t-bill rates and international oil prices, while this is the only homogeneity among the examined countries. This result implies that BRIC's demands on risk free t-bill and oil supply are large enough to influence the variation in these two international macroeconomic variables. In simple, liquidity squeeze is presented in the international market on the matter of choosing the right decisions over all feasible investment instruments. Besides, economic growth is only significant to stock performance in Russia. Although no lagged term of those explanatory variables is significant in explaining the variation of stock market performance for China and India, this paper is unable to conclude anything relating to the generalisability of the Efficient Market Hypothesis in these markets. The result only indirectly implies that a quarter is adequate enough for BRIC's stock market incorporating the information of those macroeconomic variables.

Generally, the changes in exchange rates, risk free rates and inflation do not Granger cause BRIC's stock market performance. Namely, the international investment atmosphere only has little spillover effect on BRIC. The Fisher effect regarding the null relationship between inflation and stock performance is a more relevant theory than the Fed model and the portfolio balance model on understanding the market behaviour of BRIC. Although there is no general guide of choosing macroeconomic indicators for the forecasting of stock prices, one should follow the economic and financial theories in modelling the endogenous variable of stock price movements.

## **CONCLUSION**

### **Summary**

The primary objective of this study is to revisit the causal relationship among stock market performance and macroeconomic variables under the research context of BRIC. The objectives of this paper are investigated via the means of unit root tests, cointegration test and the Granger causality approach over the period from 1996:Q4 to 2013:Q1. A unit root test was used to examine the stationarity properties within the time series of all variables. The Johansen cointegration test (1991) is used to measure the  $\Pi$  matrix from an unrestricted vector autoregressive model and to test whether a reduction in rank  $\Pi$  would cause a rejection on the cointegration properties among the variables, which was used to test whether there is a long-run relationship. The Granger causality test (Granger, 1969) is a statistical hypothesis test, and it was used to make sure that whether one time series can forecast another time series. The results indicate that there is a cointegrating relationship

among the variables and a long run equilibrium relationship is existent among stock market performance, economic growth, inflation, exchange rates, risk-free rates and oil prices for the BRIC.

Overall, the results from BRIC present dissimilar results against previous studies regarding the relationship among stock market performance and macroeconomic variables. The impacts of socialism and capitalism do not effectively categorise the effects of macroeconomic variables into BRIC's stock market performance. However, it is interesting to see that BRIC's stock market performances do significantly Granger cause the U.S. Treasury Bill rate and international oil prices. Namely, the lagged terms of stock prices do jointly impact the variations in international risk-free rates and oil prices. Commonly, previous researchers reported that risk-free rates and oil prices are the deterministic variables of stock prices (Christiano et al., 2011; Jesus and Yue, 2011; Fabia and Andre, 2009; Nathan and Mark, 2005). A reverse relationship from BRIC's stock market performance to international variables indicates that the purchasing capacities of BRIC are considerable to influence the international demand and supply in the U.S. t-bill investments and oil products. Since previous studies did not apply a Granger causality test on this relationship, a divergence between the findings does not oppugn the validity of this study. More detailed, vibrant economic performance of the BRIC signifies BRIC's importance in the global market.

Conclusively, the results document a weak significance from the macroeconomic variables to BRIC's stock market performance. This paper yields very little evidences to generalise the theoretical framework regarding the relationship among stock market performance and macroeconomic variables. The Efficient Market Hypothesis is not considerably challenged by the results of this paper. This is because most of the quarterly lagged terms of macroeconomic variables have no impact on stock market performance of BRIC. For example, highly dynamic variables, such as exchange rates and interest rates, do not Granger cause the movements of stock prices in a quarterly lagged term. The null impact of inflation on stock performance is proved to be existent in this study. The effect of inflation could be absorbed by the interest rate as suggested by previous researchers. However, the Fed model and the portfolio balance model are not applicable to BRIC since this paper documents no constructive impacts from exchange rate and interest rate to stock performance in a long run.

### **IMPLICATIONS OF FINDINGS**

The results of this study provide readers several constructive insights in political and financial outlooks. First, all macroeconomic variables examined in this paper are significant to construct a long-run relationship with stock market performance (as reported in the Johansen cointegration test), although the short-run dynamics among the variables are relatively weak to in comparison to the significance of the long-run relationship (as reported in VECM). A weak short-run relationship following a significant long-run relationship indicates that the efficient market hypothesis is still effective to infer the condition of BRIC's stock market mechanisms. In other words, the impacts of temporary frictions (financial crises or economic events) are not really influential to the stock markets of BRIC. Since market efficiency is the key to promote a good stock market structure, BRIC's government should let their stock markets remain the current condition for a *laissez-faire* purpose.

With respects to investors, the results suggest that they are unlikely to exploit a consistent in-money position in BRIC's stock market via the use of fundamental macroeconomic analysis. Although economic growth has realistically contributed to booming in BRIC's stock

markets, actual components of economic growth that facilitate the booming is still unidentified in this paper. Although some variables Granger cause stock performance in Brazil and Russia in a short run, investor should not blindly use those variables as a rule of thumb in investment. Further investigation is required to minimize investors' exposure to stock market volatility.

### RECOMMENDATIONS

To advance the research regarding this relationship, future researchers are advised to adopt the autoregressive distributed lag model (ARDL) to examine the long-run equilibrium among the variables. This is because the ARDL model can effectively deal with the issues of small sample size and  $I(1)/I(0)$ . More importantly, a universal lag applied on all explanatory variables could not fully express the lagged effect of one variable to stock market performance. For example, stock market might take one lag (one quarter) to absorb the impact of economic growth, while it could spend two to three lags reflecting the impact of the risk free rates in the stock market. Thus, the ADRL model could be superior to the Johansen cointegration test in examining the long-run relationship among the variables. Further, different frequencies and subdivided examination windows should be adopted to observe the revolutionary progress of the relationship among the variables.

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## Recruitment and Selection Practices in Business Process Outsourcing Industry

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### Abstract

Regardless of company size, location or industry, one thing is certain that recruitment and selection process has become enormously challenging and complex task for human resource management function in business process outsourcing industry (BPO). Business process outsourcing organizations offer knowledge intensive services dependent on human resources for delivery and represent a cornerstone for value creation. Scholars revealed that organizations are increasingly afflicted with the issues concerning talent shortage. Moreover, it is conceivable that organizations on all ends of the spectrum might have a human resources department that is not equipped to handle difficulties such as low retention rates and exorbitant workforce turnover at their core responsibilities. All this has a significant impact on the strength and weaknesses of an organization in managing their business in a competitive environment. Therefore, this paper attempts to unveil the determinants of employment practices and understand the importance of measuring and managing employee's hope to maximize their productivity and performance. In general, BPO organizations should maintain conducive work environment and adopt motivational rewards and policies along with best of the facilities to combat employee's issues that have plagued the BPO industry.

**Keywords:** BPO industry, recruitment and selection practices, performance, productivity

### INTRODUCTION

In the corporate world, creativity and innovations occurs rapidly due to the dynamic nature of business environment. Various organizations are concentrating on their core competencies in order to provide flexibility and improved organizational performance, and to ensure the efficient use of key resources. There is strong evidence in the literature that outsourcing has grown at a frenetic pace thus that having a bandwagon effect on many of the multinational clients. According to Kumar and Arora (2012) globalization has forced organizations outsource their production and services to countries where they find a competitive advantage in lower labor costs, improve process quality and speed time to market (Li & Meissner, 2008). The outsourcers are mainly organizations from US and UK, they outsource the functions within administrative support, inbound call center services, technical support, sales and marketing management, human resource management and training, infrastructure facilities management, and other services (Aiswarya, 2013).

Business process outsourcing (BPO) is the common form of outsourcing. It is not a new management strategy, however has received heightened interest because of its potential economic and strategic impact. Majority of organizations in US and UK have turned to outsourcing and offshoring internal operations, not only for reasons of cost and quality, but also contracting responsibilities of specific business driver to external organizations (Ezigbo, 2012). Information processing and call center activities of service organizations have moved offshore to Asian countries in record numbers. With its ready source of English-speaking,

highly educated, and technologically trained workers, has become the location of choice for business process outsourcing functions of multinational clients (Kripalani *et al.*, 2003; Pio, 2007). To date, global outsourcing occurs for all types of jobs and across most industries (Gomez-Mejia *et al.*, 2010), which is estimated that more than 3 million jobs and US\$136 billion in wages are expected. The global outsourcing market such as information technology, financial services, communication, consumer goods/services, and manufacturing is worth in excess of US\$600 billion annually, including US and UK, are unfolding in the developing world where an educated workforce is readily available (Lockwood, 2012).

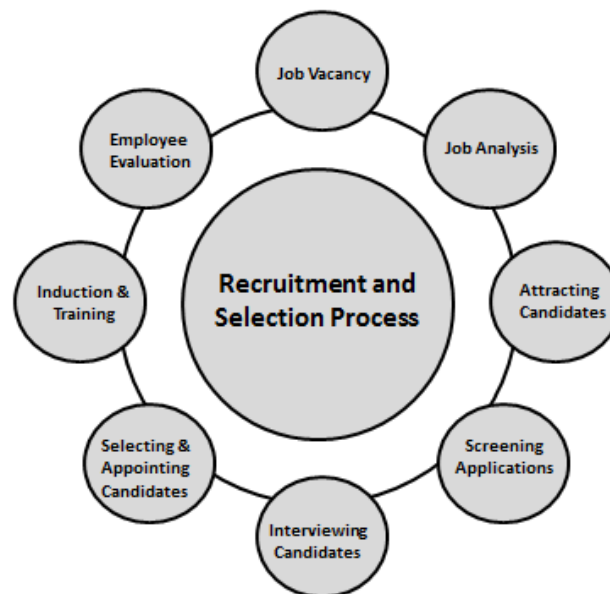
In a recent research, BPO is acclaimed as “the new development model of enterprises in the new millennium” because of the output value of BPO worldwide (Li *et al.*, 2008). The proliferation of outsourcing to new outsourced and offshored destinations such as India and the Philippines has appears poised to become major exporter of IT services resulted in robust GDP growth rates that place great demands on this emerging economic power (Dumlao, 2012; Budhwar *et al.*, 2006). Moreover, it has created a high-velocity industry where change can be sweeping and ongoing (Srivastava, 2009). As of 2012, Philippines’ IT services and BPO combined generated USD16 billion export revenue while USD20.9 billion for India. In addition, those Asian countries and their resources stand out as a salient model for bringing global workforce into unrestricted competitive approach of other country. For instance, Philippines were directly employed 926,000 full-time employees, while India has provided an estimated employment to 917,000 people (BPAP 2009–2013; Economic Times, 2013). Through these abundant results, the presence of human resources cannot be ruled out.

As employees have been ingrained and attached to external organizations, it is essential to determine factors that have high potential to influence the productivity of BPO employees involved in the expanding, high-flux outsourcing sector (Budhwar *et al.*, 2006). Moreover, it is critical to sustain employees’ productive capacity and replicate positive performance (Khandekar & Sharma, 2006). All this has a significant impact on the strength and weaknesses of an organization in managing their business in a competitive environment. The sustainable success of BPO process depends on the uniqueness of their human resources and the systems for managing human resources effectively to become successful. Therefore, this paper attempts to unveil the determinants and understand the importance of employment practices to maximize their productivity and performance. In general, BPO organizations should maintain conducive work environment and adopt motivational rewards and policies along with best of the facilities to combat employee’s issues that have plagued the BPO industry.

### LITERATURE REVIEW

Despite the prosperous in exponential rate, BPO industry is ridden with inherent problems (Mehta *et al.*, 2006) that affect the functions of human resource management. Increased globalization coupled with variations and changes in customer expectations, as well as product and knowledge intricacies make the recruitment and selection practices very difficult. People are considered to be the most valuable assets of an organization. Studies publicized that success or failure of organization is largely dependent on the caliber of the individual working therein. Without positive and creative contributions from workforce, organizations cannot progress and prosper. According to Jacobs and Roodt (2011) human resource constitutes the strategic and competitive edge in managing customer relationships as no technology can replace skilled communication, problem solving and customer focus. The choice of the right people to form a team in organization is one of the most important factors leading to its success. Hence, to achieve this, an organization has to pay a huge attention on the recruitment and selection process. Effective recruitment and selection procedures are vital in attracting and retaining high quality staff so every organization should take them deeply into

consideration. Moreover, human errors are much more expensive in comparison to such assets as land and capital, and often result in serious irreversible consequences.



**Figure 1: Recruitment and selection process**  
**Source: Failte Ireland (2013)**

Recruitment and selection, as part of effective human resource management is an important function that makes it possible to acquire the number and types of people necessary to ensure the continued operation of the organization (Aiswarya, 2013). This domain is not a single, simplified function, but a group of plans, systems, tools, processes and services. Failte Ireland's (2013) recruitment and selection process, as shown in Figure 1, illustrates how each element has a contribution to make in helping to find the most suitable candidates for any advertised position and manage them in a way that maximizes their levels of engagement. Each element provides huge possibilities for profit, provided that one can use effective solutions in exploiting them. As the field of human resource management becomes more dynamics and complex, it is often claimed that selection of workers occurs not just to replace departing employees or add to a workforce but rather aims to put in place workers who can perform at a high level and demonstrate commitment (Ballantyne, 2009).

In most academic literature the terms recruitment and selection are used together, however it is necessary at the advent to elucidate the dissimilarity of the two terms as it is entirely different functions of HR. Pilbeam and Corbridge (2006) explained that those two terms is actually based on action between "applicant and job", which is dependent on stating a need by an organization, using the most appropriate techniques and on "reviewing, evaluating and modifying the recruitment and selection system in the light of experience". Recruitment is a dynamic and complex process that includes advertising a job opening to qualified applicants, enticing them to apply for the job, maintaining the candidate's interest throughout the process, and influencing their decisions until an offer is officially extended (Breaugh, 2013). It indicates that the process of recruitment has an important purposes which is to find the best talents on the job market with professional knowledge, personal engagement and social competence. In the context of literature, new workers who came through referrals by current employees had longer tenure with the organizations that did those recruited in other ways (Taylor, 2010). A number of variables, such as the time and cost of the recruitment process, tend to have considerable influence on the expected benefits and costs of each recruitment channel. They considered employee referrals, private agencies, promotion and top notch universities as recruitment channels to hire high skilled workers (Rufini & Torre, 2010).



Selection is the process by which managers and others use specific instruments to choose from a pool of applicants a person or persons more likely to succeed in the jobs, given management goals and legal requirements (Bratton & Gold, 2007). Selection is crucial and continuing function. The ability of an organization to attain its goals effectively and to develop in a dynamic environment largely depends upon the effectiveness of its selection program. If right personnel is selected the remaining functions of management becomes easier, the employee contribution and commitment will be at an optimum level and employee-employer relations will be congenial (Anoosha, 2012). Wrong decisions not only affect the various individuals associated with them, but also result to frustration, repetitive training and low morale prior to the termination of the newly hired employee. The key point of selection should be effective, efficient and fair. Fair means ensuring that the decisions made during the process is based on merit alone (ACAS, 2014). In order to reduce the risks of discrimination lawsuits, organizations should make use of fair and legal procedures which is crucial for organizational success.

In setting out a similar distinction in which recruitment activities provide a pool of people eligible for selection, Foot and Hook (2005) suggest that although the two functions are closely connected, each requires a separate range of skills and expertise, and may in practice be fulfilled by different staff members. The recruitment activity, but not normally the selection decision, may be outsourced to an agency. It makes sense, therefore, to treat each activity separately. Preethi and Rajashekar (2013) noted that while HR plays a key role in these systematic approaches, the hiring manager must be proactive and engaged in facilitating the employee's successful integration into the organization overtime. Recruitment and selection, as defined here, can play a pivotally important role in shaping an organization's effectiveness and performance, if work organizations are able to acquire workers who already possess relevant knowledge, skills and aptitudes and are also able to make an accurate prediction regarding their future abilities. Recruiting and selecting staff in an effective manner can both avoid undesirable costs. For instance, those associated with high staff turnover, poor performance and dissatisfied customers (French & Rumbles, 2010).

### **Issues and Challenges faced by BPO industry**

Agrawal *et al.* (2011) asserts that there are various challenges provided by management literature on the external organization's side. These challenges are burden of insufficient capacity, high unit personnel cost, tight business margins, not enough financial strength to sustain, very long payback periods, expensive specialist skills, compliance and legal restrictions, unavailability of skilled manpower due to market stagnation. These require considerable efforts in terms of management's time and attention to establish. Burke and Cooper (2005) found challenges of solutions provider relating to scale and scope, and integration needed to accomplish. Kim *et al.* (2007) emphasized that trust between service provider and receiver is important determinant in adopting BPO as outsourcing is based on trust. There are few challenges from the employees' side too. Cohen and El-Sawad (2007) discoursed about culture and cultural difference between service provider and service receiver countries.

### **Attrition Rate**

Today, the rapid growth of BPO industry has resulted in the poaching of employees in high numbers. For instance, the number of BPO employees in the Philippines reached 900,000 in 2013 and is expected to increase to 1.3 million by 2016. Average salary of BPO employee is also increasing which would see from what it was some four years back. New development is that Philippines' BPO Industry expects to spend P247 billion (\$5.85 billion) as salary and the forecasted revenue is \$13 billion by the end of this year. According to reports, the salaries of

the outsourcing sector are equal to 14% of national government's spending program which is projected to be P1.86 trillion (Steve, 2012). Kumar (2008) assessed that the present salary package in BPO industry is not as lucrative as compared to other industries. However, the high attrition rate of workers paints a grim picture of the so-called 'sunshine industry' (Torres, 2014). The impact of attrition has received considerable attention by HR department. It has proven to be one of the most costly and seemingly intractable human resource challenges confronting organizations (Anantharaja, 2009; Kangaraarachchi 2010).

Various studies revealed that attrition rate in BPO firms are at the highest because of better opportunities elsewhere. Employee leaving the job is considered attrition by one organization, it is looked at as talent acquisition by the other organization and to the individual it most often means a career move, economic growth and enhancement of the quality of life. In addition, most employees works with a company in a short period of time or attrition happens in first 120 days of hiring (Radhika, 2008) due to high stress level at the job, monotonous nature of the job, loss of identity, demand-supply disparity, vague values and vision, lack of positive direction, wrong hiring policies, mismatched measures and rewards, overwork and burnout. Attrition rate is a burning issue for HR department because an organization faces problems. This is because today businesses are more dependent than ever before on their top performers to innovate and provide services that differentiate a company from its fierce competitor (Anantharaja, 2009). According to Verma and Pooja's (2011) research, the causes of attrition are different in relation to the gender. Results show that female employees feel more stressed because of work life imbalances and tend to leave jobs at an early stage of their career.

High attrition rate gives difficulties to BPO companies' bottom line. Business scholars estimate that it costs upwards of twice an employee's salary to find and train a replacement. And churn can damage morale among remaining employees. They agree that hiring the right people from the start is the single best way to reduce employee turnover. They should use psychometric tests to examine people who can work at night and handle monotony of work. Apart from that setting the right compensation and benefits is important too. Work with human resources to get current data on industry pay packages, and get creative when necessary with benefits, flexible work schedules and bonus structures. These traits will cement in the employee's minds the positive culture to be fostered in the organization. In general, organization needs to adopt a market-driven approach in dealing with the growing attrition and requires a perfect blend of time, effort, commitment and investment to craft a successful endeavor.

### **Retention Strategies**

Every organization should understand that human capital is their best commodity. Without qualified people who are good at what they do, any organization would be in serious trouble. Retaining employees in BPO industry has been a problem in many organizations for decades. In an extremely competitive market, the HR managers have been facing a tough time in finding a suitable replacement with required experience and ability, to fill up the vacancies created on account of exit of key employees (Chordiya, 2013). A single tool like training alone is not sufficient for employee retention. The best results for employee retention can be achieved by applying different tools strategically. Employee retention, as a result, is actually concerning the culture and having the appropriate procedures for the organization to obtain the development and achievement from the organization's objectives and goals. This belief was reinforced from the investigation performed by Career Systems International in 2005, by which they detailed that high manifestation of retention strategy is connected to worker's positive behaviors causing employee to keep within the organization for that optimum time frame (Riley, 2009).

Broadly, many studies claim that there are several factors that determine an organization's ability to attract and retain employees. In Sharma's (2010) research identified some factors that encourages the technical pool of human resource to seek greener postures such as: better salary, transparency in expectations, accumulation value, employment security, and greater reliance on incentive pay. It is essential to protect this management approach, as talented and motivated employees play a crucial role in overall development, growth and success of the organization. Focusing on employee retention techniques can positively impact the organization; however, failing to retain a key employee is a costly proposition for an organization. It has become imperative for organizations to look into the causes of high employee attrition and come up with a strategy for there are many determinants of retention depending upon priorities and life styles of employees (Kumar & Arora, 2012), while at the same time securing their trust and loyalty so they have less of a desire to leave in the future.

### **Employee Communication**

Employee communication is an essential aspect of the corporate management process. This factor transformed swiftly as new social media marketing instruments which develop and influence the workplace, as the organization's culture increased the pursuits of the retention approach for employees. Distributing information and eradicating barriers enforced by variations in area or divisions within the organization through technological innovation can build employee communication (Ghafoor *et al.*, 2012). It is among the most powerful indications of employee empowerment within an organization. Despite the fact employees are frequently bombarded by having an avalanche of information, they continue to participate in upward interaction within a provided work situation and undertaking a well-mannered mindset towards the individuals at all times. In a connection to marketing group, employee is the conduit to customers as well as to the outside community. If business objectives and messages in the organizations are evidently recognized, employee can serve as valuable ambassadors (Miles & Mangold, 2005).

Within the framework of management style, employee communication is needed when working with individual in various areas of career. It is a significant device in building relationships in more subtle ways. For example, getting responses and maintaining genuine communications would be the hallmarks of employee retention technique. Top management and managers attain those desired goals by means of regular meetings and survey that may shed light on why employees think about leaving. Through interviews with disaffected employees, organizations could work to give further attention to the needs, difficulties and grievances of employees including with the rewards system (Nyamekye, 2012). By taking a chance to pay attention organizations develop and create a culture of commitment that minimizes the potential risk of turnover. However, one of the primary sources of work environment anxiety is an absence of information particularly during times of change. It is often assumed that selections created at the top management are being conveyed down from the ranks. As a result, innovator or director must guarantee to provide excellent and precise details of information in a timely manner that contributes to productivity and employee retention (Guo & Sanchez, 2005).

### **Organizational Culture**

Organizational culture is a critical element of organizational life. It has been presented as buzzword which signifies the attention of management scholars across the globe for at least two decades. According to Pandita (2011) culture is an existing resource resist to impart business knowledge to vendor's resources due to fear of losing jobs leading to gaps in knowledge capture. Obviously employees working in the BPO industry sacrifice their lives in various ways. The geographical time difference with the European countries gives the industry one of the biggest advantages. As a result employees have to work in nights for long working hours and travel time, which creates lot of stress and unhealthiness. And because of stressful

life in BPO environment, employees are difficult to express precious time for their families. This issue becomes more complicated and problematic when they get married. Thus, these extra responsibilities to be given to the family, most employees quit the job. In addition to the above, one of the other major social problems that arises in the BPO industry is the cultural issues because of working with the western world. Personal habits and disciplines have undergone a considerable change due to western culture (Business Teacher, 2015).

Studies showcased that cultural alignment matters in both customer service delivery and selecting customer service partners. In a recent report, the role of right culture gives advantage among companies providing similar service. However, there is no size fits all for creating great company culture. For instance, an influential industry event in June 2014, the Call Center Week held in Las Vegas, TELUS International and GOOGLE shared similar values and beliefs in retaining and motivating the best people to deliver excellent customer service. Those values are for treating one another as family members and working as a community not just a company, investing in the personal and professional development of people to stimulate innovation, and having higher purpose and making an impact that will change the world. They believe that creating strong culture that resonates with employees' and the organization's values would result in exceptional customer service (TELUS International, 2015). In fact, these shared philosophies, articulated values, beliefs, and behaviors contribute to the unique social and psychological environment of an organization. In general, organizational culture is the 'glue' that guides behavior and design organizational decision-making (Haberberg & Rieple, 2008), and the lack of this glue will bring about devastating consequences around the organization.

### **Global Economic Turmoil**

A global recession is a period of global economic slowdown. The International Monetary Fund (IMF) takes many factors into account when defining a global recession, it states that global economic growth of 3% or less is equivalent to a global recession (Economist, 2008; Lall, 2008). The recession in the US market and the global meltdown termed as Global recession have engulfed complete world economy with a varying degree of recessionary impact. World over the impact has diversified and its impact can be observed from the very fact of falling Stock market, recession in jobs availability and companies following downsizing in the existing available staff and cutting down of the perks and salary corrections. The global financial crisis has its origins in the U.S. subprime mortgage crisis of August 2007. It seemed initially that it would only affect developed countries, but the so-called "decoupling phenomenon," which predicted that developing countries would remain unaffected, has not occurred. Instead the crisis has become a global phenomenon (Kumar, 2011).

The turmoil of global economy caught the attention of many experts and debates on how it will adversely affect business process outsourcing (BPO) companies. For instance, there has been a twin movement that has manifested itself in the way the BPO sector has been impacted. Many companies in US and UK have trimmed their budgets and have reduced their outsourcing exposure significantly. There has been an uptick in the way in which some companies have increased the pace of outsourcing. Though these twin imperatives might seem contradictory and conflicting, there are reasons for this kind of behavior. Many companies that have suffered because of the ongoing global economic crisis and have not received assistance from the government have decided to curtail the outsourcing budgets whereas others who have been bailed out by the government have decided to increase outsourcing as a means of cutting costs. The point here is that the companies in the West that have preferred to lay off their employees at home and instead ship jobs overseas are the ones that have increased business for the BPO sector. And those companies that have preferred to retain their domestic workforce are the ones that have increased the pace of outsourcing (MSG Team, 2014).

Goel and Thakur (2007) states that India as one of “destination of choice” for BPO market has been affected of global economic meltdown. But companies are seeing an opportunity in these adverse times. Industry players believe that the ability to grow up the value chain and also the emergence of some new businesses will see Indian companies emerging stronger in 2009, despite uncertainties in the markets that bring most of their revenues. In connection to this, companies should view this time as an opportunity to acquire new clients and tap fresh business. Expansion of client database amongst various international markets would only serve to insulate the companies against impact of downturn in respective economies. Moreover, it is the time to improvise and update the basic drivers for outsourcing decision making in the businesses (Hagan, 2013).

### **Decision-Making Framework of BPO**

Various theories have been coined in the academic literatures that support the decision-making framework of outsourcing business functions. It provides insights about the past, describes the current landscape and predicts the future outlook. These frameworks serve as theoretical background for making decisions. However, it could vary from cost basis to internal growth. In management arsenal, some studies have developed a theoretical framework from which outsourcing decisions can be made. These include value chain framework and transaction cost economic (Kennedy *et al.*, 2013). A study conducted by Dibbern and Heinzl (2009) on decision-making for outsourcing in small and medium sized enterprises served as a theoretical framework. The results show that internal performance and know-how deficits vis-à-vis external service providers are key determinants. Borman (2005) also presented with a third theory of decision-making basis for outsourcing which is resource dependency theory.

Within the management framework, these theories helped to determine the objective or motivation for deciding to practice BPO. Both theories help to understand why work has moved offshore and which types of activities provide the higher potential for offshore value creation. It delineates the macro-trends that have driven and continue to drive the rapid growth of the BPO industry. These theories illustrate the potential for firms to create value by choosing to outsource certain activities. Helps demonstrate that for a firm to create value and maintain its competitive position, it should focus only on a few core activities that add value and consider alternatives like outsourcing for non-core activities (Kennedy *et al.*, 2013).

### **Value Chain Framework**

Understanding the complexities of global production is a challenging task. In a world of offshoring, outsourcing and vertical specialization, activities of firms are spread across countries and national statistics cannot fully account for international production. A value chain can be simply defined as the “full range of activities that firms and workers do to bring a product from its conception to its end use and beyond” (Gereffi and Fernandez-Stark, 2011). According to Porter’s (2001) research, that a firm is a system of interconnected activities, and a firm’s competitive advantage depends upon how well it performs (or extracts value from) those activities. Typically, a value chain includes the following activities: design, production, marketing, distribution and support to the final consumer. These activities can be performed within the same firm or divided among different firms.

For offshore services industry, measuring value is complicated by the lack of reliable company level data and trade statistics for services (Sturgeon & Gereffi, 2009). To partially address this problem, the value of different services can be related to employee education level and work experience (Gereffi & Fernandez-Stark, 2010). By indicating the human capital required at different levels of the offshore services value chain, this classification provides decision makers

in developing countries with an instrument to determine where they may be best suited to enter the value chain in order to achieve their desired outcomes. It also provides an initial blueprint for economic upgrading strategies within the industry. Developing countries that aim to provide services within certain segments of the value chain must evaluate their workforce development strategies and implement policies to build human capital for those segments. In general, firms should strive to understand not only their value chain operations, but also their competitors, suppliers and distributors value chains (Odhiambo, 2010).

### **Transaction Cost Economic**

The second theory, which is the transactions cost theory, states that external or internal provision is decided on the basis of a cost comparison with regards to the sum of transaction and production costs. Transaction costs were defined as all costs of planning, adapting, and monitoring task completion within the individual functions under alternative governance modes. The concept of transaction costs is to explain the organization of firms and the method of their interactions by providing a conceptual framework for investigating some of the organizational challenges and economic risks that firms face (Garfamy, 2013). A variety of changes in the business environment, including global competition, international cooperation, and vertical disintegration, along with a focus on core competencies, have fueled interest of economists and politicians to help an organization determine where an activity should take place inside or outside the firm.

Transaction costs fall into three broad categories: (i) search and information costs are incurred when a firm starts searching for information about goods or services in the marketplace to determine their availability and price. For example, search costs are incurred when a firm is searching for a vendor in a distant country; (ii) bargaining costs are incurred during the negotiation phase. Before an agreement is accepted by both firms, costs related to travel and communication as well as legal and consulting fees are incurred by both parties. For example, a service level agreement (SLA) is created when entering into a relationship with an offshore vendor. Such agreements can be very detailed and costly to develop; (iii) and policing and enforcement costs are incurred to ensure that the other party acts according to the terms of a contract (Kennedy *et al.*, 2013). Thus, the decision to embark on outsourcing a particular business function should stem from the comparatively lower costs that will be incurred if an external vendor is consulted. Companies assume they will save money when they decided to outsource to a foreign provider. Moreover, the cost savings must be significant (Coward, 2003).

### **Resource Dependency Theory**

The resource dependency theory refers to how organizations depend on their external environment to make choices on managing their dependency on these environmental factors. It has been under scrutiny in several review and meta-analytic studies which all indicate and discuss the importance of this theory in explaining the actions of organizations, by forming interlocks, alliances, joint ventures, and mergers and acquisitions, in striving to overcome dependencies and improve an organizational autonomy and legitimacy (Hillman *et al.*, 2009; Davis and Cobb, 2010; Drees & Heugens, 2013; Sharif & Yeoh, 2014). Pfeffer (2003) asserts that resource dependency theory was developed to understand precisely the type of interorganizational relations that have played such a large role in recent 'market failures'. The motivation of those running the organization was to ensure the organization's survival and to enhance their own autonomy, while also maintaining stability in the organization's exchange relations. These were the drivers behind many of the organization's observed actions.

Moreover, when it came to explaining strategy, power often trumped profits, an insight distinctly at odds with the dominant economic approaches of the time. There are three core ideas of the theory: (1) social context matters; (2) organizations have strategies to enhance their autonomy and pursue interests; and (3) power (not just rationality or efficiency) is important for understanding internal and external actions of organizations. The emphasis on power, and a careful articulation of the explicit repertoires of tactics available to organizations, is a hallmark of resource dependence theory that distinguishes it from other approaches, such as transaction cost economics (Davis and Cobb, 2009). For a company to depend on one firm to be a sole provider of their outsourcing needs, they should look at certain resources that the external firm has that show their capabilities to perform as an outsourcing firm like physical infrastructure, technical infrastructure, project management skills, and quality certification and critical mass of skilled technical professionals (Coward, 2003). All these factors are external resources that companies are required to make outsourcing decisions.

### CONCLUSION

Business Process Outsourcing industry has witnessed growth with an unparalleled velocity. Despite the momentous growth and brilliant future, the BPO industry has facing a lot of challenges such as unavailability of skilled employees, attrition, retention of suitable employees, global economic slowdown. They should try hard to resolve these issues and challenges through various innovative measures in managing human resources. As human resources is an important corporate asset and the overall performance of companies depends upon the way it is put in use. A firm's resources propel it towards its goals, just as an engine propels an automobile towards its destination (Bratton and Gold, 2008). Acquiring their services, developing their skills, motivating them to high levels of performance, and ensuring that they maintain their commitment to the organization are essential to achieving organizational objectives. No organization can survive without the giving importance to its employee. They are the first customers and their requirement should be identified and fulfilled. Moreover, adopting different business models, best practices and strategies are the mantra an organization should follow to retain their employees. Fulfilling the reasonable expectations of employees should be a continuous process. In general, BPO companies need to give themselves a broad canvas to follow for any possible chance for innovation that may end up creating high business worth for customers.

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## Understanding the Relationship between HRM Practices and Organization Performance in HDFC Bank

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### Abstract

The main purpose of this paper is to understand the relationship between HRM Practices and organizational performance and to evaluate the perceptions of managers and non-managers on HRM practices in the context of HDFC Bank. The data was randomly collected from 24 managers and 72 subordinates using a self-administered questionnaire. The research study empirically evaluated the nine HRM practices (General climate, OCTAPACE Culture, Selection Process, Job Definition, Career Planning, Employee Participation, Performance Appraisal, Training and Development and compensation). The study showed that there is direct relationship between HRM practices and organizational performance. Finally, this research study depicts the limitations, suggestions and future research directions.

**Key Words:** PAS, Performance Appraisal, OCTAPACE and HDFC Bank.

### INTRODUCTION

Banking industry, as such, is the single most important constituents of the service sector, which is very crucial for the economic development of any country. Indian banking industry is passing through a very critical phase and confronted with very serious challenges both from within and outside. Opening up of economy, entry of foreign banks, establishment of new generation private sector banks, unprecedented pace of automation, global competition, communication revolution, demand for improved customer services, fluctuating rates of interest, incurring of heavy losses, marketing a wide range of products and product lines, restructuring of organizations, absorption and amalgamations etc. All these challenges in economics, social, cultural, technological, psychological environment have important implications on the HRM practices being followed in the banking industry as well as on the performance of the banks. All the HRM practices like recruitment, training and development, compensation and rewards, performance appraisal, promotion and empowerment, sharing of decisions, job security and security of monetary and non-monetary benefits, welfare measures and separations in the form of lay-offs, retrenchment & golden handshake have come under tremendous pressure. As a result, the performance of the banking sector has been affected very seriously as far as customer retention, profitability, business turnover, market share, retention of products and product lines, satisfactory customer services and returns on investment are concerned.

Over the past 40 years & above, human resources are considered as unique & most valuable assets of an organization. The successful management of an organization's human resources can cause a rise or fall of an organization. It is an exciting, dynamic and challenging task, especially during modern time when the world has become one large global village and economies are in a state of flux & ever changing dynamics. Short supply of talented resources and growing expectations of the modern day worker have further increased the complexity of the human resource function. Despite specific human resource functions/activities being the responsibility of the human resource department, the actual management of human resources

is the responsibility of every manager in an organization. There is an increasing demand and pressure to sustain and improve the organizational performance through efficient and motivated workforce.

In this paper, an attempt has been made to understand the relationship between HRM practices and organizational performance in HDFC Bank.

### **Research Objectives**

The study focused on the following objectives:

1. To address the relationship between HRM practices and organizational performance,
2. To identify the impact of HRM practices on organizational performance

### **HYPOTHESIS**

To give the proper direction to the study, a set of following working hypothesis has been developed:

**H1:** HRM practices have significant association with organizational performance.

**H2:** HRM practices have significant impact on organizational performance.

### **Independent Variable**

The study looked at the following Independent variables that contribute significantly to organizational performance: General climate, OCTAPACE Culture, Selection Process, Job Definition, Career Planning, Employee Participation, Performance Appraisal, Training and Development and compensation.

### **Dependent Variable**

The dependent variable was perception of employees towards organizations performance.

### **REVIEW OF LITERATURE**

Human Resource Management is very important for banks because banking is a service industry. Research suggest that service quality is increasingly recognized as a crucial factor that determines the level of success of any business (Parasuraman et al., 1988). Banking sector in this case cannot be an exception. Level of quality service is widely used to evaluate the performance of banking services (Cowling and Newman, 1995). The banks realize that customers will be loyal if they receive higher values than competitors (Dawes and Swailes, 1999) while on the other hand, banks in return can earn higher profits if they are able to position themselves better than their competitors within the specific market segments (Davies et al., 1995). People management and risk management are two key challenges banks are facing. It has become big threat as well as opportunity for banks to manage its workforce and risks to find out the success in the business of banking. Skilled & efficient manpower is responsible for efficient & effective risk management. Banking is "People Business" means it start from people (employees) and ends with people (customers). Researchers stated that human resources are people that are employed in an organisation to carry out their daily duties in exchange for wages, salaries or rewards (Denisi and Griffin, 2005). Human resources are ways and means to achieving competitive advantage because of its nature of converting the other resources (money, machine, methods and material) into output (product/service). A competitor may imitate resources like capital & latest technology but not human resource.

According to Khatri (1999), people are the single most important factors providing adaptability & flexibility to organizations. Rundle (1997), argues that we need to keep in mind

that people are the adaptive mechanism that will determine how the organization will respond to the competitive environment. Many scholars have reasoned that managing people is not as easy as managing capital or technology (Barney, 1991; Lado and Wilson, 1994). However those organizations that have understood and learned to manage their employees/HR well would have better chance to overcome others in the long run because acquiring and finally deploying and managing employees/HR effectively is important and takes much longer way (Wright et al., 1994). On one hand, human resource management is the formal system that includes philosophy, policies, and practices in an organisation to ensure that it effectively utilizes the knowledge, skill, abilities, and other characteristics of the employees to achieve the organisational goals (Pynes, 2009). Proper management of human resources can provide a competitive advantage for organisations to compete in their respective industries. Human resource practices such as the recruitment and selection, training and development, compensation and benefits, retention, evaluation and promotion of employees, and labor management relations are the practices that have always been carried out and have become key elements in an organisation. It is important for the organisation to recruit the right people to fill up available vacancies in order to attain the standard needed in delivering the required quality of services and products (Hayes and Ninemeie, 2009).

### **Impact of HRM Practices on Organizational Performance**

A lot of researchers are trying to establish a relationship between HRM and the performance of an organization have taken a micro approach, investigating every single HRM practices such as staffing, training, goal-setting, compensation and effects of those practices on organizational outcomes is shown in Exhibit 2.3 as under:

**Exhibit 2.3: Empirical Studies of HRM Practices and Organizational Performance**

Researcher	HRM Practices	Dependent variable	Finding
Russell, Terborg & Powers (1985)	Training, organizational support	Store performance	Training was positively correlated with store performance.
Balkin, GomezMejia (1987)	Compensation	-	Incentive-based reward systems were more effective in growth stage & high-tech companies.
Jackson, Schuler & Rivero (1989)	Appraisal compensation, training, employment security	-	Significant association between firms pursuing high and low innovation strategy and HR practices.
Gerhart & Milkovich (1990)	Contingent pay and base pay	Firm financial performance	Positive relationship between contingent pay and financial performance of firms.
Terpstra & Rozell (1993)	Staffing practices	Annual profit, profit growth, sales growth & overall performance	Positive, significant effect of extensive staffing practices on annual profit, profit growth, and overall performance.
Bartel (1994)	Employee Training	Labor productivity	Formal employee training eliminates productivity gap.

Russell, Terborg and Powers (1985), worked on the relationship between training, organizational support and performance of organizations. They considered a sample of sixty-two retail stores. Their study utilized data obtained from a company developed attitude survey. The findings provided evidence that both training and organizational support was positively and significantly related to store performance. In a study conducted by Balkin and Gomez-Mejia (1987), on compensation, it was revealed that incentive-based reward systems were more effective in growth stage and in high-tech companies. Jackson, Schuler and Rivero (1989), worked on the variation in performance appraisal, compensation, and training and development programs within different strategic setting. Results revealed from the survey responses showed organizations utilizing an innovation strategy as a means of differentiation versus other organizations were less likely to use incentive compensation, more likely to offer

employment security, likely to provide more total hours of training and more likely to offer employees training related to both skills needed currently & skills required in the future.

Gerhart & Milkovich (1990), studied impacts of contingent pay and base pay on a company's performance. They also examined the determinants of pay mix in an effort to distinguish the extent to which pay mix decisions vary after controlling employee investments in human capital, personal characteristics and job characteristics. Their work revealed that support for variation in pay mix even after controlling of these factors. They also found a lot of relationships between pay mix and industry, company size & company's financial performance. Terpstra & Rozell (1993), also studied effects of widespread staffing practices with company performance as their direct dependent variable. The staffing practices investigated were follow-up studies on recruitment sources, validation of studies on selection instruments, structured/standardized interviews, mental ability tests and biological information blanks or weighted application blanks. The study found that the extent of use of these staffing practices varied by industry and organizational size. Performance measures examined in the study were annual profit, profit growth, sales growth and overall performance. The results revealed a positive & significant effect of extensive staffing practices on all the above factors namely annual profit, profit growth, sales growth and overall performance. Bartel (1994), also made use of training as an independent variable & labor productivity as dependent variable and found that the implementation of training programs for employees was directly related to labor productivity gains.

The studies mentioned above provide examples of the growing interests in the effects of specific HRM practices on organizational outcomes. Becker & Gerhart (1996), have concluded that HR systems are path dependent. However, HRM practices & policies don't exist in organizations in isolation. As a result, a growing body of work has turned toward examination of these systems of HRM practices in an attempt to determine the true effect of HRM on organizational performance.

HRM practices improve organizational performance. Rondeau and Wager (2001), examined the co-relation between HRM practices, workplace climate & perceptions of organizational performance, in a large sample of Canadian nursing homes. The study found that nursing homes, which had implemented more 'progressive' HRM practices, had a general tendency to perform better on a number of valued organizational outcomes. Chand & Katou (2007), conducted a study to investigate if some characteristics of hotels affect organizational performance in the hotel industry in India & to examine if some HRM systems affect organizational performance. Their study revealed that hotel performance is positively associated with hotel category, type of hotel & hotel performance is directly related to HRM systems of recruitment & selection, manpower planning, job design, training & development, quality circle & pay system. Joseph & Dai (2009), in their studies found that there is a direct relation between HRM practices & organizational performance that alignment of HRM is also a driver for organization's performance.

The analysis carried out by Nayaab et al. (2011), revealed HRM practices contribute to the enhanced banks performance. Additionally, the result indicated that HRM practices like training, employee participation in decision making were directly proportional to overall performance of the bank. Further, Osmann et al. (2011), reported in his studies that the effectiveness of implementing HRM practices in an organization has a significant impact towards its performance. The findings also show that HRM practices directly affect almost 50% of a company's performance. Huselid (1995), conducted a study to report the link between systems of High Performance work practices and company's performance and found that these practices have an impact on intermediate employee outcomes (turnover and productivity),

short & long term measures of corporate financial performance. Hyde et al. (2008), studied the impact of HRM practices on an organization's profitability and concluded that little support for a positive relationship between HRM practices and organization profitability. Carl (2000), examined the relationship between human resource management practices followed by performance of 101 foreign-owned subsidiaries in Russia. The results of the study provide support for the assertion that investments in HRM practices can substantially contribute a company to perform better.

In order to understand the impact of HRM practices on organizational performance the following nine variables were taken into consideration:

### **General Climate**

The general climate is important for HRM practices if it has to be implemented effectively. The general climate is an amalgamation of commitment of top management and line management as well as supportive personnel policies with the positive attitude for development. The general climate is a cognitive interpretation of the organizational situation that has been labeled psychological climate which represents how work environments are cognitively appraised and represented in terms of their meanings and significance for individual employees in organizations.

### **OCTOPACE Culture**

The essence of the HRD climate can be measured by the importance that is given to the development of OCTAPACE culture in an organization. The term has been created by Professor T.V. Rao. The items like openness, confrontation, trust, authenticity, pro-activity, autonomy, collaboration and experimentation are valued and promoted in the OCTAPACE culture of organizations. Studies conducted by (Rohmetra, 1998; Kumar and Patnaik, 2002; Kumar, 1997; Bhardwaj and Mishra 2002; Mishra, Dhar and Dhar, 1999; Alphonsa, 2000; Rao and Abraham, 1999) shows that the culture of OCTAPACE values is absorbed in the culture of the many organizations to a good or moderate degree. The continuous development of human resources is direct result of the OCTAPACE culture.

### **Selection Process**

Selection is the process of choosing from the pool of potential employees available for particular jobs in terms of qualified job and organisation requirements. Organisation requirements will include the need to take account of the expectations of existing employees, whether for example, the new employee will find acceptance with existing employees. According to Tim (1995), selection is the assessment of candidates for vacant jobs and the choice of most suitable people. Selection is the oldest function of public personnel administration (Shafritz, Russell and Borick, 2007).

### **Job Definition**

Job definition is the written format of duties and tasks a single worker is expected to perform (Tracey, 1998). Defining task, authority and systems is facilitated by job definition and hence system are organized and integrated at individual job level and across organization units. Job definition envisages both job description and job specification. It clarifies various responsibilities, duties, working condition and expected skills of a worker performing that particular job (Qureshi and Ramay, 2006). It is necessary for managing employees in organisations. When employees are clear about their tasks and duties they can very easily achieve personal as well as organizational objectives. Job description is "a document which describes major duties, functions, and authority assigned to a position, and the relationship



between the position and other positions in the organization or department” (Tracey, 1998) and task is defined as “unit of work, a task is created whenever human effort, physical or mental is exerted to achieve a specific purpose” (Shafritz, 1985). Job description mainly describes an employee’s responsibilities and duties needed to be performed regarding certain job, while Job specification describes the knowledge, qualification and competencies required to perform a particular job.

### **Career Planning**

In human resource management, career planning aims to identify needs, aspirations and opportunities for individuals’ career and the implementation of developing human resources programs to support that career. According to Manolescu (2003), career planning is a continuous process for an individual to develop his own occupational concept as a result of skills or abilities, needs, motivations and aspiration. Career planning is a systematic and comprehensive process of targeting career development, implementing strategies, self assessment, analysis of opportunities and evaluation of results. Career planning process involves both the organization and the individual responsibility. Therefore, the individuals must identify their aspirations and abilities, and through assessment and counseling to understand their training and developmental needs. The organization needs to identify its needs and opportunities, to plan its employees and to ensure they possess necessary information and appropriate training for career development.

### **Employee Participation**

Participation is a process which allows employees to exert some influence over their work and the conditions under which they work (Heller, Pusic, trauss and Wilpert, 1998) or alternatively, as a process in which influence on decision making is shared between hierarchical superiors and their subordinates (Wagner and Gooding, 1987). Newstrom and Davis (2004), stated participation as a mental and emotional involvement of people in group situations that encourages them to contribute to group goals and share responsibility for them. It is social processes by which people become self involved in an organization and want to see it work successfully. Mac Gregor (1960), contended that workers participation involves creating opportunity under suitable condition for people to influence the decisions that affect them. It is a special case of delegation in which the subordinate gains control, and has greater freedom of choice in matters of bridging the communication gap between the management and workers. This serves to create a sense of ownership and belonging among the workers, as well as conducive environment in which the worker will voluntarily contribute to management’s efforts.

### **Performance Appraisal**

Performance appraisal (PA) consists of a framework of planned goals, standards and competence requirements and plays an important role in integrating the individual’s needs with the organizational needs (Saraswathi, 2010). It is a formal management system that provides for the evaluation of the quality of an individual’s performance in an organization (Yousef, 2000). Hussain-Ali and Opatha (2008), stated that performance appraisal is perceived degree to which performance appraisal system has attributes those are right for fair and accurate evaluation of employee job performance. They argue that the attributes comprise nine features such as PA objectives; PA policies; PA criteria and standard; PA form and procedure; training of appraisers; feedback discussion; procedure for ensuring accurate implementation; make decisions and store them and review and renewal. Ali and Akter (2011), stated that employee performance appraisal is subject of great interest in most organizations. There are several reasons behind this. First reason is performance appraisal decisions have effects and consequences on workers compensation and recognition (Bartol and Locke, 2000; Millward *et al.*, 2000). Second important reason is, performance appraisal is important for the

development of strategic human resources, which looks at employees as an organizational tool for an organization to survive in competitive and turbulent situations (Ahmad and Spice, 2000). Strong evidence shows that performance appraisal has positive association with performance. Hanley (2005), stated that developmental purpose of performance appraisal is more productive in influencing organizational performance. Brown and Heywood (2005), noted that performance appraisal system has positive association with improved productivity of organizations. Lee and Lee (2007), investigated that effective performance appraisal system improves productivity and quality

### **Training**

In this competitive world, training plays an important role in the competent and challenging format of business. Training is the nerve that suffices the need of fluent and smooth functioning of work which helps in enhancing the quality of work life of employees and organizational performance too. According to Armstrong, (2001) "Training is systematic development of the knowledge, skills and attitudes required by an individual to perform adequately a given task or job". Flippo,(1984) "Training is the act of increasing knowledge and skills of an employee for doing a particular job." Aswathappa (2000) stated that the term 'training' indicates the process involved in improving the aptitudes, skills and abilities of the employees to perform specific jobs. Training helps in updating old talents and developing new ones. 'Successful candidates placed on the jobs need training to perform their duties effectively'. The principal objective of training is to make sure the availability of a skilled and willing workforce to the organization. In addition to that, there are four other objectives: Individual, Organizational, Functional, and Social

### **Compensation**

Compensation is an integral part of human resource management which helps in motivating the employees and improving organizational effectiveness. According to Bob (2011), compensation processes are based on compensation philosophies and strategies and contain arrangement in the shape of policies and strategies, guiding principles, structures and procedures which are devised and managed to provide and maintain appropriate types and levels of pay, benefits and other forms of compensation. Pearce (2010), stated that compensation implies having a compensation structure in which the employees who perform better are paid more than the average performing employees. Armstrong and Brown (2005), postulate that compensation management is an integral part of HRM approach for managing people and as such it supports the achievement of business objectives. Harrison and Liska (2010), in their study posit that reward is the centre piece of the employment contract after all it is the main reason why people work. This includes all types of rewards, both intrinsic and extrinsic, that are received as a result of employment by the organization.

### **SAMPLE SIZE**

The total sample taken was 33, out of which 8 were managers and 24 were subordinates.

### **Selection of the sample organization**

The banking organization under study was Housing Development Finance Corporation Limited (HDFC) Bank. The Housing Development Finance Corporation Limited (HDFC) was amongst the first to receive an 'in principle' approval from the Reserve Bank of India (RBI) to set up a bank in the private sector, as part of the RBI's liberalization of the Indian Banking Industry in 1994. The bank was incorporated in August 1994 in the name of 'HDFC Bank Limited<sup>1</sup>, with its

registered office in Mumbai, India. HDFC Bank commenced operations as a Scheduled Commercial Bank in January 1995.

HDFC is India's premier housing finance company and enjoys an impeccable track record in India as well as in international markets. Since its inception in 1977, the Corporation has maintained a consistent and healthy growth in its operations to remain the market leader in mortgages. Its outstanding loan portfolio covers well over a million dwelling units. HDFC has developed significant expertise in retail mortgage loans to different market segments and also has a large corporate client base for its housing related credit facilities. With its experience in the financial markets, a strong market reputation, large shareholder base and unique consumer franchise, HDFC was ideally positioned to promote a bank in the Indian environment.

HDFC Bank began operations in 1995 with a simple mission: to be a **"World Class Indian Bank."** We realized that only a single minded focus on product quality and service excellence would help us get there.

### **DATA ANALYSIS AND INTERPRETATION**

#### **Employees view's on HRM variables in HDFC Bank**

The overall survey results of table 1.1 indicates that the mean values and percentage to mean score ranges between 2.50(37.50%) and 4.50(87.50%) in case of managers of HDFC bank. The table 5.24 reveals that the mean value and percentage of mean score ranges between 2.50 (37.50%) and 4.40(76.0%) in case of subordinates of HDFC bank. It is imperative to note that higher mean values or higher percentage of mean scores linked across the variables HRM indicates that these variables are perceived to be superior and effective and lower mean values or lower percentage of mean scores across the managers and subordinates have poor opinion about the effectiveness of HRM variables. To continue with the same, the table 1.1 also depicts that the perception of managers in the HDFC bank towards various components of HRM. It can be interpreted that only 35 out of 52 statements have crossed 60% level of satisfaction among the managerial staff of HDFC bank rest are less than 60%. The table 1.2 depicts the perception of subordinates of HDFC bank towards the various components of HRM. it can be interpreted that only 12 out of 52 statements have crossed 60% level of satisfaction and rest are below 60%. It reveals that managers are having more favorable perception towards the existing HRM practices in the HDFC bank than subordinates.

**Table 1.1: Perceived View of HDFC Managers on HRM practices**

Statements	HDFC Managers (N=24)		
	Mean	Mean score	Std. Deviation
GC1	2.75	43.75	1.165
GC2	3.25	56.25	1.035
GC3	4.00	75.00	1.309
GC4	3.38	59.50	1.302
GC5	3.38	59.50	1.188
GC6	3.75	68.75	1.282
GC7	3.38	59.50	1.061
OC1	2.75	43.75	0.707
OC2	3.50	62.50	0.756
OC3	3.50	62.50	0.926
OC4	3.13	53.25	1.356
OC5	3.50	62.50	0.756
OC6	4.13	78.25	0.991
OC7	4.00	75.00	0.535
S1	3.87	71.75	0.641
S2	4.13	78.25	0.641
S3	4.00	75.00	0.756
S4	4.13	78.25	0.991
S5	4.50	87.50	0.756
S6	4.13	78.25	0.641
JD1	3.88	72.00	1.246
JD2	3.88	72.00	0.991
JD3	4.00	75.00	0.756
JD4	2.88	47.00	1.356
CP1	3.75	68.75	1.165
CP2	3.75	68.75	0.707
CP3	3.38	59.50	0.518
CP4	3.25	56.25	1.165
CP5	3.50	62.50	1.414
CP6	4.25	81.25	0.707
CP7	3.63	65.75	0.916
EP1	2.50	37.50	0.756
EP2	3.13	53.25	0.641
EP3	3.50	62.50	0.756
PA1	3.75	68.75	0.886
PA2	3.75	68.75	0.707
PA3	3.50	62.50	1.069
PA4	3.13	53.25	1.246
PA5	3.75	68.75	0.886
PA6	3.75	68.75	0.886
PA7	4.13	78.25	0.991
T1	3.88	72.00	0.991
T2	4.38	84.50	0.744
T3	3.25	56.25	1.035
T4	4.25	81.25	0.463
T5	3.50	62.50	0.756
T6	3.63	65.75	1.408
C1	3.87	71.75	0.354
C2	3.75	68.75	1.282
C3	3.13	53.25	1.246
C4	3.25	56.25	1.389
C5	3.13	53.25	1.126
Total	3.61	65.49	

**Table 1.2 Perceived View of HDFC subordinates on HRM practices**

Statements	HDFC Subordinates(N=72)		
	Mean score	% of Mean score	Std. Deviation
GC1	2.50	37.50	1.063
GC2	3.04	51.00	1.301
GC3	3.04	51.00	1.122
GC4	3.29	57.25	1.042
GC5	3.25	56.25	1.113
GC6	3.04	51.00	0.999
GC7	3.08	52.00	1.248
OC1	3.00	50.00	1.022
OC2	3.33	58.25	1.239
OC3	3.21	55.25	1.062
OC4	3.21	55.25	1.141
OC5	3.42	60.50	1.349
OC6	3.13	53.25	1.393
OC7	3.67	66.75	1.274
S1	3.25	56.25	1.152
S2	3.33	58.25	1.239
S3	3.33	58.25	1.239
S4	3.33	58.25	1.308
S5	3.67	66.75	1.204
S6	3.08	52.00	1.283
JD1	3.42	60.50	1.381
JD2	3.50	62.50	1.383
JD3	3.83	70.75	1.007
JD4	3.29	57.25	0.955
CP1	3.04	51.00	1.197
CP2	3.33	58.25	1.167
CP3	3.21	55.25	1.250
CP4	2.92	48.00	0.974
CP5	3.29	57.25	1.197
CP6	3.00	50.00	1.216
CP7	3.21	55.25	1.215
EP1	2.33	33.25	1.090
EP2	3.13	53.25	1.035
EP3	3.37	59.25	1.245
PA1	2.92	48.00	1.283
PA2	3.29	57.25	1.042
PA3	3.00	50.00	1.063
PA4	2.79	44.75	1.062
PA5	3.58	64.50	1.381
PA6	3.38	59.50	1.013
PA7	3.21	55.25	1.141
T1	3.75	68.75	0.847
T2	3.83	70.75	0.761
T3	3.21	55.25	0.884
T4	3.58	64.50	0.881
T5	4.04	76.00	0.690
T6	3.79	69.75	1.103
C1	3.25	56.25	1.152
C2	3.04	51.00	1.197
C3	2.96	49.00	0.955
C4	3.17	54.25	1.049
C5	2.88	47.00	1.035
Total	3.24	56.12	

### Spearman's Correlation Coefficient

A lot of research has been conducted throughout the world to study the correlation between HRM practices and organizational performance although most of the research has been conducted in the U.S.A, yet many research studies on the subject are coming from United Kingdom. Research on this important subject is picking up in developing countries also. Research studies reveals that the relationship between HRM practices and organizational performance is positive simply there is a positive correlation between two.

Keeping the background in view, the present study has been conducted to study the relationship between HRM practices perceived organizational performance in the banking industry in India. The correlation coefficients clearly present the results of the current study. The inter correlation among different HRM practices and different measures of Organizational performance is studied, as there are glaring differences in so far results of the study are concerned . Same has been analyzed in the following paragraphs.

From table 1.3, it is clear that managers of HDFC shows positive correlation between General climate and other HRM variables with the highest positive correlation(0.497) between General climate and employee participation and is statistically significant with p-value 0.013 and lowest positive correlation (0.114) between general climate and selection . The negative correlation is only between employee participation and Career planning (-0.094) and between compensation and employee participation (-0.117) and is statistically non-significant. The overall highest positive correlation of 0.676 exists between Selection and job definition and is statistically significant with p-value  $\geq 0.0001$ . Likewise, higher level of positive correlation exists between various HRM Practices such as 0.582(Performance Appraisal and Job Definition), 0.569 (OCTAPACE culture and employee participation), 0.532(between compensation and Performance Appraisal), 0.485 (Performance Appraisal and career planning),0.430 (OCTAPACE culture and Job Definition). The lower degree of positive correlation exists between various dimensions of HRM practices such as 0.038 (Selection and Training), 0.064(Career Planning and OCTAPACE culture), 0.067(Training and Employee Participation), 0.078(Training and OCTAPACE culture)

**Table 1.3: Correlation coefficients among HRM practices in the managers of HDFC bank**

Variables		GC	OC	S	JD	CP	EP	PA	T	C
General climate(GC)	Correlation Coefficient	1.000								
	P-Value									
OCTAPACE Culture(OC)	Correlation Coefficient	0.125	1.000							
	P-Value	0.357								
Selection(S)	Correlation Coefficient	0.114	0.252	1.000						
	P-Value	0.439	0.085							
Job Definition(JD)	Correlation Coefficient	0.133	0.430*	0.676**	1.000					
	P-Value	0.469	0.014	0.000						
Career Planning(CP)	Correlation Coefficient	0.409**	0.064	0.238	0.300	1.000				
	P-Value	0.002	0.637	0.104	0.096					
Employee Participation(EP)	Correlation Coefficient	0.497*	0.569**	0.203	0.287	-0.094	1.000			
	P-Value	0.013	0.004	0.342	0.174	0.662				
Performance Appraisal(PA)	Correlation Coefficient	0.362**	0.173	0.369**	0.582**	0.485**	0.234	1.000		
	P-Value	0.006	0.201	0.010	0.000	0.000	0.270			
Training(T)	Correlation Coefficient	0.217	0.078	0.038	0.120	0.289*	0.067	0.236	1.000	
	P-Value	0.139	0.598	0.797	0.513	0.046	0.757	0.107		
Compensation(c)	Correlation Coefficient	0.128	-0.214	0.157	0.154	0.119	-0.117	0.532**	0.158	1.000
	P-Value	0.431	0.186	0.335	0.400	0.463	0.587	0.000	0.330	

The results in the table 1.4 shows that the highest association of 0.618 between Performance Appraisal and Selection among subordinates, followed by various positive correlation of 0.536 between Career Planning and Selection, 0.508 between Performance Appraisal and Career Planning, 0.479 between Compensation and Selection, 0.417 between Compensation and Career Planning, 0.414 between Selection and General Climate, 0.398 between Performance Appraisal and Job Definition, 0.368 between Compensation and Performance Appraisal and so on and are statistically significant. A large number of positive correlations are sufficient proof that HRM practices are positively related although the degree of association varies considerably.

**Table 1.4: Correlation coefficients among HRM practices of the subordinates in HDFC Bank**

Variables		GC	OC	S	JD	CP	EP	PA	T	C
General climate(GC)	Correlation Coefficient	1.000								
	P-Value									
OCTAPACE Culture(OC)	Correlation Coefficient	0.268**	1.000							
	P-Value	0.000								
Selection(S)	Correlation Coefficient	0.414**	0.200*	1.000						
	P-Value	0.000	0.016							
Job Definition(JD)	Correlation Coefficient	0.123	0.126	0.293**	1.000					
	P-Value	0.231	0.223	0.004						
Career Planning(CP)	Correlation Coefficient	0.396**	0.159*	0.536**	0.267**	1.000				
	P-Value	0.000	0.040	0.000	0.009					
Employee Participation(EP)	Correlation Coefficient	0.233*	0.278*	0.385**	0.071	0.312**	1.000			
	P-Value	0.049	0.018	0.001	0.552	0.008				
Performance Appraisal(PA)	Correlation Coefficient	0.354**	0.161*	0.618**	0.398**	0.508**	0.293*	1.000		
	P-Value	0.000	0.038	0.000	0.000	0.000	0.013			
Training(T)	Correlation Coefficient	0.078	0.072	0.278**	0.164	0.221**	0.022	0.337**	1.000	
	P-Value	0.352	0.394	0.001	0.109	0.008	0.854	0.000		
Compensation(c)	Correlation Coefficient	0.300**	0.182*	0.479**	0.080	0.417**	0.072	0.368**	0.113	1.000
	P-Value	0.001	0.047	0.000	0.436	0.000	0.548	0.000	0.221	

The above tables displays inter correlations among the variables representing the different HRM practices namely general climate, OCTAPACE culture, selection, job definition, career planning, employee participation, performance appraisal, training and compensation. It is clear that the respondents are agreeing that these practices are well established in the organizations under study. These results can be considered as a good sign that different HRM practices are communicated and recognized by both managers as well as subordinates of HDFC Bank. It can be concluded that the results confirm positive relationship between HRM practices that indicates the level of satisfaction of employees towards HRM practices as hypothesized with varying degree of correlation.

### SUMMARY OF FINDINGS AND CONCLUSIONS

On the whole we found the existence of good HRM practices in the sample study organization. The managers in general showed a favorable attitude towards HRM practices in the sample study organizations. They were satisfied with the developmental policies of the top management as well as happy with the prevailing HRM climate in the sample organizations. However, findings of the present study indicate that there is still substantial scope for improvement in various aspects of HRM practices in the sample study organizations.

### **SUGGESTIONS AND THE POLICY IMPLICATIONS**

The research study attempts to analyze the impact of HRM practices by focusing on relationship between HRM practices variables on organizational performance in the banking sector within the Jammu and Kashmir state of India. The key to the success of any organization lies in how efficiently and effectively the organizations can manage its assets i.e. human resources. The principle applies equally and perhaps more aptly to service institutions like banks. The banking industry in India, which is working hard to cope up with the technological changes and meets the challenges of globalization. In the developed countries the modern and sophisticated technology is widely accepted in the banking industry, while in India especially Jammu and Kashmir has to go long way for having perfectly managed banks.

As for as banking industry is concerned there is no other input except human resource and the output depends entirely on the quality of human resource and we have lot of factors to cover in this area. Various HRM practices have been acquired in Indian banking industry through a very gradual and reactive process. Since these practices have been acquired at different stages, they are neither cohesive nor complementary and may not be in a line with the current business activities and expected future diversification. The need of the time is not the routine casual and gradual approach but to be proactive, well planned , instant and multi prolonged approach to cope with the various challenges like unpredictable technological development , competitive environment, diversified composition of human resource, increasing expectation of customers , effects of financial reforms within the country and globalization. Given these realities, the banks are under tremendous pressure to initiate new approaches, takes efforts to sustain these initiatives and a higher degree of professionalization of HRM function, which in turn calls for the paradigm shift in managing human resources in banking industry in India .

### **LIMITATION AND DIRECTION FOR FUTURE RESEARCH**

The research study made number of limitations. The main limitation of this research study is about sampling issue as the small sample size reported may have affected the research results. Even our research findings might have depicted certain results these findings cannot be construed as an independent model to ensure performance of the organizations. Nonetheless, this model has provided insight into possible reasons for organizational performance. In addition to that, the study focused on perceptions of organizational performance and HRM practices as reported by the employees. Hence it is subject to common source and common method bias as perception varies from person to person. The study did not cover all the HRM practice variables that have an impact and relationship with organizational performance.

Several suggestions and recommendation that are fruitful for future research emerged from this present study. In order to validate the findings of the study, case study, focus groups and longitudinal studies are another interesting approach that can be undertaken for future research. Additionally, the research model of this study can be tested in other service sector like education, hospitals and tourism with the large sample size so that the research model can be generalized.

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## The impact of financial integration on economic growth Case of Maghreb countries

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### **Abstract**

**The relationship between financial integration and economic growth is a vital subject. Many empirical and theoretical works affirmed that financial integration could help countries to increase their growth rate and ameliorate their life quality. The target of this work is to study financial integration effects of thirty-five years, from January 1981 until December 2014, on economic growth of the three Maghreb countries (Algeria, Morocco and Tunisia) using the ARDL approach to cointegration testing. Estimations results indicate that financial integration affects positively the economic growth of the Maghreb countries.**

**Keywords: financial integration, economic growth, Maghreb countries, ARDL approach.**

### **INTRODUCTION**

The international financial integration is a very old phenomenon, its origins date back to the late 19<sup>th</sup> century, specifically 1870, during that period, the financial markets were in need of new global markets in order to invest and find more funding means. The relationship between financial integration and economic growth has always been of particular interest. Many studies have been devoted to this relationship to confirm or detract from the influence of financial integration on economic growth.

Some economists say that the consequences of integration on economic growth are positive. Obstfeld (1994), Acemoglu and Zilibotti (1997) Baily (2000), Honig (2008), Klein and Olivei (2008) have shown that the inflow of foreign capital is a factor likely to lead to a transfer of technology, specialization in production, allocation of capital and consequently stimulates economic growth. Thereby, the opening of emerging markets attracted foreign investors and increased the flows of capital towards them. According to Henry (2000), the liberalization of the emerging markets increased the number of foreign investors, which lead to the increase of the financial markets' liquidity, the reduction of the cost of debt, the improvement of profitability of certain projects and the increase of economic activity.

Also the study of Mensi and al (2010) reveals that the direct relationship between financial integration and economic growth is positive and stable. They affirmed that this liberalization of the capital movements influenced positively the integration of the developing economies worldwide. So, the financial integration of the financial markets facilitates the passage from one market to another as it allows the increase of the markets' efficiency. The vast economic transformations imposed by globalization have freed more the capital, facilitated trade, promoted the softening of control systems of exchanges and the establishment of currencies

convertibility, which increased the economic activity. This environment drove the majority of the Maghreb countries to liberate their trade and to globalize their financial policy due to the positive effect of financial integration on economic growth. The results of the estimates of Soumia and Benhabib (2012) showed that financial integration affects, positively, but slightly differently, the economic growth of the Maghreb countries.

Others argue that financial integration does not promote economic gains, that is, it does not have significant effects on economic growth as demonstrated by Rodrick (1998) and Kraay (1998). This positive relationship is valid only under certain conditions and countries need to lift some strategies to stimulate the real economy.

In this paper, we are trying to explain the impact of financial integration on economic growth in the Maghreb countries, especially, that their markets are of limited size and weak enticement, which hinder their economic growth at the level of competitiveness. Among the countries, which decided to conduct the way of liberalization and financial integration, we are interested in three Maghreb countries: Algeria, Morocco and Tunisia. This work tries to study the following issue: does financial integration allow the Maghreb countries to significantly improve their economic growth rate? The empirical study is based on the works of Edison, H.J., Levine, R., Ricci, L., Slok, T. (2002), Honig (2008) and Mougani (2012) using the ARDL approach to cointegration during the period of 1981-2014.

### EMPIRICAL LITERATURE

The study of the relationship between financial integration and economic growth still is of particular interest (McKinnon and Shaw 1973; Alesina (1994); De Gregorio (1996); Edwards (2001); Prasad and al(2003); Dhrifi (2009); Lane & Milesi-Ferretti (2003); Klein and Oliver (2008); Ben Salha and al (2008); Mensi and al (2010); Soumia and Benhabib (2012)). These economists showed that the liberalization of the capital account affects positively growth.

A number of researchers demonstrated the existence of an important relationship between financial integration and economic growth that is due to the economic policy pursued by economies in order to well integrate financially and increase productivity. We can explain the relationship between financial integration and economic growth through the important role of trade openness and interest rate, which determine the strategy of the economic policy of an economy.

#### **Financial integration, economic growth and trade openness**

In the early 19<sup>th</sup> century, David Ricardo demonstrated that the openness of a country allows the redirection of its rare resources towards the more efficient sectors and improves its welfare. Thus, Grossman and Helpman (2014) showed that trade openness directly affects productivity levels in domestic producers with more efficient foreigners and thus increase the contacts of each country with the best practices in the world. They affirmed that trade openness helps to increase local imports of goods and services thanks to the transfer of technologies, which makes the production of a country more efficient and increases its productivity.

Mougani (2012) focused on the impact of private capital flows on economic growth based on the rules of trade openness. Thus he has shown that financial integration affects several aspects of economic performance, particularly increases investment rates, technology transfers, trade openness, stimulates the development of the financial system and economic growth. According to Batra (1992) and Leamer (1985), the liberalization of trade paves the way to eliminate tariffs and thus reduces the relative price of local goods. Therefore, these assets become less attractive than foreign ones, which would affect negatively the national

economy. However, there are works that encourage protectionist policies but not as a long-term strategy.

Other works, like those of Grossman and Helpman (1991), Romer (1993), Rivera-Batiz and Romer (1991), considered innovation as a source of growth and encourages one economy openness. In their models, they found that earnings from free trade come primarily from scale effects lead by research and development. In addition, the reduction of custom duties and the replacement of non-tariff barriers by custom duties increased the amount of stored merchandises and thus the state revenues.

Razafindrakoto and Roubaud (2005) demonstrated the positive effect of trade on economic growth due to good factors reallocation, access to new technologies and competition within the economies of scale, which succeed to increase productivity. In general, financial integration contributes to the improvement of local financial systems, optimal allocation of financial resources and global diversification of the economy. Based on the works of Tybout (1991), Haddad (1993), Harrison (1996), Dutz (1991) 30, Fecher, Perelman and Pestieau (1993), Manganelli and Popov, (2010), we managed to identify four conclusions about the relationship between economic growth and trade openness:

- ✓ Significant effect of the liberalization of the movement of capital on enterprises productivity;
- ✓ Export firms differ from non-export ones. They are more efficient, larger and pay higher wages;
- ✓ Competition forces local enterprises to adapt to new technologies, reduce technical inefficiencies and improve product quality...;
- ✓ Productivity gains are due to the successful reallocation of human and natural resources, which are more important than gains resulted from the better exploitation of economies of scale.

De Gregorio and Lee (1998) affirmed that the fierce competition within domestic markets and foreign direct investments reduced the profits of local enterprises and minimized the production costs, as it stimulated domestic investment. Martin and Helene (2006) suggested that foreign direct investment (FDI) affects positively the economic growth rate in the long-term.

### **Financial integration, economic growth and interest rate**

Some financial have shown that raising the interest rate allows for increased profitable investments and reduces risky projects. Rising interest rates or attachment has a negative effect on the second sector Because of the increase in interest rates followed by banks. In this context, Galbis (1977) tried to analyze the positive impact of financial integration on the efficiency of investment. Galbis (1977) was able to show that the use of will reduce the pressure on domestic banks and will give other and other places for investors to realize their projects. On another side this financial liberalization will improve the efficiency of the investment and in this way he savings will move from the traditional sector to the modern sector.

Mckinnom (1973) affirmed that the liberalization of financial system allows the increase of interest rate on deposits. Therefore, it increases the savings rate that plays an important role on economic growth since that the rise in interest rates allows to reduce the projects of low-output and helps to develop the banking sector. According to him, financial liberalization is the only driving force to achieve a long-term economic growth. Shaw (1973) also demonstrated

that financial liberalization promotes the entry of foreign capital and the non-outgoing of domestic capital because of the increase of the interest rates on deposits.

Kapur (1976) is the first economist to develop Mckinnon and Shaw (1973) analysis. He suggested a model whose capital is divided into a moving capital and a static one. He demonstrated that low interest rate prevents borrowers to invest because lenders refuse to give credits, which impede economic growth. However, an increase of the interest rates on deposits enables the raise of loans demand that lead to reduce inflation and increase investments, therefore, increase the economic activity. Galbis (1977) demonstrated that the use of external financing would decrease the pressure on domestic banks and would provide other opportunities and other places so investors could implement their projects. On the other side, this financial liberalization would improve investment efficiency, and in this way savings would move from the traditional sector to the modern sector.

Brezigar-Masten and al. (2008) studied the non-linear effects of financial development and financial integration on European's economic growth using the data of macroeconomic and industrial levels. However, the effects of financial integration become more significant at higher levels of financial development. Likewise, the results demonstrate that monetary integration in Europe contributed significantly to achieve a higher degree of financial integration. So, Arjana Brezigar and al. (2011) tested the hypothesis of the direct financial integration effect on growth through the liberalization of the domestic financial sector.

Then Brigitte. D and Micheal. F (2007) have shown that in an increasingly the real interest rate is determined in large part by the forces exerted on the world market. Moreover, in the case of relatively modest open economies, the domestic situation has little effect on the real global interest rate in the medium and long term. According to the work of Brigitte Desroches and Michael Francis in 2007, we could to conclude that changes in investment demand determining the global interest rate.

### MODEL

Based mainly on the works of Edison, H. J., Levine, R., Ricci, L., Slok, T. (2002), Honig (2008) and Mougani (2012), we tried to write the estimation equation of financial integration effect on economic growth that is the following:

$$\text{Growth}_t = \alpha + \beta \text{FI}_t + \lambda \text{X}_t + \varepsilon_t \quad (1)$$

With  $\varepsilon_t$  is an error term of zero mean and constant variance; model parameters measure the variables sensitivity to economic growth.

### Dependent variable

**Growth (GDP):** refers to economic growth, some economists assume that GDP per capita is the best estimation to get the level of economic integration, which would lead to a larger integration of capital markets. We are going to take into consideration the annual percentage of growth of GDP per capita based on constant local currency. GDP per capita is the gross domestic product divided by the number of population over a one-year period.

### Independent variables

#### **-Financial integration (FI) variable**

There are several financial integration measures but we are going to use Lane and Milesi-Ferretti one. It is an indicator measured by the stock of accumulated capital flows (the sum of assets and liabilities of foreign direct investment and portfolio flows) with regard to GDP because this indicator better reflects the development of financial integration from one year to another paving us the way to better analyze the possible effects of financial openness on economic growth.

### **-Macroeconomic policy variables (X)**

-Trade openness (TO) degree: we calculate trade openness degree from the ratio of foreign trade that is the sum of imports and exports on GDP.

-Interest Rate (IR): we are going to take into account the interest rate on deposits and the interest rate paid by commercial banks, or similar, on demand deposits, fixed term deposits and deposits on account.

All the variables are annual data that are provided from the data base of International Financial Statistics (IFS) of the International Monetary Fund and the World Bank.

### **Econometric study**

There are several econometric techniques to test the long-term relationships between series. The most used ones are Engle and Granger (1987) method and Johansen (1988) approach but these methods require that all series should be integrated of the same order. However, the advantage of ARDL method is that it can be applied to any level of integration of used variables, additionally, this method produces more efficient results for small samples, which is the case of the majority of emerging countries' empirical studies. Thus, we estimate our model by this new technique of cointegration suggested by Pesaran et al. (2001) «Autoregressive Distributed Lag (ARDL) ».

Our study tries to examine the possibility of a long-term relationship between GDP per capita, which reflects the economic growth observed by (Growth: GDP), and financial integration (FI) using cointegration method suggested by Pesaran et al. (2001). We start by briefly describing ARDL technique. This procedure classifies all the variables of the model as endogenous variables. The error-correction model is resulted by the following equation (2):

$$\Delta GDP_t = a_0 + \sum_{i=1}^p b_i \Delta GDP_{t-i} + \sum_{i=0}^p c_i \Delta FI_{t-i} + \sum_{i=0}^p d_i \Delta TO_{t-i} + \sum_{i=0}^p h_i \Delta RI_{t-i} + \delta_1 GDP_{t-1} + \delta_2 FI_{t-1} + \delta_3 TO_{t-1} + \delta_4 RI_{t-1} + \varepsilon_t \quad (2)$$

With  $\Delta$  represents the operator of first difference,  $a_0$  is the constant, and  $\varepsilon_t$  is an error-term of zero mean and constant variance. We start by the estimations of equation (2) using the Ordinary Least Squares Method (OLSM) in order to test the presence of a long-term relationship between variables by the value of Fisher's test to determine the signification of the number of variable lags in our model. We test  $H_0: \delta_1 = \delta_2 = \delta_3 = \delta_4 = 0$  versus the hypothesis  $H_1: \delta_1 \neq \delta_2 \neq \delta_3 \neq \delta_4 \neq 0$ . If the statistic F calculated comes out above the threshold of critical values thus the null hypothesis is rejected, which indicates cointegration. If the calculated statistic F is below the threshold of critical values, the null hypothesis cannot be rejected due to the absence of cointegration.

We are going to make the unit root test-to-test stationarity and determine the order of integration of the different variables of each country.



**Table N°1 : Unit root test**

	Algeria	Marrocco	Tunisia
GDP	Level - 2.051012	Level - 1.708593	Level - 2.443663
	1rst differences -4.706734	1rst differences -10.82995	1rst differences -6.166100
FI	Level - 1.546117	Level - 1.135895	Level - 2.308706
	1rst differences -1.546117	1rst differences -8.622130	1rst differences -8.023550
TO	Level - 1.825863	Level - 1.696727	Level - 2.936071
	1rst differences -4.862793	1rst differences -8.670391	1rst differences -9.074802
RI	Level - 1.830388	Level - 1.223544	Level - 1.208833
	1rst differences -6.852600	1rst differences -4.959012	1rst differences -5.826062

**Source: calculation made on eviews 9.0.**

All the regression include an intercept in the levels and in the first differences at 5%.

In table N°1, we find that the variables are not stationary and are only stationary in the first difference. Therefore, all variables are integrated of order 1 or I(1). Based on the above unit rate test, we apply the autoregressive cointegration test to determine if there is a linear combination of variables of the model that is cointegrated.

### **Study of cointegration according ARDL approach**

To analyze the cointegration of variables, it is necessary to determine the number of optimal lag (P) of the autoregressive model VAR based on the values of AIC criteria (Akaike Information Criterion) and SC (Schwarz Criterion). Indeed, the choice of the number of lags could have a major influence on the performance of cointegration tests.

**Table N°2: VAR lag order**

	Lag	LogL	LR	FPE	AIC	SC	HQ
<b>Algeria</b>							
	0	-238.8633	NA	3221.901	19.42906	19.62408	19.22721
	1	-167.6745	113.9020*	39.81782	13.69522*	15.98906*	18.43652*
	2	-156.9473	13.73084	67.99020	15.43578	17.19097	18.81567
<b>Marrocco</b>							
	0	-300.7730	NA	456117.8	24.38184	24.57686	24.43593
	1	-265.3104	56.74021*	98241.64*	22.82483	23.79993*	23.09528*
	2	-249.2681	20.53418	109647.5	22.82145	24.57663	23.30826
<b>Tunisia</b>							
	0	-241.8991	NA	4107.571	19.67192	19.86694	19.72601
	1	-206.9408	55.93316*	921.1464*	18.15527*	19.13037*	18.42572*
	2	-194.4557	15.98100	1366.534	18.43645	20.19164	18.92327
	3	-184.2596	9.788222	2980.894	18.90077	21.43603	19.60394
	4	-162.4143	13.98100	3922.747	18.43314	21.74849	19.35268

**Source: calculation made on eviews 9.0.**

\* indicates lag order selected by the criterion

LR: sequential modified LR test statistic (each test at 5% level)

FPE: Final prediction error

AIC: Akaike information criterion

SC: Schwarz information criterion

We recognize that the number of lags that minimize the criteria « AIC » and « SC » is P=1 for Algeria, Morocco and Tunisia.

So now we can estimate the long-term relationship between economic growth and financial integration by the ARDL approach. Table N°3 of the test of Bounds summarizes this long-term relationship.

**Table N°3 : the Bounds testing analysis**

Countries	lag	F-statistics	
Algeria	1	4.175683	
Marrocco	1	16.25216	
Tunisia	1	15.13850	
Critical Bounds values	Lag 1		
	I(0)	I(1)	
	10%	2.72	3.77
	5%	3.23	4.35
	2.5%	3.69	4.89
	1%	4.29	5.61

**Source: calculation made on eviews 9.0.**

We find that the coefficient of F-statistics of Tunisia and Morocco (calculated F of Tunisia=15.13850 and Morocco=16.25216 ) exceeds the critical values of 10%, 5%, 2.5% and 1% of Bounds test. While for Algeria, the coefficient F-statistics (calculated F=4.175686)

exceeds the critical values of 5%, 2.5% and 1% of Bounds test, which examines the long-term relationship between economic growth and financial integration for these three countries. Therefore, we conclude that the long-term relationship exists.

**Table N°4 : Long Run Coefficients**

Dependent variable : GDP			
	Variables	Coefficients	Probabity
Algeria	FI	1.774888	0.0007
	TO	0.051896	0.0238
	RI	1.002059	0.0001
Marrocco	FI	0.795844	0.0027
	TO	0.000259	0.0210
	RI	0.502599	0.0010
Tunisia	FI	0.118148	0.0015
	TO	0.015831	0.0693
	RI	0.479910	0.0028

**Source: calculation made on eviews 9.0.**

Table N°4 presents the existence of a positive and significant relationship between macroeconomic policy (interest rate on deposits) and economic growth (GDP) for the three countries, however, the relationship between the second variable of macroeconomic policy (trade openness) and economic growth is positive but not significant. Also, we recognize that the long-term relationship between economic growth and financial integration variable is positive and significant.

### CONCLUSION

Using ARDL approach to study the long-term relationship between economic growth and financial integration, we come to the conclusion that financial integration has a long-term positive influence on economic growth. As well as the macroeconomic policy followed by the Maghreb countries (Tunisia, Algeria and Morocco) helps a lot to boost economic growth. Bounds test's results clearly demonstrate the importance of the determination of a macroeconomic policy, which encourages an economy to well integrate, financially, on the global market that has a great effect on economic growth. We find that trade openness and interest rates on deposits have a positive impact on economic growth even though openness value is not significant. So, financial liberalization increases the interest rate on deposits, which leads to increase the savings rate of an economy, since this rise of the interest rate reduces projects of low-output and helps to develop the financial sector that plays an important role in economic growth. Finally, we can conclude that without a good macroeconomic policy an economy cannot integrate financially, and subsequently cannot act positively on economic growth.

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## Jamu Brand Indonesia: Consumer Preferences and Segmentation

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### Abstract

Indonesia is one of the countries that develop traditional herbal medicine, which is called *Jamu*. However, *Jamu* is consumed by the poor. Meanwhile, the rich prefer to use modern health treatment. In addition, there is no sufficient confident of people to consume *Jamu* as their main medical treatment. Hence, identification of potential consumer of *Jamu* from demographic characteristics and exploration of consumer preferences of *Jamu* according to the market segments in Indonesia is important for herbal medicine industry to develop a consumer-based marketing strategy. Cramer's V-test statistical test was used for the analysis of 183 data survey. The findings are consumers of *Jamu* assumed that *Jamu* is cheap, easy to obtain, have no side effects, natural, and safe to be consumed. But, they considered herbs as an alternative medicine or therapy, and even as the last resort. *Jamu* is potential to be developed by product and pricing differentiation, and packaged as a product that emphasizes value with halal certification. In addition, the classification of *Jamu* as Phytopharmacy has not affected consumer purchasing decisions as it has not been included in the health care system. For middle up segments, *Jamu* needs a strong brand using English language and required medical professionals as an advisor.

**Keywords:** Jamu, consumer preference, segmentation, marketing strategy.

**JEL Classification:** M11, M30, M31.

### INTRODUCTION

In its history, *Jamu* (Indonesian traditional herbal medicine) has been used by the royal family to enhance fitness, to cure ailments, and to maintain beauty (Zuraina et al., 1990 in Limiyati & Juniar, 1998; Stevensen, 1999). Today, *Jamu* is consumed as complementary and alternative medicine (CAM) (Nissen & Evans, 2012), therapy, and even to treat severe conditions such as kidney failure and diabetes (Tuschinsky, 1995). In addition, *Jamu* provides plenty of iron, of which deficiency is a major issue in Indonesia in relation to the role of iron in productivity, child's growth, immunity, and pregnancy health (Kodyat, Kosen, & De Pee, 1998)

*Jamu* Brand Indonesia was initiated by President Susilo Bambang Yudhoyono on May 27<sup>th</sup>, 2008 (Purwaningsih, 2013). The government of Indonesia has also requested the UNESCO to establish *Jamu* as one of the world cultural heritage (Maruf, 2007), with "*Jamu*" as the term used instead of "herbal medicine". This branding is seen as a distinguishing mark as herbal medicine is known not only in Indonesia, but also in Malaysia, China, and India. In Malaysia, *Jamu* is known as *Malay phytopharmaceuticals*. These herbal medicines have also been used for decades and generations in Malaysia (Tuschinsky, 1995), as self-medication. Suprana (2014), a renowned humanist and *Jamu* business owner in Indonesia, emphasizes the importance of the term *Jamu* as a brand instead of *herbal medicine* in that the word shows serves as the cultural identity of an Indonesian product, much like Batik, Angklung, and Tari Saman, without reducing the commercial value of the product. Market acceptance towards *Jamu* product from Indonesia has been showing positive trends. On a national scale, *Jamu* product sales rose 120%

in the last 5 years, from 5 trillion rupiah in 2006 to 11 trillion rupiah in 2011, and to 20 trillion rupiah in 2014, of which 2,5 trillion is obtained from export sales (INFARKES, 2013). KADIN (Indonesian Chamber of Commerce and Industry) recommends *Jamu* as flagship industrial cluster which driving job creation and reducing poverty rate on the basis of local wisdom (Muslimin et al., 2009). This positive trend is attributed towards the "back to nature" preference adopted by the global community in personal healthcare (Hill & Howell, 2014). Compared to the conventional medicines, *Jamu* is more affordable, more readily available, and has fewer side effects (Muslimin et al., 2009). However, many people consider *Jamu* is not medicine, even though herbal medications can be combined with modern medicines to add therapeutic effects. Even without additional chemical substances, *Jamu*, which is already classified as Phytopharmacy, may be considered equal with synthetic or chemically enhanced medicines (Dean & McGuire, 2005).

The Indonesian government has shown its commitment to support *Jamu* industry up to the point where *Jamu* has now become an economic pillar for the nation. One exemplary effort comes from the Ministry of Agriculture with the establishment of Spices and *Jamu* Centre, a hub for information, marketing and education for *Jamu* (Balittro, 2012). *Jamu* companies as major players in the development of *Jamu* also continuously seeks to expand its market, with prime examples such as Ny Meneer selling its products in Malaysia and Vietnam (Amirullah, 2014), Borobudur intensifying its media campaign (Kurniawan, 2015), and Sido Muncul developing standardized *Jamu* products as an effort to penetrate global market particularly in Malaysia, Australia, Europe, and the US, along with product differentiation by offering various flavours (Prima Wirayani, 2015). However, Charles Saerang and Jaya Suprana, both influential *Jamu* businessmen in Central Java, believe that much more exploration of the potential of traditional Indonesian *Jamu* has to be made before the industry reaches its full potential (Muslimin et al., 2009).

Stevensen (1999) finds *Jamu* has only been used by the poor and those with low income in Indonesia for the past decade. High health care cost is one of the main causes of this phenomenon. On the other hand, wealthy Indonesians often seek medical care outside of the country such as Singapore, to get medical care with better quality. It can be concluded that Indonesian consumers do not possess trust to the poorly managed and packaged *Jamu*. So far there has been no sense of pride in Indonesians for consuming *Jamu* products (Pos Sore, 2015). In addition, foreign herbal medicines take up the limelight of alternative medicines, which can be attributed to the lack of promotion and information of the potency of Indonesian *Jamu* (Elfahmi, Woerdenbag, & Kayser, 2014), while intensive campaign of Mastin, a mangoesteen peel extract product, is proven to capture the attention of many consumers (Kurniawan, 2015).

Despite all these challenges, however, *Jamu* products keep showing positive trends in sales. Still, the figure is away from where many *Jamu* industrialists hope for, considering the vast potency of *Jamu* as a genuine Indonesian product to be developed and be internationally recognized. Also, there have not been many studies conducted on the Indonesian consumer preference towards *Jamu*. In the past, studies on *Jamu* mainly concerns on its medical potency or its relationship with the wealth of floral specimens in Indonesia. Some studies in the past also made efforts to upgrade herbal medications not only as *Jamu* therapy but also as standardized practice, as far as going for Phytopharmacy. All the while, exploration of consumer preference towards *Jamu* is just as essential to conduct the appropriate marketing mix, which involves among others the required *product/service, price, place, and promotion*. Therefore, this research aims to; first, identify consumer preference towards *Jamu* according to social demographic characteristics in order to map market potential of *Jamu*. This map of market potential will be useful to discover alternative market shares for *Jamu* products.

Secondly, this research aims to discover consumer preference towards *Jamu* according to market share in an effort to identify the desired consumers' treatments which will encourage them to use *Jamu* instead of modern or foreign herbal medications.

## LITERATURE REVIEW

### ***Types of Indonesian Jamu***

*Jamu* in its many variants is identified academically and globally as herbal medicine, phytotherapy, botanical medicine, medical herbalism, and herbalism (Nissen & Evans, 2012). In Indonesia, *Jamu* is classified based on its production process, user claims, and all of which is regulated in Decree of the Head of Indonesian Drug and Food National Agency number HK.00.05.4.2411 on Fundamental Regulation on Classification and Designation of Indonesian Natural Medicines. According to the regulation, *Jamu* is grouped into traditional *Jamu*, standardized herbal medicine, and Phytopharmacy (Badan Pengawas Obat dan Makanan, 2004).

Traditional *Jamu* products must meet safety criteria as set out in the existing regulations, go through the empirical test on its claims of efficacy, and must adhere to quality assurance standards. The efficacy and safety of traditional *Jamu* are empirically confirmed when the recipe has been used for generations. Standardized herbal medicines have to fulfill safety requirements according to present regulations, be tested scientifically/pre-clinically for claims of efficacy, and adhere to specific standards in terms of ingredients used in the end-product. Hence, standardized herbal medicine needs to fulfill quality assurance standards through a pre-clinical test such as toxicity test (safety), dosage approximation, pharmacodynamics test (efficacy) and teratogenicity test (safety towards pregnancy). All the requirements must be met by *Jamu* of Phytopharmacy category, with efficacy claims clinically tested, and its ingredients are in accordance with recognized standards, as well as meeting all the quality assurance requirements (Badan Pengawas Obat dan Makanan, 2004).

### ***The Development of Jamu***

Commercial *Jamu* sales began with *Jamu gendhong*, which is believed to be a production surplus of family medication. *Jamu gendhong* or *Jamu* women commonly have no label, are sold in liquid form, and have been used for years and generations, particularly in Java (Sri Zuraina, Sri Harti, Emi Sukarti, 1990 in Limyati & Juniar, 1998). To name some of the products of *Jamu gendhong* are *beras kencur*, *cabe puyang*, *gepyokan*, *pahitan*, and *sinom*.

There are at least three known ways of producing *Jamu gendhong*, namely; boiled; dried and ground, sold in powder; and ground, boiled, and simmered into extract (Limyati & Juniar, 1998; Tuschinsky, 1995). Another variant of traditional *Jamu* is made only by sun drying (Tuschinsky, 1995). Research by Limyati and Juniar (1998) found that all samples of *Jamu gendhong* do not meet standards, and are contaminated by Coliform (due to poor hygiene), also are infested with fungus (due to poor storage) and *S. Aureus* (due to poor hygiene of producing personnel and production equipment). Moreover, *Salmonella Typhus* and *Paratyphoid* (attributed to typhoid fever in humans) are also found in the samples. Consumers doubt in consuming *Jamu* is not without reasons. One of those reasons is the quality of the raw material and end products which are questionable at best. Zhang, Wider, Shang, Li, and Ernst (2012) listed an inventory of research on herbal medicine and compiled evidence of contamination of heavy metal in the herbal medicines inquired. In addition to that fact, herbal medicines, which are lauded for its chemical additive-free nature, are proven to still contain a chemical additive in their contents.

Since the 20<sup>th</sup> century, however, *Jamu* began to be sold more intensively and began to be known as modern *Jamu* industry. The rise of modern *Jamu* in Indonesia began with brands like



*Jamu* Jago, Nyonya Meneer, and Air Mancur. In 1995 alone, there were 350 big and small business companies listed as the producer of *Jamu* in Indonesia. More *Jamu* companies participated in the business as demands both local and export of *Jamu* increases. Today, *Jamu* is freely sold in the form of liquid and powder, as well as tablet, pill, and tonic (Tuschinsky, 1995). Most *Jamu* companies operate in accordance with proper industrial standards and perform a clinical test on their products, thereby putting their brands in the level of Phytopharmacy, or similar to modern medicines.

### **Preference**

Preference has defined the disposition of an individual towards an object which is commonly reflected in explicit decision-making processes (Bettman, Luce, & Payne, 2006). In other words, preference is one's feeling of like or dislike towards an object. Preference is dynamic in nature, which means that it changes along with a shift in value, education level, perception, time, situation, and lifestyle of the respective individual.

In relation to preference towards *Jamu*, *Jamu* is perceived to have various efficacy, are divided into a number of quality classifications, and are produced by a number of companies which are perceived to make an effort to create certainty among their consumers. So far, efforts in cross-corporation strategy integration to create an image as an Indonesian brand are still found to be very limited. Therefore, preliminary studies need to be conducted to identify the consumer groups of *Jamu* and the preferences prevalent in each group or, in other words, market segmentation.

Social demographic characteristics are features which describe differences in population based on age, sex, occupation, education, religion, income, family type, marital status, and geo-location. With social demographics mapping, companies can identify market targets. Social demographic information also reflects the current trends. Demographics can also be used to observe changes in demands of various products and to evaluate marketing campaigns. After the market has been grouped based on each demographic characteristics, then the preference of each group can be identified. As an example, the identification consumer group with a preference towards *Jamu* with Arabic label, with reference to Tuschinsky (1995) who discovers that, for a market in Malaysia, it is suggested that producer labels their products with Islamic-themed packaging, orthography, or visuals, as opposed to the Javanese-themed ones. This preference is attributed to the faith-oriented view of the Muslim community which asserts stronger influence over the culture of the country of origin of the product.

According to Little (2009), six preference criteria for *Jamu* products are obtained from research in several industrious countries, all of which can enrich the consumer preference in each of the segments. These criteria are the efficacy claim that *Jamu* can relieve symptoms of sickness and that *Jamu* is perceived to give side effects. Another criterion is based on the relationship formed between clients and practitioner/professionals in herbal medicines, as well as the minimum effect that *Jamu* have on daily activities. In western countries, continuous use of herbal medicines is attributed to a strong bond between practitioners or professionals and their consumers. The practitioners retain their consumers by putting special attention to the need of consumers to be heard (Nissen & Evans, 2012). Little (2009) adds that clients seeking herbal medication treatments also enjoys chatting with other clients.

Forming brand equity in order to encourage the local community to consume *Jamu* as alternative medicines, Thai government applies community-oriented approach and clinic-oriented approach. Both approaches are applied considering *Jamu* is often sought out as medication whenever modern pharmacy is deemed insufficient by consumers in Thailand. This

research finds that the adoption of clinic-based approach is more successful in Thailand private hospitals than in government-run hospitals. In addition, community-based approach is more effective in self-initiative consumption of medications, compared to initiatives from doctor's prescriptions or other professionals' suggestions. Professionals are found to have a more significant role in the consumption of *Jamu* in clinic-based approach. Therefore, the government needs to take a role in encouraging the use of *Jamu* in healthcare (Elfahmi et al., 2014). The experience from Thailand shows that recommendation is one of the key elements in promotion as a part of a marketing mix, which plays a significant part in marketing strategy compared to, for example, price point or product quality.

In modern *Jamu* industry, various promotional campaigns through advertisements in printed and broadcast media have been intensively pursued. Even so, word-of-mouth (WOM), which is a type of recommendation, is a part of promotional media which still possesses a significant influence (Tuschinsky, 1995). So far, *Jamu* producer companies have been using *house-to-house seller*, in which the reseller also acts as a healthcare or beauty consultant. Ready-to-drink *Jamu* counters are vastly spread all over urban areas in Indonesia and Malaysia. In this scheme, house-to-house sellers, resellers, and ready-to-drink *Jamu* counters take up the role of *Jamu* consultants for end-consumers. However, product knowledge of these people is perceived to be limited on what is written in the packages of the *Jamu* they sell. On the other hand, consumers expect more information from the *Jamu* products that they consume (Tuschinsky, 1995).

### METHODOLOGY

This research uses positivism paradigm with survey so that findings can be generalized (Cooper, D. R., & Schindler, 2013) as Collis, J., & Hussey (2009, p. 76) say that a survey has the purpose of collecting "primary and secondary data from a sample with a view to analyze them statistically and to generalize the results to a population". In this research, the survey aimed to obtain primary data of the *Jamu* consumption behaviour of Indonesian. In addition, the survey included questions to gather both descriptive and analytical data. Descriptive questions were used, particularly to assess consumers' perception and comprehension of *Jamu* about the price, packaging, side effects, and also the classification. Analytical survey questions determined the relationship between consumers' segmentation and their perception and comprehension towards *Jamu*.

This is an exploratory study considering that studies relevant to the *Jamu* consumption behaviour, particularly in Indonesia, are limited. Most papers on *Jamu* mainly discuss the exploration of various botanical products in Indonesia for healthcare. Meanwhile, social studies concerning the consideration and how consumers consume *Jamu* as alternative medication are few. This study can be a representation of Indonesian consumers towards *Jamu* referring to social demography segmentation.

The questions were measured in the form of grades or rates by a Likert scale using 6 scales, ranging from strongly disagree (scale number 1) to strongly agree (scale number 6). Thus, referring to Cooper and Schindler (2013, p. 312), the data were included as an interval scale because there is "classification, order, and distance, but no natural origin". An even number was chosen as Mitchell (1999 in McGorry, 2000) mentions that Asian respondents tended to prefer the middle value of an odd-numbered scale. In addition, according to Kulas & Stachowski (2009, p. 489), the middle response has the potential to be the "dumping ground", thereby showing the respondents' "uncertain, indifferent or ambivalent response orientations".

The population of this research is actual and potential *Jamu* consumers from all across social demographic strata in Indonesia, which the views were collected by convenience sampling. Self-administered questionnaires are distributed by door-knocking, along with an online survey which is widely distributed to respondents through Google form during November 2015. Data analysis is performed by basic statistics of frequency distribution and Cramer's V-test to identify the relationship between variables involved for 2-by-2 or more tables on nominal data (Pallant, 2007). In addition, to gain goodness criteria of the data collection, the respondents were those who have a minimum age of 17 years old and must be those who have a role in decision-making related to health and stamina issues in their respective families. This study involved 183 samples as according to Fink (1995), in order to obtain standard error of less than 10%, the sample size has to be more than 100 units, while Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham (2006) mention that to increase precision, there should be a sample of between 150 to 200.

## FINDINGS

General description of a respondent is made to understand the characteristic of the respondent, who have given answers to the questions listed in the questionnaires. That the answers given by a respondent are affected by his social and economic background is always a possibility. This brief description of a respondent includes the identification of age, education, religion, and other social statuses.

The respondents participating in this research comprise of 183 Indonesian nationalities that are mostly Muslim and come from Javanese ethnicity. Respondents come from various age ranges, from 18 to more than 61 years old, which are then grouped into five age ranges. The majority of the respondents are women, married, and holding a university degree or similar qualification. Respondents with more than IDR 2.5 million in a month make up 56.3% of the population. The detail of respondents' demographics profile is the following:

**Table 1 Demographics profile of the respondents**

Demographics	Categories	Frequency	%
Age	≤30 y.o	72	39,3
	41 - 50	39	21,3
	31 - 40	36	19,7
	51 - 60	25	13,7
	≥61 y.o	11	6,0
Religion	Muslim	161	88,0
	Non-Muslim	22	12,0
Race	Javanese	148	80,9
	Non-Javanese	35	19,1
Marital status	Single	111	60,7
	Married	72	39,3
Education	less than higher degree	80	43,7
	higher degree	103	56,3
Spending	≤ Rp2,5 mill	80	43,7
	> Rp 2,5 - 5 mill	68	37,2
	> Rp 5 - 10 mill	33	18,0
	> Rp 10 mill	2	1,1

## Consumer Preference

The majority of *Jamu* consumers in Indonesia perceive *Jamu* prominently as an affordable product (95.6%) and widely available (89.1%), with both perceptions scoring at an average of 5.1. This means that *Jamu* is perceived as convenience goods in Indonesia. Consumers also perceive *Jamu* as a natural product (93.4%). On the other hand, the perception that *Jamu* is safe to consume, without side effects and the chemical additive is not as prevalent as that of the availability and affordability of *Jamu*. As many as 78.7% of consumers believe that Indonesian *Jamu* is safe to consume, 63.9% of consumers think that *Jamu* is without side effects, and only 57.9% of consumers believe that *Jamu* is made without chemical additives, scoring a mean of 3.7.

As a consequence, there is reluctance among the consumers to use *Jamu* as a primary choice for medication, leading them to opt for a modern pharmacy to help cure sickness or to be used in therapy. This research discovers that only 62.1% of consumers who use *Jamu* as a primary choice for medication. As a treatment for more severe illnesses, only 65.6% consumers choose *Jamu* as an alternative medication. There is even tendency to make *Jamu* as a last resort in medication, as stated by 67.8% of consumers.

Even when it is found that there are many consumers who make *Jamu* as their first choice of medication, the finding is not surprising since the majority of the respondents involved in this research, as much as 80.3%, spend  $\leq$  IDR 5 million monthly. This finding is consistent with what Stevensen (1999) found which states that from a decade ago until today, *Jamu* is a medication mainstay for people with little or no income at all. In addition, *Jamu* consumers with considerably higher income only use *Jamu* to treat mild sickness.

Reference or media group perceived giving the most significant influence on *Jamu* consumption in Indonesia by 62.6 % of the consumers are professionals, namely medical doctors and healthcare consultants. In addition, friends and colleagues are also perceived to influence the consumption behavior of *Jamu*.

This research finds that almost all *Jamu* consumers in Indonesia, as many as 95%, prefer to consume *Jamu* with the *halal* label, even those who do not adopt Islam as their religion. On the other hand, a citation from the *sunnah* book on the *Jamu* package is not a prominent preference for consumers. Another non-prominent preference determinant is the *Jamu* brand. Consumers do not seem to show a strong preference for specific *Jamu* brands, such as Arabic, Indonesian, or English branding of the product. As many as 80.9% of the consumers even disagree with Arabic branding as a preference and choose *Jamu* as the brand instead. Consumers also do not seem to show a preference for modern packaging. 88.5% of consumers do not make foreign *Jamu* brand as a preference, with a mean score of 2.0. In detail, the Indonesian consumers' perception, behaviour, reference, and preference is the following:

**Table 2 Consumers' perception, behaviour, reference, and preference**

Indicator	Disagree	Agree	%	Mean score
Perception				
Cheap	4.4%	95.6%	100%	5,1
Easy to obtain	10.9%	89.1%	100%	5,1
Natural	6.6%	93.4%	100%	4,8
Safe	21.3%	78.7%	100%	4,4
No negative effect	36.1%	63.9%	100%	4,0
No chemical substance	42.1%	57.9%	100%	3,7
Behaviour				
Main medicine	38.8%	61.2%	100%	3,8
Alternative medicine	34.4%	65.6%	100%	3,9
Last resort	32.2%	67.8%	100%	3,9
Reference group				
Friend	38.8%	61.2%	100%	3,5
Waiter	45.9%	54.1%	100%	3,2
Professional	37.2%	62.8%	100%	3,7
Social media	60.7%	39.3%	100%	2,8
Commercial ad.	54.6%	45.4%	100%	3,0
Preference				
Halal	4.4%	95.6%	100%	5,4
Prophet sunnah	59.6%	40.4%	100%	3,2
Foreign herbal medicine	88.5%	11.5%	100%	2,0
Modern packaging	56.8%	43.2%	100%	3,5
Arabic brand	80.9%	19.1%	100%	2,6
Indonesian brand	55.2%	44.8%	100%	3,3
English brand	54.1%	45.9%	100%	3,5

Only 55% of Indonesian *Jamu* consumers are aware that *Jamu* products are grouped into several classifications, with each classification logo is printed on the packaging. However, most consumers do not know of the existing classifications, the form of the logo used for each classification, especially those belonging to Phytopharmacy *Jamu*. Therefore, consumers do not take *Jamu* classification into consideration when consuming *Jamu*. Although consumers are not aware of *Jamu* classifications and know the logo of the classifications, the majority of them believe that traditional *Jamu* and standardized herbal medicine is chemical additive-free.

Other than product attribute preference, *Jamu* consumers in Indonesia do not show a strong preference for *Jamu* products from a certain country of origin. Not one preference for each country of origin criterion obtains more than 50% mark from the consumers. So much so that only 19.1% of the consumers make Arabic *Jamu* as their preference. Today, the most consumed *Jamu* products are modern *Jamu* Tolak Angin and *Jamu gendhong*, such as Beras Kencur and Kunir Asem. This research finds a trend that *Jamu* consumers are not aware of *Jamu* classification, nor do they consider those classifications in making the decision to consume *Jamu*. Only 40% to 55% of all the consumers are aware of *Jamu* classifications and the different logos representing those classifications. Almost all of the consumers know the logo for traditional *Jamu*, yet only 24.6% and 15.3% of the consumers know the logos for standardized herbal medicines and Phytopharmacy respectively. There is an interesting finding in which consumers perceive the higher classification of a *Jamu* is, the more chemical additives in its contents.

**Table 3 Consumers comprehension of Jamu classification and chemical substance**

Indicator	Disagree	Agree	%	Mean score
Classification				
Number of classes	59,6%	40,4%	100%	3,0
Logo of classes	44,8%	55,2%	100%	3,4
Logo of traditional <i>Jamu</i>	51,4%	48,6%	100%	3,5
Logo of standardized herbal	75,4%	24,6%	100%	2,6
Logo of Phytopharmacy	84,7%	15,3%	100%	2,3
Classes consideration in the consumption	51,4%	48,6%	100%	3,4
Chemical substance				
Traditional <i>Jamu</i> without chemical	39%	61%	100%	3,8
Standardized herbal without chemical	42%	58%	100%	3,6
Phytopharmacy without chemical	56%	44%	100%	3,2

In determining their purchase or consumption of *Jamu* products, consumers directly and indirectly obtain their reference from colleagues, mass media, social media, as well as other reference groups. For *Jamu* companies, identifying the most potential media as sources of product information and recommendation for consumers is very important, so that the companies can maximize the role of such reference media in marketing their products.

**Table 4: Consumers' reference groups**

Variable	Cramer's V
Age vs Friend/colleague	,230*
Age vs Shop waiter	,240*
Age vs Professional	,223*
Age vs Social media	,236*
Age vs Commercial ad	,248*
Religion vs Friend/colleague	,147
Religion vs Shop waiter	,123
Religion vs Professional	,134
Religion vs Social media	,229*
Religion vs Commercial ad	,172
Spending vs Friend/colleague	,145
Spending vs Shop waiter	,187
Spending vs Professional	,199
Spending vs Social media	,392*
Spending vs Commercial ad	,224*
Education vs Friend/colleague	,177
Education vs Shop waiter	,191
Education vs Professional	,219*
Education vs Social media	,175
Education vs Commercial ad	,196

This research has found that, first, there are significant differences in the age group to make friend/colleague, shop waiter, professional, social media, and commercial advertisement as media references of *Jamu* consumption. Second, there is a significant difference in the religion group to make social media as media references of *Jamu* consumption. Third, there are significant differences in the spending group to make social media and commercial advertisement as media references of *Jamu* consumption. Fourth, there is a significant

difference in the education group to make professional as media references of *Jamu* consumption.

### Consumer Segmentation

In this research, *Jamu* consumers in Indonesia are grouped based on their demographic aspects, namely age, religion, education, income, ethnicity, marital status, and sex. This research identifies how the difference in each demographic class influences preferences in a certain attribute of *Jamu* products.

According to their age, consumers from different age groups have their own preferences in specific *Jamu* products. Older consumers prefer *Jamu* with Indonesian brand over those with Arabic brand. In addition, consumer age and preference in Indonesian *Jamu* brand show lateral correlation. On the other hand, consumer age and awareness of the 3 classifications of *Jamu* shows inverse correlation, with older consumers being less aware of and do not take these classifications into consideration when purchasing and consuming *Jamu* products. Different preferences are also found among Muslim and Christian consumers and Catholic consumers. Muslim and Christian consumers have a higher preference in *Jamu* with *halal* label compared to those with Catholic as religion. However, citations from the *sunnah* book do not seem to give significant influence towards the preferences of *Jamu* consumers across the segments. Only Muslim consumers show positive preference in *Jamu* with a citation from the *sunnah* book on its package. Educational background of consumers does not show significant influence towards their consumption of *Jamu* products. However, education level of consumers shows a positive relationship with awareness of the consumers of *Jamu* classifications and their logos. Income level does not seem to influence consumer preference in *Jamu* products packaging. There is a positive tendency, however, that the higher the income of the consumers, the more likely that they prefer to consume *Jamu* with modern packaging and Indonesian brand.

Women have a stronger perception that *Jamu* in Indonesia is chemical additive-free. Contrary to this fact, more men are shown to consider *Jamu* classification prior to product purchase or consumption than women. Consumers who were married or are currently married prefer Indonesian *Jamu*, have no significant preference in *Jamu* package with *sunnah* citation, and tend to purchase *Jamu* with modern packaging. On the other hand, these consumers are shown to have low awareness of *Jamu* classifications and their logos. Therefore, consumers who were or are currently married do not make *Jamu* classifications and their logos as a preference when purchasing or consuming *Jamu* products. This following table describes the influence of demographic characteristics towards consumers' perception, behaviour, reference, and preference of Indonesian *Jamu*.

**Table 4 Cramer's V-test significance**

Perception	Age class	Religion	Education	Spending	Race	Marital status	Sex
1. Cheap	<b>0,023*</b>	0,526	0,118	0,263	1,000	0,154	0,053
2. Easy to obtain	<b>0,003*</b>	0,922	0,299	0,863	0,948	<b>0,001*</b>	0,207
3. No negative effect	<b>0,031*</b>	0,423	0,099	0,393	0,811	<b>0,030*</b>	0,259
4. No chemical substance	<b>0,005*</b>	0,196	0,358	0,267	0,720	<b>0,024*</b>	<b>0,014*</b>
5. Safe	0,661	0,490	0,059	0,151	0,780	0,470	0,831
6. Natural	0,203	0,142	0,970	0,503	<b>0,000*</b>	0,310	0,770
7. Main medicine	0,906	0,921	0,590	0,338	0,681	<b>0,030*</b>	0,994
8. Alternative medicine	0,412	0,202	0,445	0,111	0,407	<b>0,000*</b>	0,064
9. Last resort	0,309	0,898	0,593	0,237	0,523	0,262	0,592
10. Foreign herbal medicine	0,197	0,522	0,314	0,965	<b>0,000*</b>	0,086	0,658
11. Prophet sunnah	0,377	<b>0,000*</b>	0,853	0,286	0,686	0,095	0,144
12. Halal	0,643	<b>0,001*</b>	0,709	0,667	<b>0,000*</b>	0,363	0,065
13. Modern packaging	0,381	0,679	0,159	<b>0,006*</b>	0,886	<b>0,027*</b>	0,095
14. Arabic brand	<b>0,006*</b>	0,198	0,437	0,672	0,955	0,490	0,747
15. Indonesian brand	<b>0,000*</b>	0,618	0,081	<b>0,009*</b>	0,773	<b>0,000*</b>	0,052
16. English brand	0,052	0,285	0,187	0,107	0,286	<b>0,009*</b>	0,536
17. Number of classes	<b>0,000*</b>	0,666	0,076	0,260	0,588	<b>0,001*</b>	0,141
18. Logo of classes	<b>0,000*</b>	0,121	<b>0,024*</b>	0,569	0,974	<b>0,000*</b>	0,187
19. Classes consideration in the consumption	<b>0,005*</b>	0,721	0,059	0,057	0,118	<b>0,000*</b>	<b>0,041*</b>

\*significant

## DISCUSSION

Studies related to consumer preferences are crucial, particularly nowadays, when technological advances have provided consumers with more options of products. At the same time, products and services are getting shorter lifetimes. Moreover, value trade-offs in commerce make preference construction more complex and dynamic (Bettman et al., 2006). In medical world, *Jamu* is still situated in a less competitive market. Even when there are various product options, one product does not have significant advantage over another. Moreover, low market price of *Jamu* makes switching cost low. This fact accounts for low consumer loyalty. Despite all that, *Jamu* companies need to build preferences, since customer preference is context sensitive, and it is built and is determined by target, cognitive constraints, and experience.

One of the most significant factors in building consumer preference in *Jamu* is *halal* product certification, which has been proven as the main indicator for consumers in the purchase and consumption of herbal medicines. This finding is notable since the study of El-bassiouny (2014) shows that today there are as many as one billion Muslims, yet they are still marginalized by limited studies about them. Meanwhile, proper application of marketing strategy promises a significant boost in sales through products which emphasize value and morality, namely *halal* products (Matin, 2011 in El-bassiouny, 2014). It is interesting to note that preference for *halal* products is also held by consumers with religion other than Islam. Moreover, Yusuf and Yajid (2015) in their research, which is conducted in five Asian countries, show that there is an increasing awareness of a *halal* product and its logo. *The halal* label has become a priority in choosing a product, which is followed by quality, brand, and price factors.



On the other hand, preference is not always a precursor for purchasing decision. Therefore, producers must understand the cognitive processes which the consumers go through in making their decision. In the Search for Dominant Structure (SDS) theory (Montgomery, 1983 in Crozier & Ranyard, 1997), when consumers are faced with multiple alternatives, they go through stages of pre-edition, finding a promising alternative, dominance testing, and dominance structuring. In purchasing and consuming *Jamu*, consumers select one product among the many kinds of *Jamu* products, they will then narrow down their selection to a number of products which are most relevant.

*Jamu* products are seen by many Indonesian consumers as convenient goods, which mean consumers do not need high effort and consideration in obtaining the products. Convenience goods do not have strong characteristics which distinguish them from their competing brands (John F. Tanner & Raymond, 2012). Therefore, *Jamu* products need to be designed as such that they are widely available, particularly affordable and practically packaged in order to allow high purchase frequency. This is due to the fact that *Jamu* has had 'crystallized' values (Schuman and Presser 1981 in Bettman, 1999), of which consumers are very familiar with the products or services and value them based on the common assumption of the said products or services. Based on this finding, *Jamu* classification is not an urgent matter and is a somewhat "wasted" effort.

On the other hand, Indonesian government adopts Indian Ayurveda which includes the use of herbal medicines in healthcare services (Shrivastava, Shrivastava, & Ramasamy, 2015), and makes classification and enrichment of *Jamu* into Phytopharmacy, under the management of Department of Healthcare, as an important objective. A government regulation which includes *Jamu* as primary medication in public health care services and which gives more access to the testing of *Jamu* and its *halal* certification is much needed. Moreover, as people gets more and more educated, they demand *Jamu* companies come up with safe-to-consume *Jamu* products. It is found that the higher the income of the consumers, the more they desire products with modern packaging. Therefore, *Jamu* companies can make product differentiation between those for the low-income, middle-income, and high-income consumers as consumers are social groups that undergo dynamic changes (Moss, 2006). In addition, Moss (2006) also states that consumers adapt more easily to new products through differentiation rather than radical change. In light of this finding, *Jamu* companies may create differentiation on their line of products, in which one product is labeled "better" when compared to the other. Thus, branding takes a crucial place in this effort. When further developed, *Jamu* will eventually turn into a shopping product from its current perception as a convenience product.

Consumers from middle to high-income groups also tend to choose herbal medicines or *Jamu* with labels in English. Hence, it is most appropriate that *Jamu* products intended for lower income consumers are labeled in a local language and be sold at the lowest possible price point. Contrary to the preceding step, products designated for middle to high-income consumers should be offered in a more modern branding and packaging, as it will express images of high-quality, exclusive, and long-lasting products (Moss, 2006). Packaging must always take the utmost concern of *Jamu* companies, as packages do not only function as product containers, but also determine quality and safety of the product as well as a preventive measure from chemical, biological, and physical damage to the products (Trinetta, 2016). Although the direct consequence of better product packaging is better quality assurance of the products, it also adds the price point of the product. To handle this, *Jamu* companies may adjust the price point of better-packaged products for appropriate consumers in certain income groups and social class, the products being a status symbol (Moss, 2006), consumers from higher income groups and social class deserve a special treatment.

Professional advisers in herbal medicines, for instance, are demanded by consumers with higher educational level. These consumers trust the opinion of professionals as reference media, rather than social media and commercial advertisements, particularly for healthcare products. The access to professional advisers is intended so that consumers can comfortably consult in determining which product is suitable for their personal needs. This deserves attention since, in Indonesia, professional consultants in herbal medicines are not commonly found. On the other hand, *Jamu* depots can still play their role in consulting consumers from the lower income groups. However, depot sellers should have the necessary skills and product knowledge. Depot sellers should not only serve the consumers as far as providing the requested products, but they also need to be aware of and have sufficient knowledge in the variants of the products that they sell.

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### CONCLUSION

*Jamu* has been specifically referred to by consumers as an Indonesian product with potential development, considering its vast market and its compatibility with characteristics of many communities. Using the findings in this research, *Jamu* companies can appropriately make product differentiation according to the perception and preference of the consumers in the proper market segments. Findings in this research can be combined with marketing strategies of *Jamu* companies so that they can accurately identify a target market and determine the most effective promotional design. However, the development of *Jamu* industry requires the support from the government, particularly in realizing *Jamu* consumption as an Indonesian culture. The realization of *Jamu* consumption as Indonesian culture is expected to increase consumer trust towards *Jamu*. *Jamu* is not just as supplements and last resort medications, but as primary medications acceptable in the medical world, not just limited to the poor. Research centre also need to expand their capacity from finding to construct consumer preference.

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## Legal Security Differences: Co-operative Comparison Between The United Kingdom And The Netherlands

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### Abstract

This paper explores the co-operative compliance approaches implemented by the UK and the Netherlands. The commonly applied legal co-operative compliance framework is used to compare both countries. Both the UK and Dutch approach on co-operative compliance are analyzed with the framework. It is concluded that the UK co-operative compliance approach creates legal security. The Dutch co-operative compliance approach is not creating legal security. These findings are elaborated considering common and civil law. Moreover, the differences in co-operative compliance are discussed in an international context. It is concluded, that from an international perspective the UK co-operative compliance approach is desirable as long as other countries follow the Dutch co-operative compliance approach.

**Keywords:** co-operative compliance, tax law, common law, code law, United Kingdom, the Netherlands, transfer pricing, tax administrations, HMRC, corporate governance, tax controlling, tax economics.

### INTRODUCTION

The OECD's co-operative compliance initiative is implemented by many countries worldwide. In the scientific literature the research on co-operative compliance is limited [1] [2]. The available co-operative compliance literature is focused on a framework for comparing co-operative compliance approaches. The current state of the legal co-operative compliance framework [3] [4] is applied to compare the United Kingdom and the Netherlands. This scientific research is the first comparing co-operative compliance approaches between countries.

### CO-OPERATIVE COMPLIANCE FRAMEWORK

In this section the UK and Dutch co-operative compliance regimes are compared. This comparison is based on the common legal co-operative compliance framework. The framework is as follows [5] [6]:

- Companies have clarity about how to comply with co-operative compliance (Clarity);
- Looking forward and real-time action to ensure that tax uncertainties are prevented or detected when they occur (timely);
- Put effort on the operations related to taxes (non-tax);
- Make it easy to comply and hard to not comply with laws and regulations (enforcement);
- Involve actively the tax payers, their representatives and other stakeholders with the purpose of better understanding and cooperation between parties (involvement).

After the analysis of the framework a conclusion is drawn on the comparison of both co-operative compliance regimes.

**Clarity.** The UK co-operative compliance regime has a high level of clarity. The Dutch co-operative compliance regime has a low level of clarity. Based on clarity the UK and Netherlands has implemented opposite regimes. Both countries are at the different end of the clarity spectrum. The UK has guided as much as possible and documented even examples how to apply for low risk. The Netherlands has guided as less as possible not even stating the requirements to apply for low risk. Both regimes have their own advantage and disadvantage. The UK regime relies on structure/ clarity and is therefore less flexible. The Dutch regime relies on flexibility and is therefore less structured/ clear.

**Timely.** The UK co-operative compliance regime has no safeguarding for timely responses on uncertain tax positions. This stems from the perception that low risk companies can make sufficient professional judgements. This is opposed to the Netherlands. The Dutch regime relies on timely responses as it is assumed that every uncertain tax position is to be discussed with the tax administration.

**Non-tax.** Both the UK and Dutch co-operative compliance regimes has an inherent focus on including non-tax processes.

**Enforcement.** The UK co-operative compliance regime is applying the enforcement model the OECD mentions: stimulating enforcement by law and benefits for complying with the law. Companies should voluntary apply for co-operative compliance. The enforcement of the OECD was not implied as enforcing companies into co-operative compliance. This is what the Netherlands is doing. The Netherlands enforces companies to participate in co-operative compliance without stimulating companies with benefits.

**Involvement.** Both the UK and the Netherlands allow all stakeholders to make comments on the co-operative compliance regime.

**Overall.** The differences between the UK and Dutch co-operative compliance regime stems from the analysis of five specific principles. Thoroughly different approaches have been applied for co-operative compliance. The approaches of the UK and the Netherlands appear to be opposites of each other. The UK has an abundant level of guidance. The Netherlands has a lack of guidance. The UK aims to document as many possible outcomes, behaviour and responsibilities before the tax activities occur. The Netherlands aim to act real-time with professional judgement and a high level of flexibility for both the taxpayer and the tax administration. Where the Netherlands called the co-operative compliance variant “horizontal monitoring”, the UK is actually operating horizontal. The Netherlands is actually operating with vertical relationships. The taxpayers must commit to the professional judgement and approach of the tax administration (or start legal proceedings). This difference in approach is also evident in the enforcement by the tax administrations. The HMRC stimulates the use of the co-operative compliance approach. The Netherlands forces companies into co-operative compliance. The UK and the Netherlands implemented different variant of co-operative compliance, even though both approaches were initiated by the OECD.

## LEGAL SECURITY

On the first sight it appears that the UK co-operative compliance approach is creating more legal security for taxpayers than the Dutch co-operative compliance approach. The UK approach has guidance on many aspects and the decision process of the tax administration is transparent. The Dutch co-operative compliance approach is unguided creating uncertainty. To

understand the differences and/ or similarities the general legal perspective of both countries is elaborated. In this general legal perspective the legal security of the co-operative compliance approaches is analysed.

### **United Kingdom**

In the United Kingdom common law is applicable [7]. Common law is a system where judicial precedent applies, judicial decisions are binding and are used to develop the law [8] [9]. This approach of law is to a large extent based on tradition. Key stone cases are important in legal proceedings. The legal environment is comparable with the legal environment of the United States. Companies aim to cover as many aspect as possible in contracting as turning to court can be expensive and the outcome is less evident than that of an exhaustive contract. In the circumstance of disagreement the method for resolving the disagreement is described in these exhaustive contracts. Legal security is in the basis derived from exhaustive contracting.

From the common law perspective the UK co-operative compliance approach is better understood. As it is common to formulate clear expectations and rules in a business relation, the HMRC fit the co-operative compliance regime in the legal environment of the UK. Companies are used to have stringent agreements before entering in a business relation. With the current structure of co-operative compliance the business relation between companies and HMRC is well defined and consists of many uncertainties. The approach for co-operative compliance is therefore creating legal security for companies participating in co-operative compliance. If disagreements occur conflicting parties can point to the general tax compliance framework and stems security from this framework.

### **The Netherlands**

In the Netherlands civil law is applicable [10] [11]. Laws are based on the decisions of policy makers. Jurisprudence can stimulate changes in law only as there is no law on a specific aspect. Once there are new laws the jurisprudence on a specific topic becomes useless. The creation of law is not necessarily in accordance with jurisprudence. In Dutch law the law practitioners are allowed a high level of professional judgement. The Dutch court is allowed to interact in the legal proceedings by requesting information not put forward by conflicting parties. Of course, this professional judgement is allowed with the assumption that the court is unprejudiced. If a conflicting party assumes prejudice, the party can ask for replacement of the judges. An independent commission decided on replacement. In tax law the high level of professional judgement is also applicable. Tax inspectors are allowed to make professional judgement on tax positions. If a taxpayer disagrees with the tax administration's decision the court concludes on the reasonableness of the decision.

The legal environment in the Netherlands is evident in the Dutch co-operative compliance approach. In the Netherlands co-operative compliance is mainly unguided. Companies are allowed to apply their own professional judgement on the design of a TCF. The tax administration/ tax inspector can make its own professional judgement on the design of a TCF and the consequent reporting requirements for the company. Co-operative compliance seems not to create legal security. However, as co-operative compliance is unguided, disagreements results in the general legal proceedings. Disagreement of tax positions between the taxpayer and tax administration result in legal proceedings comparable with the situation without co-operative compliance. No clear guidelines from the tax authorities results in no change in the legal environment. The Dutch co-operative compliance approach is itself not creating legal security.

## **Comparing the UK and Netherlands**

Putting the UK and the Netherlands in their own legal environment created new insight on their co-operative compliance approaches. The Dutch variant of co-operative compliance is in accordance with the high level of professional judgement. However, it seems that there is no legal security aimed with the co-operative compliance approach. On the opposite, the UK variant seems to create legal security. The UK co-operative compliance approach is in accordance with the UK legal environment. Moreover, the accordance with the legal environment is creating security for participants. The framework for compliance is created, published and clear. Companies are aware of the expected behaviour and are therefore able to act accordingly. The Dutch co-operative compliance regime is considered on the broader legal environment and is therefore not creating changes in the legal environment. For legal proceedings the former legal framework is still applicable.

## **DISCUSSION**

In this research the UK and Dutch co-operative compliance approach are compared. The goal of the research was to conclude on the legal security created by both approaches. From the different chapters it became evident that the UK and the Netherlands has interpreted the OECD in their own legal perspective. The UK implemented co-operative compliance with as many as possible legal guidance where professional judgement is limited. The Netherlands implemented co-operative compliance with as less a possible guidance giving companies the possibility for their own professional judgement on creating a TCF. The UK and Dutch co-operative compliance approach are opposites of each other.

In this research five OECD principles are considered for concluding on the differences: clarity, timely, non-tax, enforcement and involvement. These principles created insight in the opposites applied by the United Kingdom and the Netherlands. From the difference in law system the approaches were explainable.

With regards of legal security there are also differences. The UK has created a legal framework for co-operative compliance including the approach for disagreements. The Netherlands almost no procedures for co-operative compliance. The main focus of the Netherlands is professional judgement. Disagreement between parties is solved in court. For legal proceedings the existing legal framework existing without co-operative compliance is applicable.

Legal structures should fit the society they are applicable. With this consideration, there might be an approach optimal and an approach suboptimal. The UK approach fits its general legal environment and assuming the legal environment is fitting the society the approach is societal sufficient. This is also the situation for the Netherlands, even though the Dutch variant creates no legal security itself. The conclusion on which approach creates legal security is obvious: only the approach of the United Kingdom is creating legal security.

From a societal perspective additional insight is created on the functioning of law. To consider the societal perspective consider a group of taxpayers which is covered in both co-operative compliance regimes: multinational companies. Multinational companies must comply with laws and regulations applicable in every country they operate. It is likely that a company has operations in both the UK and the Netherlands as both countries are located near each other. To illustrate the situation a fictional company is used: FAHR. The UK profits of FAHR are taxable in the UK. The Dutch profits of FAHR are taxable in the Netherlands. FAHR has no operations in other countries and is therefore not able to avoid taxation. FAHR is willing to



participate in both the UK and Dutch co-operative compliance regime as the corporate governance of the company is aimed at complying with good tax behaviour. Before implementing a tax compliant risk management framework FAHR has considered both the UK and Dutch guidance. In such a situation a remarkable situation occurs. The Dutch documentation creates the possibility of professional judgement. The UK documentation on the other side creates limited possibility for professional judgement and FAHR must comply with the specific guidance from the HMRC.

So, what would happen in practice if FAHR must comply with both the UK and Dutch compliance policy? FAHR implements the UK co-operative compliance framework as this has detailed structures. In addition, it considers whether the implemented internal tax control environment requires additions based on professional judgement (Dutch requirement). As the UK approach is thoroughly documented there are probably very few additions. The situation that occurs is one where the UK co-operative compliance regime has been implemented. Implementing the UK co-operative compliance regime results in complying with both the UK and Dutch co-operative compliance approach.

The question is whether it is societal desirable that by following the UK co-operative compliance regime it is possible to comply with the Dutch co-operative compliance regime. To my opinion, it is desirable. The OECD initiative is aimed at international tax compliance which results ultimately in less tax expenses for both the taxpayer and tax administration. Considering the purpose of the OECD's co-operative compliance initiative this purpose is fulfilled by the combination of the UK and Dutch co-operative compliance approach. FAHR is not required to implement two separate tax control frameworks. In addition, as FAHR is willing to comply with tax regulations, the tax administration's resources can be applied on other companies. Although, this is especially the situation in the UK. The Dutch tax inspectors are still allowed to audit the taxes of FAHR as this is part of the Dutch co-operative compliance policy. The situation might occur that the UK tax authority decides not to audit the taxes, while the Dutch tax authority decides it will. As both tax authorities are both responsible for the operations in its own territory, this is not an essential shortcoming from the societal perspective.

To conclude, the UK and Dutch co-operative compliance approach differs essentially. Although both approaches fit in their own legal environment, the UK approach creates much more certainty for taxpayers, not in the last place because it is creating legal security. To my opinion, the UK co-operative compliance approach is better, however, from an international perspective undesirable. The UK approach is better in guiding companies. The UK approach creates legal security which is essential for companies. However, if all countries decide to create their own framework, international operating companies must comply with many co-operative compliance regimes which creates a huge tax administration. Monitoring changes in co-operative compliance regimes takes a lot of time. So, the UK co-operative compliance approach is excellent as long as the international co-operative compliance approaches are comparable with the Dutch co-operative compliance approach.

### **CONCLUSION**

This paper proved the difference of co-operative compliance between countries. Moreover, it gives insight in the possibility for co-operative compliance regimes. If several countries implement co-operative compliance approach comparable to the UK an administrative burden for internationalization is existing. This paper is the first scientific evidence that co-operative compliance requires an international approach instead of the national approaches currently applied. In addition, this research adds to the legal co-operative compliance framework that it proves the benefits of the framework. This paper proved that the framework

can be applied in comparing different co-operative compliance approaches. Further research can focus on comparing other countries by applying the co-operative compliance framework applied in this research.

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# **A Critical Literature Review On The Link Between Multinational Enterprises Presence, Absorptive Capacity And Competitive Advantage Of Firms**

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## **Abstract**

Scholars seem to agree on the importance of the local activity of foreign MNEs for country's development, but opinions differ widely concerning their impact. As the government work out policies to improve Foreign Direct Investment, questions that need to be answered include how Multinational Enterprises affects the competitiveness of the local domestic enterprise. This paper presents a critical review of literature on the link between the presence of Multinational Enterprises, absorptive capacity and the competitiveness of domestic firms. A number of theories have been presented and empirical literature reviewed on the key constructs of the study. A conceptual model on the relationship was developed showing the link between MNEs presence, absorptive capacity and competitive advantage. Absorptive capacity was conceptualized as an intervening variable and was operationalised as research and development activities, internal and external organization of innovation and quality of human capital. This relationship was conceptualized as moderated by distance which was operationalised as culture, physical location and institutional difference. The competitiveness for the purpose of this study was conceptualized to mean productivity and innovation advantage. The reviewed literature confirms the fact that MNEs presence act as a source of knowledge which is transferred to domestic firms which in turn achieve competitive advantage. This transfer is made possible by the existence of the absorptive capacity among the firms. For that reason we emphasize that FDI related policy needs to be concerned not only with attracting MNEs, but also with securing effective benefits. In other words, policy makers must consider all factors that hinders knowledge transfer to the domestic firms like the absorptive capacity. The reviewed literature support the argument that the greater a firm's exposure to knowledge sources, the greater the firm will acquire the competitive advantage. Like all research, the present study has limitations mainly the lack of primary data as it was more of a conceptual study.

## **INTRODUCTION**

Scholars in strategy field are concerned fundamentally with explaining differential firm performance (Rumelt, Schendel and Teece 1991). They have identified two sources of competitive advantage.

The first is the industry structure view associated with Porters (1980) that suggest that supernormal returns are primarily a function of a firm's membership in an industry with favorable structural characteristics.

The second view is the Resource Based View (RBV) of the firm that argues that differential firm performance is fundamentally due to firm heterogeneity rather than industry structure. Firms that are able to accumulate resource capabilities that are rare and difficult to imitate are able to achieve competitive advantage over competing firms (Barney, 1991).

The resource based view (RBV) is a model that sees resources as key to superior firm performance. This approach to achieving competitive advantage emerged in 1980s and 1990s after the major work published by Wernerfelt (1984) the resource based view of a firm and Prahalad and Hamel (1990) the core competences of the corporation. The resource based theory present an argument that knowledge is one of the most important resources a firm can manage. Knowledge can be considered like the biggest strategic resource of a company, and the dexterity to obtain it, and use it as the biggest capacity to maintain a competitive advantage (Cohen and Levinthal, 1990). The knowledge based competitive advantages are difficult to imitate and socially embedded in organizations. Nonaka (1994) argued that organization that are able to stimulate and improve the knowledge of their human capital, are much more prepared to face today's rapid changes and innovate in the domain where they decide to invest and compete.

Scholars seem to agree on the importance of the local activity of foreign Multinational Enterprises (MNEs) affiliates for a country development with some arguing for a positive effect (e.g. Caves 1974; Findlay, 1978; Blomstrom,1989) other like Hymer, (1970) stressing the relevance of the negative consequences. According to Brunner (2006) MNE is a controversial phenomenon whose protagonist believe it is a threat to economic sovereignty of developing nations, hinders development of self-reliance and promote materialism. Cantwell and Dunning (1986) believe that the impact of the foreign presence depends on a set of conditions, and that it may turn both virtuous and vicious circles of technological development in the location affected by foreign MNEs activity. Increasingly, however, in practice, many developing countries are learning to live with the MNEs and to devise control systems which increase the benefits flowing from their operations

Multinational Enterprise's have been defined differently by different scholars. Among the notable definition, Dunning, (1973) defined a Multinational as an enterprise which owns and controls income generating assets in more than one country. United Nations in 1973 looked at MNEs as an enterprise which control assets - factories, mines, sales offices and the like - in two or more countries. Lalnunmawia (2010) defined Multinational Enterprises as a huge industrial organization that have a wide network of branches and subsidiaries spread over a number of countries. Multinational Enterprises enter into joint venture with companies in another country and there may be agreement among companies of different countries in respect of division of production, market, etc. Developing countries are interested in attracting foreign capital since domestically sourced funds are often insufficient to finance their investment needs (Drabek and Payne, 2001). Multinational Enterprises are increasingly seen as global networks of firms, and one of the main characteristics of these networks is the creation, diffusion and commercialization of technological innovations (Dunning and Gugler, 1994). It is also noted that MNEs are not in the economic development business and are least interested in is the diffusion of their proprietary technology and spillovers depend on the absorptive capacity of domestic firms. It also depends on structure of the local resources and capabilities of the host country, as well as the macro-economic and organizational policies pursued by governments (Dunning and Narula, 1996).

## THEORETICAL LITERATURE REVIEW

### Location Theory of International Investment

The location theory is of two kind; "supply oriented location theory" and "demand oriented location theory". The supply oriented location theory explains that production takes place where the factor costs for production (including distribution) are the lowest (Dunning, 1973). The demand oriented location theory asserts that the location of a firm is governed by the location of its market and competitors (Dunning, 1973). The two theories put together give rise to four main locational factors; raw materials, cheap labor, protected and untapped markets, and transportation costs are believed to give rise to the emergence of MNEs (Buckley, 1985). This approach provide valuable insights as to geographical distributions of MNEs, it fell short to explain "how it was that foreign owned firms could outcompete domestic firms in supplying their own market" (Dunning, 1979), neither did it give any hint about the origin countries of MNEs.

### The Aliber Theory

Aliber (1970) hypothesized that it is the financial market which enables firms to have advantages over host country firms and applicable to all firms whose assets and borrowing are based in selected currencies. He reasoned that MNEs tend to flow from strong currency areas to weak currency areas. The critics of this theory argued that while the view is compatible with the early post-war American domination, it gave no account of the rise of European and Japanese MNEs (Buckley and Casson, 1976; Ragazzi, 1973). Ragazzi 1973 pointed out that "net FDI of the UK increased rapidly at a time when sterling was weak". In defense, Aliber (1983) attributed the upsurge of FDI from Japan and Europe to the decline of "market values" of US firms relative to the market value of firms headquartered abroad. Another criticism pinpointed an important issue that many MNEs raise much of their funds for investment in host countries and currencies where the investments take place and financial capital is not the most important component of MNEs (Hennart, 1982). However, Cantwell (1991) sees the theory as giving useful insights about the "timing" of FDI and "take-overs" of MNEs which move into an unrelated business sector.

### Hymer-Kindleberger Theory

The theory is also known as monopolistic or oligopolistic power, structural market imperfection, market power and industrial organization theory. In his theory Hymer tried to answer three questions (i) why do firms go abroad, (ii) how are they able to survive in foreign market in which they bear a the initial cost (iii) why do they want to retain control and ownership. Hymer (1976) then proposes three explanations for FDI: (i) Foreign investors seek control to ensure the safety of their investment; (ii) the investor seeks to remove competition or to use certain skills and capabilities in a more profitable way; (iii) the controlling and the controlled firm may have complementary assets and skills which again may better be exploited through common ownership than through market transactions in the presence of imperfect markets. FDI is consequently a rent-seeking activity, or, in other words, an investor does not engage in FDI for higher interest rates but for higher profits.

In the presence of market failures, Hymer argues, collusion in the form of common ownership might provide an important motivation for FDI (Hymer, 1976). According to the market structure, horizontal collusion may indeed be profitable if the firm can demand higher prices after the merger. Vertical collusion may be advantageous if the firms can elude a sequential monopoly problem that is the problem of the double margin (Hymer, 1976). Accordingly, FDI is an instrument to avoid competition and will lead to inefficient market structures. Hymer considered the removal of competition as the key factor FDI, and his contributions induced many scholars to write critically about the activities of multinational firms. However, latter scholars have questioned this pessimistic view.

### **The eclectic (OLI) paradigm Theory**

This theory was proposed by Dunning in 1993 and seeks to offer a general framework for determining the extent and patterns of both foreign owned production undertaken by a country's own enterprises and also that of domestic production owned by foreign enterprises. According to this paradigm, the extent and pattern of international production is determined by three factors (Dunning, 2001). The first factor is ownership advantage (O) as MNEs wish to place in a particularly advantageous location which has a comparative advantage in an activity or most favourable. Dunning (1998) argues that the locational preferences have changed as regional integration and sinking spatial transaction costs have increasingly forced MNEs to engage in international production, enhancing the international division of labour (Dunning, 1998). The second factor is interest in locating activities abroad (L). Multinationals set abroad to tap into the ownership advantages as consumers have a strong bias for national products, and domestic firms have better access to information about their country and government interventions are likely to discriminate foreigners, and foreigners face the exchange rate risk (Hymer, 1976). The third factor is internalization advantage (I) that explains that MNE chooses to internalize the operations, if it is easier to exploit the ownership advantages within a company, or if internalization can better prevent the dissipation of the advantage. (Dunning, 1993).

The Eclectic theory relies on two kinds of market imperfections (failure). The first is that the structural market failure which discriminates between firms in their ability to gain and sustain control over property rights or to govern multiple geographically dispersed value-added activities. The second is that of the failure of intermediate product markets to transact goods and services at a lower net cost than those which a hierarchy might have to incur. Dunning states that the assumption of the existence of perfect markets contributes to the failure of the factor endowment approach to explain international production (completely or partially). In neo-classical trade theory, this leads to all sorts of restrictive assumptions, such as atomistic competition, equality of production functions, the absence of risk and uncertainty and implicitly at least, that technology is a free and instantaneously transferable good between firms and countries.

The eclectic paradigm has been extended to a dynamic model: the investment development path. Its basic assumption is that the configuration of the OLI advantages changes as a country moves up the stages of development (Dunning, 2001). Outward and inward FDI are hence determined by the stage of development and at the same time determine the stage of development. According to the Eclectic theory, three reasons reflect the inability of the market to organize transaction in optimal way: the buyers and sellers do not enter the market with complete (or symmetrical) information or perfect certainty about the consequences of the transactions they are undertaking (Dunning, 2002). The market cannot take account of the benefits and costs that arise as a result of a particular transaction, but which are external to that transaction. The demand of a particular product, while infinitely elastic, is insufficiently large to enable the producing firm fully to capture the economies of size, scope and geographical diversification. There is an inevitable trade-off between the overall costs of a set of value-added activities and the opportunity they offer for emerging economies (Galbraith and Kay, 1986). The outcome of the trade-off between the Multinationals and the local economy is eminent through the intangible firm specific advantages transferred by the firms at low cost. These firm specific advantages are namely technology and knowledge spillover to the domestic firms. This tradeoff, among other pertinent elements of Eclectic theory, is what makes it duly applicable in this study.

### **Absorptive Capacity**

The concept absorptive capacity first emerged as significant in the 1980s in the field of organization learning. (Vega, Gracia and Ignacio, 2007). There is no unanimity among scholars on the concept of absorptive capacity; infact there are as many definitions of the concept as there are scholars. Cohen and Levinthal (1990) defined absorptive capacity as the ability to recognize the value of new external information, assimilate it, and apply it to commercial ends.

A review of existing theoretical literature has identified four dimensions of absorptive capacity. These are acquisition, assimilation, transformation, and exploitation. According to Zahra and George (2002) the first two dimensions are from potential absorptive capacity, the latter two are realized absorptive capacity. Knowledge acquisition is the firm's capability to identify relevant external information over the total amount of information that surrounds the firm. Acquisition is defined as the ability to recognize, value, and acquire external knowledge that is critical to a firm's operations (Zahra & George, 2002). According to Dyer and Singh (1998) the ability to evaluate and utilize outside knowledge is largely a function of the level of prior related knowledge. Prior knowledge confers an ability to recognize the value of new information, to assimilate it and to apply it to commercial ends Knowledge assimilation refers to the firm's ability to absorb external knowledge. Zahra and George (2002) defined it as a firm's routines and processes that allow it to understand, analyze, and interpret information from external sources. This perspective allows employees to understand and take advantage of external information in discovering new suppliers, new methods and techniques and new products and services.

The knowledge transformation is the firm's ability to modify and adapt external knowledge and combine it with existing and internally generated knowledge (Zahra & George, 2002). It refers to knowledge internalization in order to codify a process, to question employee's regards to the way of working in other companies, to improve processes through, discover new solutions, to go faster or adapt to environmental and technological evolutions. Transformation can be achieved by adding or deleting knowledge, or interpreting existing knowledge in a different way. Transformation scale measures employee's involvement concerning the improvement of some processes or way of doing things in their company (Chauvet, 2003).

The last element is knowledge exploitation which refers to the routines that allow firms to refine, extend, and leverage existing competences or create new ones by incorporating acquired and transformed knowledge into its operations (Zahra & George, 2002). It can also refer to a firm's ability to apply new external knowledge commercially to achieve organizational objectives (Lane & Lubatkin, 1998). Exploitation is an organization capability that allows firm's to refine, extend, and leverage existing competences or to create new ones by incorporating acquired and transformed knowledge into its operations. This requires that the knowledge is shared by a larger audience within the organization than the people who initially participated which is peripheral learning. Social integration mechanism can facilitate the sharing and eventual exploitation of knowledge. (Zahra & George, 2002). The results of absorptive capacity are very hard to copy which makes the process of absorption a competitive advantage in and of itself (Peteraf, 1993). Business makes investments that increase their ability to absorb and the more externalities that are in their environment, the greater the incentive to invest in improving the capacity for absorption (Cohen a& Levinthal, 1990). Foreign Direct Investments increases competition allowing local businesses to absorb technological novelties and effective processes from foreign firms thus raise their productivity (Rugman & Verbeke, 2001). Taking advantage of the spillover from FDI depends on the capacity to absorb them (Cohen & Levinthal, 1990).

## EMPIRICAL LITERATURE REVIEW

### Studies on Absorptive Capacity

Pedro, Jorge and Jose (2014), identified the effects of research and development activities and expenditures, research and development results, the internal organization of innovation, the external links for innovation, the quality of human capital, family management, and the complexity of businesses and market concentration. They found that research and development activity boost the generation of new knowledge and absorptive capacity from MNEs. Research and development activities were found to have the most positive effect while externalized research and development activities have a negative impact. They also found a negative link between public funding and absorptive capacity from MNEs. Their result is consistent with the fact that public financing of research and development is less effective than private funding (Griliches, 1986) and supports the notion that the companies that manage to find private financial resources are more capable of absorbing spillovers from MNEs.

Pedro, Jorge and Jose (2014) also found complexity and production-process innovations as other factors determining absorptive capacity. Complex and innovative production processes makes more and better tools available for absorbing the spillovers from MNEs. Multinational Enterprises are usually more complex, they have innovative production processes than local companies, and this helps them absorb from similarly complex, innovative foreign firms. A domestic firm with a complex, innovative production processes has capacity to apply and produce knowledge and this capacity shows up in the absorptive capacity of external knowledge from MNEs.

The study by Pedro, Jorge and Jose (2014) identified several constraints such as outsourcing and distance may affect absorptive capacity depending on, for example, the type of activity or the communication flow. Second, they argued that the study can be extended to include geographical location of foreign firms relative to local companies. Distance determinants such as culture, physical location, or institutional differences may influence absorptive capacity from MNEs. Kneller (2005) examines how technology transfer is affected by absorptive capacity (measured by human capital and research and development) in a panel of manufacturing industries in 12 OECD countries which covers the period 1972 to 1992. The study finds evidence that human capital facilitates diffusion of foreign technology. With regard to research and development, Kneller (2005) finds that research and development plays an important role in innovation but it plays a role in facilitating technology adoption only in small and less research and development intensive OECD countries. He argued that for smaller, less research and development intensive countries, research and development might play a more important role in absorbing technology from abroad than in the creation of new technology.

Kinoshita (2000) uses foreign ownership and finds no evidence that absorptive capacity facilitates technology transfer through this channel. Hu, Jefferson and Jinchang (2005) measures access to foreign technology as technology purchased through licensing agreements from foreign firms and they find that R&D enhances firm's absorptive capacity and thus facilitates technology transfer. Mayer (2001) studied the role of human capital in facilitating technology transfer through imports of machinery and equipment in 53 developing countries between 1970 and 1990. The study adopted a model in which total factor productivity depends on technology transferred through imports of machinery and equipment, the stock of human capital, and technology transferred facilitated by the absorptive capacity of the country, represented by an interaction between these two variables. Human capital is measured as the average number of years of schooling in population aged 15 or above. Technology transfer through imports of machinery and equipment is measured as average ratio of imports of machinery and equipment to the GDP. Mayer (2001) finds a positive and statistically



significant impact of the interaction between human capital and machinery imports, suggesting that human capital plays an important role in assimilating foreign technology.

Kinoshita (2000) finds that investment in research and development has no impact on technology transfer through foreign ownership. Damijan, Knell, Majcen and Rojec (2003) find that investment in research and development facilitates technology transfer through horizontal spillovers only in two countries (Slovakia and Hungary), and it actually hinders horizontal spillovers in Estonia and Latvia and has an insignificant effect in the other transition countries. Koymen and Sayek (2009) find that the human capital has a negative effect on the spillovers through backward linkages and that the horizontal FDI spillovers and forward FDI spillovers on the TFP level of domestic firms are not affected by the human capital level of these firms. Hu, Jefferson and Jinchang (2005) find evidence consistent with the hypothesis that research and development enhances firm's absorptive capacity and thus facilitates the adoption of technology purchased through licensing agreements from foreign firms. Girma, Gong and Gorg (2009) find that Chinese firms that invest in own research and development and those that provide training for their employees benefit more from inward FDI in the sector than firms that do not.

Kneller, Pantea and Upward (2010) examined whether investment in research and development, training and employees education increases the probability of firms' participation in supplying MNEs, exporting and becoming foreign affiliates. If the domestic firms are selected by their foreign partners to become affiliates or suppliers based on their absorptive capacity, then the firms selected will have the necessary absorptive capacity to implement the technology transferred. The results suggest that past absorptive capacity, measured as share of workforce with tertiary education, is positively and significantly correlated with supplying MNEs, exporting and foreign ownership. The magnitude of the effect on workforce education in 2001 on the participation in international activities in 2004 is similar to the effect reported for contemporary workforce education. Firms that had high levels of absorptive capacity, in terms of workforce education, are significantly more likely to become foreign affiliates, MNEs suppliers or exporters.

### **Studies on research and development activities and absorptive capacity**

The intensity of research and development, total intangible assets per worker, and technological gaps determine how well local firms absorb MNEs spillover (Liu, Siler, Wang & Wei (2000) and Dimelis, (2005)). According to Nieto and Quevedo, (2005) businesses do not tend to undertake research and development activities if they can simply glean technological knowledge from outside sources. In this way, a capacity for absorption is relevant in acquiring new technology that spillover from MNEs, and it therefore affects the productivity of local firms (Caves, 1974). The absorptive capacity of an enterprise, however, comes through acquiring, assimilating, and propagating new knowledge gleaned from outside the firm; more overall research and development in an industry enhances it (Liao, Welsh & Stoica, 2003). Spending in research and development creates competitive advantages by encouraging companies to absorb technological spillovers from external sources (Veugelers, 1997). Research and development expenditures imply that companies are willing to assimilate routines and processes, thereby increasing their stock of knowledge and improving their capacity for absorption (Mowery, Oxley, and Silverman, 1996). Overall then, we expect research and development expenditures to increase absorptive capacity of spillovers from MNEs at the firm level. Pedro, Jorge and Jose (2014) in their study on absorptive capacity from foreign direct investment in Spanish Manufacturing firms found that research and development activities boost the generation of new knowledge and absorption capacity from MNEs.

### **Studies on the internal and external organization and absorptive capacity**

Internal organization of innovation variable facilitates transfer of information among departments and this increase the capacity for absorption (Van den Bosch et al., 1999). To maximize this communication, the firm must design flexible formal and informal organizational structures (Liao et al., 2003), it must create multi-disciplinary teams and close links between the research and development department and other departments (Gupta and Govindarajan, 2000 and Meeus, M.T.H. Oerlemans, L.A.G. and Hage J., 2001), and it must encourage innovation (Jones and Craven, 2001). A culture of innovation stimulates knowledge, improves execution, has effective problem resolution, and encourages suggestions and continuous learning, because these things increase the capacity for absorption (Lenox and King, 2004). Also, the formal existence of a research and development department in a firm increases its absorptive capacity (Cassiman and Veugelers, 2002). Companies with strong, structured, internal research and development activities glean results from external sources more easily (Lowe and Taylor, 1998). External research and development activities also increase absorptive capacity, but only if an organization already has absorptive capacity (Griffith, Redding and Reenen, 2004).

There is some evidence that externalized research and development activities strengthen the capacity to absorb spillovers from foreign companies (Lowe and Taylor, 1998). Firms are more likely to outsource research and development when they are less efficient in research and development than supplier companies are. Whereas the supplier of research and development get economies doing research and development, they have no specific assets for research and development and their research and development is relatively standardized (Pedro, Jorge and Jose 2014).

Park and Ghauri (2011) maintain that collaborative support from knowledge transferors is a prerequisite to help organizations to absorb technological capabilities. According to Lei and Hitt (1995) not all firm relationships improve absorptive capacity, in fact, inter-organizational agreements for acquiring external technology might reduce absorptive capacity. Financial resources affect the capacity to absorb, because they provide the means for carrying out research and development activities, for reaching cooperation agreements with other firms and institutions, and for employing suitably trained staff, among other things (Kamien and Zang, 2000). Publicly funded research and development produces different results (David, Hall, and Toole, 2000). Some studies find positive effects from publicly funding research and development (Aerts and Schmidt, 2008) and others find insignificant or negative effects (Lach, 2002). However, publicly funding research and development is less effective than privately funding it (Griliches, 1986).

National governments may attempt to attract MNEs, principally because they hope it will lead to positive spillovers for local businesses (Narula and Dunning, 2000). Further, these governments may adopt measures that favor innovation in local firms so that they will be in a position to absorb knowledge from foreign enterprises. Some of these decisions may include stimulating the entry of MNEs, reducing obstacles to MNEs, supporting investments, offering tax incentives, adjusting patent regulation among others (Dunning and Gugler, 2008).

### **Studies on the quality of human resource and absorptive capacity**

The behavioral science literature suggests that both ability and motivation is of importance for individual behavior and few would question the assertion that "if individuals possess the prerequisite ability to learn performance is likely be poor if motivation is low or absent" (Baldwin, Magjuka, & Loher, 1991). Campbell (1976) noted that in industrial and organizational psychology performance is a function of the interaction between ability and

motivation. Further, empirical evidence supports rather strongly that there is an interactive, not additive, effect of ability and motivation on performance (O'Reilly & Chatman, 1994). Applying the concept of the interactive effect of ability and motivation on the issue of knowledge transfer, we expect that a higher rating in knowledge acquired will be achieved, if knowledge receivers have both ability and motivation to absorb new external knowledge.

Human capital is necessary for indigenous firm's to absorb and implement new technologies. According to Driffield and Taylor (2002) the demand for skilled workers increases when firms use superior technology as the development and effective use of technology requires human capital. Human capital is therefore increasingly considered a major constraint in implementing globally competitive strategies (Smale, 2004). Successful companies treat employees as permanent; employees are trained on an ongoing basis in order to improve their productivity (Porter, 1990). According to Lall, (2001) lacking worker skills is a major reason for slow adoption of new technologies.

Positive productivity spillovers can occur through movement of highly skilled staff from MNE's to domestic firms (Blomström & Kokko, 1998). MNEs have been found to generally produce with higher capital intensity (Blonigen & Slaughter, 2001). As the degree of human skills required is generally higher in capital intensive production, we may assume that MNEs will provide more and better training for their staff. There is also extensive evidence that investments in employee training pay off in terms of enhancing the human capital of the firm and generally a positive relationship has been established between employee training and organizational performance (Delaney & Huselid, 1996). "The effectiveness of even highly skilled employees will be limited if they are not motivated to perform" (Huselid, 1995). Previous research has shown that employees are more motivated when they know what is going on in the firm. Sharing of information on, for example, strategy and company performance conveys to the employees that they are trusted. Further, it is important that employees know what is going on in a firm so that they can use the knowledge that resides in the firm to its fullest potential (Pfeffer, 1998).

### **Studies on competitive advantage**

The concept of competitive advantage seeks to capture the elements that explain the success of the firms and analysis how enterprises manages the totality of their competences to achieve prosperity or profits. Competitiveness for the purpose of this study conceptualized to mean productivity and innovation. The two constructs are illustrated below;

### ***Studies on productivity and competitive advantage***

Productivity arises from knowledge spillover from MNEs. Spillover from MNEs arises from transactions outside specific markets, in which resources and particularly knowledge spread without any contractual relationship (Meyer, 2004). Spillover within an industry is improvements in productivity that local firms learn from foreign companies operating in the same sector. Many empirical studies about inward FDI ask whether "domestic firms really benefit from foreign direct investment". Aitken, Harrison and Hanson (1999), for instance, discover that FDI has a small negative effect on the productivity of domestic firms in Venezuela. They point out that while domestic firms benefit from positive spillovers, foreign firms draw demand from domestic firms and thereby force the domestic firms to spread their fixed costs over a smaller market and this might reduce their productivity of domestic firms (Aitken, Harrison and Hanson 1999). Gorg and Strobl (2001) investigated empirically the effects of foreign direct investment (FDI) on the productivity performance of domestic firms in three emerging economies of Central and Eastern Europe, Bulgaria, Romania and Poland. They found no evidence of positive spillovers to domestic firms on average. In contrast, on average there are negative spillovers to domestic firms in Bulgaria and Romania, while there are no

spillovers to domestic firms in Poland. This suggests a negative competition effect that dominates a positive technology effect.

Governments often promote inward foreign investment to encourage technology 'spillovers' from foreign to domestic firms. Konings and Jozef (2001) investigated the effects of Foreign Direct Investment on Domestic Firms in using a panel data on Venezuelan plants. They found out that foreign investment negatively affects the productivity of domestically owned plants. The net impact of foreign investment, taking into account these two offsetting effects, is quite small. Using cross-sector industry data Blomstrom and Wolff (1994) find that a foreign presence helps domestic firms to achieve higher levels of productivity. Haddad and Harrison (1989) do not detect any spillover effect in a sample of Moroccan firms.

### ***Studies on Innovation and competitive advantage***

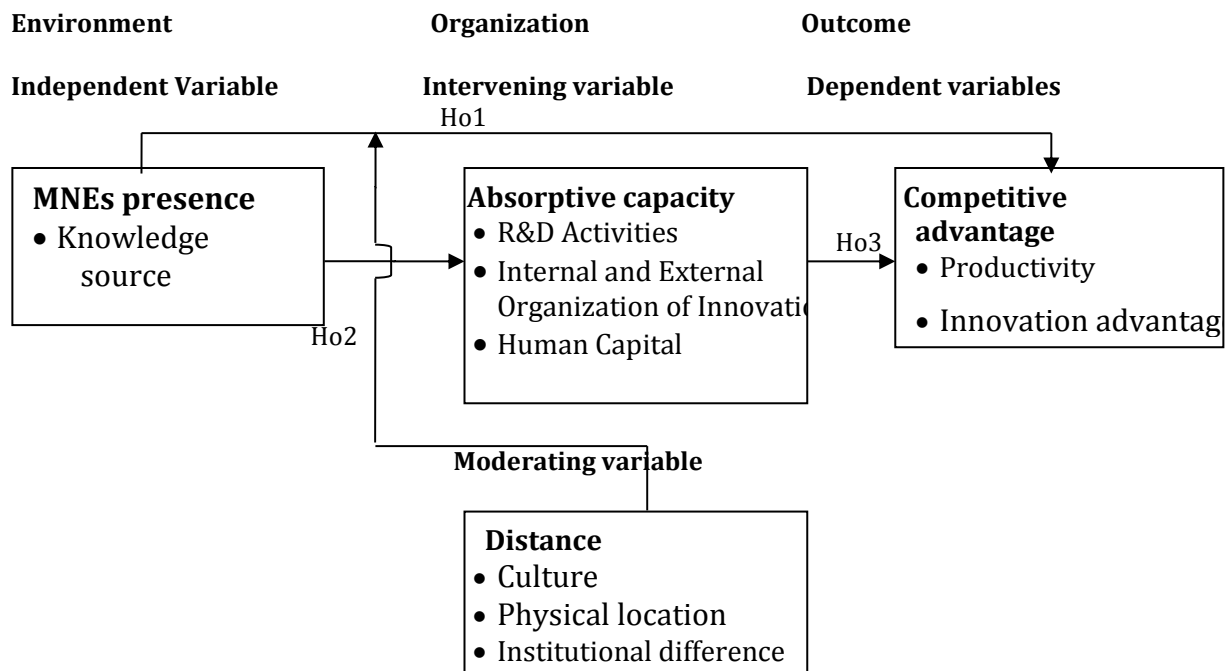
According to Rogers (1995), an innovation is “an idea, practice or object that is perceived as new by an individual or other unit of adoption”. The innovation literature includes many studies of the creation, diffusion and adoption of a variety of administrative system applications to organizational settings. The diffusion of an innovation concerns “the process by which an innovation is communicated through certain channels over time among the members of a social system” (Rogers, 1995). These ideas bolster the argument that MNEs may have different and more innovative systems relative to their domestic counterparts.

A knowledge-based competitive advantage is, in essence, innovative in the way that it develops through the creation of a new product, service, process or structure. According to Gurteen, 1998 knowledge based firms will not only quickly respond to customers' needs, but also actively shape their expectations for future products and services. For Liu and White (1997), absorptive capacity is a predictor of innovative output: Innovation is driven by synergy through investments in sources of new knowledge and in absorptive capacity. Moreover, knowledge embedded in the interactions of people, tools, and tasks provides a basis for competitive advantage in firms (Argote and Ingram, 2000).

### **Proposed Conceptual Framework**

The figure i below provide a sequence of the relationships that the researcher conceptualized in term of how competitive advantage of domestic firms can be achieved through knowledge spillover from MNEs. The model proposes that MNEs presence provide a source of knowledge that result to absorption and transfer of knowledge to domestic firms.

Absorptive capacity is conceptualized as the intervening variable in the relationship between MNEs presence and competitive advantage. It is a variable that help explain how local firms are able to assimilate new knowledge and then exploit it for competitive advantage. It is conceptualized as research and development activities, internal and external organization of research and quality of human capital. The distance is conceptualized as moderating the relationship between MNEs presence and competitive advantage and is operationalized as culture, physical location and institutional difference. The competitive advantage was the dependent variables and was operationalized as productivity and innovation.

**Figure i. Conceptual Framework**

**Source: researcher conceptualization 2015.**

In line with our model we posit that;

**Ho1:** the greater the firm exposure to knowledge source, the greater the firms competitive advantage.

**Ho2:** distance has no statistically significant effect on the relationship between the firm's exposures to knowledge source and competitive advantage.

**Ho3:** the greater a firm's absorptive capacity, the greater a firm will acquire a competitive advantage, taking into consideration the indirect influence of distance.

## CONCLUSION

The general and empirical literature review of Multinational Enterprises presence and competitive advantage of firms shows that MNEs presence enhances the competitiveness of firms. MNEs presence facilitates transfer of knowledge to domestic firms which in turn achieve competitive advantage. This transfer is made possible by the existence of the absorptive capacity among the firms. The reviewed literature support the argument that the greater a firm's exposure to knowledge sources, the greater the firm will acquire the competitive advantage. In addition the higher the firm's absorptive capacity, the more effective the transfer of knowledge from the MNEs which in turn leads to more competitiveness.

Given the fact that absorptive capacity is a powerful tool to upgrade the efficiency of the firms, we argue that the existence of absorptive capacity may allow firms to benefit more from MNEs spillovers and thus get higher results in terms of productivity and innovation increase.

## Limitations of the study

Like all research, the present study has limitations. Similar to other independent study, no primary data was collected. The study relied on existing literature and it is more of a conceptual study. We recommend that future studies collect primary data on the study variables so as to arrive at more conclusive results. Finally, there are other factors potentially influencing the competitiveness of the firms. While this study makes important contributions to our understanding of the relationship between multinational enterprises, absorptive

capacity and competitive advantage, this study is clearly only a first step and additional research is needed on this issue.

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## **Compensation Management And Employee Retention Of Selected Commercial Banks In Anambra State, Nigeria.**

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### **Abstract**

This study was necessitated due to rate of employee turnover, which is increasing in Nigeria banking system; a situation whereby employee continuously move from one bank to another in a short period of time. This paper seeks to examine the influence of compensation management on employee retention. It specifically set out to examine the relationship between Salary and Employee satisfaction in selected Commercial banks in Awka. The study employed descriptive research design. Primary source of data was the major instrument used for this study. 60 copies of questionnaire were administered to employees of selected commercial banks (First bank, Fidelity and Sterling bank); 56 were retrieved and they were all useful. Pearson's Product Moment Correlation was used for the analyses. The findings revealed that there is a positive weak relationship between salary and employee satisfaction. This shows that employees were not satisfied despite their seemingly attractive salary. In view of the finding, the study concluded that if management fail to formulate, administer and implement a good compensation policies that would allow them retain their talented employee; these employee might leave their job if they find a better offer elsewhere. The researcher recommended among others that compensation structure should include new and enticing ways to motivate and retain employee with wide range of benefits other than salary.

**Keywords:** Compensation, Employee Retention, Salary, Employee Satisfaction, Commercial Banks, Nigeria

### **INTRODUCTION**

Employees are the organisations key resource and the success or failure of organisations centre on the ability of the employers to attract, retain and reward appropriately talented and competent employee. Employee's willingness to stay on the job largely depends on compensation packages of the organisation (Armstrong, 2003). In attempt to ensure employee optimal satisfaction and retention, organisations need to consider a variety of appropriate ways to reward the employee to get the desired result (Falola, 2014). It has been argued that the degree to which employee are satisfied with their job and their readiness to remain in an organisation is a function of compensation packages (Osibanjo, 2012).

Organisations that have goals to achieve would require satisfied and happy staff in her workforce. Importantly is the fact that for any bank to take off and achieve its strategic goals would strongly depend on her capacity to attract, retain and maintain competent and satisfied staff into its employment (Oshagbemi, 2000).

One of the fundamental tasks in Human Resources Management is Compensation Management. It is a complex task that occurs periodically, demand accuracy and must not be delayed. Compensation Management requires integrating employees' processes and information with business process and strategies to achieve optimal organisational goals and objectives. This can be attributed to the fact that Compensation Management is an essential tool to "integrate individual efforts with strategic business objectives by encouraging employees to do the right things with ever improving efficiency" (Horwitz, 2010). In other words, compensation management is a powerful means of focusing attention within an organisation. They send clear messages to all employees of the, organisation informing them about expected attitudes and behaviours (Smith, 1992). For the workers, wage provides the means of satisfying their wants and needs. Compensation packages entails some basic features that tend to make employee satisfy on their job amongst which include salaries, bonuses, incentives etc and these have significant impact on employee satisfaction (Idemobi, Onyeizugbe, and Akpunonu, 2011). Compensation Management and Employee Retention as Independent variable can be influenced by these variables.

This study focus on the influence of Compensation Management on Employee Retention in Banking Industry. The study is deemed necessary because of the disturbing high rate of employee turnover in banking industries in Nigeria. Nigeria banks could be categorised according to their assets value; the Large, Medium and Small size banks (Financial Results, 2013). First bank, Fidelity bank and Sterling bank respectively were selected to represent each category for this study.

First Bank of Nigeria PLC (First Bank) is Nigeria's largest financial services institution by total assets and gross earnings. With more than 10 million customer accounts, First Bank has over 750 branches providing a comprehensive range of retail and corporate financial services. The Bank has been named "The Best Bank Brand in Nigeria" four times in a row – 2011, 2012, 2013, 2014 – by the globally renowned "The Banker Magazine" of the Financial Times Group; and "Most Innovative Bank in Africa" in the EMEA Finance African Banking Awards 2014 ([www.firstbanknigeria.com/about-us](http://www.firstbanknigeria.com/about-us))

Fidelity Bank Plc began operations in 1988 as Fidelity Union Merchant Bank Limited. By 1990, it had distinguished itself as the fastest growing merchant bank in the country. It converted to a commercial bank in 1999, following the issuance of a commercial banking license by the Central Bank of Nigeria, the national banking regulator. That same year the bank rebranded to Fidelity Bank Plc. Fidelity Bank is today ranked amongst the top 10 in the Nigerian banking industry, with presence in all the 36 States as well as major cities and commercial centers of Nigeria. ([www.fidelitybanknigeriaplc.com/about-us](http://www.fidelitybanknigeriaplc.com/about-us))

Sterling Bank Plc originally incorporated in 1960 as Nigeria Acceptances Limited (NAL). Consequent to the indigenization decree of 1972, the Bank became fully government owned and was managed in partnership with Grindlays Bank Limited. In January 2006, as part of the consolidation of the Nigerian banking industry, NAL Bank completed a merger with four other Nigerian Banks namely Magnum Trust Bank, NBM Bank, Trust Bank of Africa and Indo-Nigeria Merchant Bank (INMB) and adopted the Sterling Bank name. The merged entities were successfully integrated and have operated as a consolidated group ever since. ([www.sterlingbanknigeria.com](http://www.sterlingbanknigeria.com))

There had been a constant mobility of skilled and unskilled staff from one bank to another. The skilled persons critically hardly stay for long in one bank before moving to another bank

and this mobility has been tagged as “Brain Drain”. This will amount to high cost of Recruitment and Training to the banks which in short run will affect the productivity of the banks. This study therefore attempts to examine the influence of compensation management on employee retention.

### **Statement of the Problem**

The rate at which employee turnover is increasing in banking sector in Anambra State and Nigeria Generally has become a thing of concern and it is obvious that the step taken by the managements have not solved this problem. The evolving target in banking industry in Nigeria evident from Merger and acquisition has called for good formulation, administration and implementation of good compensation policies that would allow these banks to retain their best hands. There had been constant mobility of these highly skilled employees from one bank to another and they hardly stay for long in one bank before moving to another bank.

In view of the above, one of the reasons that informed this study has to do with the unique importance of salary in relation to employee satisfaction among bankers in bank industries. This affects the retention of employee yet it is not being addressed. There is need therefore, to find out and examine the relationship between salary and employee satisfaction among banker. This is necessary to identify how best to retain these bankers (at least for a longer period of time) to prevent constant mobility.

### **Objectives of the Study**

The broad objective is to examine the influence of Compensation Management on Employee Retention. The specific objective is:

- i. To examine the significant relationship that exists between salary and employee satisfaction.
- ii. The Compensation Management was decomposed as Salary while Employee Satisfaction was used to decompose Employee Retention

### **Research Questions**

The following research question was formulated to address the research objective;

- i. To what extent does salary influence employee satisfaction?

### **Research Hypothesis**

**H<sub>1</sub>:** There is a significant relationship between salary and employee satisfaction.

## **REVIEW OF RELATED LITERATURE**

### **Conceptual Review**

#### ***Employee Retention***

Employee retention refers to policies and practices companies use to prevent valuable employees from leaving their job. It involves taking measures to encourage employees to remain in the organisation for the maximum period of time. Hiring knowledgeable people for the job is essential for an employer; but retention is even more important than hiring. Previous research has identified several factors that have an influence on employee retention. A first important indicator of employee retention is their organisational commitment (Curtis & Wright 2001).

Employees with a high organisational commitment are those who have a strong identification with the organisation, value the sense of membership within it. This commitment is influenced by the organisation’s norms and practices, especially the organisational climate (Kaliprasad 2006), and is not job specific (Bashaw& Grant 1994). Jyothi and Venkatesh (2006) suggest the

following aspects while attempting to retain employees: planning ahead, clarity in job requirements, identify a good source of recruitment, screening and interview, provide challenging work, and focus on compensation and working conditions.

Walker (2001) identified seven factors that can enhance employee retention: (i) compensation and appreciation of the performed work, (ii) provision of challenging work, (iii) chances to be promoted and to learn, (iv) invitational atmosphere within the organisation, (v) positive relations with colleagues, (vi) a healthy balance between the professional and personal life, and (viii) good communications. Together, these suggest a set of workplace norms and practices that might be taken as inviting employee engagement. Hytter (2007) found that the personal premises of loyalty, trust, commitment, and identification and attachment with the organisation have a direct influence on employee retention. She also demonstrated that workplace factors such as rewards, leadership style, career opportunities, the training and development of skills, physical working conditions, and the balance between professional and personal life have an indirect influence (Hytter 2007). Newstrom (2009) states excessive employee turnover can have several negative effects on an organisation. They include:

- Separation costs (exit interview time, separation pay, unemployment and tax increase)
- Training costs for few new employees (both orientation and skill development instruction; both formal and informal learning experiences)
- Vacancy costs (temporary help or overtime pay; productivity loss and service disruption)
- Placement costs (attracting, screening, and relocating new hires)
- Morale effects (loss of friendship, concerns about personal job loss during downsizing)

### **Compensation Management**

Compensation is a crucial instrument for the attraction and retention of talented employees that are dedicated to their responsibilities within the firm. Compensation management aims to promote the achievement of business goals through attracting, motivating and retaining hard working employees (Shieh 2008; Petera 2011). Compensation management is a crucial component of the overall management of an organisation. It refers to the process by which employees are remunerated for their input at the workplace (Khan 2011).

Employee compensation refers to all the returns that accrue to employees arising from their employment (Dessler 2008; Van Der Merwe 2009; Nazim-ud-Din 2013). Compensation management requires accuracy and precision as, if not adequately and objectively dealt with, it may hamper organisation's operations. Compensation is not only in the form of money, but also in non-cash form. Benefits, such as pension, life and health insurance, and retirement plans, and allowances that include company cars or subsidized transportation, represent a significant pay element in many large firms. In addition, for tax advantages and economies of scale of purchasing that make it economically advantageous for the firm to provide those element, the compensation are always viewed benefits as a tools for attracting and retaining desired employees. Maslow brought in the need hierarchy for the rights of the employees. He stated that employees do not work only for money but there are other needs too which they want to satisfy from their job, i.e. social needs, psychological needs, safety needs, self-actualization, etc. (Octavious, 2015)

Researchers are of the view that firms that seek to improve employees' productivity should link remuneration and personal effort (Encinosa III, Gaynor, Rebitzer. 2007; Kaplan and Norton 2007; Bartlett and Ghosal 2013). Heneman (1992) argues that rewards and bonuses for

personal effort are the most visible ways of acknowledging an employee's efforts. However, programs that reward effort cannot be compared with new administrative procedures based on uninterrupted progress, joint effort and support (Demming 1986; Snell and Dean 1994; Lepak and Snell 2002). Firms are beginning to give greater recognition to individual pay and performance not only to encourage increased productivity and efficiency, but also to retain highly valued to achieve the firm's objectives (Kuvaas 2006). Lee and Bruvold (2003) note, that the more encouragement employees receive, the higher their level of commitment to the firm. Gardner (2004) concurs with this point of view. Similarly, Lawler (2003) argues that when remuneration is linked to effort, both individual and organisational performance is enhanced. Lawler (2003) added that tying remuneration to performance improves employee motivation, as workers become more results-oriented. Employees will make more effort to achieve results when they are aware that their remuneration package is determined by their contribution to the firm's performance (Lawler 2003).

### **Types of Compensation**

There are various forms of compensation and nearly all these forms of compensation can be categorised into four broad types (Alsabri& Ramesh, 2012). The four broad types are:

**(a) Wages and Salary:** Wages are what is paid to employees who are not permanently employed and typically pertains to hourly rates of pay (the more hours worked, the greater the pay), while salary is what is paid to people that are permanently employed and this is at a fixed weekly, monthly, or annual rate of pay.

**(b) Incentive Plans:** This is an additional compensation which is above and beyond the employees wage or salary provided. It may be long term or short term in nature.

**(c) Employee Benefit Programmes:** Time off with pay, pension scheme, tuition reimbursement, recreation activities, cafeteria services are all examples of employee benefit programmes.

**(d) Additional Privileges:** Employees in organisations may have other privileges such as the usage of company vehicles/cars, club membership or travelling allowance. These privileges may be a substantial part of compensation, especially for the executives. DeCenzo and Robbins (2007) and Khan (2011) explored compensation/reward management and they submitted that rewards are of three major types which are as follows:

- **Intrinsic and Extrinsic Rewards:** Intrinsic rewards are self-generated rewards which are anchored on self-contentment arising from the job itself and this often referred to as intangible rewards such as being part of a team, ego as a result of achieving a goal and self-importance and satisfaction arising from one's own work/effort. While extrinsic rewards are emoluments provided by the superiors such as salary increment, bonus, sales commission etc. and this is also referred to as the tangible rewards.
- **Financial and Non-financial Rewards:** Financial rewards are the rewards received by employees in monetary forms and this assists the employees to boost the financial and social status. But non-financial rewards is made up of inexpensive rewards to heighten the employees morale like long service award, best employee of the year etc.
- **Performance-based and membership-based Rewards:** Firms equally offer rewards to its employees based on their membership in that organisation or on the basis of accomplishing high performance.

### **Salary**

Salary is a huge motivator for many employees. Making the connection between money and performance motivates employees to be more productive and to go the extra mile (Zingheim

and Schuster, 2007). Salary is what is paid to people that are permanently employed and this is at a fixed weekly, monthly, or annual rate of pay. It is an agreed payment given at regular intervals in exchange for work done. Caring about employees on a personal level is important as well. Those employees who do work well to support the company may not receive much salary for their efforts so employers that choose to under-pay their employee know that these employees will work hard for minimal pay, and these employers will pay them accordingly (Zingheim and Schuster, 2007). At the same time, the same employers will pay more to other employees who are not willing to work for minimal compensation. This salary disparity leads to dissatisfaction because eventually the hard worker will notice that he or she is not being paid fairly for the amount of work they are doing, and will begin searching for another company that will appreciate his or her labour.

### **Employee Satisfaction**

Employee satisfaction is defined as the result of a psychological comparison process of the extent to which various aspects of their pay (e.g. salaries, benefits and incentives) measure up to what they desire (Batol, 1992). Thus, the larger the gap between what employees have and what they want from their jobs, the less satisfied they are; (employees tend to be most satisfied with their jobs when what they are expecting matches with what they actually collect. An employee's overall satisfaction is the cumulative result of comparisons that she makes between what her job provides and what she desires in various areas. The fact that perceived importance makes such a big difference in how employees feel also has implications for management. Obisi, (2003), listed factors that contribute to employee satisfaction as; adequate salary, good working conditions, job security, regular promotion, recognition, etc.

### **Theoretical Framework**

This study is anchored on Equity theory propounded by Stacey J. Adams. The theory suggests that employee perceptions of what they contribute to the organisation, what they get in return, and how their return-contribution ratio compares to others inside and outside the organisation, determine how fair they perceive their employment relationship to be (Adams, 1963). Perceptions of inequity are expected to cause employees to take actions to restore equity. According to this theory, employees who see themselves as being under-rewarded will experience distress. The theory, primarily, focuses on ensuring that the distribution of compensation and benefits is fair to all members.

The theory is disposed to the present study in the sense that Pay inequality affects employee satisfaction because pay is positively associated with the job satisfaction of the employees. Employees feel satisfied or dissatisfied with their pay – not so much by the total amount received, but by comparing their benefits with those enjoyed by others in the same field.

### **Empirical Review**

Terera (2014), carried out research on impact of reward on job satisfaction and employee retention among nurses in Easter Cape Province of South Africa. His study utilised a quantitative research design and 180 nurses were randomly selected; he observed that employee rewards lead to employee retention but however, they do not result in job satisfaction.

Lauri, Morgan, Dave, and Michael (2014) conducted a study on the tenuous relationship between salary and satisfaction in University of Michigan, United State of America (USA). The study revisited the classic notions of satisfaction of employee within organisation using online survey targeted to a sample of working adults which consisted of 79 participants, consisting of

60% male and 40% female with individual annual gross salary and household gross salary. Using hierarchical multiple regression analysis to test their hypotheses, their finding pit salary in a negative relationship to both job and life satisfaction.

Okpara (2004) carried out study on the impact of salary differential on managerial job satisfaction. The study was on Gender gap and its implication for management education and practice in Nigeria banking sector. A number of 340 bank managers who were member of Chartered Institute of Bankers of Nigeria (CIBN) were chosen for the investigation. The result show that there was a significant gap in salary between Male and female bank manager and that female bank managers were less satisfied with their salary than their male counterparts. The study suggests that management break “the glass ceiling” by paying both sexes comparable salaries for comparable work responsibilities; this would increase satisfaction and performance and also help to retain the best qualified employee.

Mwakidim and Obwogi (2015) examined the effect of pay and work environment on employee retention in Hotel industry in Mombasa. Their findings revealed that pay had a weak influence on employee retention while work environment has a strongest influence. They recommended that employers in the industry need to re-evaluate the current weaknesses associated with pay.

Adeoye and Ziska (2014) carried out research on compensation management and employee job satisfaction in Nigeria’s Insurance Sector. 212 respondents were used and the statistical analysis revealed that compensation management and employee job satisfaction are significantly correlated though weak.

Mensah Ruby (2012) employed a survey method in finding out the impact of indirect compensation on employee productivity in Central University College (CUC) of Ghana. There were 280 responses for the survey. Questionnaire administration and condition of service manual of CUC were used to measure the relationship between variables. The study uncovered that though management implements some of the indirect compensation available, there are other benefits which are not satisfactorily administer and this has contributed to a lack of zeal towards work, which has affected the productivity negatively. The study recommends that management of CUC should provide the necessary attention that indirect compensation deserves, as this will help boost the moral of employee which will result in higher productivity. Benita and Anghelache’s (2012) study on teachers’ motivation and pay found no difference between male and female teachers in terms of overall payment. They posited that job satisfaction derives from adequate and continuous payment by a strong desire for achievement and affiliation. Likewise, Azash (2012) study on job characteristics as determinants of work motivation and job satisfaction revealed that skills, task identity, task significance and feedback serve as either positive or negative predictors of employee job satisfaction.

Latif (2011) examined job satisfaction among public and private college teachers, focusing on the factors that contribute to job satisfaction and dissatisfaction. Findings of the study show that college teachers in the public sector reported higher levels of job satisfaction than their private sector counterparts.

### **SUMMARY OF LITERATURES REVIEWED**

Many of the relevant Literature reviewed on Compensation Management and Employee retention were carried out outside Nigeria like (Sharon, 2014 in Eastern Cape Province of South Africa, Lauri et al, 2014 in USA, Mwakidim et al, 2015 in Mombasa, Mensah, 2012 in Ghana). Though Adeoye et al, 2014 carried out their study in Nigeria but in Insurance sector; Okpara, 2004 attempted carrying out his study in banking industry but narrowed it to gender

gap. Great results were achieved in those studies, however, this study intends to ascertain the influence of salary on employee satisfaction in Nigeria banking industry with particular reference to selected Commercial banks in Awka metropolis.

## METHODOLOGY

### Research Design

This study adopted a descriptive survey design. The purpose of this design is to collect detailed and factual information that describes an existing phenomenon (Ezeani 1998).

### Population of the Study

The population of this study is made of employees of the three selected commercial banks that operate in Awka -Anambra State (First Bank, Fidelity Bank and Sterling Bank). The total population who were eligible to assist in filling –out the questionnaire is as follows:

SN	Banks	Total Population
1	First Bank, Aroma Branch, Awka	25
2	Fidelity Bank PLC, Express way, Awka	15
3	Sterling Bank Plc, Ziks Avenue, Awka	20
	<b>Total</b>	<b>60</b>

Source: Field survey, 2015

### Sample Size

Because of the smallness of the population, the researcher adopted complete enumeration.

### Sources of Data Collection

The source of data for this study was primary source. The Primary data used was questionnaire. The questionnaire was structured and the respondents were placed on a five point likert scale.

The scale ranges from (5) strongly Agree (SA), Agree (A) (4) undecided (U) (3) Disagree (D) (2) Strongly Disagree (SD) (1).

### Validity of Instrument

The questionnaire was designed in simple language to avoid ambiguity of questions and was structured in line with the objectives of the study. The study adopted Content Validity to validate the research instrument.

### Reliability of Instrument

This was done using Test Re-Test with 15 copies of questionnaire.

S/N	Pre-test responses (x)	Post-test responses (y)	di (x-y)	di <sup>2</sup>
1	10	9	1	1
2	12	13	-1	1
3	15	12	3	9
4	13	13	0	0
5	14	15	-1	1
6	15	13	2	4
7	12	9	3	9
8	10	10	0	0
9	12	14	12	4
10	15	13	2	4
				33



**Source: Field Survey, 2015**

Formula for the test re-test is

$$1 - \frac{6\sum di^2}{n(n^2 - 1)}$$

$$1 - \frac{6(33)}{10(10^2 - 1)}$$

$$1 - \frac{198}{10(99)}$$

$$1 - \frac{198}{990}$$

$$1 - 0.2$$

$$= 0.8$$

Where

1 = no of test done

6 = constant

$\sum di^2$  = total no of di<sup>2</sup>

n = total no of questionnaire

From the reliability test, a figure of 0.8 was obtained which show the instrument is highly reliable.

**Method of Data Analysis**

The data was analysed in line with the research question and hypothesis. The Pearson's Product Moment Correlation Coefficient was used to test the hypothesis using SPSS Version 20.

**DATA ANALYSIS**

Out of the 56 respondents, 22 employees had worked within the banking sector for a period of 1 to 3 years representing 39.3%. 36% for a period of between 4 and 6 years; while 25% had been in service for over 6 years. It shows that 52% of the respondents had worked in different banks before joining one of these banks while 48% of employees is working at the same bank but are willing to leave if they find a better offer from another bank.

**HYPOTHESIS TESTING**

**H<sub>0</sub>:** There is no significant relationship between employees salary and employee satisfaction.

**H<sub>1</sub>:** There is a significant relationship between employees salary and employee satisfaction.

**Table 1: Descriptive Statistics**

	Mean	Std. Deviation	N
Salary	4.1857	0.88944	56
Employee satisfaction	3.6429		0.99325

**Source: Field survey and analysis SPSS, 2015**

**Table 2: Correlations**

	Salary	employee satisfaction
Salary	1	0.339
Pearson Correlation		0.004
Sig. (2-tailed)		
N	56	56
Employee satisfaction	0.339	1
Pearson Correlation		
Sig. (2-tailed)	0.004	
N	56	56

Correlation is Significant at 0.01 level (2-tail)

**Source: Field survey and analysis SPSS ver. 20, 2015**

The r value indicates that there exists a relationship between the two variables, but a weak relationship. The calculated r value is 0.339 with a significance of 0.004. This indicates that there is significant correlation between the variables. Therefore, reject we the null hypothesis and state that there is a weak positive relationship between employee salary and employee satisfaction (if there is an increase in salary, then satisfaction will also increase but the increase will be minor).

### **SUMMARY OF FINDING, CONCLUSION AND RECOMMENDATIONS**

#### **Summary of Finding**

After the analysis of collected data, it was found that the value of the Pearson Product Moment Correlation is at 0.34. This indicates that there is a positive weak relationship between salary and employee satisfaction. It further revealed that salary alone without other incentives like bonuses, job security, regular promotion, etc cannot make employee satisfied; employee satisfaction increases as salary increase but sluggishly.

#### **Discussion of Finding**

The study discovered that there is a weak relationship between salary and employee satisfaction in selected banks in Anambra; Awka metropolis precisely but positive. This agreed with what Mwakidimi and Obwogi (2015) observed that pay has a weak influence on employee retention while work environment had a strongest influence. Also Adeoye and Ziska (2014) found a weak significant correlation between compensation management and employee job satisfaction. Mensah (2012) also support these when he observed that though management implements some of the compensation available, there are other benefits which are not satisfactorily administered and this has contributed to lack of zeal towards work (dissatisfaction).

### **CONCLUSION**

In view of the above findings, the study concludes that, to prevent employee mobility; banking industry should formulate, administer and implement a good compensation policies that would allow them retain their talented employee. When employees are satisfied, they stay long with the organisation. The incremental growth in banking industry is slow and not many people are willing to wait long when other banks are offering better initial as well as incremental packages. It therefore implies that First bank, Fidelity and Sterling banks should review their compensation package to attract, retain and motivate the talent pool.

## RECOMMENDATIONS

In line with this study, the following recommendations were made:

- ❖ The banks while framing their compensation policies should not only target salary but other things like work environments.
- ❖ The compensation structure should include new and enticing ways to retain and motivate employees with a wide range of benefit designed to enhance individual effort. For instance, banks may use various methods to support education of its employees.
- ❖ Commercial banks should also introduce generous benefits like post-retirement medical treatment, regular promotion, job security etc as a tool for retaining talent.

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## Maintenance Culture And Performance Of Selected Manufacturing Firms In Benue State, Nigeria.

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### Abstract

Manufacturing firms in Nigeria continuously face the problem of stoppage of production processes and high cost of repair due to inadequate knowledge of maintenance culture. The study seeks to examine the extent to which maintenance culture influences performance of selected manufacturing firms in Benue State, Nigeria. The specific objective is to ascertain the extent to which preventive maintenance influences product delivery of selected firms. The study adopted survey design with a population of two hundred and thirty three (233) and a sample size of one hundred and forty seven (147) derived using Taro Yamane's formula for finite population. Questionnaire was used as instrument for data collection. Data collected were analyzed with the use of Pearson Product Moment Correlation. The r value was subjected to a t-test of significance. Result shows that preventive maintenance significantly influences product delivery of the selected firms. The study recommended among others that firms should continuously adopt preventive and corrective measures of maintenance to reduce cost of repairs and intermittent stoppage of production processes. Firms should embark on continuous training programmes for their maintenance personnel as a pillar for proper maintenance culture development.

## INTRODUCTION

### Background of the Study

Today's market conditions place great emphasis on variety, performance and quality of products. In order to meet these requirements, manufacturers have been compelled to utilize complex and sophisticated machines. Over time, the driving need to meet and improve on the requirements has shifted the trend of manufacturing to high levels of automation (Raouf & Ben-Daya, 1995). The objective behind automation is to achieve higher productivity and profit in order to effectively stay competitive in business. High levels of automation require that the machines employed operate without trouble and this requirement has changed the technology and operating philosophy of manufacturing industry around the world (Mishra & Pathak, 2006). Despite the success chalked in the automation, one key factor that necessitates consideration is cost maintenance. The high and rising costs of modern production machines as well as high maintenance costs are developments that compel manufacturing firms to pay attention to the culture that promotes maintenance.

Furthermore, technology is becoming increasingly complex, with electronics, robotics and computer control now influencing every aspect of manufacturing and maintenance. This has led to many changes in maintenance activities. Special and continuous training programmes

are required to provide relevant knowledge, understanding and skills to service the increasingly specialized equipments and keep up to development in industry (Mishra & Pathak, 2006). Bamgboye, (2006) posits that maintenance is the art of bringing back the operating condition of an asset into the normal functioning at a minimum cost capable of enhancing the life span of the item. In other words, maintenance is the ability and skill of keeping infrastructures available for normal use and the designed life span of many infrastructures are at present very low in Nigeria (Uma, Obikwe&Ihezukwu, 2014). Life span enhancement necessitates a culture of adequate maintenance.

The concept of culture has various perspectives. However, for the purpose of this work, culture is perceived as a key that influences behaviour of getting things done the right way without which there is a hindrance of the attainment of goals. It is shaped by the interaction between individuals and groups that share the value, perception and goals they have assimilated from previous generation which continued in other generations. Culture in the context of a work organisation is put in place when social relationships among members influence their pattern of thinking and behaviour (Wilkins, 1994; Breden, 2006; Sani, Muhammed, Shukor, and Awang,, 2011). This implies that maintenance culture brings to bare the adoption of the attitude of ensuring regular servicing, repairs and maintenance of working assets or established system so as to guarantee their continuous usefulness.

In Nigeria, the concept seems to be very new. Manufacturing firms in Nigeria like dangote cement company, Gboko, Benue breweries limited and Nigeria bottling company plc Makurdi have invested so much on infrastructure, equipment and machines but have not given adequate attention to its maintenance and so very low results are realized in the use of assets, which lead to "poor maintenance culture." The situation in these firms can be attributed to poorly equipped maintenance departments, insufficient funding for operation and maintenance, lack of spare parts, transfer of plants without enough manpower requirements on ground, insufficient monitoring and lack of preventive and corrective maintenance strategies.

In view of the above, this study seeks to examine the extent to which maintenance culture influence performance of selected manufacturing firms in Benue state.

### **Statement of the Problem**

There exists general information which is easily accessible about the location, products and activities of manufacturing companies. However there is insufficiency of information on maintenance activities being undertaken within the industry. Adejuyigbe, (2006) reports that there are some levels of maintenance activities taking place within manufacturing industries but offer no specific details; for example the type of maintenance strategy adopted, equipment and technology employed, the role of the maintenance manager, training, documentation and influence on performance among others.

Maintenance culture such as preventive and corrective approaches which comprise of provision for adequate care of the hard earned infrastructure have not gained ground in the consciousness of resource managers in the manufacturing firms over the years. This condition has resulted in abandoned factory plants, dilapidated buildings, deserted vehicles with minor problems, moribund industries and a host of other properties which have little or insignificant problems. The ugly consequence is economic stagnation, poor quality, huge operating cost to these firms and subsequent collapse which aggregate to national economy. This study therefore seeks to examine the extent to which maintenance culture affects performance of selected manufacturing firms in Benue State.

### **Objectives of the Study**

The broad objective of the study is to ascertain the influence of maintenance culture on performance of selected manufacturing firms in Benue State.

The specific objective is to;

Examine the extent to which preventive maintenance influence product quality of selected manufacturing firms in Benue State.

Here, maintenance culture is decomposed into preventive maintenance while performance is decomposed into product quality.

### **Research Question**

To what extent does preventive maintenance influence product quality of selected manufacturing firms in Benue State?

### **Research Hypothesis**

**H<sub>1</sub>:** preventive maintenance significantly influence Product quality of selected manufacturing firms in Benue State (Dangote cement company plc, Nigeria bottling company and Benue breweries )

## **REVIEW OF RELATED LITERATURE**

### **Conceptual Review**

#### ***The Concept of Maintenance***

There are many definitions of maintenance. Telang and Telang (2010) define maintenance as “the combination of all technical and related administrative actions including supervision, with an aim to retain an item in, or restore it to a state in which it can perform a required function”. This definition clearly identifies two distinct activities in maintenance; the technical and the administrative. The technical activities are grouped under maintenance engineering and deal with the actual tasks carried out on equipment while the administrative activities are grouped under maintenance management and basically deal with the management aspects of maintenance. Al-Naija (2007), observes that maintenance is a means to maintain and improve the quality of the elements involved in a production process, continuously and cost-effectively through detecting and controlling the deviations in the condition of a production process. Maintenance can be summarized as the repair and upkeep of existing equipment, buildings and facilities to keep them in a safe, effective and desired condition so that they can meet their intended purpose (Eti,Ogaji, & Probert, 2006; Adeniyi, 2004).

Maintenance strategies are generally categorized as corrective (reactive) and preventive (proactive). The corrective maintenance is an unscheduled maintenance attempting to restore a system after a failure occurs. The preventive maintenance on the other hand is to schedule proactive maintenance routinely by designed inspection, detection, and repair/replacement (Adeyeri,Kareem, Ayodeji, &Emovon, 2011).

#### ***Maintenance Culture***

Culture is difficult to define because it have multitude concept, each with own slight variation depending on the focus of study. It is a way of life which consist language, arts and thought, spiritually, social activity and interaction. Generally, culture is acknowledged as encompassing inherited ideas, beliefs, values and knowledge that contribute the shared bases of social actions (Schein 1999; Morgan 1986; Mark, Ogaji, & Probert, 2006). Culture is the key that influences behaviour of getting things done the right way without which would hinder the goals from being achieved (Brendan, 2006; Wilkin, 1994).Culture is shaped by the interaction between



individual and groups shared the value, perception and goal they have learned previous generation continues to generation. The context of culture has been use in organisation when culture is created in the organisation of social relationship among members through way thinking, behavior and belief. In general, culture is defined as the overall activity of human behavior, the arts, belief, values, attitudes, practices, and all human works and ideas that influences each member in the organisation.

Culture in an organisation is a pattern of shared basic assumptions that the group learned as it solve its problem of external adaptation and internal integration that has worked well enough to be considered valid and therefore, to be taught to new members as a correct way to perceive, think and feel in relation to those problems (Sodiki, 2001). Schein (1985), maintains that the significance of cultural approach to maintenance activities is that it allows a general view of the social dynamics in a complex and diverse domain.

Maintenance culture focuses on the design and implementation of a technical procedure that supports the prevention or correction of premature failure of engineering systems with least cost and time without compromising the system performance and safety parameters (Hill, 2005). Developing good maintenance culture in industries requires a human resources organisational framework. The strategies would be based on definite corporate focus and objectives while the functionality of the human element depends on factors like qualification, motivation, inter-personal relationships, training and retraining. It has been found that a good production system is usually backed up by an effective maintenance system; therefore, evaluating maintenance culture is an important ingredient in the effort to enhance productivity in the manufacturing industries (Kelly, 2006; Sodiki, 2001).

### ***The concept of preventive maintenance.***

Telsang (2008) notes that preventive maintenance is the routine inspection and service activities designed to detect potential failure conditions and make major adjustments or repairs that will be of help to prevent major operating problem. The preventive maintenance policy is a system of planned and scheduled maintenance. The basic principle involved in this system is "prevention is better than cure" it includes.

1. Proper identification of all items, their documentation and coding
2. Inspection of plant and equipments at regular interval (periodic inspection)
3. Proper cleaning, lubrication of equipments. To upkeep the machine through minor repairs and major overhauls.
4. Failure analysis and planning for their elimination.

Preventive maintenance schedules are normally of two categories

1. Fixed time maintenance (firm) schedule
2. Condition based maintenance.

Joshua (2009) observes that preventive maintenance (PM) is a fundamental, planned maintenance activity designed to improve equipment life and avoid any unplanned maintenance activity. This maintenance includes, Systematic inspection, detection of the entire maintenance which is the foundation of the entire maintenance strategy. Unless the PM program is effective, all subsequent maintenance strategies take longer to implement, incur higher costs, and have a higher probability of failure.

### ***The Concept of Performance***

The concept of performance lends itself to an almost infinite variety of definitions, many of which relate to specific contexts or functional perspectives. Anthony (1965) gave a general definition and well-crafted definition of performance, sharing the concept of two primary

components, efficacy and effectiveness. Efficiency refers to performance in terms of inputs and outputs so that the resulting higher volume for a given amount of inputs, means greater efficiency. Effectiveness refers to the performance by the degree to which planned outcomes are achieved (for example: objective to avoid interruptions of supply over a period of time can be regarded as an efficient outcome).

Many previous definitions of performance tended to focus on the size of efficiency, showing financial results as a primary measure of performance. Subsequently, this concept's definitions have evolved, especially with the emergence of the Balanced Scorecard (Kaplan, Norton, 1992) which includes not only the financial perspective, but also the internal perspective, customer perspective and innovation and learning perspective. Performance can be expressed through a balanced set of parameters describing the results and processes to achieve these results. Construction business performance is achieved by balancing and interrelation of at least four forces (Kaplan, Norton, 2001):

- Efficiency of production processes;
- Shareholders' meeting requirements;
- Customer satisfaction;
- Capacity of the growth and development - staff skills (training, satisfaction), the degree of innovation, use of opportunities.

Performance is the execution or accomplishment of work, tasks or goals to a certain level of desired satisfaction. In this study, however, organisational performance is defined in terms of the ability of an organisation to satisfy the desired expectations of three main stakeholders comprising of owners, employees and customers (Aluko, 2003). This is measured in terms of the following parameters:

- i. Owners' satisfaction with costs reduction and financial returns or profits from organisational operations.
- ii. Employees' satisfaction with the conditions of work, such as wages and remuneration, style of supervision, rapid promotion and the ability of the organisation to guarantee job security.
- iii. Employees' expressed a desire to stay with the organisation, i.e., the ability of the organisation to retain its workforce.
- iv. Customers' expressed satisfaction with the quality of the products of the organisation.

There are three views for describing the overall quality of a product. First is the views of the manufacturers, who are primarily concerned with the design, engineering and manufacturing processes involved in fabricating the product. Quality is measured by the degree of conformance to predetermined specifications and standards and deviations from these standards can lead to poor quality and low reliability. Efforts for quality improvement focus on eliminating defects (components and subsystems that are out of conformance) the need for scrap and rework, and hence overall reduction in production costs.

Second is the view of the consumer or user. To consumers, a high-quality product is one that well satisfies their preferences and expectations. This consideration can include a number of characteristics, some of which contribute little or nothing to the functionality of the product but are significantly in providing customer satisfaction. A third view relating to quality is to consider the product itself as a system and to incorporate those characteristics that pertain directly to the operation and functionality of the product. This approach should include overlap of the manufacturer and customer views.

### **Theoretical Framework**

This study is anchored on the theory of Waid (1983) optimal stopping theory. The theory states that optimal stopping is concerned with the problem of choosing a time to take a particular action, in order to maximize an expected cost/loss. IT is the time at which the desired event occurs and depends on the past i.e that at any time we should be able to decide whether the event that we are waiting for has already happened or not (without looking into the future).

This theory is relevant to this study in the sense that by choosing a time to take a preventive maintenance measure, it will help reduce the cost of maintenance and loss that may incur in the production processes.

### **Empirical Review**

Halim, Mohamed, and Siti (2013) investigated total productive maintenance and manufacturing company in Malaysia. 106 out of 167 copies of questionnaire were retrieved and analysed accordingly. The inter-correlation of TPM team, strategy and planned maintenance indicated significant positive relationship with cost. The perceived reduction of manufacturing cost included production cost, manpower cost, overhead cost, material cost and unit cost. Higher practices were associated with higher cost reductions.

Mahesh and Ram (2010) assessed plant maintenance management practice in automobile industries in Francisco. They adopted a theoretical-conceptual approach specifically devoted to searching and reviewing maintenance practices in manufacturing firms. Their findings showed that the economic category of maintenance task comprise of cost structure of maintenance and production economy. The review also revealed that reliability of plant can be designed in the equipment by engineering, demonstrated by operations in a careful use of the equipment but can only be sustained by proper maintenance culture. Various works reviewed by the authors showed significant relationships between maintenance and performance of firms investigated. Adeyeri, Kareem, Ayodele and Emovon (2011) investigated dynamics of maintenance culture as a condition of reduction of material wastage from machines in Lagos metropolis. Structured questionnaire were administered to a vegetable oil and cocoa industries as well as the use of oral interviews. The results obtained from the analysis of data collected from the industries investigated revealed enormous material wastage from 2005-2008 when the industries maintenance approach was purely corrective maintenance. When the preventive maintenance approach was introduced, the material wastage from the machinery was reduced to bear minimum.

Bolaji and Adejuigbe (2012) investigated maintenance culture of manufacturing firms in Akure metropolis. Maintenance departments of some selected industries in Akure metropolitan, Nigeria, were visited for field survey and data acquisition. These industries were Delko Steel and wire industry limited, Afolabi Dinehin and sons limited and Titilayo Plastic industry limited. Nine performance ratios were selected in assessing the overall performance of the maintenance department in the selected industries. These ratios consists of short down intensity, emergency failure intensity, overtime ratio, maintenance production ratio, maintenance cost component, direct maintenance labour cost, cost of supplies and spare parts and monthly stock turnover. Virtually, all the performance ratios indicated poor performance in each production/maintenance section. The year of purchase of most equipment has between 1973 and 1998. The number of breakdown of machines has between 2-9 times per year. Number of overtime per day has between 1-12 hours and varies from one machine to another. The incessant breakdown of equipments were attributed to long age and poor maintenance.

Ajiboye and Adedokun (2010) investigated maintenance engineering and productivity in a salt production firm. A descriptive survey design was adopted and questionnaire were designed and administered to some selected firms in Osun State, Nigeria. Findings revealed that when production was just started with machine parts in good conditions the firm was able to achieve its objective for maximum productivity despite the fact that the firm did not introduce proper maintenance culture. Suddenly, a reduction in production of the salt firm was identified due to weakness of the machine parts. This situation resulted in total machine breakdown and increased maintenance cost.

Ribeiro (2011) explored the status of production equipment in some selected manufacturing firms in Ghana. The objective was to assess the level of maintenance practices by manufacturing firms and the influence the practices have on performance of the surveyed firms. To achieve this objective, questionnaire was designed and administered to a survey involving visits to manufacturing industries in Kumasi, Accra and Tema, all in Ghana. Interviews were also conducted where necessary. Correlational analysis was used to determine the association of maintenance practices with maintenance and production costs, employees' safety, product quality and the frequency of equipment break down. It was found that preventive maintenance was related positively with cost reduction in smaller firms investigated. Analysis also revealed that production managers in large firms found it difficult to appreciate the role of production maintenance. Production loss is probably the greatest loss to manufacturing industry as the entire business depends on output. Hence, the production managers of some surveyed firms found it difficult to release machines for maintenance until a total breakdown is experienced. Even when breakdown occurred, pressure was mounted on maintenance staff to hurriedly repair and get the machine back into the production line. This resulted in high costs of spare parts as well as other related overheads.

### **SUMMARY OF REVIEWED LITERATURE**

Halim et al (2013) investigated total productive maintenance ad manufacturing company in Malaysia. The findings shows a positive significant relationship between the inter-correlation of total productive maintenance (TPM) team, strategy and planned maintenance and cost. Mahesh and Reum (2010) assessed plant maintenance management practice in auto mobile industries in Francisco with the adoption of theoretical-conceptual approach shows that the economic category of maintenance task comprise of cost structure of maintenance and production economy more over Adeyeri et al (2011) in their investigation or dynamics of maintenance culture as a condition of reduction of material wastage from machine in Lagos state. The result obtained from the analysis of data collected through questionnaire and oral interview revealed enormous material wastage from 2005-2008 when the industries maintenance approach was purely corrective maintenance. Still in same line of thought Bolaji and Adejigbe (2012) investigated maintenance culture of manufacturing firms in Akure metropolis Nigeria. Their finding shows that incessant breakdown of equipment were attributed to long age and poor maintenance. Ajiboye and Adedokun (2010) investigated maintenance engineering and productivity in a salt production firms in Osun state. The finding showed that when production was just started with machine parts in good conditions the firm was able to achieve its objectives for maximum of productivity despite the tact that the firm did not introduce proper maintenance culture. But suddenly experience reduction in production due to total machine breakdown and increased maintenance cost lastly Ribeiro (2011) study on the status of production firms in Ghana. The result revealed that preventive maintenance was related positively with cost reduction in smaller firms investigated.

Various studies reveal showed a positive relation between production maintenance team, strategy. Planned maintenance and cost Itelim (2013) Adeyeri et al (2011), Adejuigbe (2010) but non of this studies reviewed has examined the extent maintenance culture influence performance of selected manufacturing firms in Benue state hence specifically the extent to which preventive maintenance influence product quality of selected firms in Benue state. IT is that Yawning gap that this study seeks to fill unlike other researchers.

## METHODOLOGY

### Research Design

Survey research design was used in this study. The study involves the determination of the extent of the relationship between two variables namely, Maintenance Culture and performance of firms.

### Population of the Study

The population of this study comprised of production/Engineering staff of three randomly selected firms out of six manufacturing firms in Benue. The three selected firms are as shown below;

**Table 3.1: Population Distribution**

S/N	Firms	Number of Employees	Percentage
1	Dangote Cement Company	86	37%
2	Nigeria Bottling Company	76	33%
3	Benue Breweries	71	30%
	Total	233	100%

Source: Field Survey 2015

### Sample size

The Sample size for this study is 147 employees (out of a total population of 233) of the three selected manufacturing firms derived with the use of Taro Yamanes' formula for finite population as propounded by Bartlett, Kotrilik and Higgins (2001) as shown below;

$$n = \frac{N}{1 + N(e)^2}$$

Where; n = sample size, N = population; e -= error margin  
Substituting in the formula, we have

$$n = \frac{233}{1 + 233(0.05)^2}$$

n = 147

Thus, the sample size is 147 employees of the selected manufacturing firms. However, Bowley's proportional allocation formula was used in determining the proportion of questionnaire to be administered to each firm.

$$ni = n \frac{Ni}{N}$$

Where

ni = number of questionnaire allocated to each firm

n = total sample size

Ni = number of employees in each firm

N = population size

**Table 3.2: Questionnaire allocated to each firm**

S/N	Firms (sampling unit)	Population	Proportion	Sample size	Question
1	Dangote Cement	86	0.36	147	52
2	Nigeria Bottling Coy	76	0.32	147	47
3	Benue Breweries	71	0.32	147	47
	Total	233	1	-	147

**Source: Field survey 2015**

### Sources and Methods of Data

The major sources of data for the study include the primary source and secondary source were gotten from text books, internet and journals. The primary data was collected with use of questionnaire. The structured questionnaire has two parts, part 1 and part 2. Part 1 deals with Background information of the respondents which encompasses such data as gender, educational attainment and location of firm, parts 2 contain ten items organized in a section. The questionnaire was designed using the Likert five point scale ranging from strongly agree to strongly disagree. Face and content validity of the instrument was ensured. In order to establish the reliability of the instrument, the instrument was subjected to test re-test method.

### DATA PRESENTATION AND ANALYSIS

The data for the analysis is presented and analyzed in line with research question and hypothesis using appropriate testing statistics. Pearson's Product Moment Correlation was used in analyzing the statistical data with the aim of establishing the strength of relationship between the dependent and independent variables. The test was conducted at 5% level of significance.

The response from the respondent covering the relevant elements of research question are compiled and presented with the mean on a Likert scale ranging from 1 to 5 in a descending order of magnitude.

SA= Strong Agree, Weight 5 points

A = Agree, Weighted 4 point

D = Disagree, Weighted 3 point

SD = Strongly Disagree, Weighted 2 point

UN = Undecided, weighted 1 point

To accept each item, mean of responses must be greater than mean of weighs ( $\mu$ ), otherwise, the item is rejected.

$$\mu = (5+4+3+2+1)/5 = 15/5 = 3$$

Di = Decision

Ai = Accept

R = Reject

**Table 4.1: Response on the extent to which preventive maintenance influence product Quality of the selected firms**

S/N	Question Item	Responses							Di
		SA	A	D	SD	UN	n	$\bar{x}$	
	Maintenance Culture <b>(preventive Maintenance)</b>	5	4	3	2	1			
1	There is formal periodic equipment inspection systems that identify problems before they become perplexing.	25	60	25	30	-	140	3.6	Ai
2	When breakdown occurs, machine are reviewed and adjusted to prevent the problem from reoccurring	38	25	50	27	-	140	3.5	Ai
3	There are measures in place to monitor quality performance	50	40	50	-	-	140	4.0	Ai
4	Preventive maintenance work has the highest priority in the maintenance planning and scheduling effort	60	10	20	50	-	140	3.6	Ai
5	Potential problems are identified and work order are entered to correct them	40	20	30	50	-	140	4.4	Ai
<b>Performance(Quality product)</b>									
6	Standard procedures are designed before breakdown to take care of resulting consequences	35	30	60	15	-	140	4.3	Ai
7	Adequate documentation and manuals relating to maintenance are available to enhance product attribute	50	25	60	5	-	140	4.3	Ai
8	Previous work orders are routinely referred to and used for planning information on maintenance	60	25	40	15	-	140	3.9	Ai
9	Technical resource personal such as engineers and experienced technicians are available to assist teams with quality improvement	50	30	50	10	-	140	3.8	Ai
10	Preventive measures are put in place to maintain and enhance product quality	30	50	55	5	-	140	3.7	Ai

Source: Field Survey [2015]

**Table 4.2 Distribution and Responses of Questionnaire**

s/n	Firm	No Distributed	No returned	% of Responses
1	Dangote	53	50	34%
2	Nigeria bottling	47	44	29%
3	Benue Breweries	47	46	31%
	Total	147	140	94%

From table 4.2 147 copies of questionnaire were distributed to the selected firms and only 140 respondents returned their completed questionnaire recording 94% returned response

### Test of Hypothesis

**Ho:** preventive maintenance does not significantly influence product quality of selected firms

**Hi :** preventive maintenance significantly influence product quality of selected firms

S/N	X	Y	X <sup>2</sup>	Y <sup>2</sup>	XY
1	85	55	7225	3025	4675
2	63	77	3969	5929	4851
3	90	50	8100	2500	4500
4	70	70	4900	4900	4900
5	60	80	3600	6400	4800
6	65	75	4225	5625	4875
7	75	65	5625	4225	4875
8	85	55	7225	3025	4675
9	80	60	6400	3600	4800
10	80	60	6400	3600	4800
Σ	753	647	57669	42829	47751

Product moment correlation coefficient (r) calculated

$$r = \frac{N \sum xy - (\sum x)(\sum y)}{\sqrt{[N \sum x^2 - (\sum x)^2][N \sum y^2 - (\sum y)^2]}}$$

Where

N = Number of pairs of scores

Σxy = Sum of the products of paired scores

Σx = Sum of x scores

Σy = Sum of y scores

Σx<sup>2</sup> = Sum of squared x scores

Σy<sup>2</sup> = Sum of squared y scores

$$r = \frac{10[47751] - (753) * [647]}{\sqrt{10(57669) - (753)^2 * [10(42829) - (647)^2]}}$$

$$r = \frac{9681}{\sqrt{(552,678,609)}}$$

$$r = 0.51$$

Test of the significance of r

To do this, the null and the alternate hypothesis are stated as follows

Ho: e = 0 ( there is no linear relationship between x and y)

Ho: e ≠ 0 ( there is a linear relationship between x and y)

The test for significance for r is a 't' test and the formula for the test statistics is given as

$$t = r\sqrt{n-2}/1-(r)^2$$

$$t = \frac{0,5\sqrt{10-2}}{1-(0.51)^2}$$

$$t = \frac{1.1597}{0.8319}$$

$$t = 1.89$$

t critical at 8 degree of freedom and 5% level of significance equal to 1.860

Decision

Accept Ho when t cal is less than t crit otherwise

Reject Ho and uphold Hi



Since  $t_{cal} 1.89$  is greater than  $t_{crit}$ . We reject the null hypothesis and accept the alternate hypothesis which signifies that preventive maintenance significantly influence product quality of Dangote cement plc, Nigeria bottling company and Benue breweries Makurdi

## DISCUSSION OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

### Discussion of findings

From the result obtained, it was seen that preventive maintenance influences the product quality of the selected firms. Though the correlation coefficient showed a value of 0.51 regarded as moderate relationship, the significant test shows that maintenance culture significantly influence product quality of the selected firms at 5% level of significance. The result of this study is consistent with the findings of Ribeiro (2011) that preventive maintenance is related positively with cost reduction in smaller firms investigated

### Conclusion

In view of the above findings, the study concludes that preventive maintenance significantly influences product delivery of manufacturing firms in Benue State, Nigeria. The result of product moment correlation coefficient 0.51 and test of significance of 1.89 shows that preventive maintenance significantly influence product quality of Dangote cement company, Nigeria bottling company and Benue breweries Makurdi which are the selected firms for the study. The implication is that adequate preventive measure will reduce rate of machine breakdown, cost and ensure continuous operation of the machine for optimum product delivery and the maintenance of quality standard.

### Recommendations

In the light of the findings the study recommends that ;

1. The firms in addition to the implementation of preventive measures of maintenance should ensure that other corrective measures are in place to reduce the rate of breakdown of machine and reduce the cost associated with repair and spare parts
2. Management should develop continuous training programmes for maintenance personnel as a pillar for proper maintenance culture development.
3. Designs, purchases and new installations should be meticulously evaluated before decisions on such issues are made to forestall inadequacy in maintenance personnel skills and spare parts.

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# The Impact Of Leadership Behavior On The Business Growth Through The Organizational Innovation And Managerial Practices

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## Abstract

The main objective of this empirical study is to determine the affect of leadership behavior with the organizational innovative techniques and managerial practices on the businesses' growth in Pakistan particularly in textile sector. Firstly, the study discusses the relationship between leadership behavior and organizational innovation, between organizational behavior and managerial practices. Furthermore, this relationship is also measured between organizational innovation and business growth and between managerial practices and business growth. Secondly, the study investigates that these relationship are strongly reinforced in the firm with the support of theoretical evidences made but not determined theoretically in the prior literature. Managerial practices take place in textile community for interaction in which organizational cognition is developed and expanded dynamically between the cognitive and behavioral changes. Organizations with greater organizational acquisition and practices create a learning network that will become easier to learn that what they use to learn and to initiate, enabling the firm to preserve its effective and competitive aversion as a textile technological center. Nomothetic research method is applied to test the hypothesis, developed for this study. The research examined a sample of one hundred ten textile firms with sample unit of senior managers, executives, administrative and other-level managers. A research model is formulated for the study and hypotheses are tested with the use of structural equation model. This study purposes that the leaders of firms initiate a transformational role, which facilitate organizational innovation and managerial performances and consequently enhance the business growth especially in textile firms.

**Keywords:** Leadership behavior, Organizational innovation, Managerial performance, Business growth.

## INTRODUCTION

Leadership has been considered as a significant factor that has much influence on innovation and organizational performance. Therefore, organizational leadership and innovation techniques are the crucial factors for achieving the strategic competitiveness in present day (Ireland and Hitt, 1999). Strategic leaders have recognized for their vital role in allocating opportunities and decisions making that affect on innovation management, managerial

activities and the firm performances (Finkelstien and Hambrick, 1996). Transformational leadership, one type of leadership, is described as the method of leadership that heightens the consciousness of joint interest among all the members of organizations and helps to attain their collective goals. As contrary to this, traditional leadership focuses on enhancing the individual interest of firm's leaders and their members and achieving the satisfaction of authorized obligations (Bass and Avolio, 2000). Leaders use both transformational and transactional behavior to different degrees of firm (Bass 1999).

Various transformational leadership theories emphasize on values, emotions and the importance of leadership behavior to encourage the employees' creativity. Employees are the main resource in the firm, Transformational leaders takes responsibility for, to promote the professional development of the employees (Bass and Avolio, 2000; Garcia Morales, 2008). The leadership behavior creates emotional links with the fellow members and acts to empire the higher values. Such, leadership that has responsibility to transmit the role of creating a shared mission and having a sense of direction and purpose in the followers is known as transformational leadership (Bass, 1999). The leadership becomes the motor for innovative culture and knowledge oriented for, to seek the best organizational performance (Bass, 1999; Bass and Avolio, 2000). Transformational leaders have charisma, create inspiration and promote intellectual stimulation (Bass, 1999; Bass and Avolio, 2000). Charisma generates the faith, pride and respect that encourage their members, their leaders and their organizations as whole to grow. Transformational leaders provide inspiration and motivation to their followers through communication of high manufacturing expectations. Such leaders also promote the employees' intellectual stimulation by promoting their knowledge, intelligence and learning to become innovative in their problem solving techniques (Bass and Avolio, 2000).

Various studies analyzed the affect of transformational leadership on business performance through the different intermediate constructs such as knowledge management (Gowen, 2009), entrepreneurship and entrepreneurship education (Rafiq, et.al. 2015; Garcia Morales, 2006), organization culture (Ogbonna and Harris, 2000), flexible behavior (Rodriguez ponce, 2007) human resources management to enhance human- capital (Zhu, Chew and Spangler, 2005) top management teams (Colbert, Kristof, Bradley and Barrick, 2008) and absorptive capacity (Garcia, Jimenez and Gutierrez, 2008).

The Literature proposes different concepts of innovation. This study uses the formulated definition of innovation introduced by the Product Development and Management Association (PDMA) that analysis innovation as; a new idea, method, technique or device. The act of generating a new process or product that can ensure the growth of organization is known as innovation. The act includes invention and the work required as a concept or idea to bring into final form (Bellivean, 2002). Although researches prescribe firm innovation as a main source of improving organizational performance, many firms do not develop innovation properly (Zollo and Winter, 2002). The study emphasizes the great importance on managerial practices and innovation for a firm's survival and effective performance (Van de Ven, 1993). Managerial practices and organizational learning are the major components to improve the organizational performances and to strengthen the competitive advantage. The new knowledge, derived from organizational learning and managerial performance enable the firm's competencies to remain dynamic and to improve in performances. Organizational learning is positive associated idea that contains different forms of performances (Argyris and Schon, 1996; Inkpen and crossan; 1995; Ireland et al, 2001). Various authors describe that innovation is the foundation to improve firm's performance and moreover, innovation plays an important role in order to improve managerial performance (Argyris and Schon, 1996; Damanpur, 1991; Hurley and Hult, 1998).

To summarize, this study describes the influences of leadership on the organizational innovation and managerial performances and give importance to provide empirical results that demonstrate these relationship. The model also claims to prove the positive and significant relation between organizational practices and innovation and demonstrates these dynamic capabilities and performances. To achieve the objective of the article, the section based on a series of hypothesis that influences of transformational leadership on organizational innovation and managerial practices with business growth and organizational performances. The method section specifies the data and the technique that used to analyze the hypothesis empirically in the textile firms. The results section describes the findings among the variables. Finally, the section on conclusion discusses the results and points out some limitations of this study.

### **LITERATURE REVIEW**

The strategic literature emphasizes on leadership style as an important influence on organizational innovation (McDonough, 2000). Generally, there is broad consensus that a participative and collaborative firm's leadership style is to encourage organizational innovation in the manufacturing sector (Kanter, 1983) than transactional leadership style (Manz, 1989). It is important to show the role of manager's perceptions in their organization that strongly influences to promote this style of leadership behavior in manufacturing organization. Transformational leaders promote organizational innovation within the firm content-in other words, Leadership is the tendency to innovate in the organization. Transformational leaders use creational motivation and intellectual improvement, which are important for organizational innovation (Elkins and Keller, 2003). Such leaders promote new ideas in their organizations, their leadership behavior are proposed to act as "Creativity enhancing forces", "Serves as a reward", "enhances exploratory thinking" and "provides encouragement into the idea generating process" (Sosik, Khai, and Avolio, 1998). Leaders develop their followers' self-determination, self-raising and self-esteem (Bass, 1990). These types of leaders motivate their followers by their energy, enhancing employees willingness to act beyond expectations, and stimulates them to apply innovative approaches in their work. This result motivation and self-confidence in the members to improve organizational innovation and business growth (Mumford, Scott, Gaddis and Strange, 2002).

Transformational leadership constructs team work and provides members a vision, energy and support for innovative processes and organizational performances (Bass, 1999; McDonough, 2000). This style set aside for organizations to learn through experiments, investigations and communications (Menguc, Avh and Shih, 2007; Slater and Narver, 1995). More specifically, the transformational leadership fuels the organizational performance by enhancing intellectual stimulation, rational motivation and self-esteem among the organization members (Coad and bervy, 1998). Transformational leadership creates greater consciousness and mission of the organization and promotes a shared vision, and establishing of a team work. This style of leadership allows the leader to learn, commit and become its driving force and also provide the desirable techniques to overcome internal and external difficulties to establish managerial learning within the organization (Wick and Leon, 1995). Several features of leadership are related to the organizational innovation (Gumusluoglu and Ilsev, 2009; Lian Shao, 2006). Transformational leaders have a passive vision; they pay optimum level of attention to promote effective communication (Adair, 1990) and fostering an environment for innovative team (Tushman and Nadler, 1986). All the features of leadership enable a better knowledge of strong relationships between the transformational leadership and there elements certainly influencing organizational innovation (Kanter, 1983).

Finally, transformational leaders have provided inspiration, to promoting intellectual values of members. Thus Leadership affecting on innovation indirectly with the communication process (Garcia-Movales, 2004) and create the style of organizational knowledge (Nonaka and Takeuchi, 1995). Further, transformational leadership has an influence on the innovation based on both factors and co-relation between them (Communication and organizational performance) (Schein, 1993; Senge, 1990).

The literatures influence on the importance of organizational innovation for a company's survival and is considered essential for effective performance (Argyris and Schon, 1996; Inkpen and Crossan, 1995). Various marketing theories describe that organizations attain a high market share concentrating on innovation speed, which generates high income and profitability. Strategic theories emphasizes that the firms adopted organizational innovation method are able to make isolation mechanisms. Similarly, the resources and capabilities theory maintains that resources and technologies required making organizational innovation externally and allowing firms to attain their competitive advantages and receive higher organizational performance (Irwin, Hoffman and Lamont, 1998; Lengnick-Hall, 1992). Thus, there are many important factors that influence on the successful management portfolio of product innovation. These factors of product innovation are;

- I. Strategy and leadership behavior
- II. Firm planning and selection
- III. Organizational structure and performance
- IV. Effective communication and collaboration.

### **Strategy and leadership behavior**

Leadership behavior and strategy have been recognized as the first important factor to enable the effective innovation management for the product. The product strategy importance is well documented in different literature (Englund and Graham, 1999; Jones, 1997; Bookhart, 1996). A product strategy defines the main objectives of product innovation in association to the organization's strategy. It specifies market targets to formalize the essential structures for implementation. A product strategy also focuses and integrates the team effort. Every worker in the project team have an input in product innovations and transformational leaders have an effective impact on the product innovation initiatives (Cooper, 1999; Cooper and Kleinschmidt, 1996). Leaders engage innovative practice at all organizational levels and create effective communication in product innovation methods (Englund and Graham, 1999).

### **Firm planning and selection**

An intellectual planned product innovation is an important factor for the success. Cooper & Kleinschmidt (1996) emphasis on the significant pre-define development activities to solve the problems in advance and facilitate the new technologies. It is essential for effective planning and selecting projects, which are focused on customers demand and link to the product strategy and objectives (De Brentani, 2001; Shepherd and Ahmed, 2000). Therefore, a clear understanding of consumer needs is core to product innovation plans and all the product operations driven by these users needs. Calantone, Benedetto and Schmidt (1999), explore 'the screening of new product ideas is perhaps the most critical new products development activity, yet it often is performed poorly'. The screening process coordinates to eliminate the extensive use of resources and focus on the critical efforts. In this view, firm success depends on the best potential among different projects (Cooper, 1999).

### **Organizational structure and performance**

An organizational structure and managerial performance have been recognized as a main enabler for the effective innovation management. Two different theories of organizational

structure are mechanistic (technique) and organic (Cumming, 1999), the mechanistic approach reinforce the previous behaviors while the organic structure promotes organizational learning and generating business knowledge (Cumming, 1999; Bacts, 1998; Davenport and Prusak, 1998). Knowledge sharing and knowledge transfer depends on the member personal network and willingness (Jones and Jordan, 1998; Ruggles, 1998). Organizations are beginning to organize the reporting lines and firm structure not around the functional department. Team work are becoming the main organizational component for new economy (Shepherd and Ahmed, 2000; Kayworth and Leindner, 2000). Similarly, Employees motivation and rewards system are the key elements in maintaining the interests of employees (Bukowitz and Petrash, 1997). Furthermore, there are various reports for practical incentive mechanisms which linked with measuring and rewarding the new idea generation and knowledge sharing. Many firms still use traditional performance measures which are inappropriate indicators of organizational success.

### **Effective communication and collaboration**

The final important factor for the product innovation management is effective communication and collaboration. The product innovation is the process of knowledge intensive (Davenport and Prusak, 1998; Drucker 1993). Firm communication described as an informational transformational process where the passive information is gathered and then transferred in an innovation way. Therefore, communication is the vital element for product innovation many researchers highlight that external communication is the main element for the successful product innovation (Mendelson and Pillai, 1999; Poulton and Barclay, 1998). Customer commitment has been proven to enhance the effectiveness of firms' project (Shepherd and Ahmed, 2000; Leonard and Sensiper, 1998). Internal communication is also the important element for product innovation success. Many researchers emphasizes on the effect of communication and co-operation among the employees that strongly relate to the project success (Maltz, 2000; Liberatone and Stylianox, 1995).

Different theories explain that organizational innovation is necessary for the better organizational performances. According to various marketing theories organizations that concentrate on the innovation attain the major share of market that produces high level of income and profitability (Irwin, Hoffman and Lamont, 1998). Thus, a passive relation exists between the organizational innovation and firm performance (Zahra and George, 2002). The organizational innovation literate has various empirical studies which supporting this relationship. Organizations that have greater innovation will attain the better response from the business environment, obtaining more capabilities that needed to enhance organizational performance (Calantone, Cavusgiliand Zhao, 2002). Organizational innovation as a main dimension of intrapreneurship has a significant influence on organizational performance (Hudge and Morgan, 2007).

Leadership is an organizational move toward becoming transformational leadership that inspires the workers to participate with enthusiasm in group efforts and analyze beyond their personal interest, reorganizing the training of employees and construction of teams to promote business performance (Bass, 1991). The main internal reasons of organization's failure is the leaders inability that suppose to the transformational role needed for stimulating organizational performances and to create potential ability between transformational leadership and firm performance. High performances in the firms are stimulated by exploring positive organizational climate. Leaders invest their time and resources to organize teams; they have required competencies to execute the strategic changes in organization (Nadler and Tushman, 1990).



Previous studies have asserted co-relation between organizational leadership and learning, showing their affect on firm business growth (Bierly, Vessler and Christensen, 2000). Traditional leadership is mainly individualistic and less necessary for organizational learning and team making. As contrary to this transformational leadership construct team work and provides support for processes change that improve business growth through better and effective leadership (Bass, 1999; McDonough, 2000). More specifically, Transformational leadership is fostered by organizational learning and business practices by promoting intellectual stimulation, motivation and self-esteem among the organizational members (Coad and Berry, 1998). Organizational learning encourages shared models and favor transformational leadership and new technologies that enhance business performance (Senge, Roberts, Ross, Smith and Kleiner 1994).

**Figure1: Frame work**



### HYPOTHESES

- H1:** A positive association exists between leadership behavior and organizational innovation.  
**H2:** A positive association exists between leadership behavior and managerial practices.  
**H3:** A positive association exists between organizational innovation and business growth.  
**H4:** A positive association exists between managerial practices and business growth.  
**H5:** A positive association exists between leadership behavior and business growth.

### METHODOLOGY

This study believes on positivism paradigm, which believes on objective reality of nature. This research uses deductive approach to test the hypothesis. The first step in the empirical study is the selection of population which to be analyzed. The population consists of the important textile organizations in Lahore, Pakistan. The sample was selected randomly from the one hundred sixty companies that had the required number of employees. This study uses the sample unit of top management, administrative and other-level managers of the organization. One hundred ten companies agreed to participate in the study. Three hundred questionnaires were distributed among the sample group, out of which 258 (86%) were returned and have been completed. SPSS 20 is used in this study to analyze the data collected from textile sector of Lahore, Pakistan. Descriptive statistics, factor analysis and reliability analysis (Cronbach's alpha) are used to test the factors validity and reliability of questionnaire measures. Similarly, correlation and regression analysis are process to find the relationship between the variables.

### Analysis and Results

This section presents the analysis of data which firstly discusses the demographic profiles of the different respondents and explain the descriptive summary that include the mean and standard deviations for all selected variables. It is followed by estimated reliability results and factors validity of measurements of constructs. Secondly, this section presents the results of regression analysis and hypotheses tests to examine the hypothesized relationships in the model.

## Descriptive statistics

### Demographic profile of respondents

A total of 300 questionnaires were distributed to top management, administration and other core staff of textile firm in Lahore out of which 258 questionnaires were return which shows a reasonable response rate of 86%. The demographic profile of respondent is given in table 1. This table contains information on the basis of education, job position, legal status, sector and staff.

**Table: 1 Demographic profile of respondents**

Respondent demographics	Frequency (N)	Frequency (%)
<b>EDUCATION: (N = 258)</b>		
Primary	17	6.6
Secondary	60	23.3
Tertiary	71	27.5
MSc, M.A	77	29.8
Professional studies	33	12.8
<b>Job Position: (N = 258)</b>		
Top Management	52	20.2
Middle Management	69	26.7
Core Staff	47	18.7
Administrative Personnel	42	16.8
Other	48	18.6
<b>Legal Status: (N = 258)</b>		
Public	4	1.6
Private	152	58.9
Other	102	39.5
<b>Type of Sector: (N = 258)</b>		
Manufacturing	127	49.3
Services	6	2.3
Researches	5	1.9
Consulting	8	3.1
Other	112	43.4
<b>Staff: (N = 258)</b>		
Up to 9	3	1.2
10-49	24	9.3
50-249	132	51.2
More than 250	99	38.3

Table 1 shows that out of 258 respondent, 17(6.6%) are primary education, 60(23.3%) are secondary education, 71(27.5%) are tertiary education, 77(29.5%) are masters level and 33(12.8%) are Professional Studies; the entire respondent provide information regarding their education. Of the 258 respondents, 52(20.2%) are top management, 69(26.7%) are middle management, 47(18.7%) are core staff, 42(16.3%) are administration personnel and 48(18.6%) are other employee of the firm; all respondents provide information there job position. Out of 258 respondents, 4(1.6%) are public sector, 152(58.9%) are private sector and 102(39.5%) are other sector, the entire respondent provide information regarding their legal status. This shows the most of the respondents belongs to private sector. Out of 258 respondents, 127(49.2%) are manufacturing sector, 6(2.3%) are services sector, 5(1.9%) are research sector, 8(3.1%) are consulting sector and 112(43.4%) are other related sector; all the respondents provide information regarding their type of business sector. Out of 258

respondents, 3(1.2%) are below the 9, 24(9.3%) are from 10 to 49 members, 132(51.2%) are 50 to 249 members and 99(38.5%) are 250 to above members; all the respondents provide information regarding number of staff in the companies. The above discussion shows that the selected samples may be considered to a good representative of the population.

### Reliability Analysis

In the table 2, shows the estimated values of Cronbach's co-efficient alpha that examine the reliability and consistency level of measures. In this sample, the values of Cronbach's alpha vary from (0.828 to 0.872).this declare that each multi-item construct high level of reliability. Leadership behavior (alpha = 0.828), Organizational behavior (alpha = 0.833), Managerial performances (alpha = 0.872) and Business growth (0.858). The Cronbach's alpha value implies that all the factors are internally consistent. In short, the reliability analysis gives the same construct among the higher Cronbach's value of a construct.

**Table: 2 Reliability of measurement**

Constructs	Valid N	Number of Items	Cronbach's alpha
Leadership Behavior	258	8	0.828
Organizational Innovation	255	10	0.833
Managerial Practices	258	7	0.872
Business Growth	258	5	0.858

### Factor analysis

Factor analysis conducted while using PCA techniques with varimax rotation method to confirm the validity of different construct. These different results are given in the table 3 and table 4 respectively. To check the data adequacy, the study employed the KMO techniques of sample adequacy test and Bartlett's test of sphericity. This sampling shows how strength connection between the variables as a well as sphericity refers to the orthogonally of different components.

### KMO measure of sampling adequacy test and Bartlett's test of sphericity

The KMO techniques of sampling indicate the suitability to employ the factor analysis. The KMO values lies between 0 and 1. The value of "0" indicates the high dispersion in correlation patterns. The value of "1" indicates the correlation patterns are relatively compact. Then factor analysis applications can become in-appropriate or appropriate. The KMO value better value lies between 0.6 to 1 and consider poor if below to 0.5. The results mentioned in table --- are all consider being better because values lies between 0.6 to 1. The Bartlett's test shows the significance of relationship between the different construct. Generally, the p-value <0.05 refers to significant relationship among variables.

**Table: 3 KMO and Bartlett's test**

Constructs	No. of items	KMO Measure of sample adequacy	Bartlett's Test of Sphericity Chi-square	Bartlett's Test of Sphericity Sig.
Leadership Behavior	8	0.921	975	0.000
Organizational Innovation	10	0.852	729	0.000
Managerial Practices	7	0.879	744	0.000
Business Growth	5	0.859	533	0.000

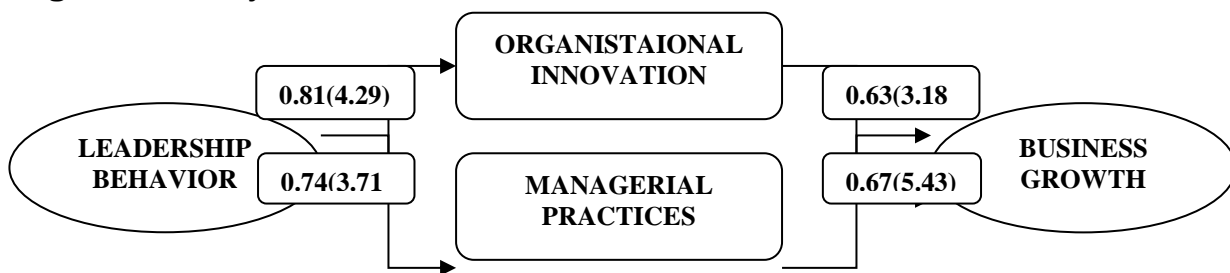
### Eigen values

Eigenvalue are those values which are considered to be the principal component that are more than 1 and they apply for the next analysis. Table-4 indicates all the eigenvalues for explained variance for different constructs. One principal component value was extracted from the given four constructs by using PCA extraction method: Leadership behavior (consisted of eight items explaining 56.36% variance), Organizational innovation (consisted of ten items explaining 35.56% variance), Managerial practices (consisted of seven items explaining 56.79% variance) and Business growth (consisted of five items explaining 63.98% variance).

**Table: 4 EIGEN VALUES**

Construct	Components	Initial eigenvalues		
		Total	% of variance explained	Cumulative % of variance explained
Leadership Behavior	Comp 1	4.509	56.362	56.362
Organizational Innovation	Comp 1	4.268	35.563	35.563
Managerial Practices	Comp 1	3.975	56.793	56.793
Business Growth	Comp 1	3.199	63.985	63.985

### Regression Analysis



### Multiple regression analysis

Independent variables	Dependent variable ; Business Growth		
Leadership Behavior	0.74 (3.74)		
Organizational Innovation		0.65 (4.42)	
Managerial Practices			0.64 (6.58)
Adjusted R	0.763	0.815	0.794
f-statistics	0.739	0.782	0.671

### CONCLUSION AND MANAGERIAL IMPLICATIONS

This study emphasizes on organizational innovation and managerial practices in the textile firms through the leadership behavior that enhances business growth. Effective organizational learning generates the technological environment that has leadership to enable innovation and maintain the competitive positions in textile sector (Senge, 1994). Transformational leadership encourages the combination of fundamental beliefs, expectations and principles. These believe and expectations enhance the rules of behavior with the conduct of individuals and groups. Research shows that leadership behavior has different effects on the organizational innovation and managerial performances that depending on the level of organizational learning in the textile firms. It is verified through this research that leadership behavior and encourages organizational innovation and managerial practices which focuses on the business growth that minimizes the cost of internal change.

This study supports the impact of encouraging the leadership in generating firm's innovation. This study also claims that the characterization of leadership behavior are more concern with the group decisions, collective organizational goals and generating capabilities. Finally, textile producing organizations need for the productive innovation to improve their working performance in the real-life business environment. It is asserted that effective innovation generates better business performances in the productive firms and this relationship is more intense as, the managerial learning and performances increases. The empirical results depict that the sources of business innovation, achieving sustainable competitive advantages and sustainable development in the textile firms are sustainable by the presence of an essential competencies that organizations possess. In this way, firms acquire a dynamic and innovative vision that enable them to improve business performances, generating resources and technological capabilities that are unique and difficult to imitate.

This model analyses the different effects of leadership behavior on innovation, managerial practices and business growth which depending on level of organizational performances. It is also examined that other consequences of introducing an organizational innovation process in textile organizations. More, attention to the effect of specific technological strategic elements on innovation is necessary in future. Future studies should rely on the large sample and should explicitly integrate the effects of external factors. It would also be interesting to study more for similar characteristics with more information provided by the lower levels of the firm's management and members working in it.

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## The Impact of Information and Communication Technology (ICT) Development on Economic Growth in Sudan: An Application of ARDL Bounds Testing Approach

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### Abstract

The aim of this study to investigate the impact of Information and Communication Technology (ICT) development on economic growth in Sudan. Annually data over the period (1980-2014) of economic growth (GDP), Information and Communication Technology (ICT) (Fixed phone line, mobile cellular and internet subscribers per 100 inhabitants) and macroeconomic factor (Gross fixed capital formation and labor force) were modeled. Using the bound testing approach to cointegration and Error Correction Model (ECM), developed within an Autoregressive Distributed Lag (ARDL) framework, the study investigates whether a long-run relationship exists among the variables. From the results, it is evident that there is an existence of a long run relationship between ICT and economic growth. The short run dynamic model also reveals that the speed of convergence to equilibrium is moderate implying that there is a short run relationship between ICT and economic growth.

**Keywords:** economic growth, ARDL, ICT

### INTRODUCTION

Explaining the sources of economic growth has ranked amongst the most significant issues that economists have examined. Romer's 1986 work began a set of theoretical and empirical analyses focusing on the endogeneity of the growth process as compared to Solow (1956) type neoclassical growth models which use an aggregate production function approach and exogenous technical changes. Information and Communication Technology (ICT) has become, within a very short time, one of the basic building blocks of modern society. Many countries now regard understanding ICT and mastering the basic skills and concepts of ICT as part of the core of economic growth process. Within the past decade, the new ICT tools have fundamentally produced significant transformations in industry, agriculture, medicine, business, engineering and other production fields; moreover ICT has an added value to the final goods and services. The widespread diffusion of the Internet, mobile telephony and broadband networks all demonstrate how pervasive this technology has become. But how precisely does ICT affect economic growth? And what are the conditions under which ICT can become effectively enhance the economic performance?

Telecommunications infrastructure investment can lead to economic growth in several ways. Most obviously, investing in telecommunications infrastructure does itself lead to growth because its products - cable, switches, etc. - lead to increases in the demand for the goods and

services used in their production. In addition, the economic returns to telecommunications infrastructure investment are much greater than the returns just on the telecommunication investment itself. The transactions costs of ordering, gathering and processing information, searching for services are high. As the telephone system improves, the costs of doing business fall, and output will increase for individual firms in private sectors contribution of economic growth. "If the telephone does have an impact on a nation's economy, it will be through the improvement of the capabilities of managers to communicate with each other rapidly over increased distances" [Hardy (1980), p. 279].

Since 1993, Sudan has witnessed an increase in telecommunication infrastructure capacity and developments in information technology to benefit from ICT contribution. Considering the significant expansion of the Sudanese ICT infrastructure in recent years, a lack of empirical studies exists concerning its impact and causal relationship with economic growth. However, two questions arise. Does ICT development lead to economic growth in Sudan? Is there long run and short run relationship between ICT development and economic growth in Sudan economic?

This study is attempted to investigate how ICT development affects economic growth in Sudan. This issue is important and has received considerable attention in the popular press concerning the creation of the "information superhighway" and its potential impacts on the economy. This investigation provides empirical evidence on the major theoretical debates regarding the linkages between ICT development and economic growth. Although many researchers have provided empirical evidences for the correlation between ICT investment and economic growth, study on the impact of ICT development on economic growth is still an unexplored area. Therefore, this paper would fill the literature gap on the effect of ICT development on economic growth.

The rest of this paper is organized in the following way: The next section is a review of relevant studies on the impact ICT on Economic growth. Section three provides Overview of ICT and stylized facts in Sudan. Section four presents the data and econometric methodology used in this study. Section five shows the empirical results and discussion. The last section provides some concluding remarks and discusses policy implications of findings and recommendations.

### **LITERATURE REVIEW**

Several empirical studies have shown that the benefits of ICT have powered the productivity and economic performance of developed nations over the last four decades. Most studies in developed and industrialized countries report that ICT plays a key role in economic performance during the 90s, such as Lau and Tokutsu (1992) examined the relationship between ICT and economic growth in US over the period 1960-1990 using the production function approach. The findings found that ICT had contributed to nearly half of the national output during the period. Kraemer and Dedrik, (1993), investigated the impact of ICT to economic growth in eleven Pacific countries for the period 1983 to 1990. The results indicating that there was a significant and positive relationship between ICT and economic growth. Niininen (1998) estimated the contribution of ICT to Finland's economic growth for the period 1983 to 1996 using the growth accounting framework. Other empirical researches showed the same results for US include Oliner and Sichel, (2000); Jorgenson and Stiroh (2000).. Niininen (2001) and Jalava and Pohjola (2005, 2007) in the context of Finland; Oulton (2002) in the context of the U.K examined the contribution of ICT to economic growth over the period 1989-1998; Gretton et al. (2002) and Simon and Wardrop (2002) in the context of Australia; Kegels et al. (2002) in the context of Belgium; Miyagawa et al. (2002) in the context of Japan;

Armstrong et al. (2002) and Khan and Santos (2002) in the context of Canada; Cette et al. (2002) in the context of France; Van der Wiel (2002) in the context of the Netherlands; and Kim (2002) in the context of South Korea.

Many of these early studies focused on labor productivity, which made the findings surprising as investment in ICT adds to the productive capital stock and should thus, in principle, contribute to labor productivity growth. Later studies found some evidence of a positive impact of ICT on labor productivity, however, some also found evidence that ICT capital had larger impacts on labor productivity than other types of capital, suggesting that there might be spillovers from ICT investment or that ICT might have positive impacts on economic growth. More recent work for certain OECD countries, e.g. the United States and Australia, has more conclusively also found significant interactions between ICT use and complementary organizational variables in nearly all sectors. The complementary factors for which data were available and which were found to have significant influence were: human capital, a firm's experience in innovation, its use of advanced business practices and the intensity of organizational restructuring. Computer use was also commonly associated with use of advanced business practices, the incorporation of companies and firm reorganization by (Gretton, et al., 2004; Bosworth and Triplett, 2003). On the other hand, comparative studies between developed and developing countries indicate that, in contrast to developed countries, developing countries do not experience significant returns from ICT development (see Dewan & Kraemer 2000). In the Middle East, Nour (2002) uses data from Egypt and other Arab Gulf countries and reports that the correlation between ICT development and economic growth is positive, but not significant. A large-scale study that examines the causality for 105 countries (Shiu & Lam 2008a) reveals bi-directional causality in high income level and European countries, but uni-directional causality in countries with lower income levels that runs from economic growth to ICT development. They suggest that less-developed countries should create the environmental conditions called 'critical mass' by promoting greater ICT penetration rates. In another study, Lam and Shiu (2010) confirm their previous results by assessing the impact of mobile telecommunications on economic growth.

Hardy (1980) is one of the first studies we are aware of that investigates the potential impact of telecommunication on growth. Using data for over 15 developed and 45 developing nations from 1960 to 1973, Hardy concludes that telephones per capita do have a significant impact on GDP, whereas the spread of radio does not. However, when the regression is attempted for developed and developing economies separately, no significant effects occur. One explanation of this might be that there are important fixed effects. Neither fixed effects nor the problem of reverse causality was addressed by Hardy.

Study by Greenstein and Spiller (1995) who investigate the impact of telecommunication infrastructure (as measured by the amount of fiber-optic cable employed) on economic growth in the U.S. They find that a positive and significant effect exists (output increases some 10% from doubling the amount of fiber-optic cable) in one industry, whereas in manufacturing sectors less of a telecommunications growth effect exists.

Röller and Waverman (1996) use evidence from 21 OECD countries over the past twenty years to examine the impacts that telecommunications developments may have had. The empirical results show the evidence of a positive causal link, provided that a critical mass of telecommunication infrastructure is present.

Piatkowski (2003) investigated the impact of ICT on economic growth in Poland over the period 1995-2000 using growth accounting framework. The results found that the increase ICT investment had contributed nearly 9% of Poland economic growth during the sample period.

A similar study Quesada & Mas (2005) showed that ICT investment has enhanced economic performance of Spain from 1985-2002 and Daveri (2000) study in 11 OECD countries found that ICT contributed significant to economic growth of most OECD countries.

Colecchia and Schreyer (2002), estimated contribution of ICT on output growth in nine OECD countries over the period of 1980-2000. The empirical results showed ICT contributed between 20% and 50% of the national output growth over the study period in most countries. Mudiarsan & Shanmugam (2007) the study used auto-regressive distributed lag (ARDL) to investigate the relationship between ICT and real gross domestic product (RGDP) for Malaysian economy over the period 1960-2004. The causality results showed that for period 1960-1982, economic growth led to growth in ICT investment, in the second period 1983-2004, reverse causality was observed ICT investment led economic growth in Malaysia.

### **Overview of ICT and stylized facts in Sudan**

Sudan's primary resources are agricultural, but oil production and export are taking on greater importance since October 2000 till the secession of south part of the country 2011. The Sudanese economy has grown quite rapidly over the last 10 years with total GDP at current market prices increasing from just over US\$15 billion in 2002 to almost \$67.32 billion in 2011. Real GDP growth has been especially strong in 2006 and 2007 registering 8.9 percent and 8.5 percent, respectively, largely as a result of increased oil production, higher oil prices and expanded export processing zones, then decreased gradually and became 2 percent in 2012 due the secession of South Sudan which resulted in an 80% decline in foreign currency earnings and a 35.6% reduction in budget revenue. Real GDP grew by 2.8% in 2011, down from 5% in 2010. This slowdown in growth is attributable to the loss of oil revenues, and GDP growth is estimated to decline further to 2% in 2012.

Sudan's experience of the last two decades in building and capitalizing on ICT as a gateway for sustainable development is a landmark in the country's history. The institutional, legal, and regulatory frameworks were reformed to advance ICT as tools for integrating the economy into the global market. However, the full potential ICT is greatly hampered by the lack of capacity of communities to make the best use of the services. Therefore, UNDP is intervening to assist the government through its ICT institutions to promote ICT for human development.

Communications and facilities are still limited outside Khartoum while travel restrictions are also in force in some areas (for example Darfur region) owing to political instability. This has had a negative impacted upon recent attempts to stimulate growth in the country's ICT sector. Nevertheless, there has been steady growth in the usage of telecommunications and internet during the past years.

The historical use of ICT in Sudan, according to the WDI database (2005) implies that before 2000 the number of users both mobile-cellular telephones and internet (per1000 population) were zero and up till the year 2000 both were only one. In recent year Sudan has shown growing telecommunication networks and internet services but still the highest price/most expensive internet service compared to other Africa and developing countries.

Below are the present recent indicators from international telecommunication Union ITU (2014) and illustrate that despite recent shown in terms of fixed telephone, the present average growth rate of the total online population. Internet, fixed (wired) broadband and mobile –cellular subscribers in Sudan during the period 2000-2013 has been significant.

The status and trend of ICT indicators in Sudan the fixed-telephone subscriptions per 100 inhabitants increased from 1.13 in 2000 to 1.48 in 2005 but then declined to 1.25 and to 1.09 in 2010 and 2013 respectively. In addition mobile-cellular telephone subscriptions per 100 inhabitants increased from 0.07 in 2000 to 4074, 41.54 and to 72.85 in 2005, 2010 and 2013 respectively. Moreover fixed (wired)-broadband subscriptions per 100 inhabitants increased from 0.002 in 2004 to 0.003, 0.03 and 0.12 in 2005, 2010 and 2013. Furthermore the percentage of individuals using the internet increased from 0.03 in 2000 to 1.29, 16.70 and 22.70 in 2005, 2010 and 2013 respectively.

The rapid increase in ICT indicators in Sudan that appear from the increasing use of internet and mobile-cellular telephone in Sudan over the period 2000-2013, are above that of African region but below Arab region, whereas the use of fixed-telephone in Sudan less than Africa and Arab region. This implies that by regional and international standard the ICT indicators in Sudan are below. Comparing Sudan ICT performance with other countries we find, mobile-cellular telephone subscriptions per 100 in Sudan 72.85 in 2013 ranked in sixth bottom place in the Arab countries after (Djibouti, Comoros, Somalia, Syria, and Yemen). The top performance in the Arab region that reported in Kuwait 190.29 is equivalent to 2.61 times that in Sudan. Fixed-telephone subscriptions per 100 inhabitants in Sudan 1.09 ranked in the second bottom place in Arab countries after Somalia, the top performance in the Arab region reported in United Arab Emirates 22.32 is equivalent to 20.48 times that of Sudan.

#### DATA AND METHODOLOGY

The study uses ICT variables data covering the period from 1980-2014 extracted from the International Telecommunication Union (ITU), such as (fixed telephone line and mobile cellular telephone (FIXMOB) and internet (INT) subscribers per 100 inhabitants) used as a proxy for ICT infrastructure. Since economic growth is strongly affected by the macro economic conditions, some economic factors which may influence the connection between ICT development and economic growth are traditional factors of production included in this study. Gross fixed capital formation (GFCF) data that is calculated in US dollars, constant prices 2005 and total civilian labor force as proxy of human capital have been considered of the main factors of economic growth both in developed and developing countries.

To investigate the relationship between ICT and economic growth, most extant empirical studies at the macro level utilize the production function with ICT as an explanatory variable. This study makes use of the framework proposed by Solow (1957) and Jorgenson (1966), and also used by Haghshenas & Berma, 2013; consider the aggregate production function in the form of the production possibility frontier. The basic production function is extended to take into account the technological progress, embodied in the form of ICT capital and non-ICT capital. Therefore, the typical production function for examining the impact of ICT on output requires three resources: labor, ICT capital and other capitals. If production is assumed to follow a Cobb-Douglas function form, the following production function is utilized:

$$Y = A ICT^{\alpha} K^{\beta} L^{\gamma} \dots \dots \dots (1)$$

Where Y is Growth Domestic Product (GDP), ICT information communication and technology represents special form of capital to estimate its impact on growth, K denotes other capitals and L denotes labor force. A is constant representing other factors of production, and  $\alpha$ ,  $\beta$  and  $\gamma$  are the elasticities of production resources. The function can be converted into the following log-linear form for analytical convenience:

$$\ln Y = \ln A + \alpha \ln ICT + \beta \ln K + \gamma \ln L \dots \dots \dots (2)$$

Based on this theory, first standard test based on the work of Dickey and Fuller (1979) is performed. Moreover, Cointegration techniques such as Johansen (1988), Johansen-Juselius (1990) and Pesaran and Pesaran (2001), ARDL approach are utilized in the economic literature to empirically determine the existence of any long-run relationship among the variables. The ARDL model has some advantages over other cointegration approaches. The appropriateness of utilizing ARDL model is that the ARDL model is based on a single equation framework. The ARDL model takes sufficient numbers of lags and direct the data generating process in a general to specific modeling framework (Harvey, 1981). Unlike further multivariate cointegration techniques such as Johansen and Juselius (1988), ARDL model permits the cointegration relationship to be estimated by OLS once the lag order of the model is identified. Error Correction Model (ECM) can also be drawn from by ARDL approach (Sezgin and Yildirim, 2003). The above advantages of the ARDL technique over other standard cointegration techniques justify the application of ARDL approach in the present study to analyze the relationship among variables. The short and long-run parameters are estimated simultaneously. The unrestricted error correction model is used for equation-1 as following:

$$\Delta \ln GDP = \beta_0 + \alpha_1 \ln GDP_{t-1} + \alpha_2 \ln GFCF_{t-1} + \alpha_3 \ln ICT_{t-1} + \alpha_4 \ln LF_{t-1} + \sum_{i=0}^n \beta_{1i} \Delta \ln GDP_{t-1} + \sum_{i=0}^n \beta_{2i} \Delta \ln GFCF_{t-1} + \sum_{i=0}^n \beta_{3i} \Delta \ln ICT_{t-1} + \sum_{i=0}^n \beta_{4i} \Delta \ln LF_{t-1} + e_t$$

For short run behavior of the variables, we use error correction version of ARDL model as following:

$$\Delta \ln GDP = \beta_0 + \sum_{i=0}^n \beta_{1i} \Delta \ln GDP_{t-1} + \sum_{i=0}^n \beta_{2i} \Delta \ln GFCF_{t-1} + \sum_{i=0}^n \beta_{3i} \Delta \ln ICT_{t-1} + \sum_{i=0}^n \beta_{4i} \Delta \ln LF_{t-1} + \lambda ECM_{t-1} + u_t$$

Where  $\lambda$  is the speed of adjustment parameter and EC is the residuals that are obtained from the estimated cointegration model. The stability tests such as cumulative sum of recursive residuals (CUSUM) and cumulative sum of squares of recursive residuals (CUSUMSQ) are also applied to test the goodness of fit for ARDL model.

### EMPIRICAL RESULTS AND DISCUSSIONS

In this section, empirical results are presented along with their analysis by using ARDL approach. Before applying ARDL, the Augmented Dickey-Fuller (ADF) test was employed to test the stationary of time-series data considered under the study and the results are presented in Table (1), ICT indicators are stationary at I(0) and the other variables are integrated at I(1) and we should apply ARDL bounds testing approach to co integration to test long run relationship between the variables.

**TABLE (1) Tests of the Unit Root Hypothesis**

Variable	Aug Dickey-Fuller test	
	Level	First differences
GDP	-2.26561	-4.414967*** I(1)
FIXMOB	-4.339838*** I(0)	-0.52452123
Internet	29.69303*** I(0)	-5.841027
GFCF	-1.1249191	-4.563698*** I(1)
LF	-1.259318	-6.276242*** I(1)

**Note: The optimal lag is automatically selected based on the Schwarz Info Criterion (SIC) for Fisher-ADF regressions. \*\*\* and\*\* denote the rejection of the null hypothesis of non-stationary at the 1% and 5% levels of significance, respectively.**

**SOURCE: Author**

To examine the long run relationships between information and communication technology ICT and economic growth in Sudan, this study uses recent co-integration analysis approach, known as autoregressive-distributed lag (ARDL) model {Pesaran et al(2001)}, All other techniques require the same level of Stationary of variables for further process

**Table (2): ARDL bound test result**

F-Statistics	6.594048	
	Critical value bounds	
Significance	10 bounds (lower bounds)	11 bounds (upper bounds)
10%	2.45	3.52
5%	2.86	4.01
2.5%	3.25	4.49
1%	3.74	5.06

**SOURCE: Author**

But the ARDL model provides and substitute test for examining a long run relationship regardless of whether the underlying variables are I(0), I(1), or fractionally integrated.. Table (2) demonstrating results of F-Statistics value comes more than critical value of bounds. It indicates long run relationship among the variables.

**Table 3: Error correction representation for ARDL model Dependent variable is DLOG(GDP)- Preferred specification**

Cointegrating Form				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLOG(FIXMOB)	0.130906	0.071318	1.835523	0.0406
D(INT)	-0.010716	0.010102	-1.060824	0.3008
DLOG(LF)	-0.363828	0.206585	-1.761154	0.0928
DLOG(LF(-1))	0.236070	0.232401	1.015785	0.3213
DLOG(LF(-2))	-0.501082	0.250220	-2.002568	0.0583
DLOG(LF(-3))	-0.384589	0.221959	-1.732700	0.0978
DLOG(GFCF)	0.301576	0.115945	2.601030	0.0167
DLOG(GFCF(-1))	-0.002961	0.120133	-0.024650	0.9806
DLOG(GFCF(-2))	-0.124910	0.111345	-1.121828	0.2746
DLOG(GFCF(-3))	-0.311284	0.116822	-2.664597	0.0145
CointEq(-1)	-0.651847	0.144215	-4.519963	0.0002
Long Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(FIXMOB)	0.200823	0.110087	1.824222	0.0424
INT	-0.016440	0.016432	-1.000466	0.3285
LOG(LF)	0.388623	0.214288	1.813556	0.0541
LOG(GFCF)	1.318317	0.214791	6.137660	0.0000
C	-6.129929	5.167518	-1.186242	0.2488
Diagnostic tests				
R2	0.821			
D.W	2.14			
Breusch-Godfrey LM				
$\chi^2(1)$	3.71(0.155)			

**SOURCE: Author**

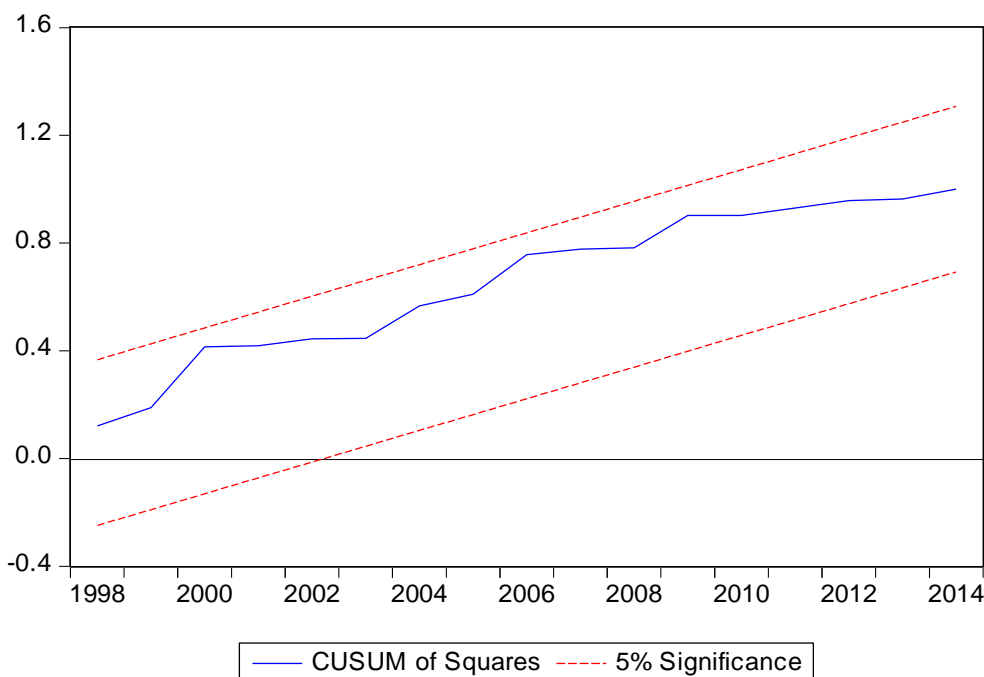
The result of the long – run relationship between fixed and mobile telephone, labour force and GFCF in table (3) reveal that the estimated coefficients has a positive and significant impact on economic growth, one percent increase in (fixmob) to contribute 0.20 percent of GDP. On the other hand the intent (INT) coefficient is found to be statistically insignificant and has

unexpected negative sign. However, econometric analysis brings evidence that the effect of the macroeconomic variables (gross fixed capital formation and labour force) on the economic growth in Sudan is more important than that of ICT indicators effect.

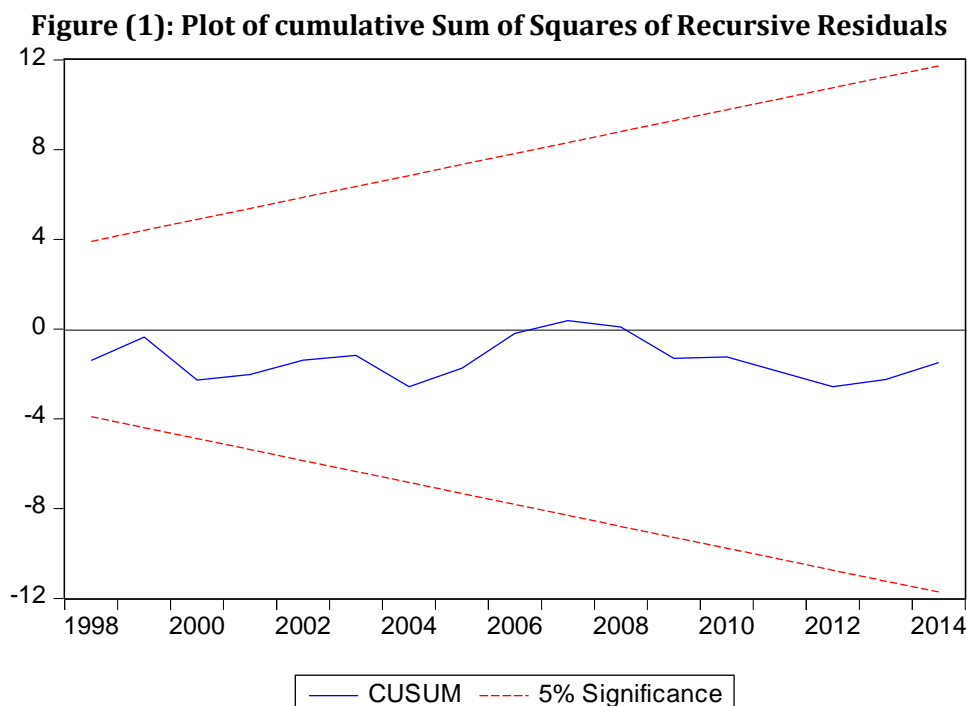
The short run effect of FIXMOB is significant at 5 per cent level, similar to the long run case but the magnitude of the effect is slightly lower than the long run case. Moreover, the results indicate the error correction coefficient estimated at (-0.6518) has negative sign and statistically significant, getting adjusted of 65.18% convergence towards equilibrium at the long run. This also indicates once the disequilibria happened, it will take more than one year to adjust itself towards the long run equilibrium. Moreover, the last part of Table 3 describes a bundle of diagnostic tests to understand the validity of the result of error correction model. The adjusted R square shows around 82 per cent of the variation of data is explained by the model. The Durbin-Watson (DW) statistic (2.14) is close to 2, which roughly indicates that the model is free of autocorrelation problem. The Breusch-Godfrey LM test for serial correlation is more appropriate for dynamic models and we see, this model passes this test.

The stability tests done on the ARDL model, using plots of “Cumulative Sum of Recursive Residuals (CUSUM)” and “Cumulative Sum of Squares Recursive Residuals (CUSUMSQ)” presented by Brown et. at (1975) has been shown in figure (1) and figure (2) respectively. Since both the plots remain within critical bounds at 5 percent level of significance. We conclude that the model is structurally stable.

**Figure (1): Plot of cumulative Sum of Recursive Residuals**







The fact that most studies have shown, positive relationship between ICT and economic growth, the results corroborate with existing empirical works (Kraemer and Dedrik, (1993), Piatkowski (2003), Greenstein and Spiller (1995), Shiu & Lam 2008).

### CONCLUDING REMARKS AND RECOMMENDATIONS

This study employed the Augmented Cobb-Douglas production function to investigate the relationship between information & communications technology and economic performance. The results showed that ICT development has a significant effect on the economic growth in Sudan. The coefficient measuring the effect of the fixed telephone and mobile cellular development on economic growth was positive, indicating that ICT affect economic growth in a positive way both long-run and short-run. The findings are consistent with existing theoretical framework as illustrated by several authors about the relationship between ICT development and economic growth. Therefore it is essential for the government to provide the society with information, up-to-date structures and educated people in other to access and use ICT efficiently.

Moreover, the study may have implications for policy makers who should focus mainly on ICT indicators because Sudan economy is still under the transition period and needs more efforts to develop ICT components by implementing specific policies that will accelerate ICT development.

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# The Extent of Applying the Balanced Scorecard at the Jordanian Universities: Comparative study between the Government and Private Universities

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## Abstract

This study aims to identify the application extent of Balanced Scorecard (BSC) in Jordanian universities, and the variation extent in application between government and private Universities. It also aims to identify the obstacles (limitations) that limit the application of (BSC) in Jordanian Universities, and indicate whether these constraints (limitations) vary between government and private Universities. To achieve objectives of the study, the researchers prepared a questionnaire which was distributed in Jordanian government and private universities, total of (28) Universities (10 government universities and 18 private universities) (according to Jordanian Ministry of Higher Education and Scientific research Statistics of 2017). Questionnaires were distributed to financial managers, internal auditing managers, quality control and assurance managers, heads of accounting departments and employees working in finance departments of these universities. The study concluded many results. Important ones can be summarized as follows: The Jordanian universities apply the Balanced Scorecard (BSC) in a moderate degree. There is variation in the implementation degree of the Balanced Scorecard (BSC), in favor of the Jordanian private universities. There are constraints (limitations) limit the application of the Balanced Scorecard (BSC) in Jordanian universities (government and private) in a moderate degree. There is a slight variation in the existence degree of constraints (limitations) that limit the application of the Balanced Scorecard (BSC) between government and private universities in favor of the private universities. In the light of this study results, the researchers presented a set of recommendations including: importance of providing appropriate environment for application of the Balanced Scorecard (BSC) in the government Jordanian universities and more attention in applying to reach a high degree similar to the private Jordanian universities. Joint efforts must be combined between the Jordanian government and private universities to curb constraints (limitations) in the application of the Balanced Scorecard (BSC) efficiently.

**Keywords:** Balanced Scorecard, Jordanian government and Private Universities.

## INTRODUCTION

The rapid changes and developments in modern business environment have affected the quality and quantity that the organizations need in order to measure and evaluate performance and in seek of achieving its strategic goals. And an urgent need to develop standards that goes along with standards of traditional financial performance has emerged, because standards of traditional financial performance have failed to keep pace with the rapid and successive changes in information and communication technology as well as the intensive competition between institutions.

If the organizations are seeking to achieve a competitive advantage, that enables them to achieve operational and strategic objectives efficiently and effectively, and if their operators believe in the importance of the two factors performance measurement and evaluation, and that they are one of the main factors for the success of the organization in light of the rapid development in the working environment of these institutions of different types, as relying on traditional financial indicators is no longer enough.

Therefore, in light of the lack of traditional financial indicators in evaluating the performance of institutions, the researchers Kaplan Robert & Norton David proposed the (Balanced Scorecard) (BSC) in 1992, to expand the framework of performance measurement to include, in addition to the financial aspects, other perspectives related to non-financial aspects. The balanced Scorecard contains the following four perspectives: financial perspective, customer perspective, internal process perspective, learning and growth perspective.

As the Jordanian universities are considered from the organizations that are highly concerned with the assessment of strategic performance, in order to achieve optimum use of resources, enabling it to achieve its strategic and operational objectives, it is important to apply the Balanced Scorecard (BSC) in a comprehensive and integrated manner, and working on reducing obstacles that minimizes the implementation of balanced scorecard effectively and efficiently.

### **Importance and objectives of the study**

The study derives its importance from a set of points that can be summarized as follows:

- It studies the extent of applying the Balanced Scorecard with its four perspectives, which is considered an important managerial accounting method in the evaluation process, not to mention its developed style, which requires a lot of assessment tools, where financial and non-financial metrics contribute in measuring the extent of services development in a way that to optimize the cost of service in a fashion that leads to achieve the highest return.
- It studies the extent of the application of the Balanced Scorecard in an important sector, which is university education sector represented by public and private Jordanian universities, which play a significant role in the higher education sector, and these universities are dynamic organizations that employ the human, physical and dynamic energies and potentials, thus they need to adopt the best ways to promote the positive aspects of performance, which include the Balanced Scorecard.
- It identifies constraints (limitations) facing the application of this new method which is very important with its various perspectives in the evaluation of Jordanian universities' performance, consequently the results of this study will be useful for decision makers at Jordanian universities as it provides them with information about obstacles faced during the application of the Balanced Scorecard and the ways to overcome it.
- This study is considered one of the few studies (if not the first one) that researches (in a comparative approach between private and public universities) the extent of applying the Balanced Scorecard in light of competition in private university sector locally and regionally. Its operators must bear in mind that succeeding in competition must be based on providing distinguished educational services with high quality and ability to cope with developments and future aspirations. which requires a competent evaluation of its performance and ensuring cost rationing of the provided educational services in a manner that achieve the highest return and guarantees maintaining the quality of the educational process.

From this the study derives its importance. The researchers seek through this study to identify the extent of applying the Balanced Scorecard in Jordanian Universities by conducting a comparative study between public and private universities.

### **Sub-objectives of the study can be formulated as follows:**

1. Studying the extent of applying Balanced Scorecard in Jordanian Universities.
2. Identifying the extent of variation in applying Balanced Scorecard between public and private universities.
3. Identifying obstacles (limitations) that restrict applying the Balanced Scorecard in Jordanian Universities.
4. Highlighting the extent of variation in obstacles (limitations) that restricts applying Balances Scorecard between public and private Jordanian universities.

### **Problem of the study**

The application of Balanced Scorecard in Jordanian universities requires researching wither the applied accounting system in these universities with its components and elements is able to operate with Balanced Scorecard as an approach of untraditional accounting approaches as well as to present it as desired. Or the elements of the accounting system in these universities require developing to become capable of operating with Balanced Scorecard as a mean to achieve balance in performance standards for it include financial or non-financial measurement indicators to meet the sustainable development purposes sought by all economic units.

The problem of the study can be formulated in the following questions:

- What is the extent of applying Balanced Scorecard in Jordanian universities?
- Is there a variation in applying Balanced Scorecard among public and private Jordanian universities?
- What are the obstacles (limitations) that restrict the application of Balanced Scorecard in Jordanian universities?
- Is there variation in obstacles (limitations) that restricts the application of Balanced Scorecard among public and private Jordanian universities?

### **Theoretical Framework and Previous Studies**

Standards of financial performance was criticized a lot, some dating back to the lack of these standards to keep pace with changes and developments in the business environment. Traditional financial standards are seen as an unsuitable tool to determine the extent of safety performance, and ineffective to guide the attention of the administration to glitches and lack of efficiency, and inappropriate to direct the management and guide it towards how to improve the competitive position of the business to ensure its continuity and growth.

As a result of criticism of the conventional standards of financial performance and the evolution of the cognitive environment and increased competition between enterprises, most facilities have tended to look for a new performance appraisal system combines the use of non-financial standards as well as financial standards, until was reached to Balanced Scorecard. Balanced Scorecard has formed what could be described as an intellectual revolution in the field of management accounting, specifically in the development of measurement techniques and performance evaluation. Hence, we should focus on that this revolution wasn't related only on using different measurements, whether financial or non-financial, but on building a participatory model coherent combining these measurements by creating overlapping or duplex flow between what these measurements represent of dimensions. This forms a state of interaction within the concept of action and reaction, or on the basis of cause and effect (Al-Khatatneh & Al-Sa'aydeh, 2009).

Balanced Scorecard as seen by (Kaplan & Norton, 1992) is a system that offers a coherent set of ideas and principles and a holistic path map for enterprises to track the translation of message in a coherent set of performance measures, these standards contribute in putting a business strategy and implementing it and assist in the coordination between the individual and organizational performance down to management objectives. They also defined it as: stereotyping and guide the company's activities and its business in four perspectives (financial perspective, customer perspective, internal processes perspective, and learning and growth perspective), each perspective contains a number of measures which are considered engines for the company's success and progress. These perspectives interact with each other through the relationship between performance engines for each perspective with performance engines of other perspectives, to translate company's strategies and plans into business and activities that are easy to manage and control.

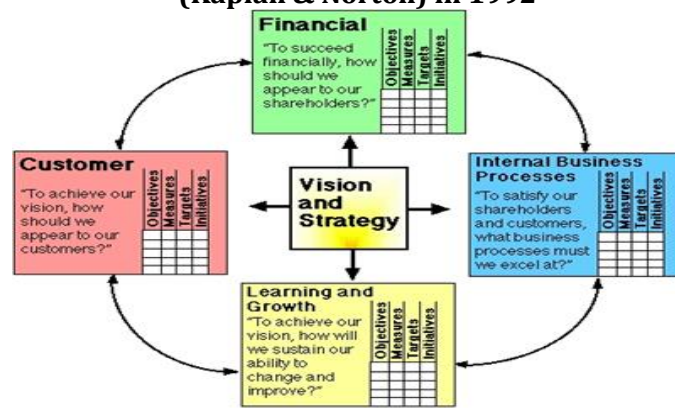
(Kaplan *et al.*, 2011) looks at the Balanced Scorecard as :A system for measuring performance in an orderly, thereby translate strategy into clear objectives, and a set of appropriate performance appraisal standards, while providing performance standards linked to a range of business programs that should be undertaken to achieve those goals.

(Bhimani *et al.*, 2015) defines Balanced Scorecard as: a way to convert an enterprise's message and its strategies to performance measures, and that the structure of the Balanced Scorecard is based on putting measurements for each perspective of the perspectives, and make the process of measurements to compare the actual performance of the planned performance. Thus, the Balanced Scorecard translates mission and strategies of the company to a set of performance measures that represent a framework for the application of its strategies. This card is an assessment tool, as well as being a strategic tool that depends on four perspectives to evaluate the performance of the company rather than focusing on the financial perspective only, although its importance, but it is not enough to form a comprehensive picture about the company, as it became known that the conventional measures that focus on the financial dimension is not sufficient to the contemporary environment, and the interest in a wider range of measurements related to quality, market size, customer and staff satisfaction can lead to greater insight into the marketing of financial performance factors.

The Balanced Scorecard is essentially based on four perspectives to measure the overall performance of the organization, when (Kaplan & Norton) in 1992 presented a Balanced Scorecard model, they formulated it in the form of a translation of the message and the vision of the organization to goals and performance measurements which are expressed through four main perspectives, as in the following figure (Figure (1)), namely:

1. Financial perspective: how the organization appears to owners?
2. Internal processes perspective: what are the processes that surpass the organization?
3. The customer perspective: How does the customer look at the organization?
4. Learning and growth perspective: How the organization will develop its economic potential?

**Figure (1)**  
**The perspectives of the Balanced Scorecard as proposed**  
**(Kaplan & Norton) in 1992**



Source: Kaplan & Norton, 1992, p. 74

And the four perspectives of the Balanced Scorecard in universities (like all organizations that apply Balanced Scorecard) are dependent as an array interconnected in the data collection and analysis, and allows measurement on various fields level, and these perspectives are:

#### **First, customer perspective (students):**

The attention of the university departments is directed to meet the students' needs and desires (without compromising the quality of the educational process), because these students are the ones who are paying for the university to cover their costs and make a profit.

The customer perspective (students) explains multiple performance measures of the output of the strategies formulated and implemented well by the university departments, these standards include in general, student satisfaction, retention methods, and the acquisition of new students; determine the profitability of the students and to identify the university's share in the market of the target segments.

This perspective revolves around the search for a definitive answer to the following questions:

1. How should the university appear to its current clients (students)?
2. How the university can achieve the greatest satisfaction of their needs and earn their loyalty?
3. How can the university attract new clients (students), after taking into account the profitability of each of them, as well as maintaining the quality of its output?

The customers (students) perspective is measured by:

- Student satisfaction: expresses the work results carried out by the university.
- Retention of students: to be made by observing the student to continue his studies at the same university for several stages of study.
- Students gain: measured by knowing the types and numbers of students who were acquired and entered the university.
- Student profit: is considered as a determinant to verify the extent of success in university's various strategies.
- Market share of university: we can obtain through this measure an appropriate assessment of the success of the university's strategy and activities that have been implemented to achieve this strategy.



### **Second, internal processes perspective**

In this perspective the effectiveness of the internal systems of the university is measured in order to ensure its competitiveness, the renewal system is one of the most important systems which include: Research, the number of patents, the number of products (specializations), in addition to the production system, including: product quality (learning outcomes), production deadlines (students graduation), and the system of after-sales service (after graduation) is also one of the important systems, including: Follow-up of graduates affairs, solve problems they may face at the beginning of their working lives.

This dimension focuses on internal processes that enhance both the axis of customers (students) enhancing customer value (students), and the financial axis to increase the wealth of shareholders (owners). Identify loops that will improve the goals and help address the distractions, and the development of performance and internal processes, in an effort to satisfy customers (students) as well as the shareholders (owners) (Kaplan & Norton, 2004).

The executive departments of the universities determine internal processes that the university should overtake, where internal operations represent a group of activities that give the university a competitive advantage in the local and regional market.

The standards of internal processes identified by the university departments focus on processes that will add value, and have a positive impact in influencing customer satisfaction (the student), and thus achieve the financial objectives of the university.

And this perspective contains a group of different processes, which are:

1. Operational processes: operational processes enable the management of the university to find value, where the university provides available services for students.
2. Administrative processes: Administrative processes enable the management of the university to find value, where the university facilitates administrative procedures for students' transactions.
3. Regulatory and social processes: Enables the university administration to find value, where the university conducts the educational process and the provision of convenient social atmosphere for students.
4. Creative processes (innovation): where the university conducts research and studies to reveal the ongoing needs of the students, and then find the facilities and services that meet and satisfy these needs.

### **Third, learning and growth perspective**

This perspective identifies the infrastructure that must be built by the university to achieve long-term growth and improvement, this interest in perspective of learning and growth comes through the discovery of large gaps between the capabilities and skills of workers, and the disparity in regulations and procedures accuracy, which requires the university administration to bridge these gaps by re-equipping its staff with the skills, and the promotion of information technology, systems and Consolidation of procedures and business.

It is worth mentioning that the interest dimension of learning and growth comes to strengthen other perspectives of the Balanced Scorecard, for example, the success of the customers (students) perspective depends on the efficiency and skill of workers, as the student satisfaction is achieved in the case of receiving a quality service, and this cannot be achieved without the presence of satisfaction and loyalty among workers toward their work, so it is sometimes seen that student satisfaction in one of its aspects is achieved as a continued impact for employee satisfaction, And employee satisfaction can be measured through the work of periodic surveys carried out by the university administration or a third party, and employee

satisfaction surveys are based typically on a statement the evaluation and satisfaction of employee for a range of elements (Kaplan & Atkinson, 1998, p. 368), which are:

1. Participation in decision-making.
2. Recognition of the employee when his work is done successfully.
3. Securing the employee with appropriate information needed for his work.
4. Receiving encouragement upon showing skills.
5. The continued support of all administrative centers.
6. Overall satisfaction of work site.

Managers must aims through their work strategy to keep the employee, because the expert employee represents the value of the university, which is part of the cultural and cognitive university's capital. The experience acquired by the employee through time factor is considered as success and progress of the university, and therefore the university must maintain these experiences.

#### **Fourth, financial perspective**

Financial results represent value for shareholders, because it sums up the economic measurable results of the procedures actually taken in the performance of work and activities of the university. The financial performance measures show to what extent the proposed strategy was viable or execution, and degree of success in its application or implementation and the extent of their contribution to the improvement of the main objectives of the university.

This perspective is the final outcome of the activities of the university, to achieve the satisfaction and expectations of shareholders and community by increasing the value of their investments and increase their profits. This perspective can be summarized by searching for an answer to the following question: How should the university appear to their shareholders and to society?

It is noted that the financial perspective in the Balanced Scorecard shows the success of the university in the implementation of various strategies, and reflects a comprehensive perspective of the performance of the university towards the parties that have to do with it.

In summary, the four-dimensional (customers (students) dimension, internal processes dimension, learning and growth dimension, and the financial dimension) that have been reviewed, are only the actual translation and detailed strategy for the university, where the university administration to convert this strategy into a viable and measurable objectives, depending on the university's ability to formulate strategy and put it clearly to all its sections, departments and faculties.

The basic features of the Balanced Scorecard can be assembled in the following key points (Zaghloul, 2010; Hussein, 2015; Bhimani *et. al.*, 2015; Kaplan *et. al.*, 2011):

1. The Balanced Scorecard is a four-dimensional model from four perspectives on which it's based on, a financial performance perspective, relations with customers' perspective, internal processes perspective and the perspective of learning and growth processes.
2. Balanced Scorecard divides each perspective to all basic components: subsidiary strategic goal, indicators, target values, procedural steps and initiatives.
3. The Balanced Scorecard is based on the blending of financial indicators and non-financial indicators in order to identify the extent of progress towards achieving the strategic objectives quantified and financially.

4. The Balanced Scorecard connects key performance indicators of financial and non-financial for each perspective with their subsidiary strategic objectives derived mainly from organization business strategy.
5. Balanced Scorecard is characterized with a limited number of key performance indicators, based on the limited maturity property, property and lack of access to more than analytical energy information to the decision maker.
6. Balanced Scorecard requires the availability of refined information system and IT infrastructure, allows the use of the report software systems, to flow of information both horizontally and vertically on time.
7. Balanced Scorecard provides an orderly route linking the future vision of the establishment with its material and human resources to achieve the best investment of these resources.

Some researchers pointed (Al-Gharib 2012; Ahmed 2014, Al-Azab 2015; Hussein, 2015; Mubaideen 2015) that there are many obstacles (determinants), which could face the application of the Balanced Scorecard, and limit the effectiveness of the application, and from those obstacles (determinants) the following:

1. Lack of knowledge about the Balanced Scorecard as a tool used to measure the performance, or lack of knowledge of the benefits derived from its use.
2. Shareholders and some departments believe that the application of non-financial dimensions of the Balanced Scorecard carries additional costs for the facility that are indispensable.
3. Translation of the vision and mission of some facilities (such as hospitals and universities) to multiple strategic dimensions may not be appropriate to the nature of the work of those facilities.
4. Lack of qualified staff who are able to deal with the Balanced Scorecard, which leads eventually to resist the application of its dimensions, this generates negative attitudes in the staff towards the usage of Balanced Scorecard especially that they don't realize clear goals for it.
5. The inability of the strategic decisions of some facilities (such as hospitals and universities) to the requirements of customers (patients and students) and their needs, as they might be at the expense of the quality of services provided and its suitability.
6. Lack of appropriate measurements for some performance variables, since the existence of these measurements is important to put strategies under execution, so the lack of measurements to measure a variable leads to a lack of management capacity to direct their performance towards that variable.

As a brief overview of higher education and official and private universities sector, the higher education sector in Jordan leads a major and significant role in bringing about overall development of the various fields, the Higher Education in Jordan has achieved over the past decade significant progress in terms of the diversity of courses and learning styles and education that controls the quality and quantity, expansion of higher education institutions, and in spite of the limited human and material resources in Jordan, but that higher education is among the priorities of the state because of its active role in upgrading the economic, social and cognitive lives of citizen ([www.mohe.gov.jo](http://www.mohe.gov.jo)).

The higher education sector in Jordan witnessed over the past two decades, sophisticated and remarkable growth, confirmed by the increase in the number of higher education institutions and the number of enrolled students, faculty and members of the administrative board, and the increase in the volume of spending and government support for this important educational sector.

This increase in the number of universities was accompanied with increase in numbers of students in them. The number of students (female and male) in public and private Jordanian Universities are estimated to be approximately (236) thousands, (28) Thousands of them are from Arab and foreign countries.

The educational role of Jordan became an active role in the region. It became the focus of attention and admiration for it was known with its high quality. This is reflected by the number of foreign students who study in Jordanian Universities which is approximately (28) thousands, females and males, from around the world. In addition to the increased polarization of graduates of Jordanian Universities to work in Arabic and regional organizations and general and private sectors.

The vision, mission and values of The Ministry of Higher Education's activities and objectives reflect on Jordanian Universities and their performance. The vision of Ministry of Higher Education and Scientific Research can be summarized in (A distinguished international Higher Education) while its message is ( Enabling Higher Education Institution to focus on its tasks and responsibilities through supporting it and following up the implementation of the strategies and politics of higher education that is based on directing towards competitiveness in establishing integrity standards and techniques of reinforcing principles of accountability, justice and transparency in providing support and special services for Higher Education students as well as in embracing leadership, excellence and creativity within the concept of participatory with the private sector).

The following table (Table 1) shows the names of Jordanian Universities (Public and Private):

**Table No. (1)  
Jordanian Universities (Public and Private) at the beginning of 2016**

University Sector	University
<b>Public Universities (10 Universities)</b>	The University of Jordan, Yarmouk University, Mutah University, Jordan University of Science and Technology, Hashemite University, Al al-Bayt University, Balqa Applied University, Al-Hussein Bin Talal University, Tafila Technical University, the German Jordanian University.
<b>Private Universities (18 Universities)</b>	Amman Private University, Amman Arab University, Middle East University, Jadara University, Al-Isra University, Petra University, Philadelphia University, Irbid National University, University of Applied Sciences, Al-Zaytoonah University of Jordan, Zarqa University, Princess Sumaya University of Technology, University of Jerash, Jordan Academy of Music, Jordan Applied University College of Hospitality and tourism Education, American University of Madaba, Ajloun national University, Faculty of educational Sciences and Arts / UNRWA.

**The source: [www.mohe.gov.jo](http://www.mohe.gov.jo)**

Through the exploration of previous literature by the two researchers, they found rarity in the studies that dealt with this study's topic in Jordanian universities sector despite its abundance in other sectors. Therefore the researchers will present the most suitable studies as follows:

- (Mubadeen, 2015) in his study of the impact of applying Balanced Scorecard on maximizing profitability in Jordanian Communication Companies, aimed at presenting scientific and theoretical concepts of Balanced Scorecard and identifying the extent to which Balanced Scorecard can be applied in Jordanian communication companies. He also aimed at identifying the obstacles to its application in Jordanian communication companies. To achieve the study's objectives, the researcher designed a questionnaire that was distributed to the study sample consisting of (135) individual, directors of

departments and employees in these companies. The study results showed that Jordanian communication companies have the opportunity to apply Balanced Scorecard and this contributes in maximizing profitability and increasing its competitiveness.

- (Al-Azab, 2015), in his study: The application of Balanced Scorecard in Jordanian brokerage firms sought identifying the extent to which the non-financial indicators of Balanced Scorecard can be applied, in order to evaluate brokerage firms' performance comprehensively. In addition to identifying the impact of applying these indicators on companies' performance and the obstacles of application. The researcher concluded that Jordanian brokerage firms adapt standards related to internal processes perspective, standards related to learning and company's growth and related to customer's perspective. The researcher indicated that the most significant factor restricting the application of the non-financial perspective in brokerage companies is the lack of clarity in the vision and strategy of the company thus difficulty in identifying standards emerging from them. The researcher emphasizes that change resistance and difficulty of attaching weights to the importance of each non-financial perspective that hinders the application of non-financial perspective.
- The aim of the study by (Hussein, 2015) titled: The impact of the application of Balanced Scorecard on financial performance in Jordan's Private Hospitals, is to identify the impact of the application of non-financial perspective of Balanced Scorecard in Jordanian private hospitals on their financial performance, as well as to identifying the obstacles to the application of Balanced Scorecard perspectives in the private Jordanian hospitals. The study population consisted of all private Jordanian hospitals registered in Ministry of Health in 2014, total of (61) Hospital. Questionnaires were distributed to the general managers, directors of departments and accountants working in hospitals. The number of distributed questionnaires was (167) questionnaires, (144) of them valid for analysis were recovered. The study concluded a number of results, including: the keenness of private hospitals departments to highly apply non-financial perspectives of Balanced Scorecard, and the absence of basic or fundamental constraints which limit the application of the Balanced Scorecard perspectives in private Jordanian hospitals.
- The empirical study (Jarirah, 2014) titled: The extent of performance evaluation using the Balanced Scorecard perspective (BSC) in the public shareholding companies for food industries in Jordan: aimed to measure the extent of performance evaluating using four key performance of Balanced Scorecard perspective in public shareholding companies food industries in Jordan, in light of the large of investments in this sector and the use of modern industrial technologies, in addition to considering safety and quality. To achieve the objectives of the study, the researcher designed a questionnaire consisting of (24) items and was distributed to the study sample comprising of 160 employees. The researcher concluded that public shareholding companies for food industry in Jordan uses performance financial and non-financial measures to evaluate its performance, and these measures are related to the financial perspective, customer perspective, and internal processes perspective and learn and grow perspective. And the researcher confirmed the lack of full development of Balanced Scorecard usage.
- The case study of (Ahmad, 2014) in Greater Amman Municipality titled: Developing of Balanced Scorecard to evaluate strategic performance in non-profit organizations, aimed to identify the possibility of developing Balanced Scorecard as a mean to evaluate strategic performance in Greater Amman Municipality as one of the non-profit organization. To achieve the study objective, the researcher selected a study sample from managers and department directors by Stratified random sampling. The study followed a descriptive and

analytical approach, and a questionnaire was designed and distributed to (123) respondent. The study concluded the competence of Balanced Scorecard as a tool to evaluate the strategic performance in the Greater Amman Municipality. The study showed that the elements of the application of Balanced Scorecard are available in case there is a genuine desire to be applied, and that there is acceptance by the respondents to apply it with various perspectives.

- The study of (Mwijuma *et. al.*, 2013) titled: Effectiveness of Strategy Implementation Using the Balanced Scorecard in Local Government Authorities, aimed to address two issues: first, studying how local government authorities implement their strategies, and second, how to adopt the Balanced Scorecard as a tool to measure the effectiveness of strategy implementation in government organizations. In order to understand the use of the strategy in the local government authorities, this study has adopted the Balanced Scorecard as a way to evaluate the organization's performance and its moving towards achieving its objectives within the four key perspectives: the financial perspective, the customer perspective, internal processes perspective and learning and growth perspective. This research was conducted on 185 managers from the five government authorities chosen in Kenya Coast region. A questionnaire consisting of closed questions that asks the respondents to choose from a certain set of answers was used. Study results concluded the success of local government authorities in achieving their objectives in varying degrees.
- The study of (Al-Zwyalif, 2012) titled: The possibility of Implementing Balanced Scorecard in Jordanian Private Universities, aimed to identify the awareness degree of presidents of private Jordanian universities regarding the importance of applying Balanced Scorecard in addition to identifying the universities' ability to apply it through studying the provision of basic elements needed for application. To achieve the study's objective, the researches designed a questionnaire for this purpose and distributed to a sample of (151) individuals, Faculty deans, Heads of academic departments, financial directors and directors of different departments in private Jordanian universities. (130) of the questionnaires were considered valid for analysis. One of the most prominent results is that presidents of private Jordanian universities are aware of the importance of applying Balanced Scorecard in performance evaluation process. The provision of financial resources and qualified human resources are considered basic requirements for the application of Balanced Scorecard with its diverse perspectives. The researcher made recommendations about the importance of applying Balanced Scorecard in these universities and the promoting the awareness of universities presidents about the importance of actual initiating of applying Balanced Scorecard.
- The study of (Tohidi *et. al.*, 2010) titled: Using Balanced Scorecard in Educational Organizations aimed to explain the importance of using Balanced Scorecard in governmental and educational institutions in Iran in order to evaluate performance through comparing planned performance with actual performance and that is for the assessment of the results of offering online educational services. The study concluded a number of results: The application of the Balanced Scorecard has led to maximizing returns by providing educational services through increasing the number of the beneficiaries and receivers of the service which reflected on the growth of returns as a result of performance improvement through the constant development according to performance evaluations through customers (students) point of view. The facilitating of providing of educational service and the constant change in the simplified user interface

cause constant interaction between the user and the organization which is reflected on the student's satisfaction and consequently increasing the profits of providing services.

- The study (Kaplan & Norton, 1992) titled: The Balanced Scorecard Measures that drive performance is considered the first study in Balanced Scorecard domain which is applied on twelve American companies that operates in different sectors. The two researchers explained a modern administrative approach to measure and evaluate companies' performance through four perspectives:

Financial perspective: it includes answering the question: how the company appears to be in front of its owners

Customer perspective: it includes answering the question: how the company appears to be in front of its customers.

Internal processes perspective: it includes answering the question: how the company conducts its diverse business and activities.

Learning and growth perspective: it includes answering: how do the employees view the company?

The study conducted that performance measurement model provides the administration with suitable information that helps in making diverse economical decisions because traditional systems of measuring performance based on Financial indicators and these standards alone is not enough to measure the overall performance of the company. One of the study's conclusion is that Balanced Scorecard model is a comprehensive system for measuring performance consisting of financial and non-financial standards. It is similar to the dashboard in the plane that enables the pilot to control all parts of the plane.

What distinguishes the current study from the previous ones is its addressing the application of Balanced Scorecard in Jordanian Universities specially that it was conducted as a comparative study of public and private Jordanian universities. A similar study was not conducted on this society with its environmental characteristic that differ (in some aspects) from the characteristics of environments in which previous studies were conducted as far as the researchers know. Also the high competitiveness of this sector on the local and regional level.

### STUDY HYPOTHESES

For achieving study objectives and answering its questions, as well as according to what the previous studies concluded, the study hypotheses were formulated as follows:

**H01:** There is no implementation of balanced score card at Jordanian universities.

**H02:** There is no variation in implementing balanced score card between Jordanian public and private universities.

**H03:** There are no constraints (limitations) which limit the implementation of balanced score card at Jordanian universities.

**H04:** There is no variation in constraints (limitations) which limit the implementation of balanced score card between Jordanian public and private universities.

### Study Population

The study population consisted of (28) Jordanian public and private universities; (10) public universities and (18) private universities, according to the statistics of Jordanian Ministry of Higher Education and Scientific Research at the beginning of 2017 listed in table (1). A comprehensive survey of study population were carried out; where the questionnaires were distributed to financial directors, internal auditing directors, quality control and assurance directors, heads of accounting departments and employees in financial sections of these universities. The researcher distributed and returned the questionnaires by hand. A number of distributed questionnaires was (336); (12) questionnaires for each university. A number of

returned questionnaires was (264); (110) questionnaires from public universities and (154) questionnaires from private universities. It was shown the completeness of data in questionnaire as well as its appropriateness for statistical analysis. Accordingly, a number of adopted questionnaires for statistical analysis was (264) in (78.6%) of distributed questionnaires.

The following table (Table 2) shows the distribution of questionnaires according to a sector of public and private universities:

**Table (2)**  
**A number of distributed and returned questionnaires**  
**according to sectors of Jordanian universities**

<b>Sector of Jordanian University</b>	<b>Number of Universities</b>	<b>Number of Distributed Questionnaires</b>	<b>Number of Returned and Valid Questionnaires for Analysis</b>	<b>Percentage of Returned and Valid Questionnaires for Analysis</b>	<b>Percentage of Returned Questionnaires for Each Sector from Total Returned Questionnaires</b>
Public	10	120	110	%91.7	%41.7
Private	18	216	154	%71.3	%58.3
<b>Total</b>	<b>28</b>	<b>336</b>	<b>264</b>	<b>%78.6</b>	<b>%100</b>

The previous table (Table 2) shows that the distribution of respondents of questionnaire questions was (41.7%) of public universities and (58.3%) of private universities. This variation is due to a large number of private universities compared with a number of public universities. The sector of universities was chosen as a study population because of scarcity of writings, researchers and studies about this sector, not to mention the vital role which this sector plays at the national and regional level.

### **Methods of Data Collection**

It is referred to many researches and studies published in scientific journals and Periodicals regarding the topic of current research. In addition, the two researchers designed a questionnaire related to this study based on theoretical framework and previous studies, which was distributed to study population and returned by hand.

The questionnaire sections and questions related to measure study variables can be summarized in the following table (Table 3):



**Table (3) Questionnaire sections and questions related to measure study variables**

Questionnaire Sections	Variable	Questions which measure variable
<b>First Section</b>	Age	1
	Qualification	2
	Major	3
	Position	4
	A number of experience year in field of current work	5
	The extent of participation in making decisions	6
<b>Second Section</b>	The extent of implementing the dimension of students (customers) as a one of balanced score card dimensions	(7 – 20)
	The extent of implementing the dimension of internal operations as a one of balanced score card dimensions	(21 – 34)
	The extent of implementing the dimension of learning and growth as a one of balanced score card dimensions	(35 – 48)
	The extent of implementing the financial dimensions as a one of balanced score card dimensions	(49 – 60)
<b>Third Section</b>	Constraints which limit the implementation of balanced score card dimensions	(61 – 72)

It is worth mentioning that the second and third parts of questionnaire were formulated in the way that helps to ease the measurement; where 5-Point Likert Scale ranged between (Strongly Disagree, Disagree, Neutral, Strongly Agree, Agree) and classified to the following degrees (1,2,3,4,5) respectively was adopted.

For testing the reliability of questionnaire results and the correlation among its questions, it was presented to a group of colleagues of university professors in departments of accounting and total quality management, as well as some specialists in field of internal auditing and quality control at Jordanian universities in order to judge and give their opinions regarding its formulation and the correlation among its paragraphs. In addition, reliability analysis was used to measure Cronbach's alpha. It was shown that its value is almost (88.1 %), where it exceeds the acceptable percentage (60%) (Sekaran & Bougie, 2015), which means the potentiality of adopting questionnaire results and assuring its reliability in achieving the study objectives.

### Methods of Data Analysis

For the purposes of achieving study objectives and testing its hypotheses, the following statistical methods were used:

- Descriptive Statistics: some percentages, frequencies, means and standard deviations were calculated.
- T-test was used for one sample in order to test study hypotheses.

### Characteristics of Questionnaire Respondents

Analysis of first part responses of questionnaire (Table 4) that the questionnaire respondents have an appropriate qualification; where all of them have a bachelor's degree at least. It is also observed that there are variety and promotion in position (financial director, director of quality control and assurance, director of internal auditing unit, accountant, internal auditor, financial auditor or employee of quality assurance) and this indicates their keeping up with developments of balanced scorecard as well as the importance of its implementation in improving performance and enhancing the competitiveness of universities. Furthermore, it is observed that there is variety in scientific majors of respondents including accounting,

business administration, banking and finance, economy, engineering and information technology by virtue of their different positions and job titles, and the largest percentage was accounting major with (78.7%) of respondents.

It is also observed an increase in the level of their participation in making decisions, where a percentage of those who permanently or mostly contribute in making decisions were (83%). What enhances the trust in concluded results is that the respondents have a high experience; where the concluded results showed that (76.5%) of respondents have experience not less than five years in working in field of universities, which is considered a high percentage.

Accordingly, it is shown the potentiality of availability of knowledge in the balanced scorecard required for respondents as well as the importance of its implementation in improving the performance of Jordanian public and private universities and their abilities to understand and answer the questions of questionnaire.

Through comparing the demographic characteristics of respondents who work at public universities with those who work at private universities, it is observed the following:

- Similarity in ranging age within category (30- less than 40 years) at Jordanian public and private universities, However, noted that a percentage of those who are ( 40 years old or more) at public universities is larger than a percentage at private universities, perhaps the reason for that is job stability in governmental sector compared with private sector.
- An increase in percentage of those who have master's degree at private universities compared with a percentage of those who have a master's degree at public universities to the detriment of those who have a bachelor's degree, where their percentage exceeded at public universities compared with their percentage at private universities.
- A large convergence in the positions of respondents at the public and private universities, perhaps this is due to the specific job titles which two researchers chose to distribute questionnaires based on.
- An increase in a number of experience years in the current work for respondents at public universities compared with private universities, perhaps the reason of that is the job stability in governmental sector compared with private sector, as well as an increase in job turnover rate at private universities.

**Table (4)**  
**Demographic Characteristics of Questionnaire Respondents**

No.	Variable	Answer Alternatives	Sector of Public Universities		Sector of Private Universities		Total University Sector	
			Frequencies	%	Frequencies	%	Frequencies	%
1	Age	Less than 30 years	17	15.4 %	37	24%	54	20.4 %
		30-39 years	39	35.4 %	69	44.9 %	108	40.9 %
		40-49 years	35	31.8 %	33	21.4 %	68	25.8 %
		50 years and more	19	17.4 %	15	9.7%	34	12.9 %
		<b>Total</b>	<b>110</b>	<b>100 %</b>	<b>154</b>	<b>100 %</b>	<b>264</b>	<b>100 %</b>
2	Qualification	Bachelor's Degree	90	81.8 %	119	77.3 %	209	79.2 %
		Master's Degree	13	11.8 %	25	16.2 %	38	14.4 %
		PhD Degree	7	6.4%	10	6.5%	17	6.4%
		<b>Total</b>	<b>110</b>	<b>100 %</b>	<b>154</b>	<b>100 %</b>	<b>264</b>	<b>100 %</b>
3	Major	Accounting	84	76.3 %	124	80.6 %	208	78.7 %
		Business Administration	7	6.4%	9	5.8%	16	6.1%
		Economy	7	6.4%	4	2.6%	11	4.2%
		Banking & Finance	9	8.2%	12	7.8%	21	8%
		Others (Engineering and Information Technology (IT))	3	2.7%	5	3.2%	8	3%
		<b>Total</b>	<b>110</b>	<b>100 %</b>	<b>154</b>	<b>100 %</b>	<b>264</b>	<b>100 %</b>
4	Position	Financial Director	8	7.3%	9	5.8%	17	6.4%
		Director of Internal Auditing Unit	5	4.5%	11	7.1%	16	6.1%
		Director of Quality Control & Assurance	4	3.6%	6	3.9%	10	3.8%
		Accountant	72	65.6 %	95	61.8 %	167	63.3 %
		Internal Auditor	17	15.4 %	24	15.6 %	41	15.5 %
		Others (Financial Auditor, Employee of Quality Assurance)	4	3.6%	9	5.8%	13	4.9%
		<b>Total</b>	<b>110</b>	<b>100 %</b>	<b>154</b>	<b>100 %</b>	<b>264</b>	<b>100 %</b>
5	A number of experience years in the current work	Less than 5 years	19	17.4 %	43	27.9 %	62	23.5 %
		5-9 years	27	24.5 %	52	33.8 %	79	29.9 %
		10-14 years	41	37.2 %	35	22.7 %	76	28.8 %
		15 years and more	23	20.9 %	24	15.6 %	47	17.8 %
		<b>Total</b>	<b>110</b>	<b>100 %</b>	<b>154</b>	<b>100 %</b>	<b>264</b>	<b>100 %</b>
		Always	31	28.2 %	49	31.8 %	80	30.3 %

6	The extent of participation in making decisions	Often	57	51.8 %	82	53.2 %	139	52.7 %
		Sometimes	13	11.8 %	22	14.3 %	35	13.2 %
		Rarely	9	8.2 %	1	0.7%	10	3.8 %
		Never	-	-	-	-	-	-
		<b>Total</b>	<b>110</b>	<b>100 %</b>	<b>154</b>	<b>100 %</b>	<b>264</b>	<b>100 %</b>

### STUDY HYPOTHESES TEST

#### H01: “There is no implementation of balanced scorecard at Jordanian universities”.

For recognizing the extent of implementing balanced scorecard at Jordanian universities, the second section of questionnaire was set out, which consisted of four parts in order to measure the extent of implementing the four perspectives of balanced scorecard at Jordanian public and private universities jointly and separately.

Table (5) shows the results of statistical analysis of questions related to the extent of implementing balanced scorecard at Jordanian universities.

**Table (5)**  
**The extent of implementing balanced scorecard at Jordanian public and private universities**

No.	Statements	Sector of Public Universities		Sector of Private Universities		Total University Sector	
		Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
<b>First Part: The perspective of students (customers): this part aims to measure the extent of the actual implementation of the students’ perspective as a one of balanced scorecard perspectives at Jordanian universities:</b>							
.7	The administration of university keeps to recognize the level of students and their parents’ satisfaction with the provided services.	2.72	0.71	3.64	0.77	3.10	0.87
.8	The administration of university takes into consideration the opinions of students regarding the academic and administrative performance of workers at university.	2.73	0.76	3.42	0.65	3.01	0.64
.9	The university provides students, customers and visitors with ample parking to achieve their satisfaction.	2.05	0.74	3.86	1.08	2.79	0.77
.10	Those who work in the administration of university keeps to deal with students fairly and indiscriminately.	2.77	0.85	3.63	0.86	3.17	0.99
.11	The administration of university cares for examining the extent of increasing a number of students from year to another.	3.29	0.73	4.31	0.89	3.71	0.81
.12	The administration of university achieves the students’ satisfaction which is not inconsistent with the educational process.	2.78	0.93	3.62	1.19	3.14	0.80
.13	The administration of university	2.91	0.82	3.70	1.04	3.24	0.97

	keens to make students and customers acquaint with everything new at the university, its facilitations and services.						
.14	The administration of university pays adequate attention to the requirements and needs of students.	2.69	0.81	3.60	0.95	3.06	0.72
.15	The administration of university pays attention to feedback of students and customers, and keens to deal with them seriously.	2.85	0.70	3.51	0.72	3.12	0.71
.16	The administration of university provides an assessment tool to take into consideration the opinions of students and customers regarding the provided services.	2.41	0.91	3.38	0.91	2.80	0.74
.17	The administration of university sets out the students and customers' satisfaction within standards that it is based on to measure its performance.	2.43	0.60	3.36	0.62	2.83	0.83
.18	The administration of university cares for decreasing a number of students and customers' complaints as an indicator of service quality provided to them.	2.56	0.60	3.54	0.70	2.97	0.75
.19	The administration of university seeks to reduce a period of time which customers spend in its different facilities to get services they need.	2.61	0.55	3.61	0.73	3.02	0.74
.20	The administration of university develops the relationships among graduates and follows up their conditions.	1.75	0.85	3.22	1.01	2.36	0.69
<b>Statements (7-20) jointly</b>		<b>2.59</b>	<b>0.76</b>	<b>3.77</b>	<b>0.87</b>	<b>3.28</b>	<b>0.68</b>
<b>Second Part: The perspective of internal operations: this part aims to measure the extent of the actual implementation of the internal operations' perspective as a one of balanced scorecard perspectives at Jordanian universities:</b>							
.21	There is no delay in implementing the procedures of registering courses for students and paying their fees.	3.16	0.85	4.05	0.69	3.53	0.82
.22	The service quality is monitored in each phase of providing it to students and customers.	2.59	0.88	3.27	0.81	2.87	0.91
.23	It is coordinated previously with the concerned parties to provide university with required equipments and requirements of the educational process in due time and an appropriate quality.	2.58	0.64	3.52	0.81	2.97	0.85
.24	The administration of university seeks to provide an academic atmosphere which contributes to succeed the educational process.	2.92	0.94	3.74	0.84	3.26	0.60
.25	A decentralized system is adopted	1.90	0.67	3.97	0.76	2.34	0.81

	in managing the affairs of university.						
.26	The administration of university seeks to eliminate defectiveness in the registration of students resulting from the lack of skillful workers at the university.	2.62	0.70	3.55	1.02	3.00	0.77
.27	A new university services are provided at a proper time.	2.55	0.79	3.51	0.71	2.95	0.85
.28	The administration of university seeks to develop the administrative work systems which help in a quick accomplishment of services for students.	2.87	0.84	3.48	0.96	3.12	0.78
.29	The university uses the control system of performance and submits reports continuously to higher management to follow up performance directly.	2.47	0.93	3.65	0.75	2.96	0.99
.30	Those who work in the administration of university keens to apply new technologies and information systems in providing services.	2.71	0.81	3.91	0.73	3.21	0.75
.31	The systems at all universities provide all required information to accomplish services for students quickly.	2.62	0.91	3.64	0.81	3.04	0.74
.32	The administration of university provides students, customers and visitors with induction leaflets which show the services provided by university and concerned department.	2.90	0.72	3.96	0.84	3.34	0.71
.33	The administration of university seeks to provide the highest quality in performing its services with the lowest possible cost.	2.78	0.61	3.79	1.01	3.20	0.87
.34	The administration of university set out an annual plan which ensures work progress of university and its development.	2.44	0.94	3.60	0.74	2.91	0.68
<b>Statements (21-34) jointly</b>		<b>2.62</b>	<b>0.61</b>	<b>3.68</b>	<b>0.91</b>	<b>3.24</b>	<b>0.73</b>
<b>Third Part: The perspective of learning and growth: this part aims to measure the extent of the actual implementation of the learning and growth's dimension as a one of balanced score card perspectives at Jordanian universities:</b>							
.35	The university specifies an annual amount for the research and development processes in order to improve provided services.	3.02	0.86	3.87	0.87	3.37	0.87
.36	The administration of university provides required techniques and technological means to improve provided educational services.	2.85	0.61	3.57	0.71	3.15	0.81
.37	The continuous improvement and development processes target decreasing wasted time rate and achieving desired objectives.	2.59	0.82	3.43	0.73	2.94	0.71
.38	The administration of university	2.53	0.83	3.10	0.64	2.76	0.68

	keens to develop the abilities of administrators' and academicians at the university.						
.39	The workers recognize university mission and strategy clearly.	2.39	0.87	3.21	0.63	2.73	0.69
.40	The administration of university develops its organizational procedures and systems.	2.82	0.90	3.62	1.01	3.14	0.88
.41	The objectives of university are characterized by realism and able to achieve and measure objectively.	2.73	0.79	3.56	0.85	3.07	0.80
.42	The administration of university uses new techniques according to requirements of information technology.	2.95	0.74	3.68	0.76	3.25	0.95
.43	The administration of university keens to develop innovation and creativity skills in solving problems for workers.	2.25	0.88	3.03	0.86	2.55	0.86
.44	Those who work in the administration of university keens to have deanship or department which is responsible for affairs of quality and development.	2.80	0.74	3.99	0.51	3.29	0.73
.45	The administration of university keens to offer opportunities for workers to develop their abilities and skills and encourage the spirit of initiative and creativity for them.	2.35	0.72	3.18	0.62	2.69	0.77
.46	The administration of university keens to continue developing the abilities of creativity and achieving a higher status among universities.	2.48	0.66	3.42	0.92	2.87	0.94
.47	The administration of university keens to maintain, develop and train creative human resources which have experiences and powers.	2.13	0.80	3.01	0.93	2.50	0.66
.48	The administration of university develops the current abilities and skills of workers in order to reach the target global level.	2.10	0.75	3.12	0.94	2.52	0.78
<b>Statement (35-48) jointly</b>		<b>2.49</b>	<b>0.78</b>	<b>3.51</b>	<b>0.83</b>	<b>3.09</b>	<b>0.81</b>
<b>Fourth Part: The financial dimension: this part aims to measure the extent of the actual implementation of the financial dimension as a one of balanced scorecard perspectives at Jordanian universities:</b>							
.49	The university uses the rate of return for investment as an indicator to assess its financial performance.	2.26	0.86	3.00	1.04	2.83	0.75
.50	The university uses the rate of growth in revenues as an indicator to assess it financial performance.	2.17	1.39	3.33	0.97	2.74	0.74
.51	The university provides the local and international programs which increase the financial return.	2.67	0.52	3.45	0.89	2.97	0.87
.52	The university uses the rate of net cash flows of operational activities as an indicator of its financial performance.	2.37	1.37	3.38	0.63	2.80	0.73
.53	Those who work in the	3.02	0.67	3.52	1.10	3.40	0.71

	administration of university keen to provide new programs in order to increase its annual returns.						
.54	Available resources, properties and returns of university are invested in order to increase the annual financial returns (profits).	2.93	0.70	3.19	0.72	3.16	0.75
.55	The university uses the financial measures as organizational indicators of faculties and majors' reality.	2.46	0.41	3.94	0.62	2.90	1.02
.56	The university uses the liquidity ratios as an indicator to assess the financial performance.	2.61	0.67	3.42	0.81	2.93	0.72
.57	The university uses the profitability ratios as an indicator to assess the financial performance.	2.48	0.79	3.39	0.71	2.88	0.85
.58	The university uses the activity ratios as an indicator to assess the financial performance.	2.25	1.31	3.55	0.67	2.70	0.86
.59	The university keens to link between the financial results and the other indicators of performance related to workers' satisfaction.	2.19	0.97	3.67	0.82	2.52	0.94
.60	Those who work in the administration of university keens to fit the prices of study hours with number and quality of services provided to the students.	2.14	0.88	3.69	0.87	2.64	0.81
<b>Statements (49-60) jointly</b>		<b>2.42</b>	<b>0.69</b>	<b>3.79</b>	<b>0.75</b>	<b>3.22</b>	<b>0.71</b>
<b>Statements (7-60) jointly (Implementation of Balanced Scorecard)</b>							
		<b>2.53</b>	<b>0.71</b>	<b>3.68</b>	<b>0.81</b>	<b>3.21</b>	<b>0.76</b>

The last two columns of previous table (Table 5) show the means and standard deviations of paragraphs which measure the extent of implementing each dimension of balanced scorecard perspectives separately and the means and standard deviations which measure the extent of implementing balanced scorecard perspectives jointly at Jordanian universities.

According to the results mentioned in the previous table, it is observed that the highest implementation was (3.28) for the perspective of students (customers). In general, the mean of total paragraphs related to measure the extent of implementing balanced scorecard at Jordanian universities jointly was (3.21), which indicates a moderate degree of its implementation. In addition, the standard deviation which was (0.76) indicates that there is consistency and compatibility among individuals regarding the paragraphs of implementing balanced score card at Jordanian universities jointly.

For testing the first hypothesis, the t-test was used for one sample using a reference value which represents the mean of three Likert scale degrees. Table (6) shows the results of this hypothesis test:



**Table (6)**  
**Results of first hypothesis test using t-test for one sample**

Variable	Mean	Standard Deviation	Calculated "t" Value	Tabulated "t" Value	Degrees of Freedom	Statistical Significance	Result of Hypothesis
The extent of implementing balanced score card at Jordanian universities jointly	3.21	0.76	18.71	1.96	263	*0.000	rejected

**Statistical significant differences at the level of (0.05)**

According to the results mentioned in the previous table, it is shown that the calculated "t" value which was (18.71) is higher than the tabulated "t" value which was (1.96) and the level of significance ( $\alpha$ ) is less than (0.05), meaning that the null hypothesis is rejected and the alternative hypothesis is accepted; Jordanian universities jointly implement balanced scorecard.

The two researchers explain this results that Jordanian universities jointly (public and private) keen to implement balanced score card, although this implementation is still in a moderate level and does not reach the required level.

**Ho2: "There is no variation in implementing balanced scorecard between Jordanian public and private universities".**

The following table (Table 7) shows the summary of means and standard deviations which measure the extent of implementing each perspective of balanced scorecard perspectives separately and the means and standard deviations which measure the extent of implementing balanced scorecard perspectives jointly at Jordanian public and private universities individually.

**Table (7)**  
**Means and standard deviations of the extent of implementing balanced scorecard at Jordanian public and private universities**

No.	Dimension	Sector of Public Universities		Sector of Private Universities	
		Mean	Standard Deviation	Mean	Standard Deviation
1	Students (Customers) Dimension	2.59	0.76	3.77	0.87
2	Internal Operations Dimension	2.62	0.61	3.68	0.91
3	Learning and Growth Dimension	2.49	0.78	3.51	0.83
4	Financial Dimension	2.42	0.69	3.79	0.75
<b>The extent of implementing balanced scorecard</b>		<b>2.53</b>	<b>0.71</b>	<b>3.68</b>	<b>0.81</b>

According to the results mentioned in the previous table, it is observed that the means of each dimension of balanced scorecard dimensions at private universities are higher than means at public universities. In general, the mean of total paragraph related to measure the extent of implementing balanced scorecard at Jordanian private universities was (3.68) which is higher than the mean at Jordanian public universities which was (2.53), which indicates that it is implemented highly at private universities and moderately at public universities. This means that the null hypothesis is rejected and the alternative hypothesis is accepted; there is

variation in implementing balanced scorecard between public and private universities and this variation is in favor of private universities.

The two researchers explain this result that the private universities, by virtue of its keenness on achieving the highest possible profitability, pay attention to the financial perspective as well as organization of internal operations and focus on customers (students) as well as learning and growth, which serve the interest of students at private universities more than the attention existed at public universities.

**H03: “There are no constraints (determinants) which limit the implementation of balanced score card at Jordanian universities”.**

For recognizing the existence of constraints (determinants) which limit the implementation of balanced score card at Jordanian universities, the third section of questionnaire was set out. Table (8) shows the results of statistical analysis of questions related to the existence of constraints (determinants) which limit the implementation of balanced score card at Jordanian universities.

**Table (8)**  
**The existence of constraints (determinants) which limit the implementation of balanced scorecard at Jordanian public and private universities**

No.	Statements	Sector of Public Universities		Sector of Private Universities		Total Jordanian Universities	
		Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
<b>The constraints (determinants) which limit the implementation of balanced scorecard at your university:</b>							
.61	There is no competencies able to collect and analyze data in order to implement the perspectives of balanced scorecard	3.04	0.85	3.04	0.81	3.04	0.71
.62	Explaining university mission to multiple strategic perspectives is considered inappropriate for the nature of university work.	2.58	0.96	2.55	0.90	2.57	0.56
.63	The administration of university considers that the cost of implementing balanced scorecard is high.	3.01	0.61	2.82	0.84	2.91	0.91
.64	Implementing the perspectives of balanced scorecard is difficult because it includes many measures which are uncontrollable.	2.82	0.76	2.78	0.75	2.85	0.63
.65	It is difficult to subject all objectives of university to the qualitative and quantitative measurement through objective indicators and measures.	2.92	0.76	2.84	0.67	2.87	0.87
.66	The higher administration of university set out the strategic plans and implements them without involving the different departments of university in setting out these plans.	2.86	0.88	2.65	0.72	2.78	0.87
.67	The administrative systems at the university do not advance to the required level to implement the dimensions of balanced scorecard.	3.02	0.73	2.48	0.79	2.80	0.95

.68	The routine of provided services at the university prevents the potentiality of developing its services.	3.19	0.98	2.45	0.81	2.89	0.67
.69	The absence of continuous update for the legal regulations at the university to keep up with new events.	2.99	0.95	2.49	0.86	2.79	0.81
.70	The administration of university does not have adequate knowledge in the methods of assessing strength and weakness points through analyzing the internal operations of university.	2.80	1.01	2.42	0.74	2.66	0.67
.71	The continuous change in the instructions which are set out by the ministry of higher education and universities accreditation commission.	3.17	0.76	2.89	0.82	3.01	0.73
.72	The strategic decisions of administration of university do not take into consideration the requirements of students and customers and their need.	2.69	0.86	2.68	0.68	2.68	0.75
<b>Statements (61-72) jointly (constraints (determinants) of implementing balanced scorecard)</b>		<b>2.83</b>	<b>0.85</b>	<b>2.76</b>	<b>0.73</b>	<b>2.80</b>	<b>0.93</b>

The last two columns in the previous table (Table 8) show the means and standard deviations of paragraphs which measure the existence of constraints (determinants) which limit the implementation of balanced score card at Jordanian universities jointly (both public and private).

According to the results mentioned in the previous table, it is shown the following: It is observed that the highest mean was (3.04) for paragraph No. (61) of questionnaire paragraphs, which indicates that the respondents emphasize that the most important constraint of implementing balanced scorecard at Jordanian universities generally (public and private) is non-existence of competencies able to collect and analyze data to implement balanced score card. In addition, the standard deviation which was (0.71) indicates that there are consistency and compatibility among individuals regarding these paragraphs.

The mean which was (2.57) for paragraph No.(62) of questionnaire paragraphs indicates that the respondents consider that the statement stating "Explanation of university mission to multiple strategic dimensions is inappropriate for the nature of university work" is considered less influential constraint which could face the implementation of balanced scorecard at Jordanian universities generally.

In general, the mean of total paragraphs related to measure the extent of existence of constraints (determinants) which limit the implementation of balanced scorecard at Jordanian universities generally (public and private) was (2.80), which indicates that these constraints are existent in a moderate level. In addition, the standard deviation which was (0.93) indicates that there are relative consistency and compatibility among individuals regarding these paragraphs generally.

For testing the third hypothesis, the t-test was used for one sample using a reference value which represents the mean of three Likert scale degrees. Table (9) shows the results of this hypothesis test:

**Table (9)**  
**Results of third hypothesis test using t-test for one sample**

Variable	Mean	Standard Deviation	Calculated "t" Value	Tabulated "t" Value	Degrees of Freedom	Statistical Significance	Result of Hypothesis
The existence of constraints (determinants) which limit the implementation of balanced scorecard at Jordanian universities jointly (public and private)	2.80	0.93	18.37	1.96	263	*0.000	rejected

**Statistical significant differences at the level of (0.05)**

According to the results mentioned in the previous table, it is shown that the calculated "t" value which was (18.37) is higher than the tabulated "t" value which was (1.96) and the level of significance ( $\alpha$ ) is less than (0.05), meaning that the null hypothesis is rejected and the alternative hypothesis is accepted; there are constraints (determinants) which limit the implementation of balanced scorecard at Jordanian universities jointly (public and private).

The two researchers consider that this result is logical, where the results of first hypothesis test indicates the existence of moderate implementation of balanced scorecard, therefore, there are no essential constraints which prevent the implementation of balanced score card. However, there are moderate constraints (determinants) which limit the complete implementation of balanced scorecard at Jordanian universities jointly (public and private).

**H04: "There is no variation in constraints (determinants) which limit the implementation of balanced scorecard between Jordanian public and private universities".**

The following table (Table 10) shows the summary of means and standard deviations which measure constraints (determinants) of implementing balanced scorecard at Jordanian public and private universities individually.

**Table (10)**  
**Means and standard deviations of constraints (determinants) of implementing balanced scorecard at Jordanian public and private universities**

constraints (Determinants)	Sector of Public Universities		Sector of Private Universities	
	Mean	Standard Deviation	Mean	Standard Deviation
The implementation of balanced scorecard at Jordanian public and private universities	2.83	0.85	2.76	0.73

According to the results mentioned in the previous table, it is observed that the mean of existence of constraints (determinants) at public universities is higher than the mean at

private universities. What enhances this result is the means of each constraint (determinant) mentioned in table (8), where it is shown an increase in means of each constraint (determinant) jointly and separately at public universities compared with private universities.

In general, the mean of total paragraphs related to measure the existence of constraints (determinants) which limit the implementation of balanced scorecard at Jordanian public universities which was (2.83) is higher than the mean at Jordanian private universities which was (2.76). This indicates that the null hypothesis is rejected and the alternative hypothesis is accepted, meaning that there is variation in the existence of constraints (determinants) which limit the implementation of balanced scorecard between Jordanian public and private universities and this variation is in favor of the private universities.

The two researchers explain this result that the private universities, by virtue of its keenness on achieving the highest possible profitability, pay attention to provide appropriate means in order to attract the largest number of students and overcome all constraints and difficulties which would prevent students to enroll in these universities. Therefore, they reduce constraints (determinants) of implementing balanced scorecard as a tool of assessing performance more than what the public universities perform in this regard.

### **STUDY RESULTS AND CONCLUSIONS**

In light of data analysis and hypotheses test, the following results and conclusions was concluded:

1. Jordanian universities generally (public and private) implements the perspectives of balanced scorecard (jointly and separately) moderately, where the mean of their implementation jointly was (3.21). The sequence of implementing these perspectives descending is as follows: students (Customers) perspective, internal operations perspective, financial perspective, learning and growth perspective, where their means were (3.09, 3.22, 3.24, 3.28) respectively.
2. It is observed that there is variation in degree of implementing balanced scorecard among Jordanian universities and this variation is in favor of Jordanian private universities.
3. There are constraints (determinants) which limit the implementation of balanced scorecard at Jordanian universities and these constraints are not essential due to their moderate degree (their mean was 2.80).
4. There is a simple variation in degree of constraints (determinants) which limit the implementation of balanced scorecard between Jordanian public and private universities and in favor of private universities, where the mean of existence of constraints for public and private universities was (2.76, 2.83) respectively.
5. When examining the existence of constraints (determinants) which limit the implementation of balanced scorecard at Jordanian public and private universities, the results show that there is consistency among respondents at public and private universities regarding the most influential constraint: the existence of shortcoming in the competencies which are able to collect and analyze data in order to implement balanced scorecard, in addition to the continuous change in the instructions which the ministry of higher education and scientific research as well as the higher education accreditation commission set out.

## RECOMMENDATIONS AND SUGGESTIONS

In light of the results which were concluded, the two researchers recommended the following:

1. Enhancing the implementation of balanced score card at Jordanian public and private universities through raising awareness for their administrations and owners regarding the importance of implementing this card and the advantage achieved by its implementation.
2. The private universities have to pay more attention to learning and growth perspective particularly, where the results of statistical analysis show that the level of implementing this perspective is the lowest among the four perspectives.
3. The private universities have to enhance its keenness on students' (customers) satisfaction without affecting on the quality of educational process and outcomes, for example, providing ample and appropriate parking for students, customers and visitors to achieve their satisfaction as well as developing the relationship with graduates and following up their conditions, even if it is needed to establish a specialized unit in deanship of student affairs for this purpose.
4. Concreting the efforts of Jordanian public and private universities in order to prevent the reasons of constraints (determinants) of implementing balanced scorecard optimally, along with keening on providing competencies able to collect and analyze data in order to implement balanced score card, in addition to coordinate with the ministry of higher education and scientific research, the higher education accreditation commission and other concerned parties to prevent the continuous change in the instructions which these parties set out.
5. Finding ways to enhance the collaboration between the administrations and workers of public and private universities at their different positions in order to activate the implementation of balanced scorecard as an effective way to help the universities remaining and achieving the competitive advantage with the increased competition and the globalization challenges.

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## **Leadership Oriented: The Role of Innovative Planning and Work Culture toward Corporate Productivity**

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### **Abstract**

**Purpose, This study aims to examine and analyze the level of corporate productivity between the State of Indonesia with Vietnam the role of Leadership oriented through innovative aspects of planning and work cultures in each country. Design / Methodology / Approach, This analysis technique is using Structural Equation Modeling (SEM) with AMOS 18. Sampling is using random sampling on e-commerce the user's. Respondents from Manager MNC is 9 respondents and employees with a total of 280 respondents obtained after the selection process. Finding and implications, First, that innovative leadership oriented has significant effect on corporate productivity is accepted. Second, it stated that innovative leadership oriented has significant effect on corporate productivity.**

**Key word: Innovation, planning, workplace culture, leadership, corporate productivity.**

### **INTRODUCTION**

In the era of global business competition that intensifies, a leader required to have the ability of innovation to analyze consumer behavior, read the market, analyze the opportunities and external threats without ignoring internal factors as a basis for decision making. Innovation is the competence to carry out the creativity in order to solve problems and seize opportunities to improve and enrich the lives (Suryana, 2003). The competition is becoming stronger, customer expectations is rising, which there is little time to develop and market new products and services. The concept and understanding of innovation in the development of research has gone through five stages of evolution (Rothwell, 1994), among others; (1) technology push; (2) need pull; (3) coupling models; (4) integration models and (5) system integration and networking models. But according to the researchers, it does not yet consider support for culture, the environment and government policies that could encourage innovation. According to Everett M. Rogers (2003) an innovation of idea, initiatives, objects and practices that is based and accepted as a new thing by somebody or a certain group to be implicated or adopted. (Research on the management of innovation, 2000). Adoption and diffusion of the new ideas and new companies (Thomake et al., 1998; Damanpour 1991.1996). Only companies that successfully put the strategy of innovation as a driver of the business model, that will be able to improve the performance and survival of companies (Franke, 2007). Good innovations

will generate new products or services with quality (eg., Manu, 1992; O'Regan and Ghobadian, 2005; Zhou, 2006) at a lower cost (Gatignon and Xuereb, 1997, which is different from the previous product (Berry et al., 2006). So innovation must be distinguished from the invention.

Meanwhile George Terry (2003), argues alternative election of particular behavior from two or three alternatives that exist. From some of the above opinion, it can be concluded as a particular technique accepted by all parties, especially in the current situation which is there is no certainty in entering 2017 and the policy of the new government, especially from the super power State like the one the United States. How is the condition and position of the Indonesian company especially for Multinational companies such as P.T. Semen Gresik, P.T. Maspion, P.T. Gudang Garam Tbk and others in facing the Global era that cannot easily compete with other States products at the same type especially in terms of work ethic, economics, technology, politics, law as well as culture, or its working culture. In addition to dealing with international issues such as the threat of workers' demands, terrorists, and also the elections as well as inconsistent government policies, the characteristics of which are difficult to predict both at the short term and the medium term.

In multinational companies in Indonesia, how the MNC managerial made managerial decisions that prepared by considering the purpose of the organization and tailored to the existence of the organization as a whole and in the organization of multi-national companies, managerial decisions have far-reaching effects when compared to individual decisions. Managerial decisions according to Robbins (2010) can not be separated from innovation, as a new idea applied to initiate / improve your product and services. Innovation in Robbins version, there are three things: (a) a new idea; (b) new products and (c) improvement efforts. Rogers (2011: 9) there are four traits of innovation include: (a) has a specific / special things; (b) have an element of novelty; (c) the planned program; (d) have a purpose. From some of the above opinions, according to researchers, innovation is a planning that create something contemporary in a competition which contains elements of planned and have a purpose, has a special feature / unitness, an element of freshness / newness and improvement efforts. Factor innovation is the spearhead of reciprocation of a MNC acted in carry out their work to promote his company and one of the weaknesses MNC in Indonesia, the lack of innovation. Culture is a mindset that makes them have the same perception of the values and beliefs that help them to understand how it should work in the company where they work now. Expert of Harvard Business School, Prof. Dr. John Kottler & Prof Dr Janes Heskett said that there is a positive correlation between corporate culture with the achievements of the business in the long term. The corporate culture has a significant role in the achievement and work productivity.

To realize the vision and mission as well as the competition which is getting competitive, it is now necessary to build a philosophy that based on a view of life as basic values that become the characteristics, habits and also a driver that cultured in a group and reflected in the attitude into behavior, ideals, opinions, the views and actions are materialized as work. Quality work culture that is able to create a work ethic in the work environment and at the ends produce quality productivity, work ethic influenced by culture. Regarding the issue of Vietnamese work ethic is superior when compared to Indonesian workers, it can be seen that the wages that are very determine the level of productivity applicable in Indonesia, while for Vietnam, wages are not indicators that determine the level of productivity but is strongly influenced by work ethic. In addition to the work culture from the work ethic side, labor in Vietnam have high discipline and self-reliance, the bulk of the workforce in Indonesia is low-skilled labor, so the productivity is also low. Werther (2002: 5) key to winning the global

competition lies in the innovative leadership. There are three main factors that can shape the character of leadership oriented such as creativity, energy, and insight into the philosophy. This three factors can stimulate the enthusiasm on self-leadership so it can move dynamically and adaptive, creativity and innovation.

Tidd, Bessant, and Pavitt (1988). Competition in time, describing an increase of pressure against the company not only to introduce new products but also performs innovation more quickly than competitors. There is hope that consumer behavior is always dealing with something that is present in a product although there is an increase in prices, it is not a problem as long as the product change its design. It needs an innovative leadership in corporate productivity.

A leader with great enthusiasm have the versatility to change and find new ways, so that the decisions taken are effective and efficient while overcoming various problems. According to James A.F.Stoner in his book Sustainability as a business imperative (2010), decision-making is a process used to choose an action as a problem-solving techniques. This adaptability forms toughness, character, capability and integrity of innovative leadership that is an attitude that is not easily discouraged, rigid, and loyal to the principle but flexible and constantly seek a breakthrough in the face of global competition.

Leadership oriented in decision making logically required to formulate recent steps that suitable with the strategy that will be taken, among others: (a) the clarity of the problem, (b) purpose orientation; (c) alternative knowledge; (d) a clear preference; (e ) maximum results. The leader is proposed to have central role in the process of empowerment of employees (Druskat & Wheeler, 2003; Randolph & Kemery, 2011), but this role is somewhat different from the role in the design of more traditional jobs which is based on more magnitude of management level and top-down control (Ahearne, Mathieu, & Rapp, 2005). Empowering is more associated with giving an influence not to have an influence, and the central characteristics that describe empowering leadership is characteristics that supporting the autonomy of employees (Amundsen & Martinsen 2015).

Dejanasz et al (2002: 19) decision-making is a process in which several possibilities can be considered and prioritized, which results are selected based on the definite and clear selection of any possibilities alternative that available and these must be supported by staff / employees who are innovative and disciplined work culture, work ethic, as well as ethical behavior.

Berman and Cutler (1996: 61) in their study explained that the decision makers with the aim of producing accurate decisions have to be careful by obtaining information with high validity and credible so that leadership oriented obtain an appropriate decision so that the election of several alternative choices provided able to realize the purpose of corporate and able to compete on the world stage, especially competition from transnational companies of other Asian countries such as Japan, Korea and Thailand.

## **DEVELOPMENT THEORY AND HYPOTHESIS**

### **Innovative planning**

Effects of changes in the business environment is getting tougher, the demands of creativity and innovation has become a major and routine activities for the company. Han et al (1998) suggested that innovation refers to products or an attempt to commit new breakthroughs. According to Ellitan and Anatan (2009) innovation involves four fields; (1). product; (2) process; (3) technology and (4) human resource innovation. Failure of innovation is generally derived from the indifference of members of the organization on innovation. Innovation is also influenced by the structure, culture, working climate and organization environment (Sutrisno, 2010).

Innovative behavior affect the leadership (Dejong & Den Hartog, 2007), subsequent researchers (Rank, et al., 2008) said innovation is a social process because the leader has a strong influence in creating innovation. Likewise, subsequent researchers said that the innovative behavior focuses on more complex process because the innovative behavior is discussed until the implementation of ideas generated (Janssen et al., 2004 in Carmeli, dkk.2006).

Several studies have found a significant correlation between innovation planning with the work culture. Among other innovation processes, successful reengineering will improve employee performance (Davidson, 1993). Technological innovation, technological progress will play an important role in achieving the long earnings capacity (Stacey and Ashton, 1990). In product innovation, product innovation process will impact directly on the success of the enterprise shown by the increase in revenue and profit (Ellitan and Anatan 2009) . Research above can not be fully amplified in Indonesia and Vietnam because the country is lacking in the environment and the role of government that determines the policy of corporate in the future, e.g. the enactment of labor intensive policies. Thus the hypothesis are:

**H1:** Innovative planning positively influence the leadership oriented.

**H2:** Innovative planning positively influence the work culture.

**H3:** Innovative planning positively influence corporate productivity.

### **Work culture**

Work culture is a philosophy that based on a view of life as basic values that become the characteristics, habits and also a driver that cultured in a group and reflected in the attitude into behavior, ideals, opinions, the views and actions are materialized as work (Supriyadi and Guno , 2003). There are some models, namely authoritarian culture, bureaucratic culture, duty culture, individualistic culture, bargaining culture and collectivity culture. Further Supriyadi and Guno (2003) states the Authoritarian Work Culture, type of work culture that devote to 'command and control'. Power within organizations often centered on leaders who often extolled as 'hero'. Workers will be expected to show high fidelity to the leader. Bureaucratic Work Culture, this bureaucratic work culture is based to the concept that organization must be taken care efficiently, by considering the principle of management with impersonal, rational, authority and formality nature. Functional Work Culture, labor organizations that debuted in the West often practice a functional workplace culture or this 'project-based'. In a functional concept, working in the organization is divided and assigned to individuals or certain forces. Individualistic Work Culture, In organizations that practice this work culture, certain individuals become the main focus. Bargaining Work Culture, In this kind of organization, unity of workers becomes a major part of the organization. Worker unity serves to safeguard the interests of workers and help achieve the objectives of organization. Collective Work Culture, said that among the heyday key of Japanese organizations is their ability to use the idea and backup of subordinate workers (Sinamo, 2003).

Siregar, (2000), adding that the work culture is a system of values, perceptions, attitudes and beliefs held by individual employees and employee groups about the meaning of work and its reflection in the activities to reach the goals of organizations and individual. Important work culture is developed because of its positive impact on the achievement of sustainable change in the workplace, including increased productivity. Actualization of productive work culture as a measure of the value system contains components owned by an employee, namely:

Understanding of the basic substance about the meaning of work, Attitude towards work and the work environment, Behavior when working, Work Ethic, Attitude toward time, Way or the tools used for work. Hartman, Martin and Terblanche (2003) declare the work culture in the organization is one factor that can stimulate innovative. Valencia et.al, (2010) in his study claimed that the type of adhocracy culture support the creation of products innovation, while the type of hierarchical culture has the opposite effect. New work culture in the organization externally oriented is a center of excellence in product development based on customer desires (Prayogo and Mc Dermott, 2011). Thus the company that aims to excel in product innovation will be the same with externally oriented. Jaskyte and Kisieliene (in Valencia et.al, 2010) found that innovation in the organization significantly affect positively the cultural dimensions that lead to flexibility and negative when it comes to stability. Thus hypothesis we asked is:

**H4:** Work culture positively influence oriented leadership.

**H5:** Work Culture positively influence corporate productivity

### **Leadership oriented and corporate productivity**

An innovative leader is a leader who never easily satisfied with the achievement of performance results. He will constantly creating new opportunities and ideas. An innovative leader is a leader who has a democratic leadership style as a style or a style of leadership that does not take a decision from his/her only point of view, but collecting all the ideas of all employees and conduct deliberation and decided together. It means to be an innovative leader is through the leadership style adopted by the leader. Dr. Upton says that leaders live in the context of discovery, exploration, and learning. From the context of curiosity, the leaders open spaces for the creation of new things.

Innovation is one of the factors that support the success of a leader in his leadership. A true successful leader is an innovative leader. In this globalization era as today, it much needed creative and innovative leader.

Here are some of the characteristics of an innovative leader:

1. Have a passion. He focused on the things you want to change, the challenges that exist, as well as strategies to deal with such challenges. Passion will make a leader stay energized and able to encourage his team, even though in a collapsed condition. Passion will encourage leaders achieve his/her dream.
2. Having a vision. Innovation has a purpose. Leaders can not expect his team to innovate if they do not understand the direction of the organization's objectives. Great leaders spend more time to describe the vision and goals of the organization and the challenges confronting. They are able to inspire people to become successful by relying on innovation.
3. Looking at the change as a challenge. Innovative leader has ambition and never satisfied with the condition of "cozy". They often voiced change. For them, silent or complacent with the current state is riskier than try something new. They will continue to look for opportunities to raise the organization.
4. Dare to act outside the rule. To innovate, not infrequently a leader needs to challenge the existing rules. Business is like art. Companies are required to find creative new ways to satisfy customers.
5. Do not be afraid of failure. Innovative leaders consider failure as part of a lesson for success. He is likely to see the value and potential of the organization, not just looking at a big operational costs.
6. Want to collaborate. Collaboration is the key for many leaders to succeed with innovation. When they find that the resources they possess insufficient to achieve

organizational goals, they did not rule out the possibility of partnering with other parties.

The success of businesses or the business world in the past or in the present fixated on investments or assets owned, may be true because through investment or capital invested, it is one capital factor in the procurement of facilities and infrastructure to support the business, including the cost of operations. However, equally important is how to get the Human Resources who have the ability and the skills needed in the business world, as well as how to maintain human resources to work effectively, efficiently and optimally so that productivity as expected.

The quality and quantity of human resources in an organization should be tailored to the needs of the organization or company concerned to be effective and efficient in supporting the objectives achievement of organization or companies. Therefore, Human Resources need to be managed and developed continuously in order to obtain Human Resources with quality in the true sense, in which the execution of the work will produce something that is desired. Quality means not only clever but meets all quality requirements demanded by the job so that the job can be completed really according to plan (Sedarmayanti, 2001: 17).

Productivity implies a mental attitude that always has the view that quality of life should be better today than yesterday, and tomorrow must be better than today.

According Ravianto. J (2004: 4) generally productivity implies between the results achieved with the participation of labor at units of time. Human resources play an important role in the process of increasing productivity because people are dynamic. Means of production and technological progress more static that can only be driven by humans. High level of productivity is the hope of every company. In improving the productivity of work, a lot of things that affect such, the increase in fair and reasonable wages or salaries, the atmosphere or a pleasant working environment, career opportunities, a chance to advance, supporting facilities, and others.

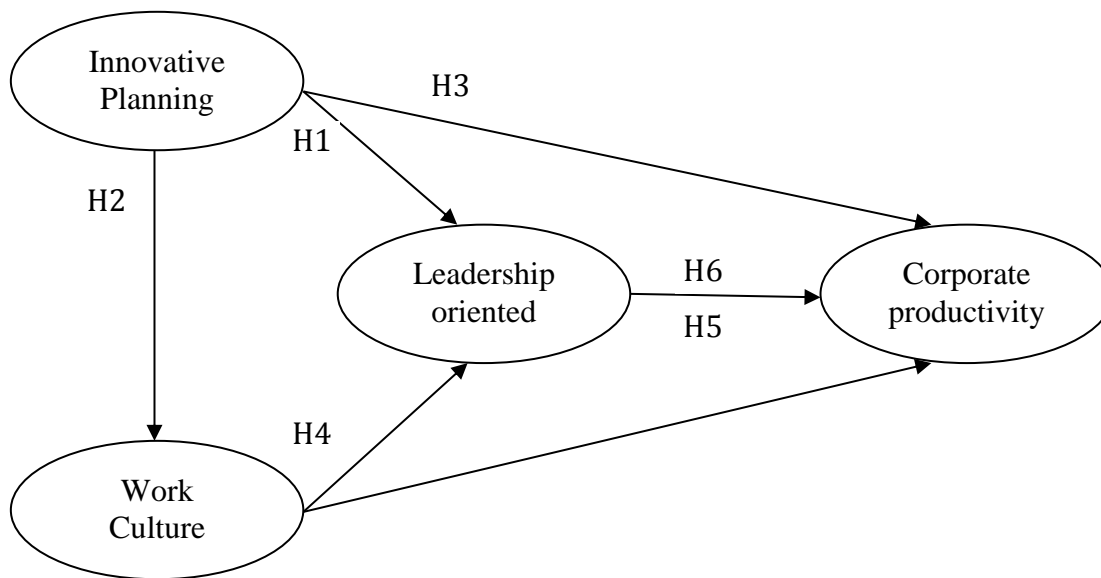
"A good manager is one who can maintain a high balance in assessing accurately the strength that assess the most suitable behavior for a specific time and really able to do that." (Gibson, 2002: 285).

The company's success is basically supported by effective leadership, in which with the leadership, it can influence subordinates to generate their working motivation to make an accomplishment in a common goal.

According to Dale Timple (2002: 31), the leader is the person who applies the principles and techniques that ensure motivation, discipline, and productivity when working with people, tasks, and situations in order to achieve company goals.

Understanding and knowing the things that can evoke motivation in a person is the key to manage other people. A leader's job is to identify and motivate employees to be able to perform well, which in turn would increase the company's productivity. From the above description it can be concluded that the leadership has a strong influence on employee productivity. Thus the hypothesis is:

**H6:** Leadership oriented positively influence corporate productivity.



**Figure 1: Research Model Suggested**

## METHODOLOGY

### Sample and Procedure

The sample consisted of employees from two companies in Indonesia, one foreign company and one company in the country. The nature of the study requires data collected either from subordinates and supervisors. Initial surveys directed at as many as 260 professional employees who fill out the questionnaire tool. Respondents were given *an informed consent* document that explains to them the nature of this research, and performance data will be obtained from their supervisor three months after they complete their survey. Of the 260 employees who were evaluated which composed of Respondents (25.0% men and 53.4% women, 21.6% did not report gender; mean age 31.72 years). In this organization, from the sample who reported their ethnicity, 56.8% of the sample are indigenous, 10.2% foreign, 1.1% Asian, and 7.9% other. The performance appraisal returned covers of the original 210 employees and 50 supervisors (71.1%).

### Measuring Instrument

*Innovative planning* with alpha ( $\alpha = 0.78$ ) (McClelland, 1975) was assessed by measuring instrument that consisting of five points (Steers and Braunstein, 1976) of *Manifest Needs Questionnaire* (range 1.20 to 7.00). Items samples were evaluated using 7-point scale (1 = strongly disagree, 7 = strongly agree) and includes planning, goal, uniqueness, and newness. Valle and Perrew (2000) a work culture consists of ethical behavior, learning and work attitude. Orientation leadership consists of creativity, positive energy and good vision. This finding is consistent with previous studies of leadership (eg, Crant & Bateman, 2000; Howell & Avolio, 1993; Kinicki & Vecchio, 1994).

*Corporate productivity* ( $\alpha = 0.86$ ) comprises 3 items of Ferris *et al.* (2005) was used to measure the productivity of companies, those are work ethic, independence and quality. Subordinate assess their compliance with the items that using 7-point scale (1 = strongly disagree, 7 = strongly agree; range 3.53 to 6.67) (Blickle *et al.*, 2011; Semadar, 2004). We use our organization internal performance measuring instrument and that collected by the human

resources department three months after the first survey. We were given raw data from an organization similar to other studies that investigated the performance or working achievement (ie, Zhang *et al.*, 2012). This performance measuring instrument used in the company to organize and provide performance feedback; thus, this measuring instrument provides a context-specific information about individual performance. The Company calculates the overall performance score based on various dimensions including employee relations with co-workers and their supervisors, their interaction with other staff and clients, professionalism, and timeliness. Every employee rated from 1 (low) to 4 (high) in each dimension, and the combined score, which is produced by the company, are then used to determine the overall performance ( $M = 30.88$ ,  $SD = 1.74$ ). From the number of demographic variables were collected, age, gender, race, and management positions accounted in this analysis, because age (Sturman, 2003; Waldman & Avolio, 1986), gender (Eagly & Karau, 2002), and race (Biernat & Kobrynowicz 1997; Maume, 1999) proved to have an effect on the leadership and / or performance. On the pretest, demographic factors such as gender and race are considered, but only age and management positions were found to influence the leadership oriented. This is not in accordance with the findings of other studies that age and performance are positively related possibilities because job performance might be increased with age (Waldman & Avolio, 1986). By including management positions, we can divide the informal leadership variance that associated only with formal positions and in better way capture the recognition of the individual as a leader.

## RESULT

Confirmatory factor analysis (CFA) model of one factor, where all items are set loading on a single factor ( $\chi^2 [130] = 934.54$ ,  $p < .001$ ; RMSEA = 0.16; SRMR = 0.13; CFI = 0.84; see "Data Analysis" for the interpretation of suitability index), produces model fit that worse than a two-factor model ( $\chi^2_{diff} [1] = 534.29$ ,  $p < 0.001$ ), indicating support for the validity factor from ELS in the our sample data. Suitability index for model of both correlating factors fall within an acceptable range ( $\chi^2 [129] = 402.17$ ,  $p < .001$ ; RMSEA = 0.09; SRMR = 0.05, CFI = 0.94). In this analysis, five pairs of error (*error*) measurements allowed to correlate and based on the index modification proposed by AMOS. To prevent the risk of use of the opportunity (MacCallum, Roznowski, & Necowitz, 1992), then the substantive requirements and statistical recommended to guide the inclusion of correlated residuals (Byrne, 1994). To further investigate innovative planning, we also test Velicer MAP (1976), which is especially valid when there is an average of eight or more variables per component (Zwick & Velicer, 1986). On the MAP test, the relative amount of systematic variance and unsystematic one remaining in the correlation matrix after extraction of components is calculated, and components will be maintained for no more systematic variance in proportion of the unsystematic variance (O'Connor, 2000). MAP test confirms that the basic structure of the data consists of two factors. Examination of the loading of standard factors showed that all 18 items had a significant loading (range = 0.70 to 0.92,  $p < 0.001$ ) in each of those factors. Inter-correlation between the two factors is 0.67 ( $p < 0.001$ ).

**Innovative Planning** assessed using the research version of the new measuring instrument (Martinsen, 2009 Manz, 1986; Neck & Houghton, 2006). Some scale are added by Martinsen (2009) because corporate may relate to the need to coordinate efforts and cooperate with others. Additionally, Martinsen found innovative planning bias include a focus on new ideas and a willingness to acquire the knowledge necessary to master the requirements of the task. CFA from one factor model ( $\chi^2 [168] = 425.26$ ,  $p < .001$ ; RMSEA = 0.08; SRMR = 0.07; CFI = 0.87) produces model fit significantly worse than two-factor model ( $\chi^2_{diff} [1] = 40.44$ ,  $p < 0.001$ ), showing support for the validity of the measuring instrument factor of work culture in



our sample data. Suitability index for two-factor model that correlated overall are considered acceptable ( $\chi^2 [162] = 384.82$ ,  $p < .001$ ; RMSEA = 0.08; SRMR = 0.07; CFI = 0.89), although the CFI is slightly below 0.90. In this analysis, seven pairs of error measurement is allowed to be correlated and based on the index of modification proposed by AMOS. This problem seems meaningful theoretically for each pair of items originally based on six behavior operation of self-leadership measuring instrument (ie, successive self-reward, priority on the interesting task, visualization of the results, focusing on new ideas, development of competence, and coordination), and error correlation thus tends to fall on the content overlapping (Byrne, 1998). Suitability index for two-factor model without errors correlated measurements is ( $\chi^2 [169] = 708.06$ ,  $p < .001$ ; RMSEA = 0.11; SRMR = 0.08; CFI = 0.73). To further investigation on the structure factor of the self leadership measuring instrument, we perform Velicer MAP test (1976), which asserts that the basic structure of the data consists of two factors. Loading of standards factors are all significant in each of those factors (range = 0.42 to 0.74,  $p < 0.001$ ), and the inter-correlation between the two factors is 0.77 ( $p < 0.001$ ).

**Leadership oriented** rated by scale of 4 items from Spreitzer (1995), which consists of three points each for the four sub-dimensions: the meaning ( $\alpha = 0.88$ ; sample item: "The work I do is very important to me"), competence ( $\alpha = 0.93$ ; sample item: "I am confident in my ability to do my job"), self-determination ( $\alpha = 0.92$ ; sample item: "I have significant autonomy in deciding how to do my job") and impact ( $\alpha = .94$ ; sample item: "My impact on what happens in my department is great"). All items scale are given in Annex C. Suitability index for the four factors correlated models are within an acceptable range ( $\chi^2 [48] = 67.73$ ,  $p < 0.05$ ; RMSEA = 0.04; SRMR = 0.03 ; CFI = 0.99).

**Corporate productivity** Work effort was assessed by five items ( $\alpha = 0.80$ ) based on the previous measuring instrument (Brockner, Tyler, & CooperSchneider, 1992; May, Korczyński, and Frenkel, 2002) and further developed by Kuvaas and Dysvik (2009). Its items are as follows: (1) "I often expend extra effort in carrying out my job"; (2) "I usually do not hesitate to exert extra effort when needed"; (3) "I purposely expend much effort in carrying out my job"; (4) "I try to work as hard as possible"; and (5) "I almost always spend more than an acceptable level of effort."

**Analysis of the data** We analyzed our data in a few steps. First, the dimensionality of the measuring instrument are analyzed, followed by making a few parcels to increase the sample size ratio compared to the parameters that were estimated in CFA (Bentler & Chou, 1987). Items parcel also offer several other advantages, including improving the properties of the distribution of the indicator (West, Finch, & Curran, 1995) and reduce the number of possible covariance between measurements error sources (Rae, 2008). However, the manufacture of parcel items should only be used to investigate the relationship between latent constructs (Little, Cunningham, Shahar, & Widaman, 2002), which is evident in our study. To ensure the identification, increases the likelihood of appropriate solutions and allowing the estimation of latent errors (Bollen, 1989), we use three indicators for each latent variable, which is in accordance with recommendation of Hau and Marsh (2004) for the construction of the parcel. In accordance with Coffman and MacCallum (2005), we use the approach of making homogeneous items parcels.

Furthermore, we identify and remove *outliers* to improve the properties of variable distribution. Then, following a recommendation from Anderson and Gerbing (1988), two-step procedure is used to test the hypothesis. The first step is concerned with testing the accuracy of the measurement model, while the second step is the testing of alternative structural models. CFA performed by using estimates of *maximum likelihood* (ML) in AMOS Version 16.0. We use CFA with *bootstrapping* techniques to address the non-normality of small multivariate

at data and assess the stability of the sample results (Efron & Tibshirani, 1993). Finally, we assess the possible impact of a general method bias towards the path coefficient method following the procedures recommended by Widaman (1985) and used by Williams, Cote and Buckley (1989). Richardson, Simmering, and Sturman (2009) develop the procedures further and call it approaches of *unmeasured latent construct method* (ULMC).

To measure the suitability of the model, we followed the recommendation of Kline (2005) and report (1) The chi-square test statistic with degrees of freedom and the appropriate level of significance; (2) RMSEA (Steiger and Lind, 1980) 90% confidence interval (CI) with a suitable, where the value of <0.05 was nearly matched, 0.05 to 0.08 is quite suitable, 0.08 to 0.10 less fit, and > 0.10 is not very suitable (Browne & Cudeck, 1993); (3) SRMR (Bentler, 1995), where the value  $\leq 0.08$  indicates a good fit (Hu & Bentler, 1999); and (4) CFI (Bentler, 1990), where the value > 0.90 is generally considered to indicate a match which is acceptable (Bentler & Bonett, 1980).

**Table 1 Fit Model**

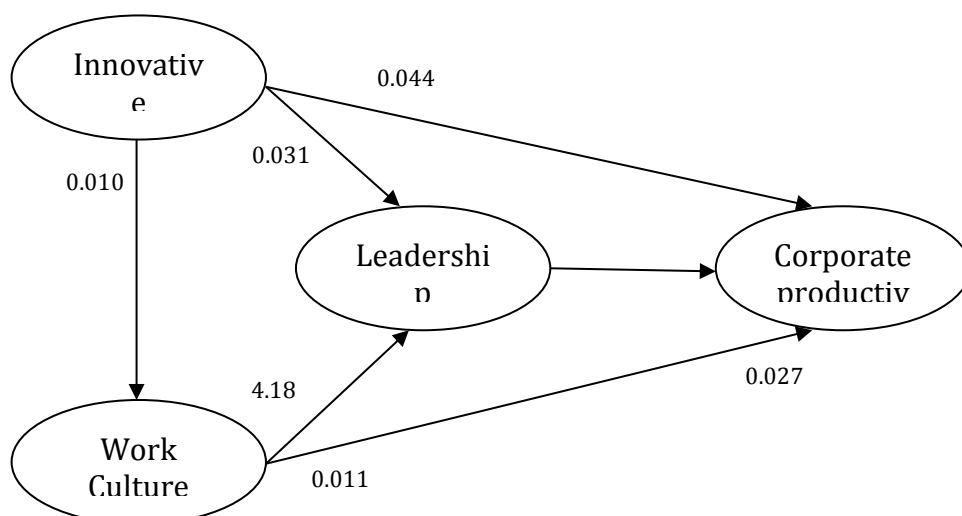
Goodness of fit indices	Fit guidelines	Proposed model
X <sup>2</sup> /df	≤ 3	2.1359
Goodness of fit index (GFI)	≥ 0.90	0.907
Adjusted Goodness of Fit Index (AGFI)	≥ 0.90	0.903
RMSEA	≤ 0.08	0.074
TLI	≥ 0.95	0.921
CFI	≥ 0.95	0.927

**Source of data: The results of SEM processor**

In addition, we report the chi-square value ratio that compared with the degrees of freedom (Marsh, Balla, & McDonald, 1988). Although there are no clear guidelines, "the ratio in the range of 2 to 1 or 3 to 1 indicate a match that is acceptable between hypothetical models and sample data" (Arbuckle, 2007, p. 589).

## RESULT

The conceptual model proposed in Figure 1 was tested using SEM. Coefficient of tracks are presented in Table 5.



**Figure 2: Results of Test Hypothesis**

Finally, the results also showed that the innovative planning and work culture has significant influence on corporate productivity in the trans-national companies (MNC).

**Table 2: Hypothesis Test**

<b>Hypotheses</b>	<b>Paths</b>	<b>Result</b>	<b>Estimate</b>
H1	Innovative planning- leadership oriented	Significant	0.044
H2	Work culture – Leadership oriented	Unsignificant	-0.18
H3	Innovative planning – Corporate Productivity	Significant	0.010
H4	Work culture – Corporate Productivity	Significant	0.011
H5	Leadership oriented – corporate Productivity	Significant	0.031
H6	Innovative planning – work culture	Significant	0.027

Note: \* $p < 0.05$

### DISCUSSION

The main objective of this paper is to analyze the influence of innovative planning and work culture towards leadership oriented and corporate productivity. Some of these relationships have previously been theoretically suggested but has not been given sufficient empirical attention, while other relationships have not been studied at all. Our results provide support for four of our six hypotheses based on the theoretical discussion. Here, we discuss in more detail the most central findings and its theoretical and practical implications.

We found that *innovative planning* is a variable with positive effect on leadership oriented. This relationship proposed by Houghton and Yoho (2005) in the contingency model of leadership and their psychological empowerment, but until now have not given attention for empirical research. The model also implies that the behavior of leaders who planned positively related to *corporate productivity*. This relationship is emphasized in theory (eg, Manz & Sims, 2001) but only investigated in a few studies (eg, Tekleab *et al.*, 2008; Yun *et al.*, 2006). Thus, our findings provide additional empirical support for one of the main objectives of *leadership oriented*, which is to lead others to lead themselves (Manz & Sims, 2001). Support obtained from the intercession of the model also implies a positive and significant relationship between *corporate culture* and innovative planning, that put forward by the experts (eg, Neck & Houghton, 2006).

We consider the findings are extremely important, because previous studies only examined the relationship between *leadership oriented* and work effectiveness (eg, Prussia *et al.*, 1998), while the effectiveness of the work is only one of the four components in the construct of employee empowerment. Thus, the finding that the *innovative planning* positively effect on latent constructs of corporate productivity can add value to the idea of *leadership oriented* as an oriented concept of empowerment in contemporary work arrangements that characterized by autonomy and delegation of responsibility and decision-making authority. Clearly, *leadership oriented* could include aspects of central self-empowerment which seems to have positive effect on employees' perception on the empowerment in their work role. We recommend further research on this issue. In summary, our findings suggest that the *innovative planning* affect corporate productivity directly or indirectly through *leadership oriented*.

We also found that *leadership oriented* operating as a *intervening* variable between *innovative planning and work culture* to productivity corporate. The results of our study indicate that the *leadership oriented* fully mediate this relationship and also eliminates the effects of workplace

culture on creativity. This issue is interesting, because the innovative planning which is a central aspect of empowerment of leadership oriented (Thomas & Velthouse, 1990), consistently conceptualized as a predictor of creativity at the individual level (Amabile, 1983). However, Neck and Houghton (2006) states that the work culture *as a leadership* also significantly informed by the concept of intrinsic motivation "(p. 281). In addition, previous studies have theorized *innovative planning* as the antecedents of creativity (DiLiello & Houghton, 2006; Neck & Houghton, 2006). To our knowledge, this paper is the first to find empirical support for such relationships, and moreover, supports that *innovative planning* may be a mechanism by which *empowering leadership* continue its effect on creativity. Beyond this, it is also worth mentioning as a finding of a positive association of *leadership oriented* towards productivity corporate that only partially mediated by creativity. Possible explanation for this is that the *leadership* oriented include behavioral strategies that directly affect business, such as *self-observation* and *self-goal setting*.

We could not find a direct effect of the *work culture* on leadership oriented as corporate productivity factor. This is different from Raub and Robert (2010) who found that the effects of *workplace culture* on the *in-role* behavior *affiliative extra-role* behavior on a sample of employees in front line manufacturing companies are directly. Work culture conceptualization can be deemed to include the full spectrum of *in-role* behavior until challenging *extra-role* behavior. Therefore, based on the findings of Raub and Robert, it is logical to assume that the work culture can not play the role of a partial intercession. However, the difference between Raub and Robert findings and our own findings may be due to the organizational context which is not the same. Employees in foreign organization, which is an affiliate organization, probably basing their businesses in many tasks on the perception that psychologically empowered. For example, it is logical to argue that the meaning was instrumental in encouraging the various types of businesses in the work effort. Other possible explanation is that, in our study, *innovative planning* has a parallel mediation role and also pass on the effect of *oriented leadership* to corporate productivity. However, eliminating the *work culture* in the model and adding the direct path of *leadership* oriented to corporate productivity did not change the status of innovative planning as variable of indirect relationship. Thus, the nature of the employment sector may play an intervening role and should be taken into account when investigating oriented leadership role in the process of empowerment of employees. We did not have a chance to test this possibility because of the work effort is only included as outcome variables in this study. Therefore, we suggest that researchers investigate the matter further.

### THE PRACTICAL IMPLICATIONS

Some practical implications emerge from the findings in this paper. First, the nature of work changed substantially in the last decade to become more complex and severe cognitive (Humphrey, Nahrgang, & Morgeson, 2007), and knowledge workers are highly skilled and educated at the core of a segment of the labor force that is growing rapidly (Parker, Wall, and Cordery, 2001). From the perspective of human management strategy, it is important to match the style of leadership with the work to achieve the use of human resources efficiently. Logic of *oriented leadership*, with emphasis on autonomy, motivation, and employee development, also seems perfectly suited to the knowledge-based working approach to the human capital (Liu, Lepak, Takeuchi, & Sims, 2003). This problem is demonstrated by the findings of this paper on the sample represented respectively by trans-national companies workers sectors.

Second, workers are more driven by intrinsic motivation factors than by the external one (Frost, Osterloh, & Weibel, 2010). In this regard, innovative planning is a central construct for tasks involving feelings of intrinsic task motivation that comes from the perception of the

meaning, competence, self-determination, and its impact in the role of work (Spreitzer, 1995). This paper shows that the *oriented leadership* potential affect corporate productivity. Thus, the trans-national companies (MNC) should emphasize empowerment to include *innovative planning* and *oriented leadership* as management practices that prioritized in their human resource strategies.

### LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

Studies are flawed, because the data is collected at one point in time, the correlation between variables does not represent a causal relationship. To assess the causal direction, the findings must be replicated in the experimental and / or longitudinal research in the future. Second, work effort and creativity was not investigated in both studies, and replicability of findings regarding these variables should be tested in future research. Third and last, because of the relatively low level of response from both studies (ie, respectively 37% and 31%) generalizability of findings may be reduced. However, regarding this research, non-response bias is eliminated by comparing the characteristics and response of early and late respondents (Armstrong and Overton, 1977). For the second study, we were not able to conduct this analysis because we do not have data for response time. Another problem that may affect the generalizability of the findings is the dominance of female respondents (ie, 94%) in Study 2.

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## Effects of Service Quality on Customers Satisfaction on Botswana's Mobile Telecommunications Industry

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### Abstract

Botswana's telecommunications sector has shown significant growth over the years. This is evidenced by the increase in the number of mobile operators, coupled with a drastic increase in the number of consumers. Notwithstanding this, the mobile sector is challenged to continually find ways to ascertain that their products and services meet customers' expectations, in order to provide improved quality of service and ensure customer satisfaction. This study therefore, examines the relationship between service quality and customer satisfaction in the mobile sector and compares levels as well as analyse the determinants of service quality. The SERVQUAL model was adopted for this study, through which twelve dimensions of service quality were explored and measured. Principal component analysis was employed to compute the customer satisfaction and service quality indices. The regression results showed that, across all mobile operators; Assurance, Credibility, Security and Tangibles are the major dimensions that are significantly and positively related to customer satisfaction. Therefore, service providers need to focus on issues of assurance, credibility, security and tangibles among others, to increase satisfaction levels among their customers.

**Keywords:** Botswana; telecommunications; service quality; customer satisfaction; principal component analysis; ordinary least squares.

### INTRODUCTION

The telecommunications industry is very important in the development of the economy, as it ensures ease of service provision and facilitates business transactions. At a macroeconomic level, good telecommunications infrastructure has been shown to have a positive relationship to economic growth (Sridhar & Sridhar, 2009). It is in this light that Botswana's telecommunications sector has shown significant growth over the years. This is evidenced by the increase in the number of mobile operators from zero in the 1990s to currently three mobile service operators. These Public Telecommunication Operators (PTOs) are Mascom, Orange (formerly Vista) and BeMobile (a subsidiary of Botswana Telecommunications Corporation). Mascom and Orange both started operations in 1998 while BeMobile followed a decade later in 2008. The three PTOs provide local, national and international mobile services. In addition, Botswana's telecommunications industry continues to show significant growth with respect to the total number of consumers of the services provided by the mobile service operators. The numbers of consumers have increased more than 30 times from 106,029 in 2000 to 3,410,507 in 2014 (Statistics Botswana, 2016).

The sector is regulated by the Botswana Communications Regulatory Authority (BOCRA), which has the prerogative to license operators, as per the Communications Regulatory Authority Act of 2012 and guidelines established by the 1995 Telecommunication Policy.

Analysys Mason (2009) carried out a market study (as commissioned by BOCRA, the then Botswana Telecommunications Authority); and the results of the study showed that Botswana's mobile telephone industry was performing quite well. This was evidenced by strong penetration and coverage levels (at around 80 percent), which compared well to best practice countries such as South Africa and Namibia (at about 80 and 50 percent, respectively). Also, there was an indication that the country was still expected to experience more growth in the mobile prepaid market due to the high incidence of multiple subscriptions. The review concluded by pointing out that there was indeed effective competition in this sector.

It is imperative that those managing the PTOs be aware of how to ensure that they meet (or even exceed) customer expectations. This is because a high quality of service is one major aspect of retaining or increasing one's market share. The mobile telephone sector is challenged to continually find ways to ascertain that their products and services meet customers' expectations. Customer satisfaction is crucial for a company's long term business success. In order to retain or gain more market share, service providers ought to outperform their competitors through offering high quality products/service, to ensure clients are satisfied (Saghier & Nathan, 2013). The PTOs can ensure customer satisfaction only if they have knowledge of the extent of customer sensitivity and expectation towards the services they offer. Therefore, the objective of this study was to assess the level of customer satisfaction and make a comparative analysis of the effect of service delivery on customer satisfaction in Botswana's mobile telecommunications sector. This particular study augmented on the already limited literature on Botswana's telecommunications sector in that it looked into the effect service quality has on customer satisfaction, from the customer's view point. This helped bridge the gap left by previous studies (such as Analysys Mason, 2009), which only focused on mobile network penetration and other developments in the sector at a macro level.

### LITERATURE REVIEW

Service quality is usually defined in various ways, depending on the situation being assessed as well as the factors of interest. It is usually explained as customer sensitivity to the extent to which a service adequately meets or exceeds expectations (Czepiel, 1990). Literature on service marketing generally defines service quality as the overall evaluation of the service offered. This assessment is done by customers on the receiving end (Eshgi et. al., 2008). Parasuraman et al. (1985) describes service quality as "The discrepancy between consumers' perceptions of services offered by a particular firm and their expectations about firms offering such services" (pp. 49). Therefore, the consumer would judge a low quality service as service that is below expectation and vice-versa. A crucial component of service quality is the customer's expectation (what they feel the service provider should offer), which is influenced by personal needs; previous experience; other customers' referrals and the provider's communication strategy (Parasuraman et al., 1985).

Literature highlights that it is quite a challenge to measure service quality due to its intangibility nature, which is difficult to quantify. Intangibility refers to the lack of a physical product to; touch, taste, smell or hear, before any purchases are made, which makes it difficult for the consumer to understand the nature of what they actually receive (Daniel & Berinyuy, 2010). For instance, in the case of a company offering mobile telecommunication services; here the consumer just makes calls and does not receive any physical/tangible product. This therefore requires service providers to make efforts to determine the level of intangibility of services and try to incorporate tangible elements that could help better understand expectations from the consumer's perspective.

Most research shows that service quality is a major determinant of customer satisfaction and retention. Ahmed et al. (2010) assessed the impact of service quality on customer satisfaction

in Pakistani telecommunication sector and found that the service quality measures of; tangibles, assurance, responsiveness, reliability and empathy had a positive and significant relationship with customer satisfaction. Similarly, Loke et al. (2011), using the service quality scale (SERVQUAL) model, looked at the impact of; reliability, responsiveness, assurance, empathy and tangible aspects on customer satisfaction in Malaysia's telecommunications sector. Results highlighted that though all five dimensions explained more than 80 percent of the customer satisfaction; empathy, reliability and responsiveness showed the strongest and significant effect on customer satisfaction and loyalty.

Joshi et al. (2010) assessed service quality in India's telecommunication sector, focusing primarily on three service providers in three localities (Chandigarh, Panchkula and Mohali) and highlighted seven dimensions of quality to be assurance, reliability, tangibles, responsiveness, empathy, network quality, and any other factor. Of these seven, results showed that, five of them (empathy, assurance, responsiveness, network quality and any other factors) had a significant influence on the customers' perceptions of service quality. Agyapong (2011) conducted a study on the effect of service quality on customer satisfaction in the Vodafone telecomm company (Ghana). The study used a modified service quality scale (SERVQUAL model) for analyzing service quality. Multiple regression analysis was used to examine the relationship between service quality variables (tangibles, reliability, responsiveness, competence, courtesy, feeling secure, communication and customer understanding) and customer satisfaction. The results showed that all the service quality variables were good predictors of customer satisfaction, and that, if no action is taken to enhance these variables' levels, customer satisfaction would decline.

## METHODOLOGY

There are a number of perspectives used when looking into customer satisfaction. Evaluation of customer satisfaction is typically with respect to both technical and functional qualities. However, because customers rarely have the technical expertise to evaluate services offered, functional quality plays a major role in forming a basis for service quality (Agyapong, 2011). There are a number of models and tools used to measure customer satisfaction.<sup>1</sup> The SERVQUAL (Service Quality model) is the most widely used model, since it identifies gaps between customers' expectations from an excellent service provider, to their perception on service offered by their current service provider (Szwarc, 2005). This model was developed by Parasuraman et al. (1985), based on the fact that, in order to maintain satisfied customers, one ought to ensure that customers' perception on service offered is not that far off from their expectations. Various dimensions of service quality are looked into here, and among others; tangibles, reliability, responsiveness, assurance and empathy. The strength of the model is that it is applicable in various industries and sectors. This study adopted the SERVQUAL model (Parasuraman et al, 1985), which is in line with similar studies on service quality (Agyapong, 2011; Loke et al., 2011). Twelve dimensions of service quality were explored and measured. Table 1 presents the variables (dimensions) and their descriptions/definitions. The conceptual framework for the study was adopted and modified from empirical studies on service quality and customer satisfaction (Agyapong, 2011; Dehghan, 2006; Parasuraman et al., 1985). The framework indicates that service quality is a predecessor of customer satisfaction.

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<sup>1</sup> Other models include Simalto and Conversion models

The study surveyed a total of 510 mobile telephone users, randomly selected around Gaborone, across the three mobile operators. The sample size was determined using the Cochran (1977) formula. The probability proportional to measure of size approach was used to allocate the sample across the three mobile operators; with the operator with the highest number of subscriptions taking the larger share. To determine the effect of service quality on customer satisfaction, which was the main objective of the paper, customer satisfaction (dependent variable) was regressed against the twelve service quality dimensions. The twelve dimensions of service quality used in the study were adopted from Parasuraman et al. (1985; 1988). The ordinary least square estimation technique was employed following Agyapong (2011) as follows;

$$Q = \alpha + \sum_{i=1}^n \beta_i X_i + \varepsilon_i \quad (1)$$

where,  $Q$  measures customer satisfaction,  $X_i$ 's are the service quality dimensions,  $\beta_i$  denote the coefficients to be estimated,  $\alpha$  is the intercept term and  $\varepsilon_i$  is the error term. Principal component analysis (PCA) technique was also employed in the analysis of the data. PCA is a multivariate technique used to reduce the number of variables in a data set into a smaller number of dimensions (Vyas and Kumaranayake, 2006). In mathematical terms, from the initial set of  $n$  correlated variables, PCA creates uncorrelated indices or components, where each component is a linear weighted combination of the initial variables. For example, from a set of  $X_1$  through  $X_n$ ,

$$\begin{aligned} PC_1 &= a_{11}X_1 + a_{12}X_2 + \dots + a_{1n}X_n \\ &\vdots \\ PC_m &= a_{m1}X_1 + a_{m2}X_2 + \dots + a_{mn}X_n \end{aligned} \quad (2)$$

where,  $a_{mn}$  represents the weight for the  $m$ th principal component and the  $n$ th variable.

The weights for each principal component are given by the eigen vectors of the correlation matrix. The variance ( $\lambda$ ) for each principal component is given by the eigenvalue of the corresponding eigenvector. The components are ordered so that the first component ( $PC_1$ ) explains the largest possible amount of variation in the original data, subject to the constraint that the sum of the squared weights ( $a_{11}^2 + a_{12}^2 + \dots + a_{1n}^2$ ) is equal to one (Vyas and Kumaranayake, 2006). As the sum of the eigenvalues equals the number of variables in the initial dataset, the proportion of the total variation in the original data set accounted by each principal component is given by  $\lambda_i/n$ . The second principal component ( $PC_2$ ) is completely uncorrelated with the first component, and explains additional but less variation than the first component, subject to the same constraint. Subsequent components are uncorrelated with previous components; therefore each component captures an additional dimension in the data, while explaining smaller proportions of the variation of the original variables.

**Table 1: Variable Description**

<b>Variable</b>	<b>Description/ definition</b>
<b>Access</b>	This refers to whether it is easy to access the services provided by the network, waiting periods as well as convenient operation hours and location.
<b>Assurance</b>	Knowledge of personnel and their ability to inspire trust and confidence.
<b>Communication</b>	Keeping customers informed about services in a manner in which they understand better.
<b>Competence</b>	This refers to whether the personnel have the necessary knowledge and skills to perform their duties.
<b>Courtesy</b>	Deals with whether personnel are polite, considerate and friendly, as well as the presentable in appearance.
<b>Credibility</b>	Involves the extent to which the network displays being honest, credible and trustworthy.
<b>Empathy</b>	Caring, individualized attention the network provides its customers.
<b>Reliability</b>	Ability to consistently perform the promised service accurately and dependably.
<b>Responsiveness</b>	Willingness to help customers and provide prompt service.
<b>Security</b>	Being free from danger, risk and doubt, both physically and financially; as well as whether issues of confidentiality are maintained.
<b>Understanding</b>	This refers to whether the network makes a conscious effort to know its customers' needs.
<b>Tangibles</b>	Physical facilities, equipment and appearance of personnel.

**Source: Parasuraman and Zeithaml (1988)**

## RESULTS AND DISCUSSIONS

### Descriptive Analysis of the Results

This section gives a narrative of the results of the analysis carried out, on the effect of service quality on customer satisfaction in the mobile telecommunications sector. Table A1 of the appendices shows the descriptive statistics of variables for the service quality measure. Respondents had to rate the level of importance they attributed to each service quality variable, for the particular mobile operator they affiliate with. Table A1 shows the average responses for all the mobile operators. Across all three mobile operators, the most important dimensions of service quality were shown to be; communication and courtesy at a mean score of 4.2. That is, for customers to deem an operator to provide a quality service there is need to communicate with customers through regular updates and promptly respond to their queries. Also, customers require operators to be polite, patient and sincere when assisting them (courtesy). The average rating of 3.8 for the tangibles dimension was the lowest across all networks, indicating that customers do not place a very high importance on the appearance of office space, staff and equipment used, as compared to other dimensions of service quality.

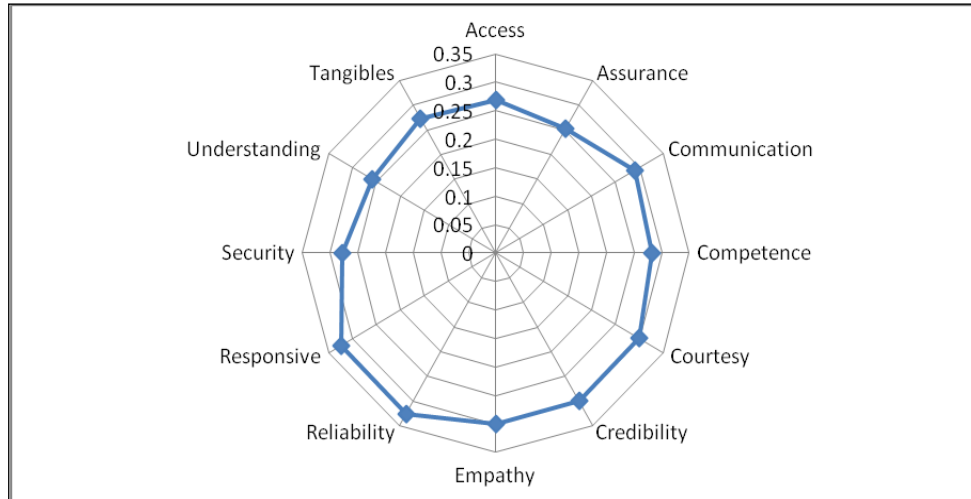
The descriptive statistics on Table A2 shows the respondents' perception on how their choice of mobile operator's service quality meets their expectations. The responses are on a scale of 1-5 (i.e. 1- much worse than expected, 2- worse than expected, 3- equal to my expectation, 4- better than expected and 5- much better than expected). Across all mobile operators,

customers felt that the mobile operators' level of courtesy when assisting clients was better than expected, with an average score of 3.8. This dimension still remained dominant when the responses were split according to the mobile operators, as customers from each of the three operators showed the highest rating for courtesy. When looking at the least scored variable for customers across all operators, waiting period had a consistent average score of 3.3 across the board. This indicated that the average waiting period experienced by the customers is as per expectation. In terms of overall satisfaction ratings across all mobile operators, the results of the survey showed that majority of the respondents, at 66.9 percent, were either satisfied or very satisfied with their network provider. About a quarter (25.9 percent) of the respondents indicated that they were neither satisfied nor dissatisfied with their mobile operator. Though this was not necessarily negative feedback, more could be done to unpack this apparent indecisiveness and work towards improving it to a "satisfied" rating.

Table A3 highlights the percentage variations as explained by the eigenvalues for each of the dimensions assessed, on the perceived level of service quality. The cumulative column in the table shows that 52.3 percent of the variations in the perceived service quality are due to issues of access (ease of access, waiting period and convenience). The eigenvalues of at least 1 provide insight on how many principal components to extract in our analysis. Therefore, based on Table A3, there are only three variables (pertaining to access) with eigenvalues above 1, indicating that our analysis will extract 3 principal components. Similarly, from Table A4, we obtain the percentage variations as explained by the eigenvalue for each of the dimensions assessed, on how the mobile operator's service quality meets customers' expectations. The cumulative column in the table shows that 62.7 percent of the variations in the perceived service quality are due to issues of access (ease of access, waiting period and convenience) and assurance (value added services and confidence). These two dimensions, (access and assurance), have the highest eigenvalues as indicated in Table A4 (figures bolded in the table). Based on the eigenvalues of at least 1 rule, Table A4 therefore shows that our analysis should extract 4 principal components.

A determination of the correlation between the principal components and the 12 dimensions of service quality in the study was carried out, as shown in Figure 1 and Table A5, in relation to the customer perceptions of service quality. Three principal components were extracted in our analysis, and due to standardization, they all had a zero mean. In determining the correlation, we looked at variables with the strongest correlation with component 1, as shown by the large magnitude, the farthest from zero in either a positive or negative direction. For the purposes of this analysis, our correlation value which indicated importance is at least 0.29 (figures bolded in Table A5). Component 1 was shown to be strongly correlated to six dimensions. The component increased with an increase in the mobile operator's; communication, courtesy, credibility, empathy, reliability and responsiveness. This suggested that these six dimensions vary together. If one increases, then the remaining ones also increase.

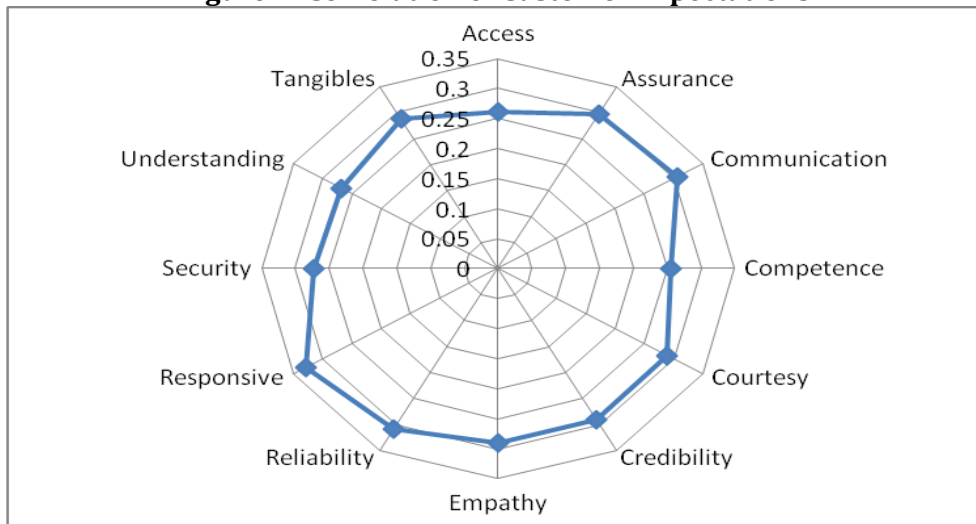
**Figure 1: Correlation of Customer Perception on Service Quality**



**Source: Author computed from survey data (2014)**

Figure 2 and Table A6 highlight the correlation between component 1 and the 12 dimensions of service quality, with respect to customer expectations. Component 1 showed a stronger correlation to three dimensions (communication, reliability and responsiveness). These indicated that the component increased with each of the dimensions. These results are consistent across customer expectation and service quality with regard to reliability and responsiveness dimensions. However, with regard to service quality, communication dimension showed a stronger correlation with component 1, whilst for customer expectation, credibility showed a stronger correlation with component 1.

**Figure 2: Correlation of Customer Expectations**



**Source: Author computed from survey data (2014)**

On average, customers across all mobile operators gave a score of 3.59, indicating that the level of service quality by the mobile industry was a little over their expectations. The scores when split according to the mobile operator indicated a slight difference between the scores of the 3 operators' subscribers. These scores ranged from 3.56 to 3.64 with a difference of between 0.04 and 0.08. Table A6 shows the gaps between perceived service quality and customers' expectations. The dimension with the largest gap was Credibility (importance score 4.07 and



expectation score 3.54). The top five dimensions, with a gap ranging from 0.44 to 0.53, were; Credibility, Access, Responsiveness, Competence and Courtesy. These values were all positive, a clear indication that the level of service quality perceived by the customers was more than expected.

### DETERMINANTS OF SERVICE QUALITY ON CUSTOMER SATISFACTION

Table 2 presents regression results for the service customer satisfaction models. We report the results for the overall model, where the independent variables account for about 19 percent of the total variation in the dependent variables. The F-statistic is highly significant ( $p < 0.001$ ), implying that the explanatory variables jointly exert significant influence on customer satisfaction.

**Table 2: Determinants of Customer Satisfaction**

<i>Variables</i>	<i>Coefficient</i>	<i>SE</i>	<i>t</i>	<i>P&gt;t</i>
Access	-0.14	0.21	-0.66	0.509
Assurance	0.41	0.19	2.16	0.031**
Communication	-0.03	0.22	-0.12	0.907
Competence	-0.09	0.17	-0.51	0.607
Courtesy	0.14	0.21	0.67	0.504
Credibility	0.32	0.19	1.66	0.098*
Empathy	-0.09	0.20	-0.44	0.658
Reliability	0.31	0.26	1.20	0.230
Responsiveness	-0.04	0.26	-0.17	0.866
Security	0.34	0.17	1.98	0.048**
Understanding	0.18	0.18	0.99	0.322
Tangibles	0.90	0.21	4.21	0.000***
Constant	-8.71	0.84	-10.34	0.000***
No. of observations	510			
F-Statistics	11.11			0.000***
Adjusted R <sup>2</sup>	0.19			

**Source: Author computed from survey data (2014)**

\*, \*\*, and \*\*\* significant at 10, 5 and 1 percent, respectively.

The overall model showed that, all the significant variables carry the expected signs. Across all operators; assurance, credibility, security and tangibles are the four variables shown to be the major determinants of customer satisfaction. Assurance positively relates with customer satisfaction, an indication that customers' knowledge of personnel and their ability to inspire trust and confidence positively relate with the customers' satisfaction level. The results are consistent with previous studies conducted in other countries, such as Agyapong (2011), which showed that the extent to which a mobile operator demonstrates a level of honesty and trustworthiness is of importance to customers in the mobile telecommunications sector, as demonstrated by the positive impact credibility has on customer satisfaction. Security positively relates to customer satisfaction, an indication that, customer satisfaction improves with the degree at which the mobile operator is perceived to maintain confidentiality and be less risky. Also, the positive relationship between tangibles and customer satisfaction shows that customers are very much concerned with the appearance of an operator's facilities, equipment and personnel.

## SUMMARY AND CONCLUSIONS

Botswana's telecommunications sector has shown significant growth over the years as evidenced by the increase in the number of mobile operators and by the total number of consumers of mobile service providers. Mobile operators grew from zero to the current three, and the number of consumers increased from about 106,000 in 2000 to 3.4million in 2014. The objective of this study was to assess the level of satisfaction and make a comparative analysis of the effect of service delivery on customer satisfaction in Botswana's mobile telecommunications sector. The specific objectives of this study were to determine the relationship between service quality and customer satisfaction in the mobile sector and compare levels and determinants of service quality between operators. The study surveyed a total of 510 customers, randomly selected across all three mobile operators around Gaborone.

The results of the study confirmed that indeed there exists a strong relationship between service quality and customer satisfaction in Botswana's telecommunications sector. Across the three networks, the most important dimensions of service quality were shown to be communication and courtesy. That is, for customers to deem an operator to provide a quality service there is need to communicate with customers through regular updates and promptly respond to their queries. Also, customers require operators to be polite, patient and sincere when assisting them (courtesy). The average rating of the tangibles dimension was the lowest across all operators, indicating that customers do not place a very high importance on the appearance of office space, staff and equipment used, as compared to other dimensions of service quality.

The results of the survey also showed that overall satisfaction ratings across all mobile operators indicated that majority of the respondents, were satisfied with their network provider and the results were consistent across the three mobile operators. On average, customers across all operators gave a score of 3.6, indicating that the level of service quality by the mobile industry were a little over their expectations. With regard to the gaps between perceived service quality and customers' expectations, the top five dimensions, with wider gaps were; Credibility, Access, Responsiveness, Competence and Courtesy, with gaps ranging from 0.44 to 0.53, a clear indication that the level of service quality perceived by the customers is more than expected. The regression results showed that, across all mobile operators; assurance, credibility, security and tangibles are the major dimensions that are significantly and positively related to customer satisfaction. Therefore, service providers need to focus on issues of assurance, credibility, security and tangibles among others to increase satisfaction levels among their customers.

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## APPENDICES

**Table A1: Descriptive Statistics for Service Quality by Mobile Operator**

Variable	Service Quality	Customer Expectations
Access	3.9	3.5
Ease of access to services	4.0	3.5
Waiting period	3.7	3.3
Convenience operating hours, location	4.1	3.6
Assurance	4.0	3.6
Value added services- music, internet	3.9	3.6
Instils trust and confidence	4.0	3.6
Communication	4.2	3.7
Updates customers	4.2	3.8
Response to queries	4.1	3.6
Competence	4.1	3.7
Employees' skills and knowledge	4.1	3.7
Courtesy	4.2	3.8
Employees polite and friendly	4.2	3.8
Employees sincere and patient	4.2	3.7
Credibility	4.1	3.5
Trustworthiness and transparency	4.1	3.5
Empathy	4.0	3.5
Individualized attention	3.9	3.5
Better understanding of customer needs	4.0	3.5
Reliability	4.0	3.6
Timely delivery of services	4.0	3.6
Truthfulness, dependable and consistent	3.9	3.6
Accurate Records	4.2	3.6

Responsiveness	4.0	3.5
Willingness to listen and assist	4.1	3.7
Promptly attend customers	4.0	3.5
Special care	3.9	3.4
Security	4.1	3.7
Confidentiality maintained	4.1	3.7
Understanding of Customer	3.9	3.5
Efforts to know customer needs	3.9	3.5
Tangibles	3.8	3.6
Attractive products	3.8	3.5
Appealing staff and offices	3.7	3.6
Up to date equipment	3.9	3.7

**Source: Author computed from survey data (2014)**

**Table A2: Descriptive Statistics for Customer Expectations**

Variable	Mascom	Orange	BeMobile	Total
Access	3.5	3.4	3.5	3.5
Ease of access to services	3.6	3.4	3.5	3.5
Waiting period	3.3	3.3	3.3	3.3
Convenience- operating hours, location	3.5	3.6	3.7	3.6
Assurance	3.6	3.7	3.7	3.6
Value added services- music, internet	3.6	3.7	3.6	3.6
Instils trust and confidence	3.6	3.6	3.8	3.6
Communication	3.6	3.8	3.8	3.7
Updates customers	3.7	3.9	3.8	3.8
Response to queries	3.5	3.7	3.7	3.6
Competence	3.6	3.7	3.6	3.7
Employees' skills and knowledge	3.6	3.7	3.6	3.7

<b>Courtesy</b>	3.8	3.9	3.8	3.8
Employees polite and friendly	3.8	3.9	3.7	3.8
Employees sincere and patient	3.7	3.8	3.8	3.7
Credibility	3.4	3.7	3.6	3.5
Trustworthiness and transparency	3.4	3.7	3.6	3.5
Empathy	3.5	3.5	3.6	3.5
Individualized attention	3.4	3.5	3.6	3.5
Better understanding of customer needs	3.5	3.5	3.5	3.5
Reliability	3.5	3.6	3.7	3.6
Timely delivery of services	3.5	3.6	3.6	3.6
Truthfulness, dependable and consistent	3.5	3.6	3.7	3.6
Accurate Records	3.6	3.6	3.8	3.6
Responsiveness	3.5	3.6	3.6	3.5
Willingness to listen and assist	3.6	3.8	3.7	3.7
Promptly attend customers	3.5	3.6	3.6	3.5
Special care	3.4	3.4	3.5	3.4
Security	3.7	3.7	3.6	3.7
Confidentiality maintained	3.7	3.7	3.6	3.7
Understanding of Customer	3.5	3.5	3.4	3.5
Efforts to know customer needs	3.5	3.5	3.4	3.5
Tangibles	3.6	3.7	3.6	3.6
Attractive products	3.5	3.6	3.6	3.5
Appealing staff and offices	3.6	3.7	3.5	3.6
Up to date equipment	3.7	3.7	3.6	3.7

**Source: Author computed from survey data (2014)**

**Table A3: Variations on Customer Perceptions of Service Quality**

<b>Variable</b>	<b>Eigenvalue</b>	<b>Difference</b>	<b>Proportion</b>	<b>Cumulative</b>
<b>Access</b>				
Ease of access to services	<b>9.859</b>	8.355	0.411	0.411
Waiting period	<b>1.504</b>	0.321	0.063	0.473
Convenience- operating hours, location	<b>1.183</b>	0.215	0.049	0.523
<b>Assurance</b>				
Value added services- music, internet	0.967	0.074	0.040	0.563
Instils trust and confidence	0.893	0.043	0.037	0.600
<b>Communication</b>				
Updates customers	0.850	0.037	0.035	0.636
Response to queries	0.813	0.051	0.034	0.670
<b>Competence</b>				
Employees' skills and knowledge	0.762	0.127	0.032	0.701
<b>Courtesy</b>				
Employees polite and friendly	0.635	0.010	0.027	0.728
Employees sincere and patient	0.625	0.015	0.026	0.754
<b>Credibility</b>				
Trustworthiness and transparency	0.610	0.029	0.025	0.779
<b>Empathy</b>				
Individualized attention	0.582	0.060	0.024	0.803
Better understanding of customer needs	0.521	0.013	0.022	0.825
<b>Reliability</b>				
Timely delivery of services	0.508	0.030	0.021	0.846
Truthfulness, dependable and consistent	0.478	0.016	0.020	0.866
Accurate Records	0.462	0.030	0.019	0.886
<b>Responsiveness</b>				
Willingness to listen and assist	0.432	0.020	0.018	0.904
Promptly attend customers	0.412	0.039	0.017	0.921

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Special care	0.373	0.010	0.016	0.936
<b>Security</b>				
Confidentiality maintained	0.363	0.024	0.015	0.951
<b>Understanding of Customer</b>				
Efforts to know customer needs	0.339	0.027	0.014	0.966
<b>Tangibles</b>				
Attractive products	0.312	0.043	0.013	0.979
Appealing staff and offices	0.269	0.022	0.011	0.990
Up to date equipment	0.247	.	0.010	1.000

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**Source: Author computed from survey data (2014)**



**Table A4: Variations on Customer Expectations**

<b>Variable</b>	<b>Eigenvalue</b>	<b>Difference</b>	<b>Proportion</b>	<b>Cumulative</b>
<b>Access</b>				
Ease of access to services	<b>10.728</b>	9.431	0.447	0.447
Waiting period	<b>1.297</b>	0.154	0.054	0.501
Convenience- operating hours, location	<b>1.143</b>	0.120	0.048	0.549
<b>Assurance</b>				
Value added services- music, internet	<b>1.023</b>	0.172	0.043	0.591
Instils trust and confidence	0.851	0.115	0.035	0.627
<b>Communication</b>				
Updates customers	0.735	0.040	0.031	0.657
Response to queries	0.695	0.040	0.029	0.686
<b>Competence</b>				
Employees' skills and knowledge	0.655	0.027	0.027	0.714
<b>Courtesy</b>				
Employees polite and friendly	0.628	0.054	0.026	0.740
Employees sincere and patient	0.575	0.028	0.024	0.764
<b>Credibility</b>				
Trustworthiness and transparency	0.546	0.011	0.023	0.787
<b>Empathy</b>				
Individualized attention	0.535	0.024	0.022	0.809
Better understanding of customer needs	0.511	0.029	0.021	0.830
<b>Reliability</b>				
Timely delivery of services	0.483	0.008	0.020	0.850
Truthfulness, dependable and consistent	0.475	0.034	0.020	0.870
Accurate Records	0.441	0.026	0.018	0.888
<b>Responsiveness</b>				
Willingness to listen and assist	0.415	0.014	0.017	0.906
Promptly attend customers	0.400	0.035	0.017	0.922
Special care	0.366	0.025	0.015	0.938
<b>Security</b>				
Confidentiality maintained	0.341	0.011	0.014	0.952
<b>Understanding of Customer</b>				
Efforts to know customer needs	0.330	0.034	0.014	0.966
<b>Tangibles</b>				
Attractive products	0.295	0.023	0.012	0.978
Appealing staff and offices	0.272	0.011	0.011	0.989
Up to date equipment	0.261	.	0.011	1.000

**Source: Author computed from survey data (2014)**

**Table A5: Principal Component Analysis of Customer Perceptions of Service Quality**

Variable	Component 1	Component 2	Component 3	Unexplained
Access	0.2679	<b>0.3525</b>	<b>0.4078</b>	0.3057
Assurance	0.252	<b>0.3755</b>	<b>0.4627</b>	0.3077
Communication	<b>0.2916</b>	<b>0.401</b>	-0.101	0.2979
Competence	0.2834	0.2098	<b>-0.4097</b>	0.3272
Courtesy	<b>0.2987</b>	0.0919	<b>-0.4102</b>	0.3045
Credibility	<b>0.3003</b>	0.0643	<b>-0.315</b>	0.352
Empathy	<b>0.2998</b>	-0.1497	-0.2368	0.3675
Reliability	<b>0.3258</b>	-0.0114	0.1868	0.3005
Responsive	<b>0.3233</b>	-0.2459	0.0678	0.2746
Security	0.2776	-0.2255	0.139	0.4479
Understanding	0.2598	<b>-0.5468</b>	0.0981	0.2771
Tangibles	0.2735	-0.2907	0.2227	0.408

Source: Author computed from survey data (2014)

**Table A6: Principal Component Analysis of Customer Expectations of Service Quality**

Variable	Component 1	Component 2	Component 3	Component 4	Unexplained
Access	0.262	<b>-0.339</b>	<b>0.561</b>	0.163	0.208
Assurance	0.297	-0.109	<b>0.420</b>	0.110	0.265
Communication	<b>0.307</b>	-0.120	0.295	-0.007	0.289
Competence	0.256	<b>0.674</b>	0.064	0.233	0.156
Courtesy	0.289	<b>0.496</b>	0.047	0.095	0.231
Credibility	0.290	0.125	0.019	<b>-0.479</b>	0.283
Empathy	0.290	0.077	-0.170	<b>-0.344</b>	0.336
Reliability	<b>0.308</b>	-0.160	-0.117	-0.256	0.289
Responsive	<b>0.329</b>	-0.033	-0.115	-0.040	0.259
Security	0.273	-0.223	-0.294	-0.285	0.348
Understanding	0.268	-0.196	<b>-0.462</b>	<b>0.479</b>	0.197
Tangibles	0.287	-0.151	-0.243	<b>0.416</b>	0.279

Source: Author computed from survey data (2014)

**Table A6: Gap Scores of Service Quality Dimensions**

Variable	P	E	Gap Score (P-E)
Access	3.93	3.46	<b>0.47</b>
Assurance	3.97	3.63	0.34
Communication	4.13	3.71	0.42
Competence	4.10	3.65	<b>0.45</b>
Courtesy	4.20	3.76	<b>0.44</b>
Credibility	4.07	3.54	<b>0.53</b>
Empathy	3.93	3.50	0.43
Reliability	3.96	3.59	0.37
Responsive	4.02	3.55	<b>0.47</b>
Security	4.08	3.68	0.40
Understand	3.89	3.51	0.38
Tangibles	3.79	3.62	0.17

Source: Author computed from survey data (2014)

P = Perceptions, E = Expectations (P – E = Service Quality Gap)

## The Relation Between Economical And Environmental Factors And Malaria Incidence In Khartoum State-Sudan

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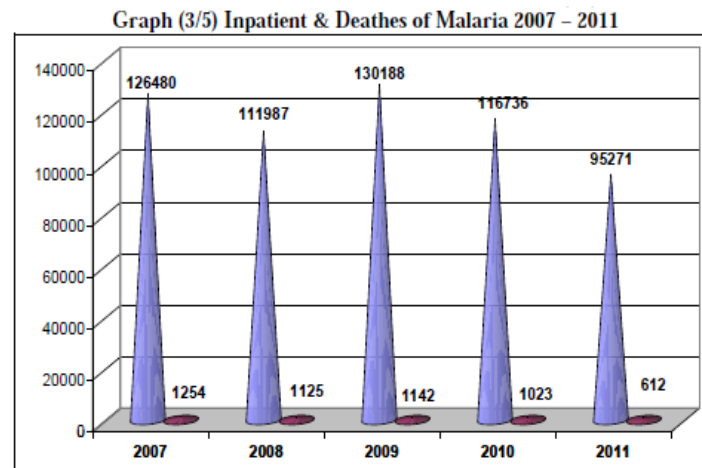
### Abstract

Malaria incidence is intimately linked to environmental quality and economic status of the family. However, few studies have evaluated the associations between environmental factors and economic status of families and prevalence of malaria among their children. Prospective population-based study on malaria was carried in Khartoum State. Sample size was 400 families, distributed between three different socioeconomic strata. Different quantitative and qualitative methods of data collection were used (questionnaires, interviews and observations). The prevalence of malaria was performed for children under five years old. The study found that income was the strongest influencing factor ( $P=0.000$ ) affecting negatively the prevalence of Malaria among children through affecting standard of living. Also there is strong relation between environmental factors (such as pit latrine and home size) and prevalence of malaria. Poverty and poor environment in home and around lead to increase malaria incidence.

**Keywords:** Malaria, environment factors, socioeconomic status, traditional prevention, children diseases.

### INTRODUCTION

Human health and well-being are intimately linked to environmental quality. A clean environment is essential for human health and well-being. However, the interactions between the environment and human health are highly complex and difficult to assess. An estimated 24% of the global disease burden and 23% of all deaths can be attributed to environmental factors (WHO, 2006). This makes the use of the precautionary principle particularly useful. The best-known health impacts are related to ambient air pollution, poor water quality and insufficient sanitation. Malaria is an important health problem of developing countries. Malaria incidence in Sudan was estimated to be about 9 million episodes in 2002 and the number of deaths due to malaria was about 44,000. Children under five years of age had the highest burden and males had the highest incidence and mortality (Abdalla, 2007).



From graph the inpatient and death by malaria increase in 2007 and 2009 and relatively decrease in 2011.

In Sudan, prevention relied heavily on vector control through insecticide spray, with minimum efforts toward early diagnosis and treatment. Bed nets have been in use for a long time.

This disease to a great extent was known to be related to sanitation of the house and the environment of the area surround it (Abd/ El-Gayoum et al (2009), Abbas (1994), Prathiba et al (2012). Households which have toilet facilities clean drinking water, and a greater number of rooms and mosquito nets in the rooms, have less chance to infect by malaria (Ayele et al, 2013). Therefore, this disease is prevalence in low socioeconomic areas (Tusting et al, 2013).

Poor families live in dwellings that offer little protection against mosquitoes. Improper excreta disposable will lead to soil and water pollution and food contamination and propagation of flies and other insects. This pollution and insects will affect home environment and family health. Annual health statistical report 2011 shows that malaria represents the second place (11.4%) among diseases leading to health units (children less than five years). But fortunately, Malaria recently is being out of ten diseases leading to death in hospitals for children less than five years (AHSR, 2011).

There are many factors contributed to the spread of malaria in Khartoum State, such as climate variables (rainfall, Temperature..etc)( Rasha etal, 2011). Also, large expansion of agricultural schemes particularly around residential areas, bad drainage system, the presence of an old decayed water piped net work, which is subject to continue breaks. All these factors provide suitable breeding grounds for vectors carrying diseases.

Traditional medicine is embedded in the Sudanese culture. Many authors talked about its old roots in Sudanese societies (Ibn def alla, 1974), (Alsafi, 1970)...etc. In Sudan popular health system play a major role in the health of people. The mother usually treats and prevents physical and spiritual diseases in home. Many mothers use some medicinal plants to treat or prevent from malaria. Some of them used the bark of *Cinchona succiruba* and fruits of *Tamarindus indica* used as drink, and other eat seven seeds from *Corton zambesicus* in the morning. Home remedies to malaria complication used also by mothers in Tanzania (Tarimo, 2000).

The study aims to determining the prevalence of malaria in Khartoum State, and investigate the relationship between economic and environmental factors with malaria incidence.

## **MATERIAL AND METHODS**

### **Study setting and participants**

This study was carried in Khartoum State, which is located between latitudes 15°26' and 15°45' N and longitudes 32°25' and 32°40' E, at an altitude of 405.6 m above sea level. In the last census 2008 Khartoum total population was (5.7) million.

### **Sample size**

The sampling unit used in the study was the family, which was defined as a group of individuals living together in a household. The family usually included the father, mother, offspring, and sometimes grandparents, aunts, and uncles. Research sample was 400 families.

### **Sample selection**

A multistage random stratified sampling technique was employed for the selection of the study population in this comparative study. The sample size (400 families) was divided into three strata: 120 families from Alriyad to represent the high socio-economical status (HSS), 180 families from Gebra representing the middle socio-economical status (MSS), and 100 families from Alremala representing the lower socio-economical status (LSS). The strata were distributed proportionally according to the size of the population in the catchment area for each center.

## **QUESTIONNAIRE**

A structured questionnaire was designed to fulfill the study objectives. It consisted of four sections: The first section was concerned with the personal and socio demographic characteristics of the participants (e.g., age, sex, and education). The second section of questionnaire is about economic status of the family (different sources of income). The third section is about environmental elements in home and surrounded areas. The fourth section is about malaria prevalence among children, and treatment type used for it (traditional or modern medicine).

The questionnaire design was the outcome of many steps including comprehensive literature review, and three referees reviewed it. To refine the questionnaire, a pilot study was undertaken to test the reliability of the questionnaire, and was completed by 21 volunteers in the three areas.

## **DATA COLLECTION**

Data were collected during 2012.

## **STATISTICAL ANALYSIS**

For the comparisons, the  $\chi^2$  test at 99% level of significance ( $p = 0.01$ ) was used. Data were analyzed by the SPSS program (statistical package for social sciences), the results presented by percentage and chi square test.

**RESULTS AND DISCUSSION**

**Table (1) Demographic characteristics of families**

Family size ≤ 5	290	72.5%
> 5	110	27.5%
Children Age\sex		
Male ≤ 5	136	52.3%
Female ≤ 5	124	47.7%
Family income		
< 301\$	268	67%
> 300\$	132	33%

**Source: fieldwork 2012**

The table above showed that a high percentage (72.5%) of families’ members less or equal to five, which reflects that family’s size is relatively small. Considering sex distribution among children; the percentage of male (52.3%) relatively higher than female (47.7%). Significantly, higher percentage (67%) of families earn less than 301\$, this definitely Reflects the poverty among this population.

**Table (2) Malaria spread among children**

Areas	Malaria		Total
	Yes	No	
Alriyad(HSS)	0 .0%	80 100.0%	80 100.0%
Gebra(MSS)	13 11.4%	101 88.6%	114 100.0%
Alremela(LSS)	7 10.6%	59 89.4%	66 100.0%
Total	20 7.7%	240 92.3%	260 100.0%

**Chi<sup>2</sup>-P=0.008**

**Source: fieldwork 2012**

The table above showed that there is a strong relation between residential areas with malaria. Malaria prevalence in Gebra (MSS) was higher probably because of the unhealthy environment of the area, a lot of mosquitoes during most of the seasons. This was detected by chi square test (P= 0.008). The surrounded area usually affected the spread of malaria more than home environment, this was clear from the results of the spread of insects, and these results agree with Abbas (1994) study. However, it was found that 85% from children infected by malaria their mothers complaining from mosquitoes all seasons.

**Table (3) the relation between families incomes and infected by malaria**

Income	Malaria		Total
	Yes	No	
< 301\$	20 11.9%	148 88.1%	168 100.0%
> 300\$	0 .0%	92 100.0%	92 100.0%
Total	20 7.7%	240 92.3%	260 100.0%

Chi<sup>2</sup>-P=0.000

Source: fieldwork 2012

The relation between family income and incidence of malaria was clear in table above all cases of malaria exist among family earns less than 301\$. Family income has a great influence in taking nutritional foods, house standard of living and availability of medical care. Moreover, income determines the availability of measurement using to fight mosquitoes, this agrees with Tusting et al (2013) study.

**Table (4) mosquitoes in the three areas**

Spread of mosquitoes	Area			Total
	Alriyad	Gebra	Alremela	
Yes	39 32.5%	145 80.6%	70 70.0%	254 63.5%
No	57 47.5%	20 11.1%	10 10.0%	87 21.8%
in some seasons	24 20.0%	15 8.3%	20 20.0%	59 14.7%
Total	120 100.0%	180 100.0%	100 100.0%	400 100.0%

Chi<sup>2</sup>-P=0.000

Source: fieldwork 2012

From the table above (32.5%) of Alriyad's residents were complaining from mosquitoes all seasons. Whereas, a high percentage (80.6%) of Gebra's residents complaining from mosquitoes all seasons, which represent the worst area according to spread of mosquitoes. Alremela also have a bad environment (70%) from its resident complaining from mosquitoes.

The environment around the house may be provides a suitable breeding ground for a wide range of vectors carrying diseases. Flies breeding and feeding in the scattered garbage around the houses or streets transmit diarrheal diseases, and where mosquitoes breeding in stagnant water cause malaria. All these reasons and others help in made bad and unhealthy environment. Even the family care about home environment and aware about preventive methods, the insects come from surrounded areas. This leads to increase malaria in this period.

It is noticed that Alriyad's streets are wide and clean, and garbage was collected by a proper way. Moreover most families care about cleaning near their houses, which is taken by their servants. From interviews with Gebra's mothers, they mentioned that the problem of unhealthy environment is due to many reasons; firstly the empty places, hence some poor families live as squatter settlement. Where they lack, the basic infrastructures essential for life and good health e.g. water supply, garbage collection and latrine. Second reason is the rare of channels and stagnate water after rain fall. These reasons lead to unhealthy environment with spread of flies, insects and mosquitoes carrying diseases like malaria and diarrhea.

In Alremela the problem of bad environment concentrated in narrow streets and spread of pit latrine, which lead to increase flies. Moreover, people live near river (western area of Alremela) believing that agriculture projects have contributed enough to increase of mosquitoes. The spread of insects and mosquitoes affected the distribution of diseases in these areas.

**Table (5) The relation between bath types and mosquitoes spread**

Exist of mosquitoes	Bath types		Total
	Tradition (pit latrine)	Siphon	
Yes	42 75.0%	212 61.6%	254 63.5%
No	7 12.5%	80 23.3%	87 21.8%
In some seasons	7 12.5%	52 15.1%	59 14.8%
Total	56 100.0%	344 100.0%	400 100.0%

**Source: fieldwork 2012**

The table above showed that majority (75%) from families who have pit latrine suffering from mosquitoes all seasons. Families which have toilet facilities have less chance of having mosquitoes, which agree with Ayele et al (2013) study.



**Table (5) The relation between malaria incidence and home size**

Number of rooms	Malaria		Total
	Yes	No	
≤ 3	12 11.1%	97 89.9%	108 100%
>3	8 5.3%	144 94.7%	152 100%
Total	20 7.7%	240 92.3%	260 100.0%

Source: fieldwork 2012

Home size has influencing factor affecting spread of mosquitoes in home. This clear from table above the percentage of children (11.1%) infected by malaria live in home with ≤ 3 rooms compared with 5.3% children live in home with >3 rooms. The negative relation between home size and malaria incidence is confirmed by Ayele et al (2013) study.

**Table (6) The relation between income and measures to fight mosquitoes**

Measures	Income		Total
	less than 301\$	more than 300\$	
Smoking	106 46.9%	9 13%	115 39%
Spray	95 42.0%	58 84.1%	153 51.9%
bed nets with others measures	18 8%	0 .0%	18 6.1%
regular cleaning	7 3.1%	2 2.9%	9 3%
Total	226 100.0%	69 100.0%	295 100.0%

Source: fieldwork 2012

It is well known that mosquitoes transmitted parasite of Malaria. Therefore it is important to fight it by effective measures in addition to regular home cleaning. The table above shows that

51.9% of all sample using spray to fight mosquitoes. The majority (84.1%) of families who earns more than 300\$ using it. Spray is effective measure to fight mosquitoes, but it's expensive and not available to most common people. Whereas the percentage of families used smoking (traditional methods) 64.7% earn less than 301\$ compared with 13% families earn more than 300\$, and it is clear that the percentage increase with income. The common smoking used to fight mosquitoes in Sudan is Acacia seyal Del. Minority percentage (6.1%) and (3%) used bed nets with other measurement and depend on regular cleaning to decreased mosquitoes respectively.

It is observed that the common type of families in Sudan is the extended families. Hence, the grandmother still plays a major role in providing health care for all members of the families. The study found that there is a negative relation between family income and using home remedies, a high percentage (37.3%) of mothers who selected home remedies as the first choice in the case of illness, their families' earned less than 301\$ monthly, because economic status affecting directly the selection of treatment types by the determination of facilities and access to medical treatment, and that agreed with Abdalla study (2003).

Famous prevention mixture used by some families constituted from six plants mixed with bee honey: Solenostemma argel, Acacia nilotica, Tamarindus indica, Cymbopogon schoenanthus, Hibiscus sabdriffa and Phoenix dactylifera. From interviews, some families used in the treatment the bark of Cinchona succiruba and Khaya senegalensis, the fruits of Acacia nilotica, the shrubs of Sonchus oleraceus and the leaves of Azadirachta indica.

#### **CONCLUSION AND RECOMMENDATIONS:**

Risk factors for malaria are almost always concentrated in the lowest social and economic categories of societies. Poverty and poor environment in home and around lead to increase malaria incidence. The study found that the first factor lead to increase malaria is poor environment i.e. rare channels, stagnant water....etc.

The study found that income was the strongest influencing factor (P=0.000) affecting negatively the prevalence of Malaria among children through affecting standard of living and the type of measurement used to fight mosquitoes. Spray is effective measure to fight mosquitoes, but it's expensive and not available to most common people. Therefore, majority (84.1%) of families who earns more than 300\$ using it. Also there is strong relation between environmental factors (such as pit latrine and home size) and prevalence of malaria.

The study recommended that the government must states policies to improve standards of living as general. Moreover primary health care must be appropriate, accessible, acceptable, and affordable and requires to common population. Because inadequate and unavailability may force mothers to search other solution to their families' health problem, even there are risk.

The people, NGOs and local committees should give the priority to preventive measures, this can done by a major role in controlling vectors of diseases. Moreover, must give big attention to sanitation environment. The people can participate in the different stages of mosquito control activities. This can be done by keeping the environment clean (home and surrounded areas).

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## How much does rice price influence milled paddy price? Analysis of price integration in Indonesia

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### ABSTRACT

This study analysis how much the price of rice influences the price of milled paddy. The results can aid in policy suggestions related to the price of rice. If the price of rice has a big impact on the price of milled paddy, increasing rice prices could be an effective policy to increase the price of milled paddy. This would desire farmers to increase production and create food security. If is the little effect, this policy would not be effective. The impact of this policy might harm consumers and increase poverty. The analysis was carried out using price integration and data from Indonesia. The data were taken from January 1, 2007, to December 31, 2014. The results show that rice prices influence the price of milled paddy, but not proportionally since increases in milled paddy price are always lower than increases in rice prices. Thus, increasing the price of rice to increase the price of milled paddy to help the farmers is not effective because it does not substantially increase farmer income and will not be effective for stimulating production. This phenomenon occurs because for many farmers (especially small farmers), the market structure is nearly a monopsony market. As a suggestion for make increasing rice prices more effective, the government could intervene via Indonesian logistics Bureau to make the market more competitive. This intervention could create competition for traders in the monopsony market.

**Keywords:** The price of rice, the price of milled paddy, the integration of price, food price policy.

### INTRODUCTION

Information on the influence rice price is important for food policy in Indonesia since rice is the staple food [1]. However, there are problems with government policy. Reducing rice prices to make it more affordable could threaten food security and impact the price of paddy. If rice prices are low, the price of paddy will be low too and rice farming will not be profitable. Thus, many farmers will leave paddy farming. However, policies to increase rice prices would harm most people in Indonesia since rice is the main food, and poor people would suffer.

This research is an extension of previous research [2]. The previous findings were only for large and medium farmers, for whom the prices of rice affect the price of paddy. But for small farmers, rice prices have no effect on the price of paddy because the structure of the market is close to a monopsony. The influence of rice price on paddy price is proportional for large farmers, which means the increase of rice price leads an almost equal rise in milled paddy price. However, the relationship for medium farmers is disproportionate, with one percent increases in the price of rice resulting in increases of 0.62 percent in paddy prices.

The previous research was conducted in only one district and cannot represent other regions in Indonesia. However, in 2006, the Ministry of Agriculture of the Republic of Indonesia

started distributing daily data on the prices of rice and milled paddy on their website. The can be used to analyze the effects on a national scale. This research uses data from January 1, 2007, until December, 31, 2014.

The section discusses the analysis plan. The analysis was done through a simple linear regression and correlation. Section 3 discusses the cointegration analysis, which was used because the price of milled paddy is also influenced by historical prices, and this phenomenon cannot be analyzed by a simple linear regression. Finally, a discussion and conclusions are presented.

### ANALYSIS METHOD

The analysis methods used in this research are regression, correlation, and cointegration. Regression analysis was first used to measure the influence of prices, and correlation was used to measure the integration. Influence is the dependency a dependent variable (the price of milled paddy) on an independent variable (the price of rice) [3]. The regression analysis determines how much the price of rice will increase the milled paddy price. The model used in this analysis is:

$$Pp = a + b Pr + u \quad (1)$$

where  $Pp$  is the price of a milled paddy,  $a$  is a constant,  $b$  is a coefficient of the proportion of increase in rice prices due to the rising price of milled paddy,  $Pr$  is the price of rice, and  $u$  is a residual variable. The price of rice otherwise affects the price of milled rice when the probability of acceptance  $H_0$  is  $<0.05$ .

Correlation analysis is commonly used to measure integration [3]. Variables affect each other in integration, and correlation analysis cannot measure the level of influence. Nevertheless, correlation analysis is still required because in reality, the prices of rice and milled rice affect each other.

The next analysis is more complex, which is required because past prices influence the price of milled paddy. Thus, it is necessary to analyze the data with a time series, but milled paddy price data is not available in this form because sales transactions do not occur every day for milled paddy. Milled paddy sales transactions generally occur after harvest. Thus, the existing daily data can only be analyzed with regression and correlation. To analyze the data as a time series, the data must be merged across time and location. This involves combining daily data into monthly average data. between throughout Indonesia.

An Error Correction Model (ECM) was then used to analyze cointegration. ECM can be used to analyze the cointegration of two variables [4]. The ECM equation was modified from Gujarati and Porter [4] and adapted to the context of this research:

$$\Delta P_{p,t} = \alpha_0 + \alpha_1 DP_{r,t} + \alpha_2 u_{t-1} + \varepsilon_t \quad (2)$$

The data  $u_t$  can also be used to test whether the data is stationary or non-stationary. ECM requires analysis of the data in a stationary form. Testing for whether the data is stationary is done using the Augmented Dickey Fuller (ADF) test.  $\varepsilon_t$  is a residual variable. The equation was calculated using Eviews software, which is a statistical program for econometric analysis. Data were obtained for the daily prices of medium-quality rice and milled paddy in cities and districts throughout Indonesia [5]. According to the Central Bureau of Statistics of Indonesia,

there are 413 districts in Indonesia and 98 cities [6]. However, price data are not distributed for every day and every district or city since sales transactions do not occur every day.

## RESULTS

### Simple Analysis

The number of data points was 47,842. The data were analyzed using SPSS software. The data are divided by year to see the effects of changes from year to year. The analysis results are shown in table 1.

**Table 1. Values Of Regression and Correlation of The Prices of Rice With Milled Paddy in Indonesia Between 2007 to 2014**

Year	Regression	Correlation	Significant
2007	0.2754	0.5802	***
2008	0.2665	0.5183	***
2009	0.4048	0.4414	***
2010	0.4457	0.4171	***
2011	0.3052	0.5506	***
2012	0.2343	0.3583	***
2013	0.2654	0.4308	***
2014	0.3572	0.6040	***

\*\*\*: very significant  $\alpha < 0.01$

The table shows the important numbers only. The effect is the regression coefficient value, which shows how large the proportion of the increase in the price of milled paddy is when rice prices rise by one unit. The value of these effects appears to change every year, but all values are below 0.5. This means that the increase in the price of rice was not proportional to the increase in the price of paddy. The integration value is a correlation value, which changes every year, but all values are very significant. It can be concluded that the price of rice has integration with the price of rice paddy.

Next is the analysis of the influence and integration in areas of Indonesia. The analysis cannot be done for all regions in Indonesia because there is too much data to include in this paper. Therefore 20 regions are presented in the table. Regional selections are based on the most number of data available, since more data result in a more accurate analysis. The SPSS results are shown in the following table.

**Table 2. The influence and integration of rice and paddy prices in the regions in Indonesia**

No.	Region	Regression	Correlation	Significant	Number Data
1	Tapanuli Selatan	0.4433	0.9192	***	1761
2	Karawang	0.5615	0.8332	***	1083
3	Bandung	0.5200	0.9408	***	1011
4	Tanggamus	0.4275	0.9281	***	886
5	Kulon Progo	0.4930	0.9711	***	873
6	Jember	0.4827	0.9237	***	828
7	Hulu Sungai Utara	0.7368	0.9650	***	800
8	Agam	0.7378	0.8977	***	759
9	Majalengka	0.5367	0.9413	***	759
10	Subang	0.5739	0.8973	***	755
11	Ngawi	0.5041	0.9181	***	745
12	Indramayu	0.5356	0.9355	***	735
13	Asahan	0.4209	0.8688	***	637
14	Lampung Selatan	0.4557	0.9249	***	621
15	Sleman	0.4883	0.9329	***	618
16	Kupang	0.0160	0.0766	0.0608	600
17	Sopeng	0.5273	0.9538	***	582
18	Lamongan	0.4595	0.9429	***	573
19	Kuningan	0.2820	0.4846	***	563
20	Badung	0.5676	0.7143	***	542

The table shows that the influence and integration vary in each region. In general, rice prices affect the price of milled paddy significantly. In the area of Kupang only, rice price has no effect on the price of paddy at a 95% confidence level. The different value of regression in this area will be the subject of future study on the factors that affect integration between the price of paddy and rice. This research only focuses on whether there is price integration in Indonesia

### Advanced Analysis

The advanced analysis was conducted using cointegration analysis. The fluctuation of the prices of rice and milled paddy can be seen in figure 1. The figures show that the price of milled paddy is always integrated with the price of rice. If the rice price increases, the price of milled paddy increases.

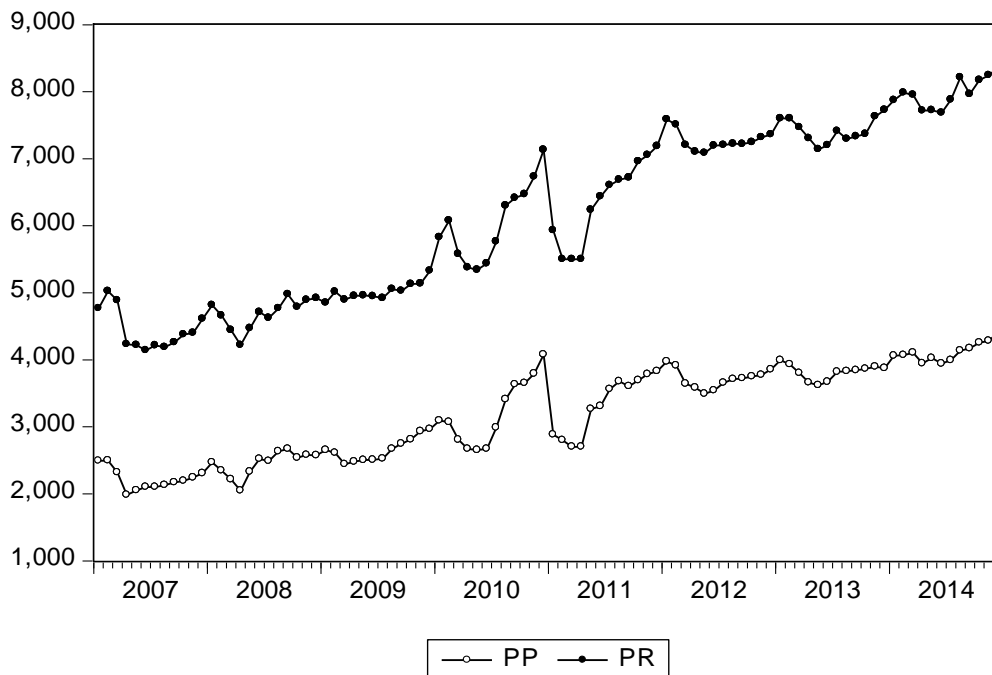


Figure 1. The price of rice and milled paddy prices in Indonesia.

Table 3. Test unit root

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-6.082198	0.0000
Test critical values:	1% level	-3.503049	
	5% level	-2.893230	
	10% level	-2.583740	

Table 4. Results of cointegration analysis.

Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
0.284037	31.09868	15.49471	0.0001

Table 4 shows the statistical trace values that exceed the critical value, so the probability of acceptance H0 is <0.01. Thus, the conclusion is that there is cointegration at a level below 1%. The effects of rice price and previous price from ECM are shown in table 5.

Table 5. The results of ECM

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-5.989594	8.268207	-0.724413	0.4707
D(PR)	0.686608	0.034125	20.12055	0.0000
ET(-1)	-0.352627	0.069309	-5.087752	0.0000

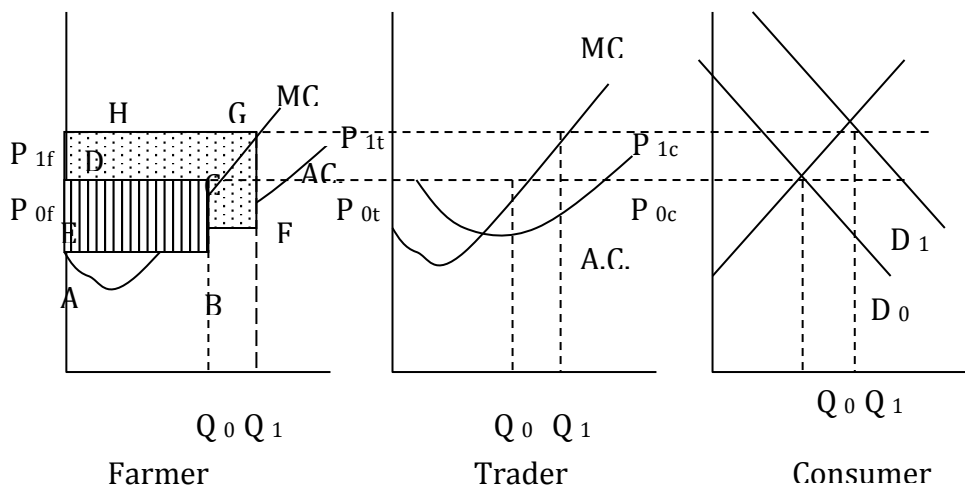


The table shows that the effect of the price of rice (D(PR) and previous prices (ET (-1)) on the price of milled paddy is very significant. This is evident from the value of the probability of acceptance  $H_0 < 0.01$ . Thus, the conclusion is that milled paddy prices have integration with the price of rice. The influence value of the price of rice was 0.68, indicating that an increase in rice price by one unit will be followed by of price increase of milled paddy by 0.68 units. The increase is not proportional, and the percentage increase in the price of milled paddy will be lower than the increase in the price of rice.

**DISCUSSION**

The results show an integration effect of the price of rice with the price of milled paddy in Indonesia. The influence varies from year to year and between regions, but all the regression coefficient values are less than one. The price increases are disproportionate, and the increases in rice price may not increase the family income of paddy farmers.

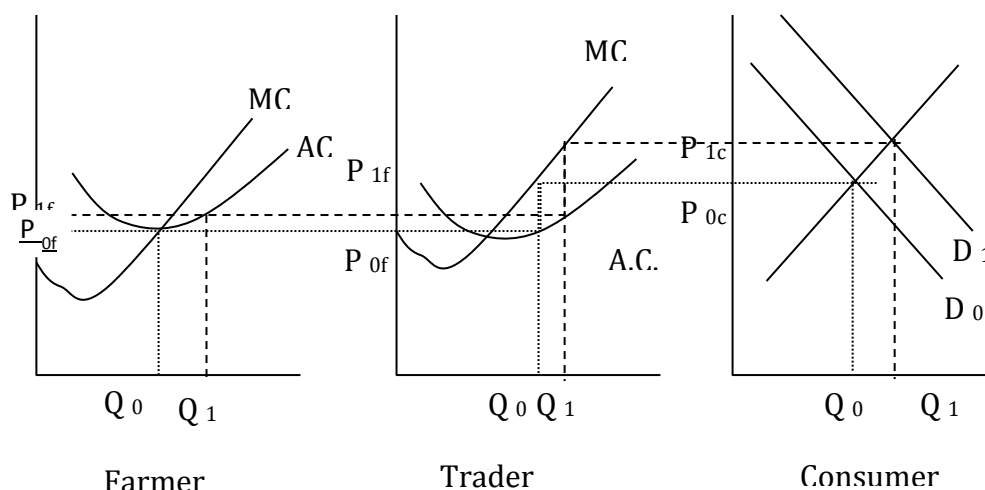
A previous study explains how price increases were not proportional to increases in the price of milled paddy based on the effect of the market structure on the integration [2]. In the market for milled paddy, there are two opposing main structures: a perfectly competitive market structure and a monopsony market structure. The effects of the price of rice on milled paddy prices are illustrated in figure 2.



**Figure 2. Effect of increases in the price of rice on milled paddy price) in a perfectly competitive market [2].**

In this figure, all variables are constant except for changes in prices and profits of farmers. If the demand for rice increases from  $D_1$  to  $D_0$ , the rice price changes from  $P_{0c}$  to  $P_{1c}$ . With rising prices, a trader will buy rice with a proportional increase in prices at the farm level of  $P_{1f}$  to  $P_{2f}$ . This is due to the absence of a market barrier in a perfectly competitive market, where many other merchants come and compete with the traders to buy milled paddy from farmers. Due to the proportional increase in the rice price, the profit of the farmers will be changed from rectangle  $ABCD$  to rectangle  $EFGH$ . Thus, the conclusion is that proportionate price increases will improve the profitability of paddy farming.

A monopsony situation is different from a market with perfect competition because there is a strong barrier for other traders to enter the market. The effect of increases in the price of rice for milled paddy prices in a monopsony market can be seen in figure 2.



**Figure 2. Effect of increase in the price of rice on milled paddy prices in a monopsony market. [2]**

In a monopsony market, there is only one trader in the area who can buy milled paddy produced by farmers. Traders will maximize profits by buying paddy for the average production cost (AC) of the farm. At that price, the farmer will still sell if the price is not less than the average production cost (AC). Farmers cannot obtain a higher price because there are no other traders. If there is an increase in rice prices in the consumer market from  $P_{0c}$  to  $P_{1c}$ , then traders will only raise prices along the curve of AC for farmers. Thus, the increase in the price of rice will not be proportional to the increase in the price of milled paddy.

However, there is no truly competitive market or perfect monopsony market. The market structure has degrees of monopsony markets, such as oligopsony and oligopsonistic competition, which extend to near perfect competition. When approaching perfect competition, price rises in milled paddy will be proportional to increases in the price of rice, but when approaching a monopsony market structure, the increase will be more disproportionate. Proportional increases will increase farming profits, while disproportionate increases will not increase profits.

In the case of integration of the rice price with the price of milled paddy, there will be an increase in the income of family farms if the rice price increases, but not if there is no integration. Research result of Makbul [2] divided farmers into three groups: large farmers, medium farmers, and small farmers. Large farmers have more than one hectare of land, medium farmers have between one-half and one hectare, and small farmers have less than half a hectare. The results showed that the large farmers experienced a significant influence of increases in rice price on the price of milled paddy with a regression coefficient of 1.03. Thus, the increase is proportional. Large farmers are in a competitive structure where farmers can sell to every trader anywhere they want. The research shows that large farmers benefited from increases in the price of rice, and family income increased significantly.

Among middle farmers, the increase in rice prices significantly influence the price of milled paddy, but the regression coefficient is 0.62. This suggests that the increase is not proportional, so farmers experience a more monopsonistic market structure or monopsonistic competition. In this case, traders have limited power to determine price. The results showed that an increase in the price of rice will increase farm family incomes significantly. However, for small

farmers, increases in rice price have no significant effect on the price of milled paddy. The results showed no significant effect of the increase in the price of rice on the family income of farmers. This happens because small farmers rely heavily on merchants, who can thus determine the purchase price of milled paddy from farmers. The structure of this market is a monopsony structure. The results of an agricultural census in 2013 indicated that 57 percent of farmers in Indonesia are small farmers [7]. Thus, for more than half of rice farmers in Indonesia, family incomes do not increase when the price of rice increases.

According to Mubyarto [8], small farmers often practice *ijon*, which means that farmers sell paddy before it is harvested. Usually farmers do this because they have financial problems and request a loan from a merchant. The traders will help farmers with financial problems, but it is the traders who determine the price of milled paddy. This phenomenon is a type of monopsony market. Furthermore, the reduced role of Bulog (the Indonesian Bureau Logistics) in stabilizing the price of rice has led to the emergence of an oligopsonistic market [9]. Bulog is a government organization that helps stabilize rice prices in Indonesia, and its role diminished after the reform of governance in Indonesia in 1998. Furthermore, rice traders have taken over their role. Some wholesalers of rice predominantly cooperate to perform vertical and horizontal integration in the rice economy. Vertical integration involves combining business of purchasing paddy, paddy processing into rice, and rice sales in a cooperating group. Horizontal integration involves cooperation in the rice trade between traders who already know each other and have a kinship between them [9]. The activities of the rice traders have formed a cartel oligopsony.

This study did not show an increase in rice farming profits or increasing the income of farm families. Importantly, if there is no increase in rice farming profits, farmers will leave paddy farming and switch to other businesses. If this situation continues, it will threaten food security in Indonesia. Food security in this matter means that the government has the authority to meet the food needs of the people of Indonesia with its own resources [1]. Food security is important because of food safety concerns. If food security is neglected and the country becomes dependent on food imports, food security will be threatened when there is turmoil in the international rice market. According to Anderson and Strutt [10], China's state dependency on food imports has contributed social unrest in the country.

Food policy is aimed at increasing the price of rice to give farmers the incentive to continue paddy farming and maintain food sovereignty. However, such policy can increase poverty in Indonesia. According to Pfeiffer [11], an increase in the price of rice in Indonesia by 10 percent would increase poverty by four percent, and an increase by 30 percent would increase poverty by 14 percent. McCulloch [12] concluded that an increase in the price of rice will lead to an increase in urban and rural poverty, and even for small paddy farmers. According to Syafaat [13], for small farmers, only 26.5 percent of their income is from farming, and the rest is from other businesses. Furthermore, 70 percent of poor households are spending money to buy rice [14]. Thus, for poor farmers, a rice price hike will lead to an increase in the cost of living. Government policy to reduce food prices will also increase productivity in the agri-food sector. According to Dorward [15], low food prices will increase the growth of the broader economy, which in turn will increase the productivity of workers in the agricultural sector, especially small farmers.

Government action is thus required to address this dilemma. If the government desires food security, the price of rice should be increased, but this will increase poverty. To provide an incentive to farmers to continue farming, the price increases of paddy should be proportional to the increase in rice prices. Research is needed to explore factors that affect the proportionality of increases in rice price to the price of milled rice. If the monopsony market

structure is one such factor, a program will be needed to reduce this structure in the paddy market.

Bulog managed to stabilize the price of rice in Indonesia through the ceiling and floor prices [18]. Bulog can reduce the monopsony market structure in the rice market by providing a competitor against traders who have a monopsony in the paddy market. If the price increase is not proportional to the milled paddy price increases, then Bulog could buy milled paddy from farmers with an increase similar to the increase in the price of rice. In microeconomic conditions, Bulog will not have a financial loss, but in macro conditions, it will generate major economic benefits for the economy of rice in Indonesia. The benefit is that farmers have the right to benefit from increases in rice prices, which will be an incentive to farmers to increase production. Increased rice production will support food security in Indonesia.

In reality, it is not easy to implement this concept, and many unforeseen problems could arise. Changes in the price of rice are ever-changing and difficult to ascertain, but through the experience of Bulog, some adjustments can be made, such as accepting small profits to reduce the risk of price changes. In this case, it is possible to accept a reasonable profit but not to maximize profit. The purpose of such a program is not to maximize profits but to help farmers receive fair prices in accordance with increases in rice price. Furthermore, implementation of this program would not be carried out for all regions, but only in areas where monopsony practices occur.

## CONCLUSION

The research results indicate that the price of rice integration with and has a significant influence on the price of milled rice in Indonesia. Nevertheless, increases in rice price are not proportional to the increase in the price of milled paddy. The increases milled paddy prices are always lower than those of rice. This means that the price increases are mostly enjoyed by others who seek to profit from economic rents. If the government desires food policies to achieve food security, high rice prices are necessary but result in increased poverty. However, if the price increase is not entirely up to the farmers, then such policies will be futile, and food security will be difficult to accomplish.

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## Assurance of Learning and Assessment at the Business Degree Program and Major Levels

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### Abstract

This study presents one business school's experiences in simultaneously undergoing the accreditation processes of both the Association to Advance Collegiate Schools of Business International (AACSB) and the Middle States Commission on Higher Education (MSCHE). AACSB International is a worldwide accreditor of business schools, while MSCHE is a regional accreditor of colleges and universities in the Middle States region of the United States and several other locations internationally. It discusses the process of assurance of learning (AOL) and assessment at the degree program level for the business school's AACSB accreditation and at the major level for the institution's MSCHE accreditation.

**Keywords:** Assurance of learning, assessment, accreditation, AACSB, MSCHE

### INTRODUCTION

The Association to Advance Collegiate Schools of Business International (AACSB) accreditation is a highly sought designation by business schools in the United States and around the world. It is recognized as the most prestigious accreditation a business program can earn. To date, 786 business schools in 53 countries and territories have earned AACSB accreditation (AACSB, 2017).

The Middle States Commission on Higher Education (MSCHE) is a non-governmental peer-based association, accrediting higher education institutions in the Middle States region of the United States and several other locations internationally. MSCHE accreditation is an important way that an institution can publically demonstrate its accountability and its commitment to striving for and achieving excellence in higher education. To date, MSCHE has accredited 525 institutions, with 19 of them from other countries (MSCHE, 2017b).

While AACSB accreditation is awarded to business programs, MSCHE accreditation is awarded to an institution of higher education. Thus a business school would receive AACSB accreditation, whereas its university would be accredited by a regional accrediting association such as MSCHE.

Both of these accreditations require demonstrated evidence of assurance of learning (AOL), i.e., demonstrating that a program's learning goals have been met. Yet their requirements are at the different levels. AACSB states that AOL activities should occur at a degree program level (e.g., bachelor's, master's), while MSCHE focuses on AOL activities at a major program level (e.g., Management, Marketing, etc.)

This study presents one business school's experiences in simultaneously undergoing the accreditation processes of AACSB and MSCHE. It discusses the process of assurance of learning (AOL) and assessment at the degree program level for the business school's AACSB accreditation and at the major level for the institution's MSCHE accreditation. The lessons learned are discussed.

## **AOL AT THE DEGREE PROGRAM LEVEL FOR AACSB ACCREDITATION**

### **Background**

AACSB revised and adopted its business accreditation standards in 2013 (the 2013 Standards). These new standards represent major revisions from the prior 2003 accreditation standards (the 2003 Standards). These changes necessitated that business schools, pursuing initial accreditation or re-accreditation, fully understand the differences between the two sets of standards so as to work more effectively towards compliance with the new standards, including the related documentation requirements. A number of articles related to the 2013 Standards have appeared in the literature. These articles examined major changes in the 2013 Standards, as compared to the 2003 Standards (Abdelsamad, et al., 2015), surveyed AACSB member deans' perceptions towards the 2013 Standards (Miles, et al., 2015), and discussed the implications of the 2013 Standards for business faculty and deans (Miles, et al., 2014).

The 2013 AACSB accreditation standards consist of 4 sections and 15 standards, with the AOL-related standards listed in Section 3 (see Table 1).

**Table 1: The 2013 AACSB AOL-related Accreditation Standards**

Sections	Standards in Section 3
1. Strategic management and innovation (Standards 1-3)	Standard 8: Curricula management & AOL
2. Participants—Students, faculty, & professional staff (Standards 4-7)	Standard 9: Curriculum content
3. Learning and teaching (Standards 8-12)	Standard 10: Student faculty interaction
4. Academic and professional engagement (Standards 13-15)	Standard 11: Degree program educational level, structure, & equivalence
	Standard 12: Teaching effectiveness
Adopted: April 2013; Most recent update: January 2016. Source: <a href="http://www.aacsb.edu/accreditation/standards">www.aacsb.edu/accreditation/standards</a>	

To align AOL activities with the 2013 accreditation standards, it is necessary to take a closer look at the 3 AOL-related standards in Section 3 (i.e., Standards 8, 9, and 11). Standard 8 states that *"The school uses well-documented, systematic processes for determining and revising degree program learning goals; designing, delivering, and improving degree program curricula to achieve learning goals; and demonstrating that degree program learning goals have been met"* (AACSB, 2013, p. 29). Standard 9 states that *"Curriculum content is appropriate to general expectations for the degree program type and learning goals"* (AACSB, 2013, p. 31). Standard 11 states that *"Degree program structure and design, including the normal time-to-degree, are appropriate to the level of the degree program and ensure achievement of high-quality learning outcomes. Programs resulting in the same degree credential are structured and designed to ensure equivalence."* (AACSB, 2013, p. 34)

It is important to understand that degree program learning goals stated in these AACSB accreditation standards refer to the educational expectations for a degree program (e.g., bachelor's, master's), rather than the learning goals for individual majors or concentrations within a degree program (Marshall, 2007). For example, a school with a Bachelor of Science degree program (BS) may have several majors (e.g., Accounting, Finance, Management Marketing, etc.). All of these major programs should have the same degree program learning goals.

### **Implementation of AOL at the Degree Program Level**

This section discusses an AOL process implemented at the business school of a middle-sized public university in New Jersey, USA, in compliance with the 2013 AACSB AOL Standards. The business school has 8 undergraduate major programs. It received the AACSB accreditation under the 2003 Standards and is currently in the process of applying for re-accreditation under the 2013 Standards.

To comply with the new accreditation standards, the school revised its AOL process. Since the AACSB AOL-related accreditation standards are stated at the degree program level, the school's AOL framework was developed at the college level with the program learning goals mapped into the business core courses. The assessment plan was then developed and implemented at the business core course level. The assessment results were used to close the loop, i.e., developing an action plan for the ongoing business program and its curriculum management and improvement and for enhancing student learning experiences.

Development of the AOL framework at the degree program level includes: (1) state clearly the program learning goals; these goals usually have conceptual definitions; (2) define learning objectives for each program learning goal; these learning objectives should have operational definitions; and (3) map the program learning objectives into business core courses with the specifications as where each program learning objective is introduced and reinforced and where and how often the AOL assessment data will be collected. This stage leads to a rubric that ties the degree program goals to most, if not all, business core courses and shows the overall assessment plan at the degree program level. A college-wide AOL committee is needed with one faculty representative from each business core course.

Development of the assessment plan at business core course level includes: (1) develop course-based measurable assessment criteria for each business core course, based on its assigned degree program learning objective(s); (2) select assessment instrument(s) for course-based assessment criteria; and (3) define performance levels (used to group students; e.g. excellent, satisfactory, and unsatisfactory) and target performance (e.g., at least 90% of students will perform at satisfactory or higher level). The assessment instruments may be direct or indirect, course-embedded, case studies, team projects/papers, presentations, etc. The literature has provided rich sources about this subject (Bamford et al., 2012; Gibson, 2011; Jayashree & Mitra, 2012; McConnell et al., 2008; Payne et al., 2008; Phelps & Spangler, 2013; Price & Randall, 2008; Weldy & Turnipseed, 2010). In summary, this stage leads to a course-based assessment rubric for each business core course involved. This rubric details the assessment activities and can be used for assessment data collection and reporting. This stage requires collaborative teamwork among the faculty members who teach the same course. A course coordinator is needed to play an instrumental role.

The last stage of AOL at the degree program level is to implement the program assessment plan at the business core course level and utilize the assessment results to close the loop. It requires that all faculty members who teach the same business core course follow the established assessment plan, use the same assessment tool, and collect the assessment data during the same planned semester. A course coordinator is needed to send out assessment reminders and aggregate the data from all sections. The gaps between expected performance and actual performance are identified and an action plan is developed accordingly to close the



loop, i.e., to reduce or eliminate any discrepancies. The assessment results may further be utilized for ongoing curricula management and improvement.

## **AOL AT THE MAJOR LEVEL FOR MSCHE ACCREDITATION**

### **Background**

The Council for Higher Education Accreditation (CHEA) is the largest nongovernmental higher education organization in the United States. It promotes academic quality through accreditation. Currently, CHEA is an association of 3,000 degree-granting colleges and universities, and has 6 regional accrediting agencies (CHEA, 2017).

The Middle States Commission on Higher Education (MSCHE) is one of the six regional accrediting agencies under CHEA. It mainly accredits colleges and universities in the Middle States region of the United States. In recent years, higher education institutions in some other countries have also started to adopt MSCHE accreditation as a form of external quality assurance (Cheng, 2015; Ramirez, 2015). To achieve and maintain MSCHE accreditation, an institution must demonstrate that it fully meets the 15 requirements of affiliation and 7 standards for accreditation and that it engages in an ongoing process of self-review and improvement (MSCHE, 2017a).

The MSCHE Standard V addresses educational effectiveness assessment and focuses on AOL: "Assessment of student learning and achievement demonstrates that the institution's students have accomplished educational goals consistent with their program of study, degree level, the institution's mission, and appropriate expectations for institutions of higher education." (MSCHE, 2017a). Notice AOL and assessment here refer to the educational expectations for a program of study, or individual majors, rather than for a degree program.

### **Complying with MSCHE AOL Accreditation Standard at the Major Level**

This section discusses an AOL process implemented at the major level at the above referenced middle-sized public university in New Jersey, USA, in compliance with the MSCHE accreditation standards. The university has more than 80 bachelors' and 60 masters' degree programs, along with several doctoral and professional programs. Its most recent affirmed accreditation from MSCHE was in 2014 following the Periodic Review Report. Currently, the university is in the process of preparing the comprehensive ten-year Self-Study for its re-accreditation in 2019.

To comply with the MSCHE AOL and assessment standard, each academic program/major within the university is required to develop its assessment plan and document its assessment process in detail. That is, the AOL for MSCHE accreditation is mostly implemented at the department level by the faculties who teach the core courses of an academic major program (e.g., Management, Entrepreneurship, Human Resources, etc.).

The process of AOL at the major program level consists of following steps: (1) develop learning goal(s) with operational definitions for each major program goal; (2) develop specific measurable learning outcome(s) for each learning goal and map them into the curriculum for a major, i.e., showing where these learning outcomes will be introduced and assessed, and how often the assessment data will be collected; (3) develop detailed assessment plan for each major core course, including assessment tools, performance levels, and quality target; and (4) implement the assessment plan, including data collection, data analysis, and development of an action plan to reduce the gap between actual performance and target performance and close the loop.

The learning goals for an academic major are mission-driven and state the learning expectations in general for the graduates with the major. To ensure the achievement of these program goals, one or more operational student learning goals need to be developed. Next, for the assessment purpose, some more specific and measurable learning outcomes need to be defined for each learning goal. All these need to be mapped into the major's core curriculum to show the how program goals, learning goals, and learning outcomes are mapped into the major core curriculum and where and how often the assessment will be implemented. An example of this program goal and major core curriculum mapping is shown in Table 2. Again, the AOL process is carried out at the academic major level (most likely within a department) and requires the participation of the all faculty members who teach the core courses for a major.

**Table 2: Mapping Program Goals into Major Curricula for AOL and Assessment**

Major Program Goal	Learning Goals	Learning Outcomes	Where to Assess and How Often
Graduates will be able to solve qualitative & quantitative management problems.	1. Student will be able to use quantitative tools for problem solving.	1.1. Students will be able to perform basic data analysis for managerial decision making	Decision Making Tools for Managers (Annual)
		1.2. Students will be able to apply essential qualitative models to solve business problems.	Decision Making Tools for Managers (Annual)
	2. ....	2.1. ...	
		2.2. ...	

Following the AOL and assessment framework shown in Table 2, a detailed assessment implementation plan for each course is then developed; including assessment tools, performance levels, and quality targets. Assessment tools maybe direct or indirect. Some common choices include: course-embedded assessment (tests, case studies, presentations, etc.), employer evaluations, and surveys (graduating senior survey, employee survey, alumni survey, etc.). Performance levels will be used to group students (e.g., excellent, good, fair, poor, etc.) and with a quality target as the minimal learning expectation (e.g., at least 80% of students will perform at good or excellent levels). A course coordinator for each course is needed to play an instrumental role, if more than one faculty member teaches the same course.

The last step of the AOL process at the major level is to implement the assessment plan. It includes collecting and analyzing assessment data, identifying learning weaknesses and any gap(s), and developing an improvement action plan to close the loop. The assessment results may lead to revisiting the major's program goals and learning goals. The improvement plan may be related to ongoing curriculum management and improvement, and actions for reducing or eliminating any discrepancies between quality targets and actual student performance.

## DISCUSSION

The accreditation by AACSB is sought by business schools and the AOL and assessment for this accreditation are carried out at the degree program level, rather than at the academic major level. The focuses are degree program goals, the associated learning objectives, and their mapping to the business core courses. The implementation of AOL at this level requires institutional support and the commitment of the business school. A college-wide committee with a faculty coordinator from each business core course is needed.

The accreditation by MSCHE is sought by colleges and universities and the AOL and assessment for this accreditation are carried out at the academic major level. The focuses are major program goals, the associated learning objectives, and their mapping to the majors' curriculum. The implementation of AOL at this level requires institutional support, departmental commitment, and teamwork among the faculty members who teach the core courses for the same major program.

Some comments from the implementation of AOL and assessment at the degree program level and the major levels:

1. A faculty member may be involved in both levels of assessment, if he/she teaches both a business core course and a major core course. When that is the case, it is important to recognize the similarities and differences in AOL between these two levels.
2. The key for a successful AOL process, both at the degree program level and at the major level, is to utilize the assessment results to close the loop – for ongoing program and curriculum management and improvement, and for continuous learning enhancement.
3. Several operational learning goals maybe used to represent a conceptual/general program goal for the assessment purpose. However, they do not need to be assessed at once. For example, if there were four learning goals for a program goal, an initial AOL and assessment plan may only focus on two of them.
4. The assessment plan may be carried out annually, rather than every semester. This may be appropriate as it takes time to implement an action plan and to see the results.

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## Due to Instability Gambling is the best Model for most Financial Products

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### Abstract

In financial markets the demand curve is positively sloped in most cases. We give a rigorous mathematical prove that this leads to an instable equilibrium price. Therefore stock prices may fluctuate chaotically, making them unpredictable in many cases. Financial investments have therefore lots in common with gambling. In order to take the analogy further, we suggest a special gambling strategy (betting on a color in roulette). In doing so we have a model which may create a substantial amount of cash each year until it crashes after many years. Both gambling and financial speculation will never create money in the very long run. Because our gambling model is at least statistically predictable, it is “better” than speculative investment.

**Keywords:** stock market; gambling; stability; chaos.

### INTRODUCTION

Though trading in financial markets may involve some speculation, it is by and large considered a necessity for a modern economy. It is even thought to be so essential that some banks are considered too big to fail. On the contrary is the image of gambling. It is maybe entertaining, but it is (sometimes) addictive and by and large considered bad. It is considered so bad that it is illegal in many places.

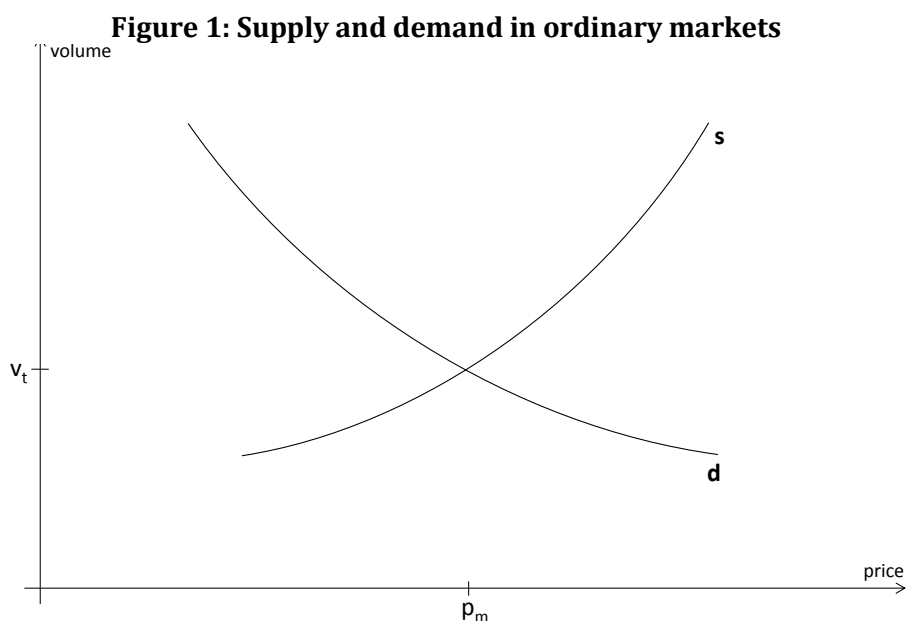
So far for the common believe. Unfortunately it is a fairy tale. We can show that financial trading is identical to gambling (at least in most cases). In [1] the consequences for the taxation especially the Tobin tax have been shown. Here we start our proof by considering supply and demand curves like in Figure 1. If supply is lower than demand, there is a shortage and prices go up. If supply is higher than demand, there is a surplus bringing prices down. This is the main argumentation for a (stable) market price  $p_m$ . In contrast financial products are mostly bought in order to sell them for a higher price. Therefore rising prices make them more attractive. This fundamental difference to ordinary products have also be noted by philosophers, e.g. [2].

Here we give a rigorous proof that financial products never have a stable market price. Because market prices of financial product are very different from the underlying conserved value [3], their value may fluctuate chaotically in a mathematical sense. Therefore financial trading is as unpredictable as gambling.

In our third chapter we will take this analogy further. By introducing a roulette strategy where one is betting on color and doubling the investment until one wins, we have a perfect model for an investment bank. We even conclude in our fourth chapter that real gambling would be less risky than financial trading because a global crisis would be impossible.

## The mechanism of market equilibrium

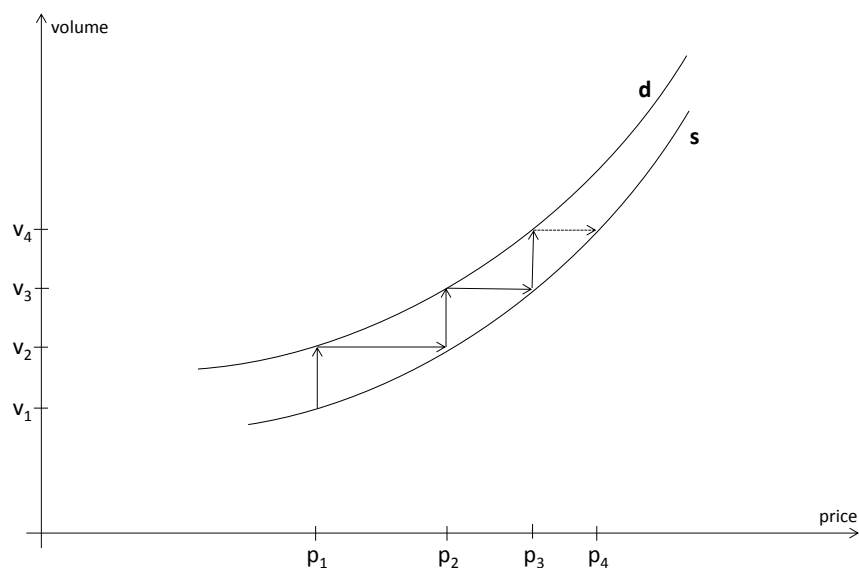
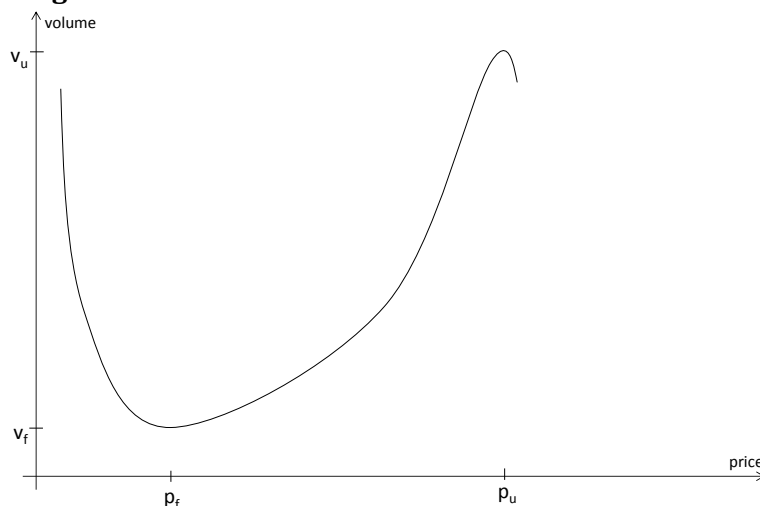
In probably any undergraduate course of economics one will learn about supply and demand. In Figure 1 it is shown that the demand will go down, if the price goes up. On the supply side the supplier is happy to offer more, if the price is high. Mathematically spoken the demand



curve (denoted by  $d$  in Figure 1) is negatively sloped, and the supply curve (denoted by  $s$  in Figure 1) is positively sloped. Therefore they have an intersection. This point defines the market price  $p_m$  and the corresponding traded volume  $v_t$ .

Please note that the curves in Figure 1 do not mean that a certain amount of people are buying or selling at particular prices. At a price  $p$ , a certain amount of people are willing to sell or buy. The corresponding volume  $v$  is the accumulated volume being traded by these people. Of course, if there is a market price, everybody is buying and selling at that price. If the price  $p > p_m$ , there is much more supply than demand. The price goes down. If the price  $p < p_m$  there is more demand than supply, and the price goes up.

Financial products such as stocks or options have also demand and supply. There is however a difference to almost all other products and services. Most people buy financial products in order to sell them for a higher price. Therefore a rising price is attractive for potential buyers. In other words the demand curve is positively sloped. This difference has been used to explain the momentum effect in stock markets [4]. It has been identified as the main problem in financial markets [2]. While it is obvious that a positively sloped demand curve will not lead to more stability, it is not obvious that it must lead to instability.

**Figure 2: Supply and demand in a financial market****Figure 3: Realistic demand curve in financial markets**

To see the point one may consider the curves in Figure 2. (In financial products the supply curve may have any slope. But it does not change our line of argumentation) Starting with  $p_1$  in Figure 2 selling at particular prices. At a price  $p$ , a certain amount of people are willing to sell or buy. The selling at particular prices. At a price  $p$ , a certain amount of people are willing to sell or buy. The there is too little supply or too much demand. Therefore the price will go up to  $p_2$ . But the volume  $v_2$  is still too small. So the price will go to  $p_3$  and so forth. It will spiral upward. If one exchanges  $s$ - and  $d$ -curve in Figure 2, the price will spiral downward. This is a good indicator for chaotic behavior, but it is no proof for instability. Nevertheless there may be points where supply meets demand. It is even quite likely by considering more realistic demand curves. In Figure 3 it is shown that the demand it not ever increasing with rising prices. At some point the price becomes ridiculously high ( $p = p_u$ ). A typical point for a so called maidens' hausse. In the same token at a point  $p < p_f$  the price looks like a super sale (If the price is lower than e.g. book value). With a demand curve of Figure 3 it looks very likely that the supply curve will intersect the demand curve maybe even several times. So we are back to the question whether that market price is stable. In what follows we will prove instability in a mathematical sense.

Please note that the "standard" proof for stability for ordinary markets does not work here. Unfortunately this "standard" proof isn't common knowledge at all. For more detail please see

[5]. In any market the buyer will pay the market price  $p_m$  if its value is at least slightly higher. (The value is normally not very much higher, because otherwise competition will be high)

$$p_{m0} \lesssim value_0 \tag{1}$$

Equation (1) holds for any market transaction. The only specialty for financial markets is that the value is normally not conserved here, cf. [3]. While a conserved value is pretty fixed, a non-conserved one may vary rapidly. The conserved value of e.g. a stock will be proportional to the future earnings a company will make. Though it is not known when buying a stock, it cannot change on a daily basis let alone within milliseconds during high frequency trading. In reality stocks are almost never bought in order to realize the conserved value. In [3] it has been explicitly shown that the market price of a stock is normally several times higher than its underlying conserved value.

The index naught in Equation (1) denotes an initial equilibrium state. It is of course also valid without the naught. Introducing a small variation  $\delta p$  with  $p_m = p_{m0} + \delta p$ , inserting it in Equation 1, and making a Taylor expansion to lowest order leads to:

$$p_{m0} + \delta p \lesssim value_0 + \left. \frac{\partial value}{\partial p_m} \right|_{p_{m0}} \cdot \delta p + O(\delta p^2) \tag{2}$$

The immediate learning from Equation (2) is that if the slope  $\partial value / \partial p_m > 1$ , positive variations in price ( $\delta p > 0$ ) are only possible in the long run. Else the inequality of Equation (2) does not hold. For a slope  $\partial value / \partial p_m < 1$  the variation in price must be negative for the same reason. This effect can be translated into the timely development of the market price or better traded price. The (non-conserved) value for the buyer does not explicitly depend on time. (Else it would not be possible to choose the starting time as e.g.  $t = 0$ ) So we have  $dvalue/dt = \partial value / \partial p_m \cdot dp_m/dt$ . In other words we have:

$$\frac{dp_m}{dt} = \frac{1}{\frac{\partial value}{\partial p_m}} \cdot \frac{dvalue}{dt} \tag{3}$$

Equation (3) is the desired change in market price. Because the value is not conserved it may change at any time and in any direction. If  $\partial value / \partial p_m > 1$ ,  $\delta p > 0$ , and the market price will increase slower (in time) than the value for the buyer. So the buyer has even more reason to buy and will do so. The market price will go to infinity. If  $\partial value / \partial p_m < 1$ ,  $\delta p < 0$ , and the market price will decrease faster than the value for the buyer. So it is allowed for the price to become smaller and smaller. Mathematically spoken it will reach minus infinity.

So we have proven that the market price has no stable equilibrium. It will either go to plus infinity or minus infinity. Of course in reality the market price will bounce between  $p_f$  and  $p_u$  of Figure 3 rather than  $\pm \infty$ .

### Gambling: Best Model for financial products

Market prices in financial markets will either go up or down but will not find (stable) market equilibrium. As seen from Figure 3, volume will also go up with price. This is particularly dangerous in the derivatives market. In an ordinary stock market there is a natural cutoff in



volume, because the number of stocks is finite (and fix) for a company. Issuing derivatives can be done ad infinitum. It makes the unavoidable crash much more drastic.

While the market price will fluctuate between two extremes, it is far from being predictable. This is because the extreme values denoted by  $p_f$  and  $p_u$  in Figure 3 are neither fixed nor calculable. Especially the upper bound depends on the moods or better nerves of the individual trader. Therefore Saunders [6] found so strange relationships for stock prices as the weather on Wall Street. In other words, nobody can predict stock prices. So it is possible to make a profit, but nobody can *plan* it. By the way, if stock prices were predictable by any scientific method, it would not last until long, and everybody would use this method. As a result nobody would make a profit. Even in that respect financial trading is identical to gambling. Predicting next week's lottery numbers by whatever method would sooner or later lead to the correct numbers on anybody's lottery ticket. In essence the correct numbers would imply a lower win than the original fee.

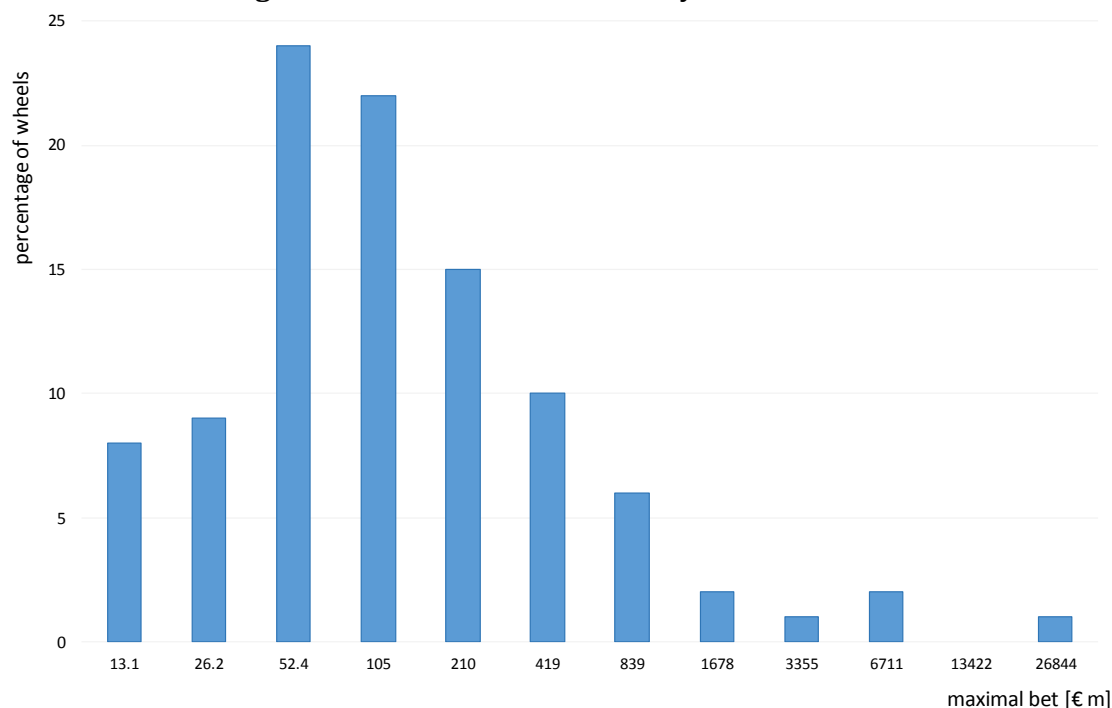
Comparing financial trading to gambling or even equating it with it may sound strange for some readers. While financial traders may make a good living over many years, gamblers hardly do. Furthermore profits from financial trading make a substantial part of GDP in some areas. In contrast wins and losses from gambling will make a net loss. However this contradiction is easily solved. In (ordinary) gambling people make a small loss almost all the time. But they have the hope of a rare big win some day. In financial industries it is the other way round. There are some (small) profits over a long period. Then there is a crash or something similar, and all profits of the past are destroyed, cf. [1]. In addition profits from other industries and/or consumers' savings may be taken.

There is however a way of gambling pretty similar to financial trading. It is even performed by some people over their entire life without making any losses. It works as follows. At a roulette table one can bet on red or black. So one may bet € 1 on red. There are two possibilities: Red comes or not. If red comes, one will gain one dollar. If there is black (or zero) one will lose € 1. Then one has to bet € 2 on red (or black). Let suppose one will lose again. So the total loss is € 3. Then one has to bet € 4 on one color. Let suppose one will win now, one will gain € 4. Together with the previous loss of € 3 one will have a net win of € 1. Obviously in one run one will always win € 1, as long as one can afford an arbitrary long row of the wrong color. But even in this limit one will not win anything. Performing the mathematics correctly shows an infinite loss in the limit of infinity. Supposedly there is a limit of playing the game for  $n$  rounds. (For e.g.  $n = 10$ , starting with one dollar would mean taking a maximum bet of € 512) Then there is a chance of  $(19/37)^n$  to lose all the betted money and of course a chance of  $1 - (19/37)^n$  to win one dollar. (Please note that we are considering the European rather than the American roulette) The average expected gain is therefore

$$1 - \left(\frac{19}{37}\right)^n - \left(\frac{19}{37}\right)^n \cdot \sum_{i=1}^n 2^{i-1} = 1 - \left(\frac{38}{37}\right)^n \quad (4)$$

As one sees the net gain is always negative. In other words it is a loss. Even or especially in the limit  $n$  to infinity it stays negative. It actually goes to  $-\infty$ . As long as one can afford a high enough bet, one will always have a continuous income for maybe a long time. However, if the desired color does not come for many rounds, the amount for a bet may be higher than the credit line. One is forced to stop with a big loss. This looks familiar to the stock market.

**Figure 4: Distribution of necessary maximal bets**



The analogy to the financial industry is even more perfect if one uses proper numbers. Let us suppose our banker/gambler is starting with a bet of € 100. He or she is doing so on 100 roulette tables in parallel. (This is probably easily possible if there are at least 100 online casinos) This is much smarter than starting with € 10,000 in the first place, because unlike the worldwide stock markets, 100 roulette wheels are completely independent. So the total risk is correspondingly lower. The outcome from dealing in this way can be calculated by using proper probabilities. For the doubters of statistics, we performed a *real* experiment. However due to the limits of our grant money, we do it by a computer simulation. Our computer spun 100 wheels for one million times each. Compared to a real roulette it is about ten years of operating each wheel or 1,000 years of spinning one wheel. Pure luck is therefore excluded. In Figure 4 the result of our experiment is shown. If 100 roulette wheels are spun one million times each, within e.g. 15 wheels the necessary maximal bet was € 210 m. In only one case a necessary maximal bet of € 26.8 b was necessary. (In our experiment it was wheel number 70, and the maximum was necessary after over 900,000 spins) Including the bets before this maximum, one needs a credit line of € 53.7 b. Please note that one does not need such an amount of cash. It is only necessary to have such a credit line. So the five richest men in the world (from Gates to Zuckerberg in 2017) could easily perform our experiment privately. They would have a gross win of € 4.86 b or € 486 m per year. (At least in Germany it would be completely tax free) This is a substantial income for almost no work and no value added to the economy.

## CONCLUSIONS

If the demand curve is positively sloped, the equilibrium price of a stock is not stable. In general it will fluctuate chaotically. Therefore stock prices are not predictable. Betting on them is identical to gambling. As shown in Figure 3 there is maximum price  $p_u$  and a maximal volume  $v_u$ . As bigger as these number get the harder the crash will be. "Normal" stocks have a natural cut-off because  $v_u$  is limited by the number of stocks issued. Such natural cut-off is not existent

in derivatives and the like. The market decides how many derivatives are traded. Therefore the derivatives' market is much more speculative. A wisdom known from common sense already.

Investing in something where the outcome is totally uncertain is commonly referred to as gambling. Our special game of betting on a color only, is an almost perfect simulation of a typical stock market. Of course, after a sufficiently long time the model above will fail. If in our case the credit line is not € 53.7 b but just € 13.4 b (the 100 richest men on earth may qualify), one would need a bailout of about € 50 b within a period of ten years for a "company" which produced quite constantly almost € 500 m per year. Also this looks familiar to (investment) banking. Please note that this € 50 b is not gone forever. It can be used to overcome the "financial crisis" (for doubling the last bet). So it may be returned to the tax payer much faster than the bailout money for ordinary financial institutions.

The analogy between (speculative) financial investments and our gambling model goes even further. Within the period between two crashes real money is earned in both cases. One may ask who is paying for these earnings? The other participants in the "markets" pay the price! The amount of cash temporarily produced in e.g. computer trading is lost for the millions of ordinary investors. In our gambling model the casino makes less profit. In order to avoid bankruptcy, the casinos are forced to charge higher fees. So the ordinary gambler is slightly less well off.

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# The Investment Strategy of Taiwan Futures Market after Quantitative Easing Monetary Policy

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## Abstract

After the financial crisis in 2008, US Federal Reserve adopted quantitative easing monetary policy to boost the US economy. However, the hot money made tremendous shocks in financial markets. After 2015, the US job market stabilized and the Fed ended the QE and started raising interest rates. The aim of this study is to show that institutional investors affect TAIEX futures through MSCI Taiwan Index Futures, and consequently affect Taiwan 50 ETF. This study incorporates the price spread of TAIEX futures and MSCI Taiwan Index Futures in the model to conduct backtesting using program trading. This can help us determine if the mean reversion model is better than the contrarian model and the momentum model. The results show that the mean reversion model has higher profits and stabilities than the contrarian and momentum models. The results suggest that incorporating the price spread of TAIEX futures and MSCI Taiwan Index Futures and utilizing the mean reversion property of behavioral finance can enhance trading performance.

**Keywords:** Mean Reversion; Program Trading; Granger Casualty Test; Efficient Market; Quantitative Easing

## INTRODUCTION

After the 2008 financial crisis, the US Federal interest rate was near zero. This suggested that the traditional monetary policy was no longer useful in solving economic problems. As a result, the US Federal Reserve (thereafter, the Fed) started a series of quantitative easing (QE) monetary policy. The first QE was executed between March 2009 and March 2010. The size of QE1 was about US\$1.725 trillion; that was about US\$100 billion on average every month. The QE2 was executed between November 2010 and June 2011. QE2 had the size of around US\$600 billion, which had mainly been used to buy long-term Treasury bonds. The average purchase amount every month was about \$75 billion. The QE3 was executed in September 2012. In September, the Fed bought US\$23 billion Treasury securities and from October, the Fed bought US\$40 billion per month. From January 2013, the Fed increased the purchase amount to US\$85 billion. Essentially, the money was printed to buy mortgage-backed securities (MBS), Treasury long-term notes, US government bonds and agency MBS. The purpose was to raise the price of long-term US bonds and lower interest rates. This could also lower the mortgage interest rates and provide support for the housing market.

As US dollar is the reserve currency around the world and many major commodities are priced in US dollars. More than \$2000 billion base money was injected into the domestic market after

QE. At such a low interest rate environment, the US dollar fell dramatically. The US Dollar Index fell from a high of 88.8 on 12 June 2010 to a history low of 72.89. In actual fact, by printing more money, QE was used to dilute debt and transfer risk. The high liquidity made the international capital flow even more uncertain, which led to asset bubbles and financial risks in other countries. As the US job market improved, the Fed started to reduce the size of QE from January 2014. The bond purchasing amount reduced by US\$10 billion to US\$75 billion. The QE was ended in October 2014 and the Fed raised interest rate in December 2015. The US Dollar Index rose to a high of 100.6 on 3 December 2015. The liquidity around the world started to contract and hot money flew out of emerging markets, bringing dramatic impacts to these countries' financial markets.

As the trade dependence between Taiwan and the US is quite high, a shallow market like Taiwan cannot avoid being affected by QE. As the Taiwan government aimed to globalize and internationalize the financial market, foreign investors were allowed to invest in spot and futures markets. In 1996, the government revised the regulation on securities investment and foreign exchange settlement by overseas Chinese and foreign investors. Foreign institutional investors and individual investors were also allowed to directly invest in the domestic securities market. Before 1996, although foreign investors were allowed to invest in Taiwan, the trading volume by foreign investors was very low as foreign investors typically trade in both spot and futures market for hedging purposes. Only until 1998, the government cooperated with the CME and SIMEX to release new Taiwan index futures and later on created the local Taiwan index futures (TAIEX futures). In May 2000, the Treasury Department reduced the transaction tax of local futures from 0.1% to 0.05%. Thereafter, the fluctuations of Taiwan stock market were affected by Taiwan Stock Exchange, Taiwan Futures Exchange and SIMEX.

TAIEX futures is a financial futures contract which uses Taiwan stock market index as the underlying asset. The quotes of TAIEX futures and Singapore's MSCI index futures have a stable cointegration relationship. The spot and futures markets have long-term stable equilibrium relationship and the Taiwan index futures have good price discovery function of the spot market price. As the global financial markets keep developing, capital can freely flow from one market to the other market and the information can spread efficiently. The foreign exchange market, stock market and futures market become more closely tied. The price in one market can influence the price in the other markets. For example, on 12 June 2010, the US Dollar Index was at a history high of 88.8. Meanwhile, the Taiwan stock index was at 7300. When the US Dollar Index fell to a history low of 72.89 on 2 May 2011, the Taiwan stock index rose to 9000. Then, when the US Dollar Index rose back to a high of 84.83 on 13 July 2013, the Taiwan stock index dropped to 8100. Facing with such a volatile market, individual investors who lack for accurate information were likely to run away from the market. In actual fact, the trading by individual investors had decreased to about 50%. Therefore, how to use behavioral finance to help individual investors trade in the financial market is worth investigating. It can also help the stock market to reflect its true price more accurately and the Taiwan stock market is more likely to transform from a shallow market to become a mature stable market.

Therefore, this study proposes investment strategies from behavioral finance and stock market index futures perspectives. The organization of this paper is as follows. Section 2 provides literature review. Section 3 explains the research methods, including event studies, Granger causality model, and program trading estimation methods. Section 4 discusses the data source. Section 5 provides empirical results and analyses. The final section then gives a conclusion.

## LITERATURE REVIEW

How to make profits in stock markets has been a hot issue among the financial markets. Fama (1965) proposes that the trend in stock prices is random. If stock price fluctuations have incorporated all expectations and information of market participants, then the stock price is not predictable. This is a market efficiency problem. Fama (1970) thus formally proposes an efficient market hypothesis (EMH). His idea was consistent with the main stream of economic thinking at that time. According to Fama (1965, 1970), the efficiency of a market can be classified into: (1) weak form efficient market, whereby all past information has been reflected in stock prices; (2) semi-strong form efficient market, whereby all public and relevant information about the future prospects of the companies have been reflected in stock prices; and (3) strong form efficient market, whereby all information related to the company is reflected in the price. However, after 1980's, more and more evidence shows anomalies in markets, such as momentum effect and reversal effect. The latter anomaly exists because investors believe that there exists mean reversion effect in stock returns. That is, stocks that rise in the short and medium term will fall, and falling stocks will eventually rise. Therefore, investors can adopt contrarian strategy to increase trading efficiency.

Basu (1977) examines the relationship between P/E ratio and investment returns of NYSE listed companies between 1957 and 1971 and finds that firms in the low P/E ratio group has average yearly return of 16.3%, which is much higher than firms in the high P/E ratio group. The latter has average yearly return of 9.3%. The results show that contrarian strategy can lead to trading profits. Shiller (1979) also finds that the overreaction in opportunistic asset prices contradicts with the concept of an efficient market. Poterba and Summers (1988) use the variance ratio test to examine the market returns of the US market between 1871 and 1986 and market returns of seventeen other countries between 1957 and 1985. They find positive correlations in stock returns in the short term but negative autocorrelation in the long term. Based on the price changes data of NYSE listed companies between 1926 and 1985, Fama and French (1988) find negative autocorrelation in 3~5 year stock market returns. About 25% to 40% of the returns can be predicted based on past profit information. The returns of small sized companies can be more easily predicted; 40% can be predicted based on past performance. The prediction rate is about 25% for large sized companies. Therefore, overreactions in price will eventually have mean reversion. De Long, Shleifer, Summers and Waldmann (1990) argue that noise trading will cause overreactions. Therefore, when the asset prices rise or fall too much, it is likely to correct in the other direction. Therefore, the long-term return is often negatively autocorrelated. Moreover, Cutler, Poterba and Summers (1988) find negative autocorrelations in 3 to 5 year stock market returns. The results suggest that price may underreact initially and then gradually correct in the long term. Bremer and Sweeney (1991) examine Fortune 500 companies between July 1962 and December 1986. Stocks whose prices vary by more than 7.5%, 10% and 15% in one day are all included in the sample. These stocks are followed for 20 days after rising or falling in prices. Their results show that for losers, the returns are 2.84%, 3.95% and 6.18% five days after. On the other hand, there is no abnormal profit for winners. Therefore, there are significant corrections for losers while no corrections for winners. The degree of correction also increases with the initial price changes. Poterba and Summers (1988) further show that short-term stock prices are positively related in the short term while 3 to 5 year stock returns are negatively autocorrelated in England and in the other 16 countries / regions.

Lakonishok et al. (1994) use three indicators to further test the contrarian strategy based on NYSE and AMEX listed companies between 1968 and 1990. They find that the stock portfolio with low P/E ratio beats the portfolio with high P/E ratio. Also, the portfolio with lowest P/BV ratio has 5-year average holding return of 19.8%. In contrast, the return of highest P/BV ratio is only 9.3%. In addition, during the 25 good performing months of the stock market, the average returns of portfolios with lowest and highest P/BV ratios are 14.8% and 11.4%, respectively. During the 88 bad performing months of the stock market, the portfolio with low P/BV ratio still has higher return than the portfolio with high P/BV ratio. The results suggest that stocks with low P/BV ratio have lower risks. Further, the portfolio with higher P/CF ratio has lower 5-year average holding returns (9.1%) than the portfolio with lower P/CF ratio (20.1%). Hackel et al. (1996) also study the relationship between P/CF and investment returns for NYSE listed companies between 1980 and 1994. After classifying the sample into five groups based on P/E ratio, they find that the average yearly return of S&P 500 companies is 19.2% for the portfolio with lowest P/CF ratio, which is higher than the average return of 4.1%. The investigation by Shiller (2000) shows that on average, investors believe that stock markets will rise again after falling. The law of small numbers suggests that investors may accidentally sell profitable stocks when selling stocks. Therefore, we are able to observe disposition effect. Genesove and Mayer (2001) also find disposition effect in housing market. They find that Boston housing owners have higher selling prices for houses whose prices are falling than houses whose prices are not falling. In fact, the selling price is 25%-35% higher. The evidence again shows that contrarian strategy is workable.

In contract, in the real market, there exists a group of irrational traders who adopt positive feedback strategy. The positive feedback strategy can lead to herding behavior, extrapolation expectation and technical analyses. The herding behavior arises because of incomplete information and uncertainty in the market. By mimicking other's behavior, the investor can save the cost of gathering information and have less aversion if making losses. As herding behavior involves many investors, it has strong impacts on the stability and efficiency of the financial market. Lakonishok et al. (1992) analyze 769 US stock funds between 1985 and 1989 and find that fund managers will observe the trading behavior of other fund managers when trading small companies' stocks. This is because small companies have less publicly available information. Froot et al. (1994) also observe herding behavior among institutional investors in the face of new external information. The reason is that institutional investors typically utilize similar data sources, economic models, investment portfolios and hedging strategies. Werners (1999) examines all US mutual funds between 1975 and 1994 and find evidence of herding behavior in mutual funds. In fact, stocks that have been commonly purchased by mutual funds have better same-period and lag-period returns than those that have been commonly sold by mutual funds. Werners (1999) believes that the herd trading behavior of mutual funds is rational and can help speed up the reflection of information in stock prices and the stability of the market. Based on the NYSE listed companies between 1926 and 1982, DeBondt et al. (1985) find that companies with better performance in the previous year perform better in the year after. Jegadeesh and Timan (1993) find evidence of momentum effect in the market in the short and medium terms. That is, stocks whose prices are currently rising or have already risen are likely to remain so in the following 18 months, and vice versa. Investors who have bought in good performing stocks and sold bad performing stocks at the same time are likely to gain 9.29% abnormal returns in the following 3 to 12 months. Following Jegadeesh and Timan's (1993) methods, Rouwenhorst (1998) also finds momentum effects in twelve European countries' stock markets and the strategy can contribute to 1.16% abnormal returns every month.

Another argument on efficient market is on the predictability of financial asset returns based on technical analyses. If the technical analysis is workable, then the stock market is only weak-

form efficient. Lo and MacKinlay (1988, 1999) show that random effects do not exist in US stock's weekly index. Past price information can in some degree be used to predict future returns. This is because all factors have reflected in current market prices and the prices will move with the trend. The validity of these results is affected by data-snooping bias. When the data is repeatedly used, the satisfactory results may be due to luck rather than the predictability of the model. White (2000) proposes a "reality check bootstrap methodology" to enhance the empirical check of technical trading. Brock, Lakonishok and LeBaron (1992) adopt 26 different technical trading rules in Dow Jones Industrial Index in 1990 and find that technical trading leads to higher returns than the base model of holding cash. However, data-snooping bias exists in technical trading rules when search for parameters. This study follows the testing method in Lan et al. (2014, 2015) and uses econometrics models and optimized program trading to conduct a two-stage test. The aim is to find a stable investment strategy. The hypothesis to be tested is as follows:

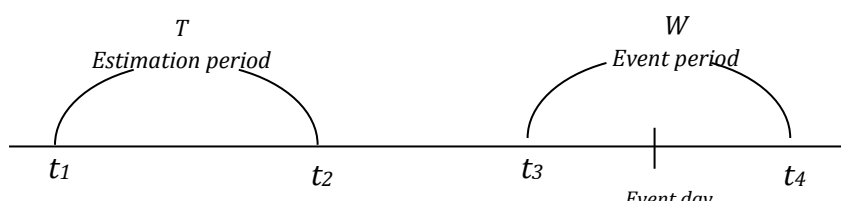
The price spread of TAIEX futures and MSCI Taiwan Index Futures has a mean reversion property. In other words, when the technical analysis shows the two indices diverge, then the contrarian strategy can lead to higher profits.

## RESEARCH METHODS

### Event Study Model and Estimation Methods

This study uses the event studies to test the effect of QE on investors' behavior by examining the price changes in Taiwan 50 ETF. <sup>1</sup>Based on the data obtained from Taiwan Economic Journal (TEJ) database, we use GARCH model to test the abnormal returns on the announcement day.

The event study model is summarised as follows:



t: time    T: Estimation period    W: Event period

Estimated return based on the market model is as follows:

$$R_t = \alpha + \beta R_{mt} + \varepsilon_t$$

where  $R_t$ : Stock return at time t;  $R_{mt}$ : Market return on day t

$$\hat{\varepsilon}_t | \Omega_{t-1} \sim N(0, h_t)$$

Expected value of the error term,  $\varepsilon_t$ , is zero.

$$h_t = d_0 + d_1 \varepsilon_{t-1}^2 + d_2 h_{t-1}$$

Abnormal return (AR) during the event period is:

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<sup>1</sup>As the futures' prices lead the spot market's prices, Taiwan 50 ETF, a spot market security, is used a substitute variable for Taiwan index futures.



$$AR_t = R_t - \hat{R}_t$$

where  $R_t = \ln P_t - \ln P_{t-1}$ ;  $P$  is the stock price.

Cumulative abnormal return (CAR) can be calculated as follows:

$$CAR = \sum_{t=t_3}^{t_4} AR_t$$

To take into account of the trading restriction after the announcement, this study uses 600 days before and after the day with the lowest US Dollar Index (2011.5.2) as the event period. That is, a total of 1200 days are used to test if AR and CAR are significantly different from zero. The estimation period includes 1000 days which are based on the weighted index of listed companies.

### VAR Model and Estimation Methods

To ensure that all variables in the model have causality relationships and to avoid the identification problem in simultaneous structural equations, Sim (1980) applies the vector autoregression model in econometrics. All variables in the model are lagged variables of itself and other variables. When the single variable autoregression is extended as multi-variable vector autoregression, we do not need to worry about how to set exogenous variables. All variables are endogenous and can be used to predict a relevant time series system and the dynamic impact on this system by random noises. In this study, the three variables in the model are  $y_{1t}, y_{2t}, y_{3t}$ . Variable in time  $t$  is formed by the variable in the prior time  $k$  and the error term. That is, taking VAR(1) (i.e.,  $k = 1$ ) as an example:

$$\begin{aligned} y_{1t} &= m_1 + a_{11}y_{1,t-1} + a_{12}y_{2,t-1} + a_{13}y_{3,t-1} + \varepsilon_{1t} \\ y_{2t} &= m_2 + a_{21}y_{1,t-1} + a_{22}y_{2,t-1} + a_{23}y_{3,t-1} + \varepsilon_{2t} \dots\dots\dots(1) \\ y_{3t} &= m_3 + a_{31}y_{1,t-1} + a_{32}y_{2,t-1} + a_{33}y_{3,t-1} + \varepsilon_{3t} \end{aligned}$$

$$\text{where } E(\varepsilon_t) = 0, \forall t, E(\varepsilon_t \varepsilon_s') = \begin{cases} \Omega, s = t \\ 0, s \neq t \end{cases}, \Omega = E(\varepsilon_t \varepsilon_t')$$

The error term  $\varepsilon_t$  is white noise;  $m$  is the constant,  $a$  is the coefficient and  $\Omega$  is a positive definite variable and a covariance matrix. That is, the error terms  $\varepsilon_t$  can be correlated at the same period but cannot be correlated with its lagged period or the variables at the right-hand side of the equation. From here, the test on causality relationship is developed.

### Granger Causality Model and Estimation Methods

As the economic theory on the relationship between the price spread (TXFDIFF) of TAIEX futures and MSCI Taiwan Index Futures and the TAIEX futures (DTXF) is yet unclear, the causality test of Granger (1969, 1988) can be used to clarify such relationship. Specifically, the model can test if the coefficients of current  $y$  series and the past values of  $x$  series have causal relationship. That is, whether the past values of  $x$  can explain the present values of  $y$ . The model tests if adding a lagged value of  $x$  can increase the degree of explanation. If the correlation coefficient of  $x$  and  $y$  are statistically significant, we can then conclude that  $y$  is Granger caused by  $x$ .

If the series do not have the property of unit root, the causality relationship can be tested using the following model:

$$\begin{aligned} Y_{t1} &= \delta_0 + \sum_{i=1}^m \delta_i Y_{t1-i} + \sum_{i=1}^m \gamma_i Y_{t2-i} + \varepsilon_t \\ Y_{t2} &= \lambda_0 + \sum_{i=1}^n \lambda_i Y_{t2-i} + \sum_{i=1}^n \omega_i Y_{t1-i} + v_t \end{aligned} \dots\dots\dots(2)$$

where  $\varepsilon_t$  and  $v_t$  in Equation (2) are white noise error terms.  $m$  and  $n$  are the optimal lag periods based on SC's minimum value. The null hypothesis is  $\gamma=0, \omega=0$ . If  $\gamma \neq 0, \omega=0$ , then  $Y_2$  has a Granger lead on  $Y_1$ , and vice versa ( $Y_1$  has a Granger lead on  $Y_2$ ). If both  $\gamma$  and  $\omega$  are not equal to 0, a bidirectional causality relationship exists.

### Experimental Design and Estimation Methods

This study incorporates three models in the experiment. Model 1 is the contrarian trading model with only one set of data (data1) (i.e., TAIEX futures). Model 1 is purely based on RSI oscillators. That is, when there is no long position (or there is a short position), the investor will buy when  $RSI < 35$ . When there is no short position (or there is a long position), the investor will sell when  $RSI > 65$ .

Model 2 is a mean reversion model based on Williams' (1999) program trading design. To increase the trading performance, apart from data1, another set of data (i.e., the price spread of TAIEX futures and MSCI Taiwan Index Futures) is used as a filter. To ensure the fairness in evaluation, the models are estimated based on the following trading strategies. That is, apart from data1, another set of data (i.e., the price spread of TAIEX futures and MSCI Taiwan Index Futures) is included as a filter. The model in this study is estimated based on the following trading strategies. Specifically, apart from data1 (i.e., price of TAIEX futures), the price spread (TXFDIFF) of data2 (i.e., TAIEX futures, denoted as TXF) and data3 (i.e., MSCI Taiwan Index Futures, denoted as SGX) is included as an indicator. The technical analysis of diversion trading strategy<sup>2</sup> in program trading is carried out as follows:

1. The index uses RSI oscillators. Data1 is the price of TAIEX futures.
2. Calculate the price spread of two futures as the indicator (i.e., the price of data2 (TXF) subtract the price of data3 (SGX) times 100).
3. When at least nine K bars are above 70 (or below 30) and the values of RSI are twice above 70 (or below 30), this can be included. In addition, when the closing price obtains a new high (or low) within nine K bars but the RSI does not, the strategy is to sell (or buy) at this low (or high) point in the future.

Model 3 is a momentum model. It is a trading strategy (Model 2) that is based on Kestner moving average system and uses the closing price and the breakthrough point in 20-day and 80-day moving average. There are two conditions in Kestner moving average system. First, buy if today's closing price is higher than the high point of 20-day (80-day) moving average and the 20-day (80-day) moving average is higher than yesterday's closing price. Second, sell if today's closing price is lower than the low point of 20-day (80-day) moving average and the 20-day (80-day) moving average is lower than yesterday's closing price. To ensure the consistency in comparison with Model 1, the former allows the simulation period to increase by 10% in today and 100-day moving average and the latter allows the simulation period to increase by 10-30 days and 60-80 days for 20-day and 80-day moving average. The optimal number of days for moving average is found out by the program.

This study uses MultiCharts program trading to conduct backtesting in the first stage (2011.5.2~2013.7.13). The optimal coefficient that occurs when we have at least nine K bars

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<sup>2</sup> When the price reaches a new high (or a new low) but the index does not.

and RSI is above 70 (or below 30) is brought into the second stage (2011.5.2~2016.02.03) and the third stage (2011.5.2~2017.01.20) to estimate the Taiwan futures market. This way, we can see if technical analysis can enhance trading profits by incorporating the price spread between two index futures. In addition, to ensure the fairness in evaluation, the simulation period is expanded for the second set of data (2010.6.12~2016.2.21) and the third stage (2010.6.12~2017.01.20).

### DATA

This study examines whether the trading profits can be increased by incorporating the price spread of TAIEX futures and MSCI Taiwan Index Futures as a variable. The daily data used include the prices of TAIEX futures and MSCI Taiwan Index Futures that are obtained from XQ database. To ensure that benchmarks are comparable, the data are divided into two groups. One group has a shorter learning period of 27 months. The other group has a longer learning period of 36 months. For the experimental design, the data period for the first stage covers from a history low on 2 May 2011 to a short-term period high on 13 July 2013 (i.e., 547 sample points). The second stage covers from 2 May 2011 to 21 February 2016 (i.e., 1315 sample points) and the third stage covers from 21 February 2016 to 20 January 2017. The experimental method involves using the optimized simulated parameters obtained from the first stage in the second and third stages.

The second group is based on cycle. The first stage covers from a high on 12 June 2010 to the next high on 13 July 2013 (i.e., 641 sample points). The second stage covers from 12 June 2010 to 21 February 2016 (i.e., 1409 sample points), and the third stage covers from 21 February 2016 to 20 January 2017. Similarly, the optimized simulated parameters obtained from the first stage are to be used in the second and third stages. All data mentioned above are calculated at level except for those original data that is  $I(1)$ . These need to be differentiated and represented by  $D$ . Also, the transaction cost in each model is about \$1000.

### EMPIRICAL RESULTS

#### Granger Causality Test of Taiwan 50 ETF's CAR

To ensure the suitability of TAIEX futures and MSCI Taiwan Index Futures as variables, it is important to first analyze their relationships. Hence, we use the event study method and show that under QE, MSCI Taiwan Index Futures is the Granger cause of TAIEX futures. The TAIEX futures is the Granger cause of average CAR of the top 50 companies with largest weighting in the index (i.e., Taiwan 50 ETF). The following sections describe the analytical steps that this study has taken.

#### AVERAGE CAR OF TAIWAN 50 ETF (0050)

The QE in the US started in November 2008 and ended in October 2014, lasting for six years. This study chooses 2 May 2011 as the announcement day. On this day, the US Dollar Index reached a history low. The futures market has the price discovery function of the spot market. Institutional investors often use TAIEX futures and MSCI Taiwan Index Futures as hedging and arbitrage tools and choose Taiwan 50 ETF, which comprises Taiwan's top 50 weighted companies, as the investment target. Therefore, the average CAR of Taiwan 50 ETF can reflect investors' sentiment to QE. Figure 1 shows the AR/CAR of GARCH model. The figure suggests that after QE, the average CARs are mostly negative (-6%~-8%). Although there is a temporary bounce back in 2009, it continues to fall afterwards. In 2014, the average CAR has reached -10%. The results reflect the harsh economy at that time, which consequently affects the price of Taiwan 50 ETF.

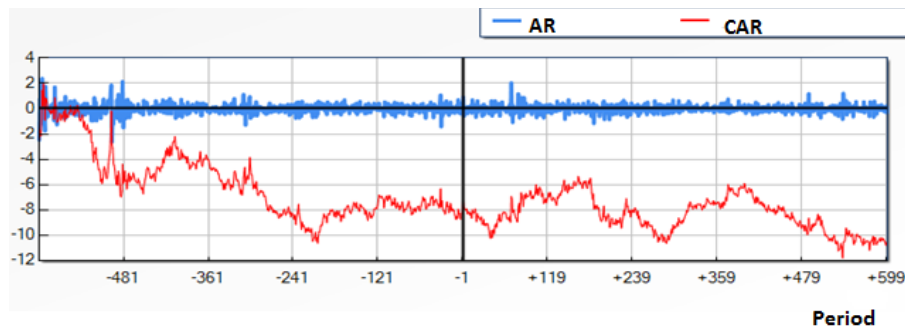


Figure 1 AR and CAR of Taiwan 50 ETF around QE announcement

### Unit Root Test of Sample Data

To ensure the validity of empirical results, before testing the causal relationship between variables, we need to make sure that the time series of variables have the same level. Hence, ADF unit root test is carried out to ensure that the average CAR of Taiwan 50 ETF, TAIEX futures, MSCI Taiwan Index Futures and the price spread are stationary. Based on the test of lagged period with minimum SC, the data at the original level mostly cannot reject the null hypothesis. The results suggest that these variables are not stationary and are characterized by fat-tails. The time series also have autocorrelations. Hence, after taking the first difference, the series become stationary and meet the condition of cointegration. Therefore, we can proceed with Granger causality test.

Table 1 Unit root test of Granger model's variables

Variables / Model	Intercept (C)	Trend (T) and intercept (C)	No trend (T) and intercept (C)
CAR50	-2.9473(1)***	-2.9009(0)	-0.3319(0)
D(CAR50)	-42.7227(0)***	-42.7144(0)***	-42.7294(0)***
TXA	-3.1656(1)**	-2.8452(0)	0.7853(0)
D(TXA)	-32.6900(0)***	-32.7283(0)***	-32.6643(0)***
MSCI	-2.4929(0)	-2.3450(0)	0.6461(0)
D(MSCI)	-33.8697(0)***	-33.8718(0)***	-33.8610(0)***

Note: According to Mackinnon (1991), \*, \*\*, and \*\*\* represent significance at 10%, 5% and 1% level, respectively. The C, T, and L in the model represent the intercept, trend and lagging period. TXA, MSCI and CAR50 represent the price of TAIEX futures, the price of MSCI Taiwan Index Futures and the average CAR of Taiwan 50 ETF. D represents differentiated data.

### Estimation Results of VAR Model

This section examines the causality relationship between the average CAR of Taiwan 50 ETF, TAIEX futures and MSCI Taiwan Index Futures using the VAR model. The results show that in the short term, TAIEX futures lead Taiwan 50 ETF for one period. MSCI Taiwan Index Futures lead TAIEX futures for one period as well (as shown in Table 2).

**Table 2 Estimation results of VAR model**

	D(CAR50)	D(TXA)	D(MSCI)
D(CAR50(-1))	-0.207544 (0.02794) [-7.42728]	1.076611 (6.90077) [ 0.15601]	0.031691 (0.25418) [ -0.12468]
D(TXA(-1))	-0.000658 (0.00012) [-5.62500]	0.060072 (0.02889) [ 2.07951]	-0.000700 (0.00106) [-0.65821]
D(MSCI(-1))	-0.001199 (0.00318) [-0.37690]	-1.371769 (0.78569) [-1.74593]	0.020850 (0.02894) [ 0.72048]
C	-0.004614 (0.01093) [-0.42200]	3.194283 (2.70038) [ 1.18290]	0.090891 (0.09946) [ 0.91382]
Determinant resid covariance (dof adj.)	14656.54		
Log likelihood	-10821.54		
Akaike information criterion	18.11629		
Schwarz criterion	18.16733		

### Granger Causality Test

This section examines the Granger causality relationship between the average CAR of Taiwan 50 ETF, TAIEX futures and MSCI Taiwan Index Futures. The results show that when lagging one period, the TAIEX futures lead the average CAR of Taiwan 50 ETF. MSCI Taiwan Index Futures also lead TAIEX futures (as shown in Table 3). In other words, institutional investors do indeed attempt to influence TAIEX futures through MSCI Taiwan Index Futures, which consequently have an influence on Taiwan stock markets (or the Taiwan 50 ETF). Therefore, in the next section, the price spread between TAIEX futures and MSCI Taiwan Index Futures is included in the model to conduct backtesting using program trading. This can help us understand the effect on trading performance.

**Table 3 Granger causality test**

<b>Dependent variable: D(CAR50)</b>			
<b>Excluded</b>	<b>Chi-sq</b>	<b>df</b>	<b>Prob.</b>
D(TXA)	31.64061	1	0.0000
D(MSCI)	0.142054	1	0.7062
All	31.83514	2	0.0000
<b>Dependent variable: D(TXA)</b>			
<b>Excluded</b>	<b>Chi-sq</b>	<b>df</b>	<b>Prob.</b>
D(CAR50)	0.024340	1	0.8760
D(MSCI)	3.048281	1	0.0808
All	3.063149	2	0.2162
<b>Dependent variable: D(MSCI)</b>			
<b>Excluded</b>	<b>Chi-sq</b>	<b>df</b>	<b>Prob.</b>
D(CAR50)	0.015546	1	0.9008
D(TXA)	0.433242	1	0.5104
All	0.450943	2	0.7981

**Granger Causality Test of TAIEX Futures Trading Model**

**Unit Root Test of Sample Data**

To ensure the validity of results, we need to ensure the stability of variables before testing their causality relationships.

**Table 4 Unit root test of Granger model's variables**

Variables / Model	Intercept (C)	Trend (T) and intercept (C)	No trend (T) and intercept (C)
TXF	-2.3350(0)	-2.3481(0)	0.1208(0)
D(TXF)	-35.8174(0)***	-35.8105(0)***	-35.8280(0)***
SGX	-2.2737(0)	-2.4396(0)	-0.1492(0)
D(SGX)	-37.7112(0)***	-37.7023(0)***	-37.7213(0)***
TXFDIFF	-2.3417(0)	-2.3512(0)	-0.1180(0)
D(TXFDIFF)	-35.1822(0)***	-35.8053(0)***	-35.8229(0)***

Note: According to Mackinnon (1991), \*, \*\*, and \*\*\* represent significance at 10%, 5% and 1% level, respectively. The C, T, and L in the model represent the intercept, trend and lagging period. TXF, SGX and TXFDIFF represent the price of TAIEX futures, the price of MSCI Taiwan Index Futures and the price spread. D represents the differentiated data.

At the original level, the data including TAIEX futures, MSCI Taiwan Index Futures and the price spread cannot mostly reject the null hypothesis based on the test of lagged period with minimum SC. The results suggest that the variables are not stationary. After taking the differentiation, the series become stationary and meet the condition of cointegration. That is,  $I(1)$  is a stationary series and we can proceed with Granger causality test.

### **Granger Causality Test**

This section examines the Granger causality relationship between the price spread of TAIEX futures, MSCI Taiwan Index Futures (TXFDIFF) and TAIEX futures (DTXF). The results show that when lagging two periods, bidirectional Granger relationship exists (as shown in Table 5). Therefore, the price spread and TAIEX futures are Granger cause of each other. In the next section, these two variables are included in the model to conduct backtesting using program trading. This can help us analyze the effect of price spread on trading performance.

**Table 5 The Granger relationship of the price spread and TAIEX futures**

Dependent variable: D(TXFDIFF)			
Excluded	Chi-sq	df	Prob.
D(TXF)	5.284125	2	0.0712
All	5.284125	2	0.0712
Dependent variable: D(TXF)			
Excluded	Chi-sq	df	Prob.
D(TXFDIFF)	4.631901	2	0.0987
All	4.631901	2	0.0987

### **TAIEX Futures and the Effect of Price Spread on Trading Performance**

#### **Model 1 (Contrarian Model)**

Using daily data, this section examines the situation in which investors trade based on existing TAIEX futures information and RSI technical analysis. Based on three stages of simulation, in a shorter period (2011.5.2~2013.7.13) the profit in the first stage is \$563,000. When the optimal parameter from the first stage is utilized in the second and third stages, the profits become \$984,600 and 1,008,200, respectively. The increment is as high as 78.8%. Based on three stages of longer periods of learning (2011.5.2~2013.7.13), the profits become \$831,600 in the first stage, \$916,800 in the second stage and \$1,088,600 in the third stage. The increment is as high as 30.9%. In the same period, the TAIEX futures have increased by 14.02% from 8141 to 9283. In other words, based on the RSI technical analysis, without the price spread information, investors are able to make profits solely based on the past information of TAIEX futures (as shown in Table 6).

**Table 6 Total trading analysis of Model 1 across three stages (daily data)**

Unit: dollar

Period	2010.6.12~2013.7.13~2016.2.21 ~2017.1.20			2011.5.2~2013.7.13~2016.2.21~ 2017.1.20		
Stages	Stage I	Stage II	Stage III	Stage I	Stage II	Stage III
Winning Probability (Trading No. / Success No.)	100%(4/4 )	100%(5/5 )	100%(6/6 )	100%(3/3 )	100%(5/5 )	100%(6/6 )
Net profits	831,600	916,800	1,088,600	563,600	984,600	1,008,200

Next, using hourly data (i.e., the intraday data), we investigate the situation in which investors trade based on existing TAIEX futures information and RSI technical analysis. Based on three stages of simulation, in a shorter period the profit in the first stage is \$525,200. When the optimal parameter from the first stage is utilized in the second and third stages, the profits reduce to \$10,800 and 260,600, respectively. The decline reaches as large as -50.38%. Based on three stages of longer periods of learning, the profits become \$479,600 in the first stage, \$259,000 in the second stage and \$219,800 in the third stage. The decline is as large as -54.17%. Therefore, with only the past information of TAIEX futures and without the price spread information, investors may not gain from trading (as shown in Table 7).

**Table 7 Total trading analysis of Model 1 across three stages (hourly data)**

Unit: dollar

Period	2010.6.12~2013.7.13~2016.2.21 1~2017.1.20			2011.5.2~2013.7.13~2016.2.21 ~ 2017.1.20		
Stages	Stage I	Stage II	Stage III	Stage I	Stage II	Stage III
Winning Probability (Trading No. / Success No.)	66%(42/ 28)	59%(72/ 43)	60%(84/ 51)	75%(24/ 18)	57%(42/ 24)	60%(56/ 34)
Net profits	479,600	259,000	219,800	525,200	10,800	260,600

**Model 2 (Mean Reversion Model)**

This section tests Model 2 by including the price spread information of TAIEX futures and MSCI Taiwan Index Futures. The results show that the profit in the first stage is \$700,000. When the optimal parameter from the first stage is used in the second and third stages, the profits become \$983,800 and 827,600, respectively. The increment is as high as 18.22%. Based on three stages of longer periods of learning, the profits become \$1,111,400 in the first stage, \$1,395,000 in the second stage and \$1,238,800 in the third stage. The results suggest that including the price spread information and using the property of mean reversion, although the profits slightly decrease in 2017, this trading strategy can still lead to profits, which have increased by 11.46%. Since investors can profit based on past information, the results suggest that the Taiwan futures market is not efficient (as shown in Table 8)



**Table 8 Total trading analysis of Model 2 across three stages (daily data)**

Unit: Dollar

Period	2010.6.12~2013.7.13~2016.2.21 1~2017.1.20			2011.5.2~2013.7.13~2016.2.21 ~ 2017.1.20		
Stages	Stage I	Stage II	Stage III	Stage I	Stage II	Stage III
Winning Probability (Trading No. / Success No.)	81%(11/9)	84%(13/11)	73%(15/11)	100%(7/7)	100%(9/9)	81%(11/9)
Net profits	1,111,400	1,395,000	1,238,800	700,000	983,800	827,600

Next, using hourly data (i.e., the intraday data), Model 2 shows that in a shorter learning period, the profit in the first stage is \$510,200. When the optimal parameter from the first stage is used in the second and third stage, the profits in the second and third stages are the same and increase to \$987,000; that is, an increase of 93.45%. Based on three stages of longer periods of learning, the profits become \$466,000 in the first stage, \$663,200 in the second stage and \$590,600 in the third stage. The increase is as large as 24.24%. Therefore, by incorporating the price spread information, this trading strategy can lead to profits (as shown in Table 9).

**Table 9 Total trading analysis of Model 2 across three stages (hourly data)**

Unit: Dollar

Period	2010.6.12~2013.7.13~2016.2.21 1~2017.1.20			2011.5.2~2013.7.13~2016.2.21 ~ 2017.1.20		
Stages	Stage I	Stage II	Stage III	Stage I	Stage II	Stage III
Winning Probability (Trading No. / Success No.)	50%(80/40)	57%(137/73)	50%(160/80)	46%(15/7)	56%(23/16)	56%(23/16)
Net profits	466,000	663,200	579,600	510,200	987,000	987,000

**Model 3 (Momentum Model)**

Using daily data for Model 3, in a shorter learning period the first stage shows a loss of -\$98,400. As the optimal parameter is not profitable in the first stage, we do not need to proceed with the second and third stages of simulation. In a longer learning period, the first stage also leads to a loss of -\$280,400. As a result, we do not proceed with the second and third stages of simulations. Therefore, the results show that the momentum strategy based on daily data of TAIEX futures is not profitable (as shown in Table 10).

**Table 10 Total trading analysis of Model 3 across three stages (daily data)**

Unit: dollar

Period	2010.6.12~2013.7.13~2016.2.21 1~2017.1.20			2011.5.2~2013.7.13~2016.2.21 ~ 2017.1.20		
Stages	Stage I	Stage II	Stage III	Stage I	Stage II	Stage III
Winning Probability (Trading No. / Success No.)	0%(2/0)	-	-	0%(2/0)	-	-
Net profits	-280,400	-	-	-98,400	-	-

Using hourly data (i.e., the intraday data), Model 3 shows that in a shorter learning period, the profit in the first stage is \$532,400. When the optimal parameter from the first stage is applied in the second and third stages, the profits reduce to \$437,600 and 1,800, respectively. The decline is as large as -99.58%. As for the three stages of longer periods of learning, the profits become \$661,400 in the first stage, \$566,600 in the second stage and \$130,800 in the third stage. The decline is as large as -80.22%. In other words, momentum strategy does not lead to trading profits (as shown in Table 11).

**Table 11 Total trading analysis of Model 3 across three stages (hourly data)**

Unit: dollar

Period	2010.6.12~2013.7.13~2016.2.21 1~2017.1.20			2011.5.2~2013.7.13~2016.2.21 ~ 2017.1.20		
Stages	Stage I	Stage II	Stage III	Stage I	Stage II	Stage III
Winning Probability (Trading No. / Success No.)	38%(52/20 )	33%(113/3 8)	33%(132/8 8)	38%(36/14 )	32%(97/32 )	38%(118/3 9)
Net profits	661,400	566,600	130,800	532,400	437,600	1,800

### CONCLUSIONS AND RECOMMENDATIONS

After the financial crisis, the US Federal Reserve adopted quantitative easing monetary policy in an attempt to boost the US economy. After 2015, the US job market stabilized and the Fed ended the QE and started raising interest rate. The hot money started flew out of emerging markets and brought tremendous shocks in financial markets. The aim of this study is to show that institutional investors affect TAIEX futures through MSCI Taiwan Index Futures, which consequently affect Taiwan 50 ETF. This study incorporates the price spread of TAIEX futures and MSCI Taiwan Index Futures in the models to conduct backtesting using program trading. The results can help us answer the question: whether the mean reversion model is better than the contrarian model and the momentum model.

The results show that for the mean reversion model (based on daily data), incorporating the price spread of TAIEX futures and MSCI Taiwan Index Futures in a shorter learning period lead to profits across three stages of simulations. The profits increase from \$700,000 in the first stage to \$983,800 and \$827,600. For the longer learning period, the profits increase from \$1,111,400 in the first stage to \$1,395,00 and \$1,238,800 in the second and third stages, respectively. The increment in profits is even higher when intraday data is used. Therefore, the mean reversion model has higher profits and stability than contrarian and momentum models. The evidence suggests that incorporating the price spread information and utilizing the mean reversion property of behavioral finance can enhance trading performance. Due to the space and time limit, future research can use other futures data in Taiwan to conduct optimal backtesting and run the simulations.

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# Do India's activities in Africa liberate and strengthen Africa's position in the Euro-African relation?<sup>1</sup>

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## Abstract

This research will analyze the economic relationship between India and Africa by analyzing trade, investments, aid and trade agreements. Moreover, this study will investigate whether there is substitution effect for the economic relationship between Europe and Africa and compare the results to China. The engagements of India appear to be stronger in resource rich countries and prove no substitution effect for the relationship of Europe and Africa. Moreover, India is also behind China in terms of trade. However, while India's engagement might be smaller than China's and Europe's engagement, it might be more beneficial to Africa as the exports provide Africa with a trade surplus, whereas China and Europe do not. Therefore, the trade between India and Africa is a positive development for Africa, especially as Africa manages to reinvest this surplus into the development of its own economy.

**Keywords:** Africa, Sub-Saharan Africa, India, economic relation, trade, investments, development aid, trade agreements, resource driven.

## INTRODUCTION

Over the last decades India has experienced a spectacular economic growth, comparable with the large industrializations as the United Kingdom and United States (Winters & Yusuf 2007). The trade between India and Africa has also enjoyed impressive growth, many believe that India might offset Europe from its thrown as the largest economic partner of Africa. This article will analyze the economic relationship of India and Europe with Africa, and look at trade, investment, aid and trade agreements. This study adds trade agreements to the conceptual model of Keers & Pennink (2010) and will analyze the implications of doing so. In addition, what are the consequences for Africa and Europe of the increased engagement by India? Moreover, the case of India will be compared to China, as these countries are often considered equals. This study will finish with recommendations for further research.

### Indo-Africa & European-Africa economic relation in existing literature

India has been trading with Africa for over one hundred years, and over time it has developed a strong relationship with Africa (Nanji & Radeva 2009). The economic growth of India over the years, with rates of 8-9% amplified its role in the global economy (Economist 2007).

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Correspondingly it also increased its engagement with Africa. Broadman (2007) regards the trade and investments between India and Africa to be sustainable as they complement each other with African needs for Indian manufactured goods and India's need for Africa's natural resources. The role of natural resources in this relation is increasing since India wished to diversify its energy needs, due to the possible conflict with its traditional partners Afghanistan and Iraq (Kaplan 2010). While trade between African and India in 1991 was around 967 million dollar, it reached the 35 billion dollar mark in 2008 (Nanji & Radeva 2009). This is only expected to grow, with estimates going as high as 120 billion by 2012 (McCann 2010). It is important to stress once again the importance of natural resources in the economic relation between India and Africa. The stream of India's investment in Africa is also largely focused on resource rich countries (Broadman 2007; Beri 2010; Pigato 2009; Vidyarthee 2009). Furthermore, it seems that trade and investment policies are often interwoven with development aid, and that aid is often a part of a package deal with Africa (Vidyarthee 2009; Zafar 2007). Europe is the most important trade partner of Africa, in almost all African countries it is the largest exporter or importer (Keers & Pennink 2010). Moreover, Europe is also the largest partner of Africa in investment and development aid, however the current rise of Indian-Africa engagements, at a much higher pace than Europe, might threaten this position in the long run. Broadman (2007) focuses on the different aspects of trade, investments and aid between Africa, China and India and the opportunities that follow. However, the research also addresses difficulties, such as border formalities that need to be solved in order to further progress trade. The study by Broadman focuses on the growing relationship of China, India and Africa but does not discuss the possible consequences this change might have for other economic partners of Africa. This paper follows upon the study by Keers and Pennink (2010) on the effects of the Sino-African relation. It investigates whether Indian- African endeavors might negatively affect the European-African relation, and whether Indian trade, investments and development aid will become a preferred substitute for European engagements. Furthermore, it is discussed whether this possible effect is different for African oil-exporters and oil-importers since academics often point to the importance of natural resources in the engagements of India.

### **Theoretical model for the study on the relation between India and Africa**

This paragraph will deal with the research design, the conceptual model, and the factors and data-set used in this study to answer the following research question:

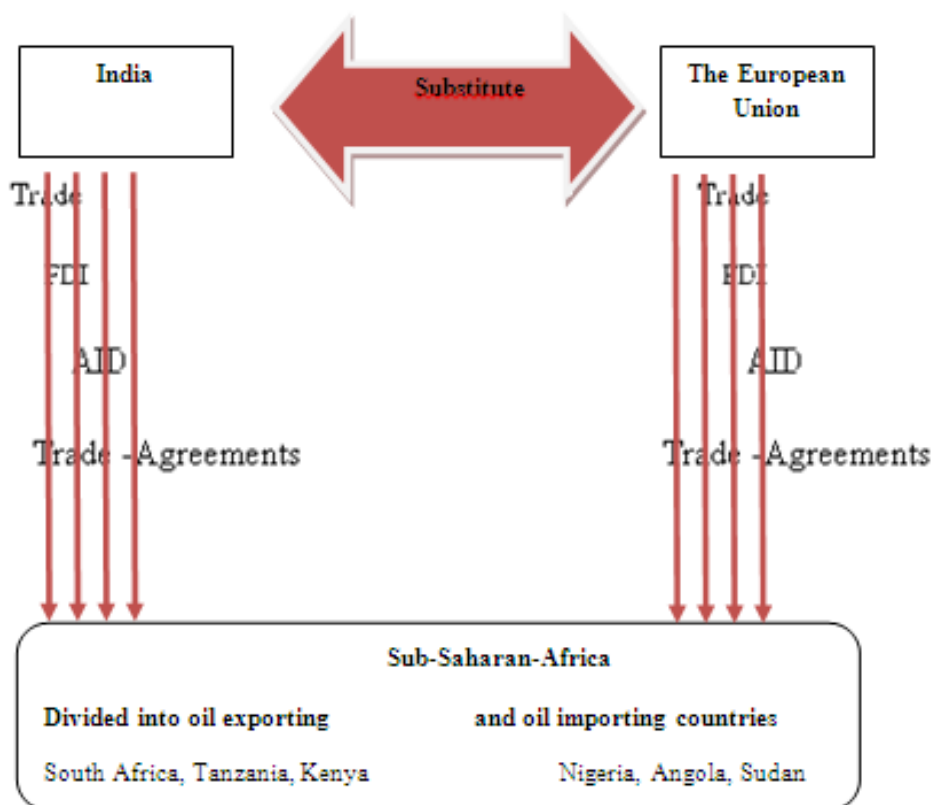
Is the growing economic relationship between India and Africa a substitute for the traditional relationship between Africa and Europe?"

#### ***Theoretical model***

The research by Broadman (2007) on behalf of the World Bank that analyzes trade, foreign direct investments and formal trade policies between countries and continents led to a surge in research covering the impact and growth of Chinese and India engagements with Sub-Saharan Africa. The framework of Broadman was the foundation for further investigation. Zafar (2007) investigated the economic relation of China with Africa based on trade and investments and elaborated the relation by adding the factor aid into the model, based on the assumption that aid plays an important role in facilitating trade and investments. When analyzing the economic relationship of India with Sub-Saharan Africa several authors indicate the possible differences in results when looking at oil-exporting and oil-importing countries (Pigato 2009; Radelet 2010).

The research of Keers and Pennink (2010) follows the same line of reasoning used in the aforementioned studies, and analyzes the economic ties between China and Sub-Saharan Africa and whether it might substitute for European-African engagements. This study is a follow up of this research and also analyzes trade, investments, and aid but also adds trade agreements to the model. Trade agreements were part of the initial study by Broadman (2007), where it was one of the policy factors influencing trade and investment patterns. Broadman regards trade agreements as necessity for trade. Moreover, in recent negotiations between Europe and Africa there seems to be controversy over the economic partnership agreements, Meanwhile India is negotiating and changing its trade agreements with various parties. This can be captured in the following conceptual model.

**Figure 1: Conceptual model**



**Source: Keers & Pennink (2010)**

The concepts trade, foreign direct investment, foreign development aid and trade agreements are investigated and together form the economic relationship between India, Europe and Sub-Saharan Africa.

For analyzing the trade relationship of Sub Saharan Africa with India and Europe, it is necessary to analyze the volume of imports and exports. To investigate whether there is a possible substitution effect it is necessary to examine if Indian-African trade is increasing and if Euro-African trade is simultaneously losing ground. Increasingly there is a notion that North-South trade is losing ground to trade between Southern partners. The economic development in Southern countries has resulted in a growing middle class with more discretionary income; this in turn leads to more demand and opportunities for import and trade.

Second, foreign direct investment (FDI) is an important component in the economic relation. Sauvart (2011) even argues that foreign direct investment has surpassed trade for delivering

goods and services to foreign markets. In addition, FDI plays a vital role in integrating the production process worldwide. This development became apparent after the large surge of investments sent from developed countries to China and India, which significantly contributed to their impressive growth. In turn these developing countries started their own outward investment schemes (Hattari & Rajan 2010). Foreign direct investments have increased from 147 billion in 1990 to over 1 trillion in 2004 (UNCTAD 2004). Additionally, developing countries contributed 174 billion, or around 14% of global outward foreign direct investments. The United Nations mentions that these developing countries invest especially to acquire strategic assets. Therefore, it is expected that resource rich countries are the largest recipients of foreign direct investments, and according to Asiedu (2006) Angola, Nigeria and South Africa indeed were the largest recipients.

According to the Organization for Economic Cooperation and Development (OECD) : "Foreign direct investment reflects the objective of obtaining a lasting interest by a resident entity in one economy (direct investor) in an entity resident in an economy other than that of the investor (direct investment enterprise). The lasting interest implies the existence of a long-term relationship between the direct investor and the enterprise and a significant degree of influence on the management of the enterprise. Direct investment involves both the initial transaction between the two entities and all subsequent capital transactions between them and among affiliated enterprises both incorporate and unincorporated" (OECD Benchmark Definition of Foreign Direct Investment Third Edition 1996). In the Foreign Direct Investment Yearbook of the European Commission, a FDI is considered an international investment when an investor obtains a lasting interest of ten percent or more in an enterprise resident in another country. The research question suggests that Indian FDI will substitute for traditional European investments, and that this effect is stronger in resource rich countries (Hattari & Rajan 2010). Therefore, this paper will examine whether there are changes in the investments made by India and Europe in the African continent.

Third, the economic factor of development aid is also defined according to the OECD as " The flows of official financing administered with the promotion of economic development and welfare of developing countries as the main objective, concessional in character with a grant element included". Moreover: "official development assistance flows comprise contributions of donor government agencies, at all levels. This also means that besides loans or grants or similar financial flows, it also includes debt cancellation as a form of development aid" (OECD website). The presence of new international actors in Africa and their increased political and economic engagement in Africa influence the context in which development aid takes place (Rampa & Bilal 2011). Europe urges these countries to join the development assistance committee. Europe wants to involve these nations, hear their views and eventually jointly address development in donor countries (Rampa & Bilal 2011). While Europe views triangular aid forums in a positive light, Africa and India have different views. Africa now has different sources of development aid, and has the luxury of choosing partners based on its needs, why give up this privilege? Meanwhile India rejects the idea of classifying countries in donors and other as recipients, and therefore does not want to participate in the Western aid effectiveness debates (Rampa & Bilal 2011).

Several authors (Broadman 2007; Rampa & Bilal 2011; Vidyarthi 2009) mention the different development models, more specifically the thin line between commerce and aid in the



engagements of the emerging partners compared to the stricter division made by traditional donors. India approaches Africa as an equal wanting to build a mutually beneficial relationship (Chanana 2009), in addition India as part of the non-aligned movement addresses a non-interference policy. In contrast, traditional donors have always approached Africa from a donor-aid recipient perspective. This relationship is built on philanthropy, but on the condition those developing countries develop western governance principles (Rampa & Bilal 2011).

The discussion paper of Rampa & Bilal (2011) gives the following schematic overview capturing the different development approaches between emerging and traditional donors:

**Table 5: Different development approach emerging and traditional donors**

	Emerging economies	Traditional donors
Sector	Health, agriculture, education, production, capacities, peace, security and infrastructure	MDG's, trade liberalization, promotion of democracy, human rights and fragile states
Modalities	Interest in flexible procedures, cost efficiency, and speedy project delivery timeframe	Importance of Paris/Accra agenda: greater attention to capacity building, governance transparency, involvement of non-state actors and accountability
Channels	Bilateral relations; aid is almost exclusively disbursed directly to recipient governments	Regional, pan-African and multilateral endeavors also prominent features of their approach

**Source: Rampa & Bilal 2011**

This schematic overview indicates several important differences. Most importantly it shows that Europe strives for long-term intangible goals while emerging economies such as India attempt clear short-term projects aimed at current needs (Chanana 2009; Zafar 2007). Moreover, the European approach is aimed at the pan-African level, while emerging economies seek partnerships bilaterally. Consequently, these projects are more effective and make it possible to combine them with trade and investments. The new landscape in African aid development has spurred discussion in Europe that development aid is not effective, and that Europe needs to reconsider its policy. Within different European countries changes have been communicated via the press. The Netherlands, for example, has limited the number of countries it supports, and these countries are selected by their strategic importance.

Trade agreements are the fourth and final component of the economic relationship between India, Europe and Africa. Broadman (2007) refers to these as at-the-border-policies, and for this research, the trade agreements that are in effect between the participating countries will be examined. Vidyarthi (2009) describes trade agreements as the level of tariffs and or quotas between two or in some cases several countries. The scope for this paper is not to analyze complete trade agreements, but to see where there are trade agreements in our set of countries. Trade agreements are extensive documents and cover more than just free trade and reducing tariffs. Additionally, trade agreements often include regulatory framework improvements for trade, capital flows, property rights (McQueen 2002). The complex nature of these agreements has led to a shift from a multilateral to a bilateral level to ease negotiations.

After bilateral agreements are made, these issues are again included in multilateral negotiations (Goodison 2007). Consequently, this could mean that one party has a more powerful influence over the negotiations process, and this might result in unbalanced agreements. Therefore, it is interesting that the process of negotiation between Europe and Africa is at an impasse, while simultaneously countries such as China and India have increased their engagements with Africa. One could argue that Africa feels stronger in this negotiation process because of its decreased dependence on Europe. Moreover, the negotiations between India and Africa take place on a more equal playing field, as India talks about creating a partnership in development.

There are multiple trade agreements in affect for Europe and Africa, and most African countries are usually involved in more than one trade agreement. For example, there is the Cotonou agreement, the everything-but-arms agreement and some countries have also already agreed to new economic partnerships. For India and Africa it is not clear which agreements are already installed as negotiations are still in progress. The later paragraph on trade agreements will discuss the latest updates and implications of African trade agreements and whether Indian engagements are an alternative to the European trade agreements.

### ***African oil exporters vs. African oil importers***

Sub-Saharan Africa consists of 48 countries, and has a rich diversity among its members in terms of history, geography, culture and political systems, which affects their different economic potential (Radelet 2010). Therefore, it is important to look at the characteristics of the individual countries. Pigano (2009) and Radelet (2010) focus on two types of African countries: labor abundant countries and oil-exporters. These types of countries show different growth rates and attract different investments. Radelet (2010) argues that, "the economic dynamics in the oil-exporting countries are fundamentally different from those in other countries in Africa". The world economy is based on oil, gas and other scarce resources that are needed for transport, production, and living. Thus the economic growth in emerging countries will further increase the demand for oil. Further, the availability of oil plays a large role in government policy within these countries and throughout the world. Africa is seen as a key source of oil and gas outside the more politically volatile oil-producing regions in West Asia and the Middle East (Beri 2009). The IMF's list of oil-exporting countries is defined on the basis of net oil-exports and includes Nigeria, Sudan, Angola, Cameroon, Chad, Republic of Congo, Equatorial Guinea, Gabon and Mauritania (IMF). These countries may have profited from the ever increasing oil and commodity prices. From 1996-2008 the average growth rates per capita in the oil exporting countries were higher than in the other African countries (Radelet 2010). It could be the case that the export of oil to India and China plays an important role in these growth figures, and that therefore the result might differ for the group of oil-exporters in comparison with oil-importers. Overall, economies blessed with natural resources show different investment and export patterns than those without natural resources. Oil exporting countries tend to rely heavily on extractive industries, while other sectors are relatively underdeveloped. For this reason it is also interesting if we detect different results, or maybe detect a substitution effect only in the oil exporting countries, which confirms the notion of India focusing on energy diversification. The next paragraph will further elaborate how the countries were chosen for the different data sets.

## EMPIRICAL DATA

### Countries under investigation

The aim of this research is to examine whether the Indian-Africa economic relationship is a substitute and will replace the Euro-African economic relationship. The previous paragraph stressed the differences between oil exporting and oil-importing (labor abundant) countries. Therefore it is necessary to compare these groups. For this study each group will consist of three countries. Publications and research show that India sees Africa as a key source for diversification of its energy needs, it is therefore likely that the data set of oil exporting countries shows a stronger economic relation with India than the data set of oil importing countries (Beri 2010). To test this hypothesis the countries that will be included in the data set of oil importing countries need to be important trade partners of both India and Europe. The European Commission publishes reports of the trade and foreign direct investments for each country, which also state the main trade partner of each country. Based on this data, a search is performed to find the countries suitable for each data set. Notably, all of the countries in the reports have Europe as one of its main import or export partners. The data set of oil-exporting countries consists of Nigeria, Angola and Sudan. While the data set of oil-importing countries consists of South-Africa, Tanzania and Kenya.

**Table 6: Data set**

<b>Oil exporting countries</b>	<b>Sub-Saharan</b>	<b>Oil importing countries</b>	<b>Sub-Saharan</b>
Nigeria		South Africa	
Angola		Tanzania	
Sudan		Kenya	

The completion of this research is based on the data coming from different international organizations that monitor and publish statistics compiled from their databases. The following institutions are vital for the information gathering process, International Monetary Fund (IMF), World Bank, Eurostat, UNCOM and OECD statistics. Moreover, for gathering the Indian data it is necessary to dive into various Indian government institutions such as the Reserve Bank India (RBI), and the ministries of trade, commerce and finance. The data will be gathered and analyzed for the timeframe 2000-2010 for the selected countries. Hereafter graphs and tables will be compiled to make the data more comprehensive and illustrating.

### LIMITATIONS

This study encountered data availability problems, not all the data on FDI and development assistance is in the public domain. The Indian figures are still very non-transparent, the numbers in this research follow from on other articles and statements. The data on European FDI is not available for all countries, but fortunately, development assistance data is complete. Furthermore, Indian institutes might follow different definitions than European institutes. Finally, the research on Indian engagements in Africa is still very limited, most research is on Chinese engagements. Therefore, this research is valuable in itself that it explores the engagements of India in Africa.

### India's Economic Relationship with Sub-Saharan Africa

#### *The Role of Natural Resources*

Energy security plays a very important role in India's foreign policy; India is currently fourth on the list of oil consumers worldwide, and the third largest importer (Voll 2010). The Indian economy is projected to grow at 8-9% annually over the next two decades, leading to a substantial increase in its demand for oil to meet its transportation and production needs (CSIS 2006; Singh 2007). India is very dependent on outside energy supplies, as it is not richly

endowed with natural resources itself, except for coal (Vidyarthi 2009). Estimates by Beri (2009) a senior research associate at the Institute for Defense Studies, suggest that India can match 25% of its energy needs internally, and will have to import around 70% (Singh 2007). China, in comparison, has a higher volume of oil imports, but only imports 46% of its energy needs (Cheru & Obi 2011). Therefore, the role of natural resources seems to play a more important role in India's engagement with Africa than China. This illustrates the importance for India to increase its ties with African resource rich countries. Indeed already 18% of its oil imports come from North and Sub-Saharan Africa (Beri 2010; Voll 2010). At this moment, 65% of its oil imports originate from the Persian Gulf and India is concerned about its dependence on this politically sensitive region. India is following other major oil importing economies by diversifying its energy sources (Singh 2007). India sees Africa as an attractive source of energy because African oil is of high quality (Beri 2010). Although India has long history of trade links with many Eastern African countries, the need for energy has contributed to the fact that Nigeria has become India's largest partner in terms of import.

**India's Trade with Sub-Saharan Africa**

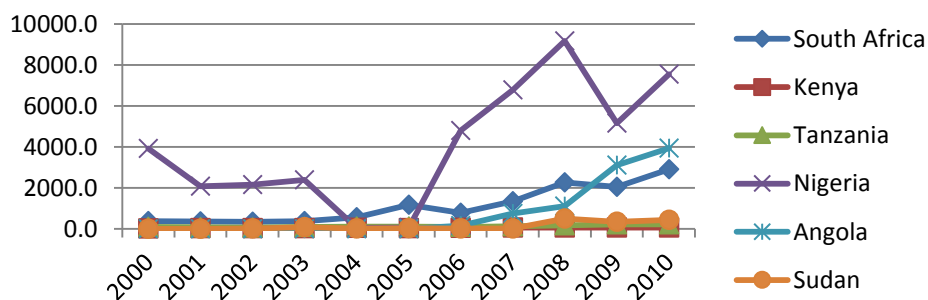
The study by Broadman (2007) already indicated the sustainable nature of the relationship between India and African countries as India's increasing need for natural resources complements Africa's need for manufactured goods. The trade relation of India with Sub-Saharan African countries has intensified over the entire line, although India imports more than that it exports. Moreover, the graphs confirm the image that energy security plays a vital role in Indians relation with Africa, given that Nigeria and Angola have surpassed South Africa as biggest import partner.

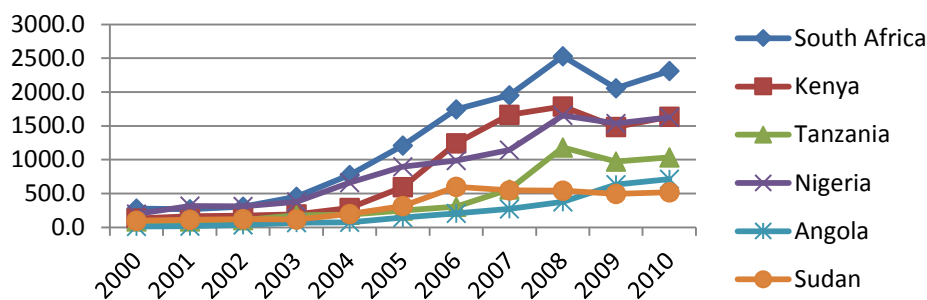
**Table 7: Indian imports from Sub-Saharan Africa (millions USD)**

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
<b>South Africa</b>	372,4	361,9	349,7	378,0	563,4	1182,3	782,2	1350,6	2268,7	2052,5	2916,3
<b>Kenya</b>	17,9	30,1	32,3	32,9	52,4	43,7	49,5	71,8	75,1	69,4	73,3
<b>Tanzania</b>	98,8	82,2	64,2	95,3	112,3	111,6	94,1	134,4	178,8	227,5	220,8
<b>Nigeria</b>	3918,6	2083,1	2156,8	2391,7	50,0	60,4	4807,6	6789,8	9175,5	5158,9	7552,8
<b>Angola</b>	0,0	0,0	4,9	1,6	0,5	2,4	168,1	749,5	1117,6	3116,5	3941,6
<b>Sudan</b>	7,0	7,7	19,8	79,0	27,9	30,8	22,5	16,4	510,2	344,0	440,9

Source: IMF direction of trade statistics

**Figure 2: Indian imports from Sub-Saharan Africa (millions USD)**



**Figure 3: Indian exports to Sub-Saharan Africa (millions USD)****Table 8: Indian exports to Sub-Saharan Africa (millions USD)**

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
<b>South Africa</b>	278,9	269,7	307,0	454,2	773,4	1210,4	1745,0	1954,1	2532,6	2056,8	2312,2
<b>Kenya</b>	133,1	163,3	175,4	195,1	285,8	593,0	1243,8	1664,2	1787,2	1486,0	1634,3
<b>Tanzania</b>	88,8	87,5	106,8	176,8	187,2	248,7	305,2	564,0	1182,7	975,2	1035,7
<b>Nigeria</b>	199,0	315,7	309,6	377,4	661,1	898,4	985,7	1142,2	1655,8	1536,1	1626,2
<b>Angola</b>	14,1	15,5	37,7	68,5	74,8	145,2	207,1	272,4	376,6	632,5	714,2
<b>Sudan</b>	100,3	110,8	120,4	114,8	197,1	317,8	599,0	546,5	544,5	494,7	517,9

Source: IMF direction of trade statistic

### ***India's Foreign Direct Investments in Sub-Saharan Africa***

India's foreign direct investments can be divided into two distinct periods, the period before 1990 and thereafter. After that year the regulations and restrictions on investment were softened for both inward and outward investments. The period before 1990 showed investments in developing countries, while the period after 1990 is characterized by investments in developed countries (Hattaria & Rajan 2010). They discuss the problems in analyzing Indian FDI data, as the information is not available in the public domain. Other researchers with access to the data find FDI being channeled through offshore financial centers such as Mauritius, but also via the Netherlands. Pradhan (2005) mentions the following reasons for investing abroad: market seeking, technology seeking, brand name seeking, resource seeking and risk diversification seeking. The reasons for investing in Africa are likely to fall under the following categories: market seeking, resource and diversification seeking. As mentioned, India is dependent on oil-imports and wants to diversify its sources of energy. Moreover, the potential of Sub-Saharan Africa as a market is also attractive in the long-run.

### ***India's Development Aid in Sub-Saharan Africa***

Traditionally India is perceived as an important aid receiver (Chanana 2009), and it is even listed in the top 10 of aid recipients (Madote 2010; OECD 2008). Therefore, it is noteworthy that, while being a large recipient of aid, India has its own foreign aid program since the 1950, albeit small, focused on capacity building, and mostly directed to neighboring countries or countries in Africa (McCormick 2008). The scale of its aid programs has increased with its rise in the global economy, although the bulk of aid is still aimed at training, capacity building and other soft investments. According to Chanana (2009) India's aid program annually grew at a 22% compounded rate over a period of 10 years. India's aspirations on the global scene contribute to its role as a donor. Agrawal (2007) regards this as an attempt to deflect from India's own internal problems and that India wants to put more focus on its new global status as a growing economy. In line with this stature Agrawal (2007) expects India to be a net exporter of development assistance within 5 years.

India development aid is based on capacity building, as it is not able to compete with the hard dollars/euros offered by other African development partners (Chanana 2009; Voll 2010). India

gives aid through different programs of which the Indian Technological and Economic program (ITEC) is historically the most important. Via this program, India contributes 10.3 million annually, but only 5% is directed towards Africa, and it is distributed based on the importance for India (Kragelund 2011). As with foreign direct investments, development assistance figures are non-transparent. Neither the Ministry of External Affairs nor the Ministry of Finance maintains records of aid. In 2007, there was an initiative to bundle all development assistance within one agency, however, none of the individual ministries was willing to give up their power (Mitra 2010). Moreover, there is no official definition of what India considers as development assistance. Therefore, this section will at best give an estimate of the development assistance provided by India. The total budget is estimated by Chanana (2010) and it was described in rupees, the Indian currency. The table below is adjusted to dollars. According to McCormick (2008) only 8% of the total budget in 2004 was allocated to Africa, while most of the development aid budget was directed towards neighboring countries as Bhutan, Afghanistan and Nepal.

**Table 9: India's foreign aid development budget 2004-2010 (million USD)**

	2004	2005	2006	2007	2008	2009	2010
<b>Grants and loans</b>	420,3	462,4	370,3	387,9	577,9	515,5	510,4
<b>of which loans</b>	1,5	1,7	1,9	2	1,4	1,8	1,8
<b>Contributions to IO's</b>	55	71	77	75,9	273,5	113,8	119,4
<b>Investments in IFIs</b>	2,2	3,9	12,4	2,9	661,5	1447,6	63,1
<b>EXIM bank expenditure</b>	48,5	36,7	34,3	50,3	109,1	94,1	92,1
<b>Total</b>	526	574	494	517	1622	2171	785

**Source: Chanana (2010)**

India's development aid is different from OECD aid in the sense that it is not conditional, but is tied, meaning that the recipient is forced to spend it on products and services of the donor country. All in all, India's development assistance had its peak in 2008-2009 with a budget around 2 billion dollar, before and after it was 0.5 billion dollar. This is in line with literature praising India for its different approach, small scale and its focus on capacity building. Additionally, a recent article discusses Indian aid and mentions the aid budget for Africa to have increased from 22.5 million dollar 2004 to 24.6 million dollar in 2009. It has also written off debt under the HIPC II initiative of Tanzania, Mozambique, Uganda and Zambia. Most of the development assistance is part of the Focus Africa program of India. Voll (2010) mentions the following initiatives, pan -African E- Network including Tele-medicine and distant learning linked to Indian universities at a total cost of 1 billion dollar. An overview of alternative assistance by India is given below.

- India-Africa summit: "India pledges to provide 500 million dollar in concessional credit facilities to West -African states in 2008"
- "India pledges 180 million dollar to improve water supply and ten million dollar for education in Tanzania, 2011 (Development news 2011)."
- "India offered a credit line of 5 billion dollar to Africa for development, and 700 million dollar for training in 2011, for a period of three years (Development news 2011)."
- "India contributes 900 million dollar for support to Nigeria in 2007 (Earth times 2007)."

Looking at the estimates by Chanana (2009) it is hard to imagine that all the mentioned projects listed in the media are true, especially since McCormick (2008) mentions that the bulk of foreign aid is directed to Indians neighboring countries.

### ***India's Trade Agreements with Sub-Saharan Africa***

The closed economy of India is slowly opening up to other countries. This process started in the 1990 and aims to liberalize the Indian economy albeit, only under conditions of extreme necessity (India Trade 2010). According to Broadman (2007), trade agreements are a necessity for trade as tariffs protect domestic producers, and out price foreign products making it hard to compete fairly. India is eager to promote trade and is in negotiation with several countries to install free-trade agreements and/or preferential trade agreements.

Similar to the United Nations' Everything but Arms initiative, India has preferential agreements for the least developed countries in Africa. The duty-free tariff preference scheme will cut back tariffs on 85% of India customs, declining its tariffs by 20% annually. This agreement focuses on African exports and covers 92.5 % of Africa's exports to India (India commerce 2006). Three countries fall under the least developed countries scheme of India, namely, Tanzania, Angola and Sudan.

South Africa is involved with India and Brazil in a triangular forum that aims to coordinate its political, social and economic interests between the countries internally, but also externally in other international forums (India Commerce 2006). The group aims at starting a free-trade-area but is limited by the presence of both Brazil and South Africa in custom unions, MERCOSUR and SACU respectively (RIS 2006). The negotiations with SACU are still ongoing and this is also the case for Nigeria part of economic community of western African states as well (India Commerce 2006).

### **Is the Economic Relationship Beneficial**

#### ***Indian perspective***

The African continent is an important strategic partner for India, analyzing trade, investments, aid and the trade agreements confirm this notion. As mentioned, natural resources and then particularly crude oil and natural gas are vital for the Indian economy. This is also confirmed by the stronger growth of trade with resource rich countries. However, as Africa continues to grow economically it also might become a large market for Indian goods. The trade and investments cannot be viewed separately from trade as the aid given by India is tied, and in return, Indian goods and services are bought. Moreover, by increasing its support to Africa, India tries to change its own image, and hopes to gain the support of African nations in its efforts to step up internationally. There are still trade negotiations in process between India and Africa, but the existence of these talks indicate that there is progress.

#### ***Sub-Saharan African perspective***

The Sub-Saharan region can benefit from having multiple partners, and it therefore should welcome India's investment, participation in aid, and continue trade negotiations. The large increase in exports to India offers it room to reinvest this additional income. The investments by India and its companies help Africa integrate into the world economy improve their infrastructure, and India's IT expertise could serve Africa well. Moreover, increasing its ties with India make Africa less dependent on Europe, which is still its largest trade partner. India's treatment of Africa as an equal partner points out the paternalistic approach of Europe and gives Africa additional leverage in negotiating with Europe.

## Europe's Economic Relationship with Sub-Saharan Africa

### European Trade with Sub-Saharan Africa

Since 2004, the trade between Europe and Sub-Saharan Africa has risen substantially with European imports consistently higher than its exports. The main imports have been energy products, and its main exports were machinery and equipment, however, this trend was ended by the beginning of the financial crisis (Eurostat 2010). The list of Europe's top ten trade partners in Africa shows mainly North- African countries, in which mainly mineral fuels dominate trade. Trade with South Africa shows a more diverse image as it consists of machinery and equipment, manufactured goods and to a lesser percentage mineral fuels. The African Statistical Yearbook names Europe as its main import and export partner. The biggest import partners were France, Germany and Italy. Its main export partners were Italy, France and Spain (ENECA 2010).

**Table 10: Top ten trade partners Europe in Africa**

Rank	Extra- EU-27 imports		Extra- EU-27 exports	
	Country	Value in million EUR	Country	Value in million EUR
1	Libya	19996	South Africa	16040
2	Algeria	17356	Algeria	14655
3	South Africa	14928	Egypt	12627
4	Nigeria	10453	Morocco	11909
5	Tunisia	7891	Nigeria	9162
6	Morocco	6510	Tunisia	8931
7	Egypt	6112	Libya	6471
8	Angola	4916	Angola	5471
9	Cote d'Ivoire	3055	Ghana	1749
10	Cameroon	1744	Senegal	1628

Source: Eurostat

The graphs show an overview of the import and export of Europe with the selection of countries. In the previous research by Keers and Pennink (2008) South African exports were nearly double the exports of Nigeria, while three years later this gap almost disappeared. As mentioned, the financial crisis severely affected the growing trend as the graph shows.

**Table 11: European imports from Sub-Saharan Africa 2001-2010 (million USD)**

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
<b>South Africa</b>	8830,2	9022,8	11300,9	14530,7	16957,4	18521,5	21055,6	23959,3	14575,1	21248,9
<b>Kenya</b>	447,9	605,3	706,3	730,6	1054,4	1173,0	1323,7	1519,1	1364,4	1302,1
<b>Tanzania</b>	438,2	479,6	302,9	430,8	367,6	377,7	477,5	445,3	439,4	424,6
<b>Nigeria</b>	4345,2	4381,3	5257,2	5954,6	9450,0	12399,2	12750,5	21022,4	13285,3	17541,1
<b>Angola</b>	1643,6	1929,1	1153,3	1106,9	2966,3	2455,0	5228,7	10435,1	6219,9	4631,4
<b>Sudan</b>	213,2	183,7	319,7	169,7	131,6	80,3	183,8	163,9	130,1	109,8



Source: IMF direction of trade statistics

Figure 4: European imports from Sub-Saharan Africa (millions USD)

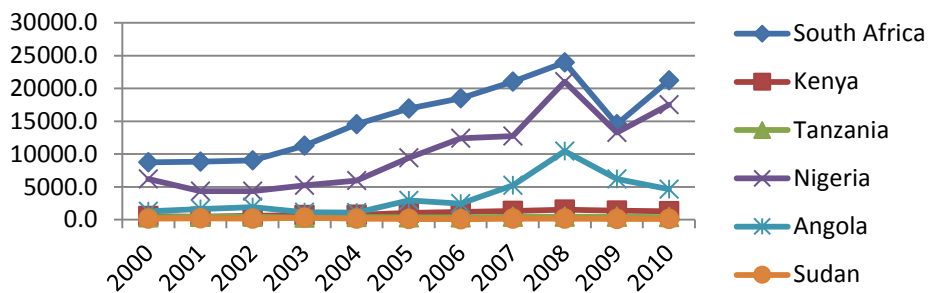


Figure 5: European exports to Sub-Saharan Africa (millions USD)

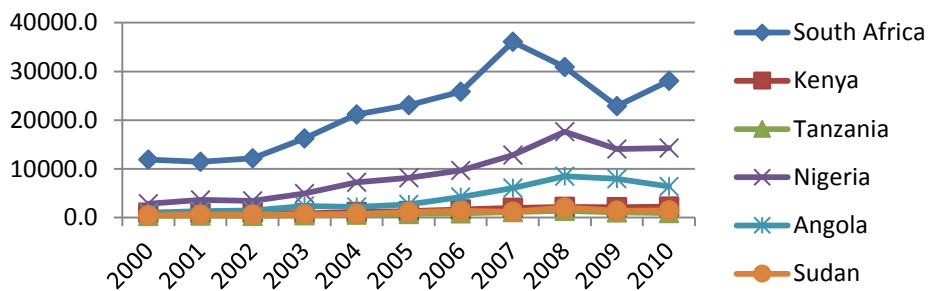


Table 12: European exports to Sub-Saharan Africa 2001-2010 (million USD)

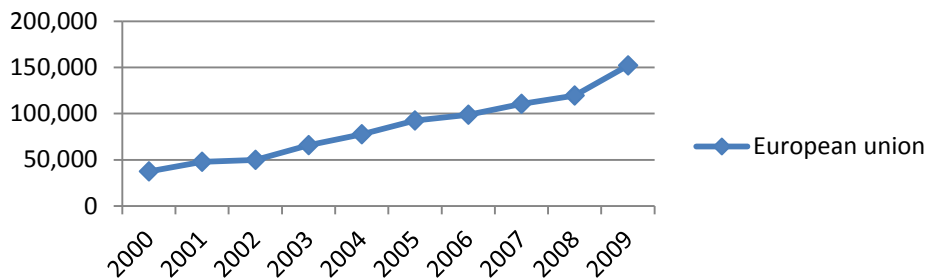
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
<b>South Africa</b>	11437,2	12174,4	16252,9	21176,5	23077,0	25850,3	36060,6	30905,3	22897,2	28057,1
<b>Kenya</b>	925,8	1064,1	911,0	1122,1	1358,6	1679,3	2008,2	2184,8	2112,9	2232,9
<b>Tanzania</b>	389,9	372,6	505,4	612,7	739,0	867,3	1137,5	1404,3	1099,9	958,5
<b>Nigeria</b>	3615,3	3420,1	4940,2	7221,7	8161,7	9711,0	12822,1	17623,3	14092,5	14310,7
<b>Angola</b>	1352,0	1456,1	2369,8	2224,2	2747,1	4207,2	6093,7	8493,9	7948,5	6374,2
<b>Sudan</b>	637,1	593,0	657,2	773,6	1155,5	1390,1	1237,3	2051,3	1413,1	1440,5

Although Europe is one of the largest partners of Africa, if not the largest, for Europe itself African trade is relatively small compared to Europe’s other trade partners.

**European Foreign Direct Investments in Sub-Saharan Africa**

The European Union is the largest source of FDI in the world economy. Europe is a net investor, its outward investments exceed investments in Europe. The main destinations for the European Union’s FDI are other non-EU members and the United States (Eurostat 2010). In 2007, FDI reached its highest level of 530 billion dollar, but after the financial crisis this dropped to 263 billion dollar in 2009. The European Union held 153 billion dollar in FDI stock in Africa by the year 2008, or 4.7% of its total invested stock. In 2008, the level of FDI flows show that 18.5 billion dollar was directed to Africa. The main investment partner was Egypt, which received about 50% of total FDI flows (Eurostat 2010).

**Figure 6: Europe's investment position in Africa (millions USD)**

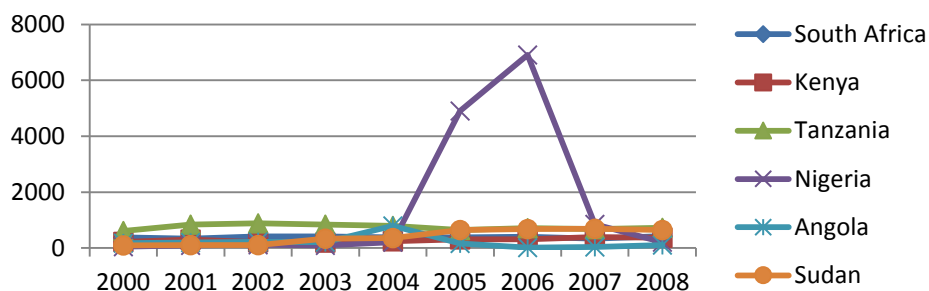


Since 2000, the investment positions of Europe have steadily increased from 40 billion to 153 billion by 2009. This graph shows that even while the total level of FDI positions decreased during the financial crisis, FDI positions in Africa increased. The rate of return of African investment is currently the highest with 17% and therefore it is an attractive investment destination (Eurostat 2010). The steady economic growth that African countries experience is also reflected in this graph, while FDI normally fluctuate with the state of the economy.

The data on direct foreign investments is monitored by Eurostat in cooperation with the partner countries, however the data of FDI is not complete for the European Union. Eurostat has aggregate data for different regions even the African regions, and while a country by country breakdown is possible, not all of the data is actually available. Consequently, this research can only show the developments for the available countries and within our data set the information is only available for South Africa and Nigeria. These happen to be the largest trade partners of both Europe and India and are both from a different data set (Keers & Pennink 2010).

### **European Development Aid in Sub-Saharan Africa**

The third economic component in the economic relation between Europe and Africa is development aid. The OECD also uses the official term “development assistance” and this comprises contributions from donor government agencies at all levels, it also includes debt cancellation. Debt cancellation or debt relief plays an especially large role in aiding developing countries; this was part of the Heavily Indebted Poor Countries (HIPC) initiative launched by the IMF and World Bank (G8 2006). The main recipient countries in Sub-Saharan Africa include the four countries that make up the data set for this study Tanzania, Sudan, South Africa and Kenya in that particular order (EU Donor atlas 2010). In 2008 Germany was the largest donor in the European Union followed by France and the Netherlands. The following graph shows the development assistance of Europe to the selected countries. The level of aid has increased over the years. In 2000 it was around 1,5 billion dollar after which it increased to the level of 2-3 billion annually. There is a large increase in the year 2005-2006. In this year in Europe there was a large write-off of debt, with Nigeria and Sudan as main beneficiaries. Hereafter, the level of development assistance went back to 2-3 billion. “In 2008 president Barroso of the European Union condemned European countries that allegedly promised to increase aid by 0.56 per cent by 2010 and 0, 7 per cent of GDP by 2015, while European countries actually decreased aid over this period” (Kohnert 2008)

**Figure 7: European development aid in Sub-Saharan Africa (millions USD)**

European development assistance is granted to African countries, but they have to adhere to governance reforms. For instance, trade liberalization (see trade agreements), promotion of democracy and human rights.

### European Trade Agreements with Sub-Saharan Africa

The European Commission negotiates and coordinates trade agreements with- on behalf of the European member states with counterparties. Thereafter the European Council and parliament need to formally agree the trade agreements. Europe has several trade agreements in place with the African region including the Cotonou Agreement, Economic Partnership Agreement (EPA) and Everything But Arms agreement (EBA) (European Commission 2011).

The Cotonou Agreement was signed in 2000 by the EU and the African, Caribbean and Pacific countries (ACP), and aimed at poverty eradication, sustainable development and a gradual integration of the ACP countries into the world economy (European Commission 2010). The treaty is designed to continue until 2020, and the treaty grants ACP countries duty-free access to Europe. The EPA negotiations between Africa and the EU are troubling as African nations feel that it is too favorable towards Europe. The main difference between the EPA and the Cotonou Agreement is the reciprocal access, meaning that Europe would also get duty-free access to ACP countries.

These EPA negotiations are held between the EU and various communities within ACP, which enables the trade agreements to focus on the needs of the counterparty. Besides these economic partnership agreements, most countries within Africa fall under the Everything-But-Arms category (EBA) (European Commission 2009). This is the most favorable trade regime at this moment, with duty-free-access for all products except arms without quantitative restrictions. The United Nations determines which countries fall under the EBA regime. There are currently 49 least developed countries. The countries Angola, Sudan and Tanzania are on this list.

South Africa is part of the South African Development Community (SADC) region and it is the largest participant in this group. There are thirteen members in SADC of which six members, South Africa, Angola, Botswana, Lesotho, Mozambique, Namibia and Swaziland negotiate via SADC with the EU. The seven other members within SADC negotiate through other region groups with the EU. The economic partnership between SADC and the EU offers no duties/quotas for imports to the EU, it also grants the EU the same right for most of its imports to the participating countries. Moreover, the SADC still has the right to reinstall duties to protect its market. The agreement also includes clauses for Angola and South Africa to join this accord (European Commission 2010). However, South Africa is not likely to join this agreement as it has a separate more comprehensive partnership with the EU, the Trade Development and Cooperation agreement (TDCA). The TDCA in addition covers cooperation

and development of energy, free flow of capital and social development (European Commission 2009).

Tanzania, Kenya, Uganda, Burundi and Rwanda together form the East African community (EAC). Kenya is the only member of this community that is not part of the Everything-But-Arms agreement. In the agreement with Kenya, there are still some special sectors that need to be protected namely, coffee, tea, spices, meat and dairy.

Nigeria is part of the economic community of West African States (ECOWAS) that is reluctant to agree on terms of an Economic partnership with the EU. Especially Nigeria is opposed to the current negotiations and the terms proposed by the EU.

As mentioned, there is some controversy regarding these trade agreements between Europe and Africa. The leverage of Europe over Africa is large, the pressure for Africa to concede is mounting because with the ending of former agreements, tariffs will be reinstalled, and possibly damage trade flows. Second, Europe is a large donor of African countries and aid-negotiations are simultaneously being discussed, which puts additional pressure on African countries to concede. The phrase "trade for aid", often heard in Europe can be seen here in a different perspective. Third, the countries in the African communities vary in terms of development with other partner countries, some partners are part of the EBA agreement, while others are not. Moreover, when a partner comes to an agreement with Europe, this puts additional pressure on the other members. Although, the agreements leave room for protection of infant industries, it is especially negative for African countries that open their markets for European products (mostly manufactured goods and equipment), while Europe subsidizes its agriculture sector, which happens to be one of Africans export products. Consequently, African producers will still have trouble competing with European producers, while Europe gains free access to Africa facing little competition.

### **Is the Economic Relationship Beneficial?**

#### ***European perspective***

The relationship with Sub-Saharan Africa is complex, and one should take the colonial history into consideration when analyzing the total relationship. The total level of trade with Africa is for Europe relatively small, in comparison with other regions. As an investment destination it is an attractive destination given the favorable rate of return of 17%. The development assistance to Africa is quite high, but Europe feels morally obliged to support Africa, regarding its colonial role. Europe is giving development aid on the condition that Africa will develop western governance principles and improve human rights and democracy. In the long run it can profit from the improved frameworks, but in the short run it is not very effective. Finally, the new developments in negotiating trade agreements are in favor of Europe, as Europe hopes to gain duty free access to the African countries as well. All in all, Africa is also an important partner for diversifying energy needs, and one could expect that the aforementioned efforts will contribute to having access to oil and other natural resources.

#### ***Sub-Saharan Africa perspective***

The economic relationship with Europe is still the largest of Africa, in most African countries Europe is the largest exporter and importer. Furthermore, Europe is the largest source for foreign direct investments and academics regard FDI as a tool to integrate Africa into the world

economy. Development aid is also important for Africa, however, Europe aims that African countries develop western governance principles while African countries rather develop their infrastructure instead. This infrastructure is important in the short run, and as African governments feel that, certain governing principles Europe tries to enforce should be their own choice to decision to make. Trade agreements are important for Africa, and the current trade agreements make it possible for Africa in most cases to export duty-free, while their own market is still protected. The trade negotiations are still in progress, and would grant Europe duty free access into Africa, this would be unfavorable for African countries as they receive a large part of their income from tariffs.

### Balancing the Score for India and Europe

The previous paragraphs dealt with analyzing the economic relationship between India, Europe and Africa. The four factors analyzed were trade, investments, aid and trade agreements. The previous chapters analyzed trade on an individual basis, but this chapter will jointly present the data to give a more comprehensive perspective on the economic relationship between Africa, India and Europe. The data collection process was rather problematically. Indian data on FDI for individual countries is non-existent in the public domain, while its development data is also not available as development assistance is a joint responsibility of separate ministries. The development aid data used for this study is therefore based on statements by government officials and press releases. Nevertheless, this section will provide a comprehensive comparison between Indian and European engagements with Africa.

### Trade Sub-Saharan African Countries

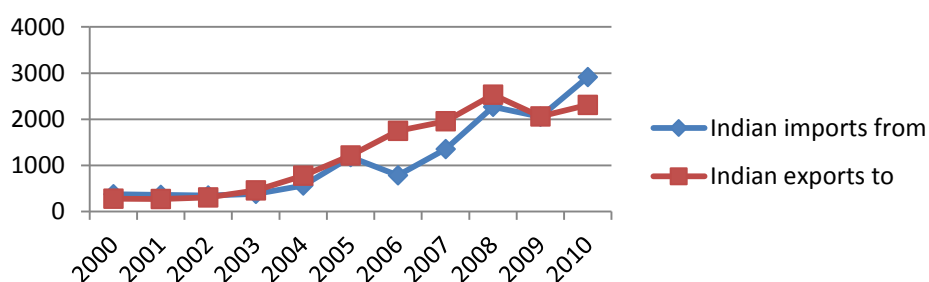
#### *Trade with Oil Importing Sub-Saharan African Countries*

The main focus of this study is whether Indian engagement is substituting the traditional European-African relation. Furthermore, this study expects that the results might vary for resource rich and labor abundant countries. The intensity of engagement is expected to be higher in the oil exporting countries as oil plays a vital role in the India-African relationship. The oil-importing countries South Africa, Kenya and Tanzania are analyzed first, and in the second section the same analysis will be provided for the oil-exporting countries, Nigeria, Angola and Sudan.

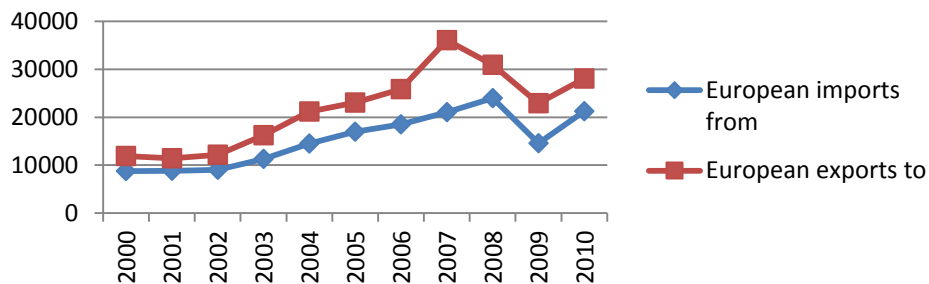
### South Africa

South Africa is the biggest economy of the African continent, and has an abundant supply of natural resources, mainly precious stones and minerals such as gold, diamonds and platinum, but not that much oil. It also has a well-developed industrial and services sector. South Africa is also the African nation that is most integrated into the world economy. The trade statistics show that India and Europe are both increasing their engagements with South Africa. The trend line shows a similar linear curve, however on closer inspection it can be seen that the level of trade between Europe is in absolute terms tenfold the trade between India and Africa.

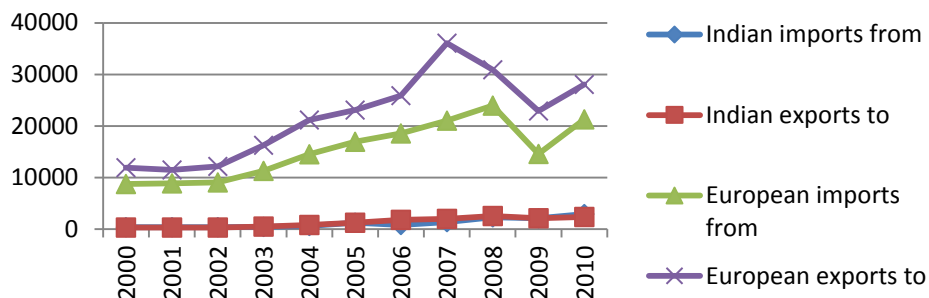
**Figure 8: India South Africa trade (millions USD)**



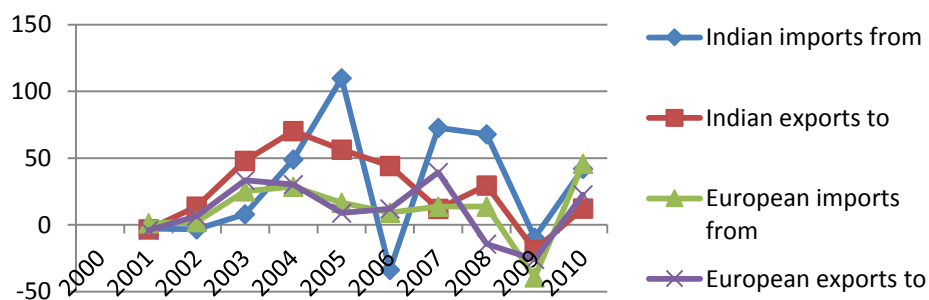
**Figure 9: European South Africa trade (millions USD)**



**Figure 10: South African trade with India and Europe (millions USD)**



**Figure 11: Percentage change trade flows (millions USD)**

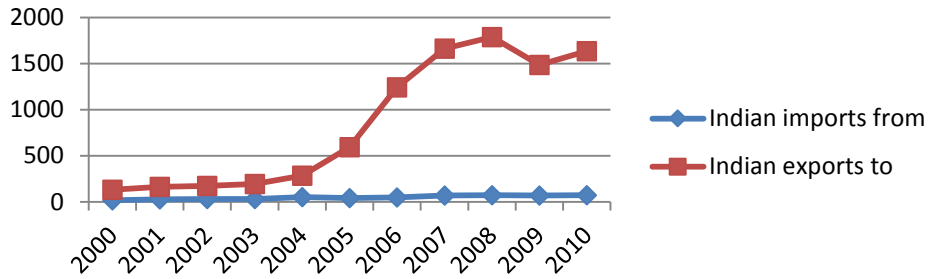


## Kenya

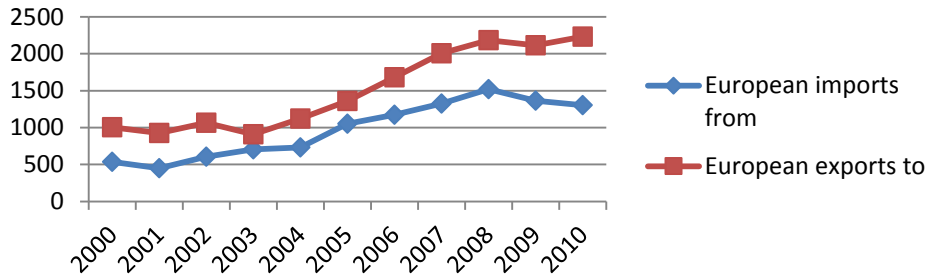
Kenya lies at the Eastern coast of Africa and, although separated by the Indian Ocean, it is geographically India's neighbor, (Voll 2010). Kenya is not endowed with many natural resources, and Kenya's most important export products are tea, coffee, horticulture and fish. While the most important import products are industrial supplies, machinery and equipment.

The trade data shows that Kenya's imports from India and Europe are higher than its exports to these countries. Since 2004, Indian exports to Kenya have rapidly increased, and at a higher rate of growth than Europe. However, European exports are still ahead and also increasing. The level of Indian imports from Kenya is quite low, and far below European imports from Kenya. The trade between Kenya and Europe is more balanced with export and imports at a similar level.

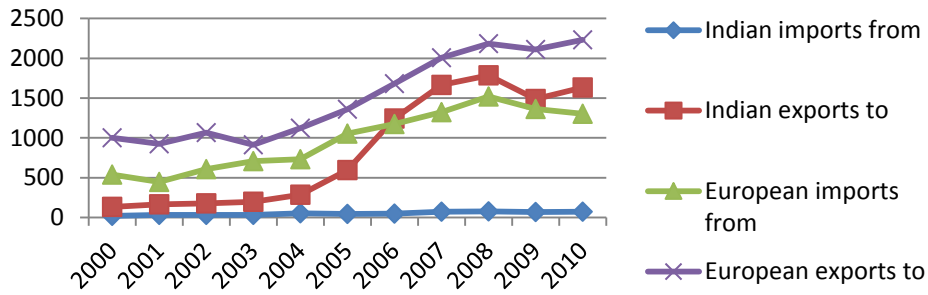
**Figure 12: India Kenya trade (millions USD)**



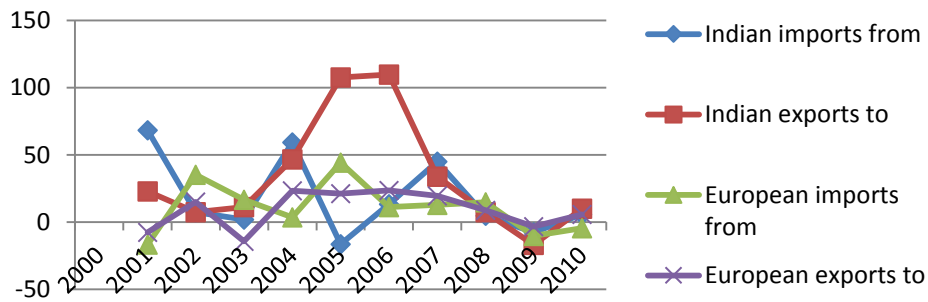
**Figure 13: Europe Kenya trade (millions USD)**



**Figure 14: Kenya trade with India and Europe (millions USD)**



**Figure 15: Percentage change trade flows (millions USD)**

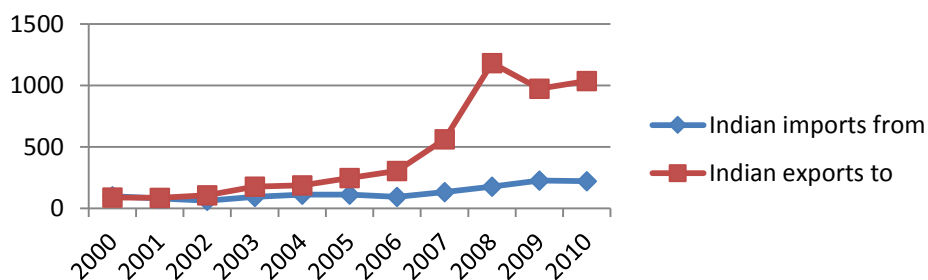


**Tanzania**

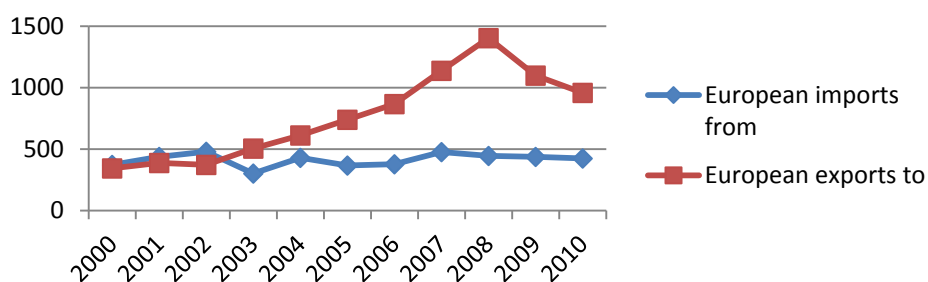
Tanzania is another Eastern African country, in the backyard of India, and is one of the fastest growing economies of the continent. The backbone of the economy is its agriculture sector that produces tea, coffee, tobacco and a variety of nuts. However, its most valuable exports are capital goods, followed by consumption goods. At the same time, its main imports are capital goods, followed by fuel and transport goods. Tanzania imports from India and Europe are higher than its exports to these countries. The difference in the level of Tanzanian imports from Europe and India is smaller than the difference was for both countries with Kenya, but Europe’s imports are still nearly double Indian imports. Indian exports to Tanzania doubled in

2008, in 2010 it even surpassed European exports, which decreased for the second consecutive year in a row.

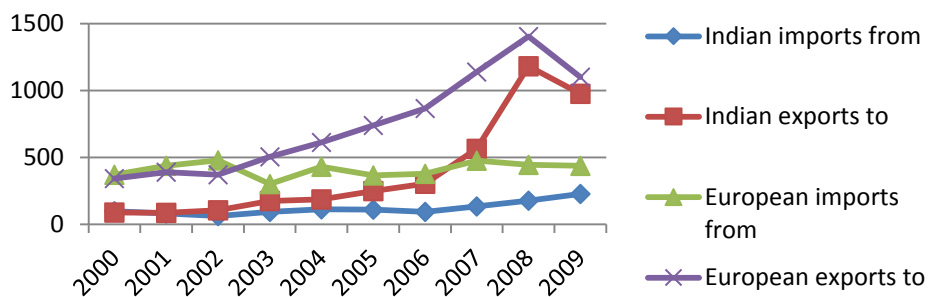
**Figure 16: India Tanzania trade (millions USD)**



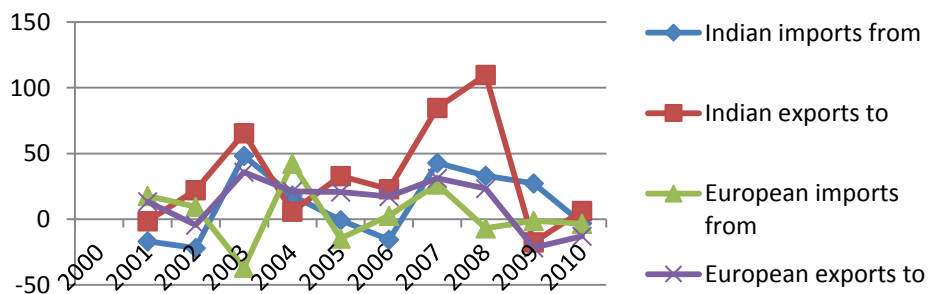
**Figure 17: Europe Tanzania trade (millions USD)**



**Figure 18: Tanzania trade with India and Europe (millions USD)**



**Figure 19: Percentage change trade flows (millions USD)**



All in all, the trade data between India, Europe and the data set of oil importing countries show that the trade of Europe is still larger than Indian trade. In Tanzania and Kenya the differences



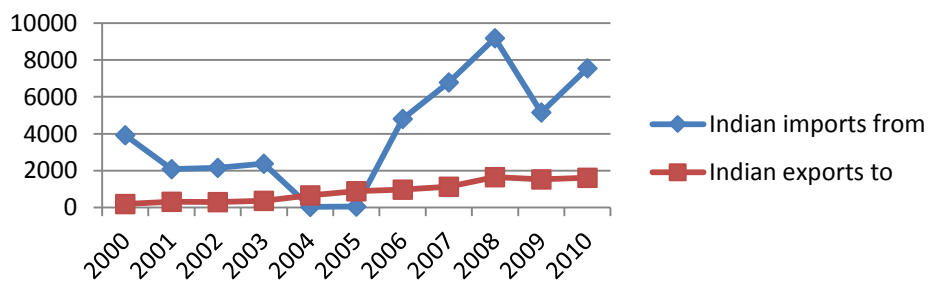
in the level of exports from India and Europe are getting smaller, but it seems that India mostly exports to these countries, and imports stay behind. Tanzania is the only country of this data set in which India surpasses Europe in exports, but in overall trade Europe is still ahead. The case of South Africa is different than the other countries. India has increased its imports and exports with South Africa, but the European level of trade is almost tenfold that of India's level of trade. The level of Indian imports from South Africa is high compared to the imports from the other countries in the data set, which might be due to its gold imports from South Africa.

**Trade with Oil Exporting Sub-Saharan African Countries**  
**Nigeria**

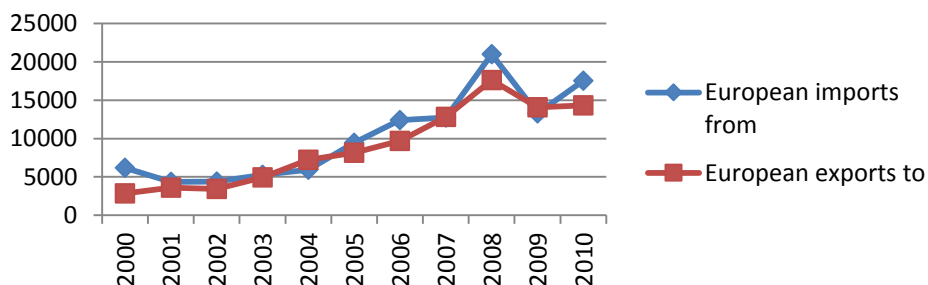
Nigeria is the largest oil exporter within Africa and a member of OPEC. Oil is a major feature of the Nigerian economy and together with current oil prices, makes Nigeria one of the world's fastest growing economies. However, the Nigerian economy is not solely dependent on oil, as it is also the third largest manufacturer in Africa, and it has the fifth largest banking sector within Africa (Focus Africa 2011). The main export products of Nigeria are crude petroleum and liquid natural gas, while its main imports are manufactured goods, machinery and transport equipment (CIA World Fact Book).

The trade data for Nigeria illustrates the sudden rise of India's involvement in oil-exporting Africa, but the data also shows European imports rise. In 2005, India was not very active in Nigeria and in 2006 this changed, as imports increased seventyfold. Hereafter, growth rates of Europe and India were comparable, although European imports were already at a much higher level. The export data of India and Europe to Nigeria are different, the Indian exports increase but it is in no comparison to its imports. While, the trade relation of Europe and Nigeria is more extensive, as European exports are almost equal to its imports.

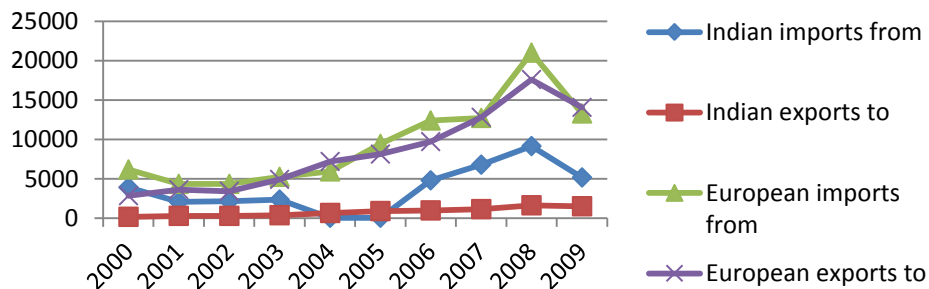
**Figure 20: India Nigeria trade (millions USD)**



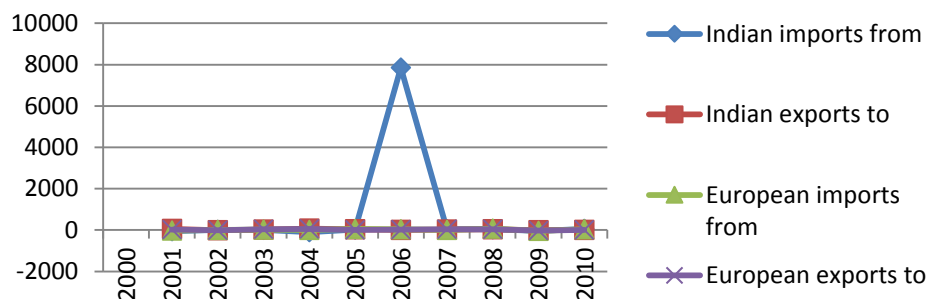
**Figure 21: Europe Nigeria trade (millions USD)**



**Figure 22: Nigeria trade with India and Europe (millions USD)**



**Figure 23: Percentage change trade flows (millions USD)**



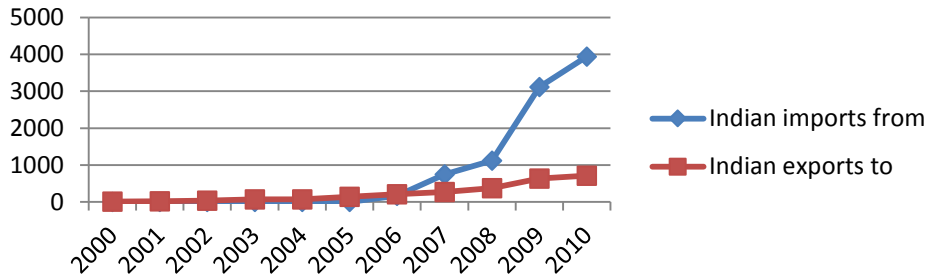
The data shows that Europe is currently a larger trade partner of Nigeria than India. The following quote of the Nigerian minister of commerce and industry captures the foresights for Indian-Nigerian trade: “ We want bilateral trade to grow from the present level of 10 billion to 50 billion in 2015” (HinduBusinessline 2010). Furthermore, the minister acknowledges the dominance of oil in the trade relation, but Nigeria is also negotiating for lower tariffs of other products than oil, to increase the level of these goods as well.

### Angola

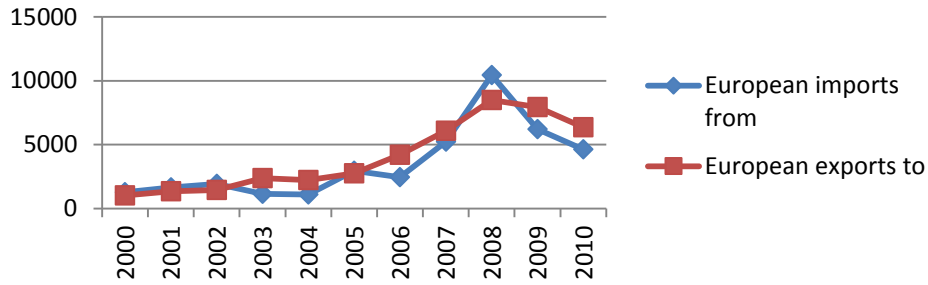
The Angolan economy is very dependent on oil-exportation, which makes up 94% of its export, Angola became a member of OPEC in 2006 (Focus Africa 2011). The Angolan economic growth is therefore related to the development of the price of oil. As the oil price skyrocketed in recent years, this resulted in double-digit growth for the Angolan economy. Besides its oil exports it also exports diamonds, while consumer and capital goods are its main imports.

The trade data shows that both India and Europe have intensified the trade relation with Angola. In 2006 India and Europe started increasingly importing from Angola, and Europe even doubled imports from 2007-2008. Hereafter, it started dropping, maybe as a consequence of the financial crisis. On the other hand, India experienced growth from 2006 on, and in 2010, the level of imports came close to the European level. The exports of India and Europe are not the same, Europe exports to Angola are tenfold the level of India.

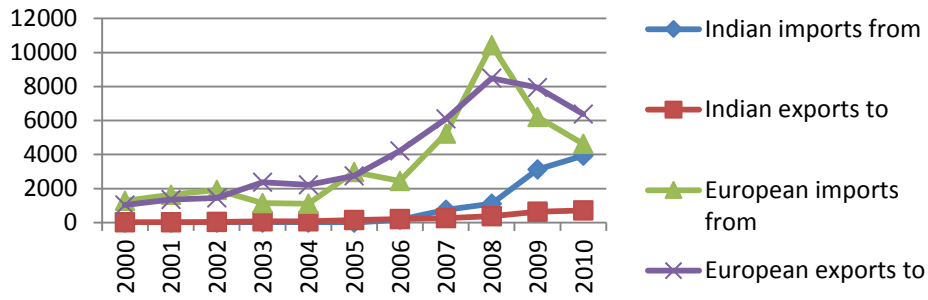
**Figure 24: India Angola trade (millions USD)**



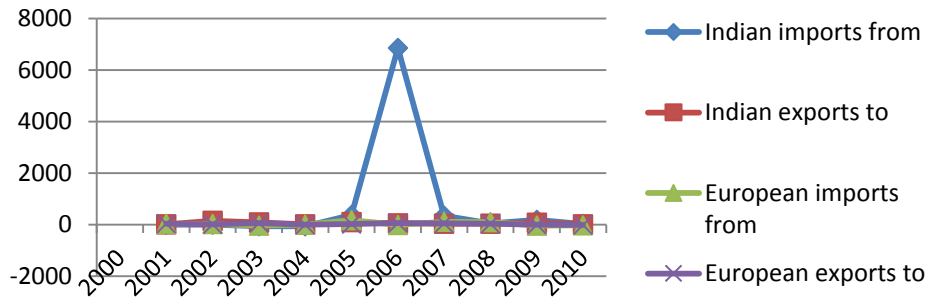
**Figure 25: Europe Angola trade (millions USD)**



**Figure 26: Angola trade with India and Europe (millions USD)**



**Figure 27: Percentage change trade flows (millions USD)**



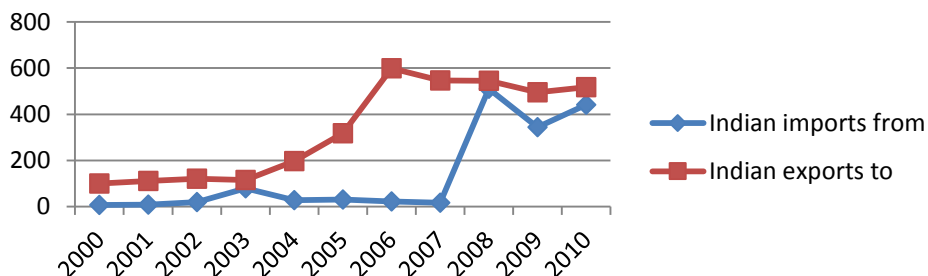
**Sudan**

Sudan is the last country within our data set of oil exporting countries. While it now thrives on oil-exports, before it mostly concentrated on the agriculture sector, which is still important for its economy (Focus Africa 2011). The main exports are petroleum and oil, followed by cotton and sesame seed. The main import products are food, manufactured goods and refinery equipment (Website CIA).

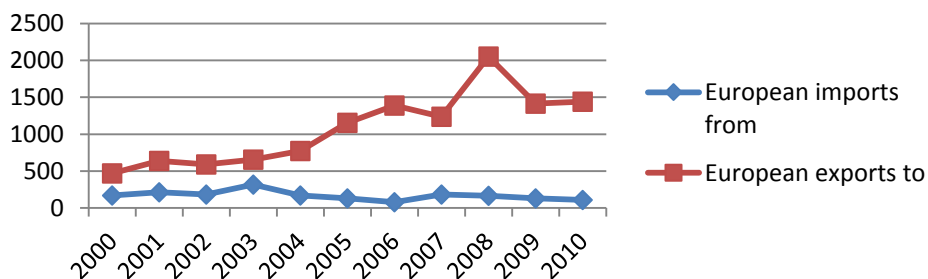
Analyzing the trade data it show a different image for India and Europe, while India increased its imports from Sudan, Europe does not import much from Sudan. For both countries the exports to Sudan are higher than the imports, and the European exports are at a much higher

level than Indian exports. Although the level of Indian imports is lower than in the other oil-exporting countries within our data set, it is a large increase from the initial level in 2006. Since 2008, there has been a new up rise of the civil war in Sudan, and it might have significantly affected the level of European imports.

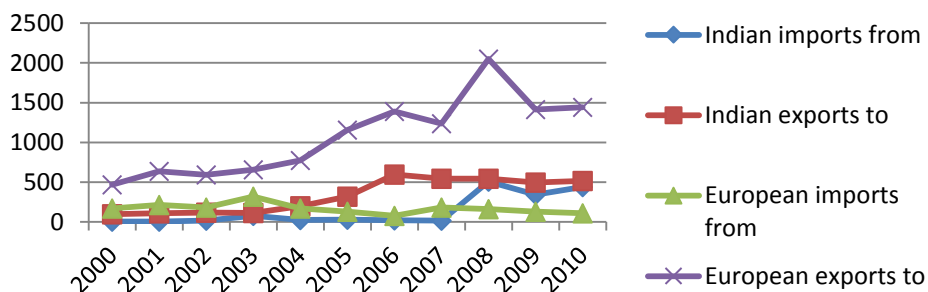
**Figure 28: India Sudan trade (millions USD)**



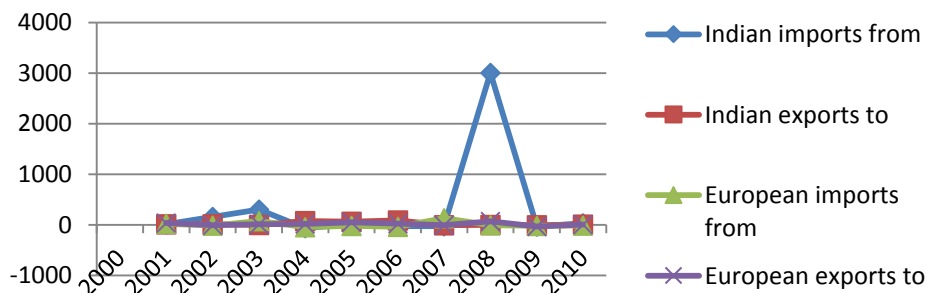
**Figure 29: Europe Sudan trade (millions USD)**



**Figure 30: Sudan trade with India and Europe (millions USD)**



**Figure 31: Percentage change trade flows (millions USD)**



Overall the trade data of the oil exporting countries shows a good picture of the trade relationship of Europe and India. While India's increased level of imports from the oil

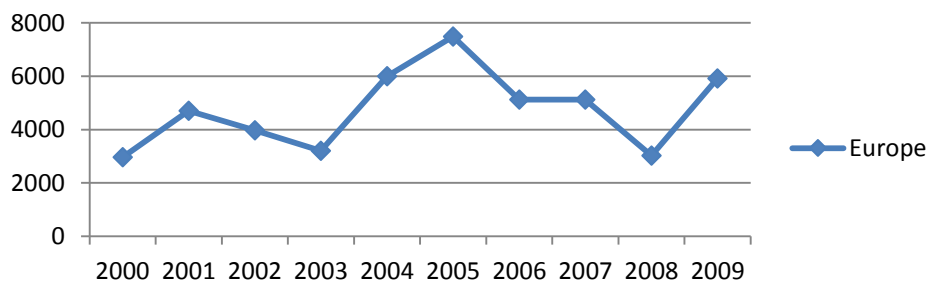
exporting countries is evident, the rise of European imports was also clear. More importantly, India imports mostly from the African countries, but does not reach the European level of export to these countries. This reinforces the image of India acting to secure its energy needs and the resulting resource driven partnership of India and Africa.

In conclusion, the trade relationship of India and Africa is mostly directed to imports from oil exporting countries, but remains lower than European imports. The level of exports of India to Africa is quite low in comparison to the level of exports by Europe. The figures show a definite rising of India in Africa, and as for now, it is mainly imports from Africa, resulting in a net surplus for Africa, which it could possibly reinvest.

**Foreign Direct Investment in Sub-Saharan Africa**

The role of FDI in integrating Africa into the global economy is important, and therefore it is unfortunate that not all of the data is available for both India and Europe. While the data for Europe is limited to South Africa and Nigeria, the data for India is non-existent in the public domain. However, there is some literature available on this topic, and major investments are mentioned in press releases. This paragraph will try to combine the available data with an overview of Indian investments. The data will focus on the FDI flows because these are reported annually, and the positions are a consequence of these flows.

**Figure 32: European direct investment flows to South Africa (million USD)**



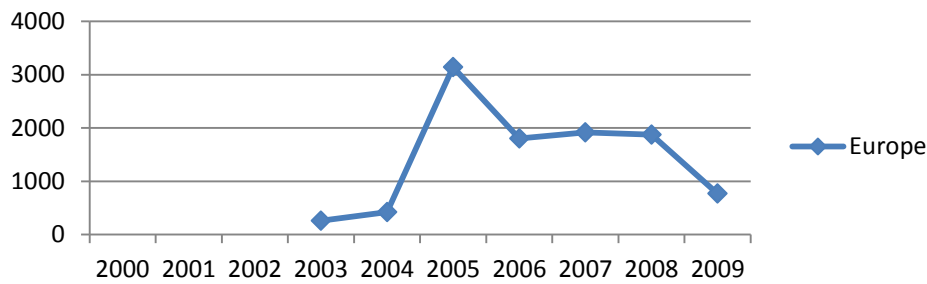
**Table 13: European direct investment flows to South Africa and Nigeria**

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
<b>South Africa</b>	2958	4700	3971	3197	6005	7487	5124	5118	3018	5918
<b>Nigeria</b>				260	423	3143	1802	1917	1877	771

Source: Eurostat

As mentioned, Europe is the largest source of FDI worldwide, and EU companies are a key source for investments in South Africa. This surge in investments comes mainly from new investments by formerly South African multinationals now headquartered in the United Kingdom (Thomas & Leape 2005). India invests mainly through private companies, and currently 96 companies are active in South Africa. Among these are Tata Mahindra & Mahindra most know and the largest (Cheru & Obi 2011; Singh 2007). The investment flows of Europe are relatively constant around 5-6 billion.

**Figure 33: European direct investment flows to Nigeria (million USD)**



European investments in Nigeria are smaller than the investments in South Africa. The level of investment is around 2 billion dollar, with the Netherlands as an important investor. It might seem strange that the level of investments are smaller in a resource rich country, but then again, the investment climate of South Africa is more favorable because as it is more stable. In contrast there is a lot of turmoil in Nigeria with terrorist attacks on oil stations. The level of European investments in Nigeria even decreased to less than one billion dollar in 2009. It was estimated that India is increasing its engagements with Africa in order to secure its energy needs, and the following statement certainly supports this claim:

“India has agreed to invest six billion U.S. dollars in power plants and other projects in Nigeria, Indian Deputy High Commissioner to Nigeria Anil Trigunayat said at the weekend”(People’s Daily 2006). The six billion is also mentioned in the article of Singh (2007) and labeled an oil infrastructure deal.

“Trigunayat expressed India's desire to collaborate with Nigeria for the benefit of both countries, saying that India was also interested in engaging in joint venture projects with Nigeria in the oil and gas sector ” (People’s Daily 2006).

The level and presence of India as an investor in Africa is increasing, while the level of investments from Europe is fluctuating. The investments in South Africa by Europe are increasing again after a fall, so it’s hard to speak of a substitution effect, the fall of investments could also be a consequence of the economic climate. The rise of India’s engagement in Nigeria is without questions, and we also see a drop in European investments from 2005. It could be that India is partially the reason for this drop, but it is also known that Europe is reluctant to invest in Nigeria as it’s unstable and there are attacks on oil refineries.

### **Foreign Development Aid in Sub-Saharan Africa**

The data on Indian development aid is relatively scarce, but the rise of India as an emerging donor is a fact. India has been a large recipient of development assistance itself but has limited the number of countries from which it is willing to accept development aid. Simultaneously, it has increased its efforts in development assistance. While India is known for its capacity building and small scale projects, it recently has initialized a large scale pan-African E-network. It also extended large volumes of credit lines, and took part in debt-relief programs. The extension of credit lines of around 5 billion dollar, 700 million dollar for training, and the total costs of the pan-African e-network of 1 billion dollar amount to 6.7 billion dollar over a three year period.

The development assistance of the European Union to Africa seems unaffected by the development aid of India. In 2000, the total amount of development assistance by the EU to the six countries in the data set was 1,5 billion dollar, and over the years has increased to the level of 2-3 billion dollar annually. However, in the years 2005-2006 it even reach levels of 7 and 9 billion dollar respectively. Over the entire period it was Tanzania that annually received just less than 1 billion dollar, but Nigeria received the most in the form of debt relief.

All in all, it is a good development for Africa that multiple partners are willing to contribute to the development of the African region. Since the data of India had to be gathered from statements by government officials and estimates in literature, it is not clear whether the suggested figures are in fact the actual contributions. The European data is official and has been steady over the years. The aid figures from India would amount to 2,2 billion dollar annually, while Europe contributes 2-3 billion dollar annually, not taking into consideration the large debt relief program, that by itself exceeds all Indian donations. Therefore, it is clear that although India is rising as a potential donor, but it is not a substitute for European development assistance, which is not affected and remains stable development partner.

### **Trade Agreements with Sub-Saharan Africa**

The developments in trade agreements nicely illustrate a side effect of the increased engagements of other partners than Europe. As the data has showed, Europe is still the most important import and export partner of most African countries, but with India and other emerging countries increasing their engagement substantially, the African countries have improved their bargaining position with Europe as they are less dependent than before.

India is in negotiation with different African partners to set up preferential and free trade agreements, as these have not been installed yet. India does support the least developed countries, by following the United Nations agreement of giving these countries duty free access to its markets. Within our data set Angola, Sudan and Tanzania fall under this regime. As mentioned, negotiations are in progress, and this is a time consuming process as African countries fall under different Economic communities, which stalls the process. Europe has various trade agreements with African countries the EBA, Cotonou and new Economic Partnership Agreements. Again, Angola, Sudan and Tanzania have duty-free access via The-Everything-But-Arms agreement. Then there is the Cotonou agreement for the African, Caribbean and Pacific region, and this gives these countries also duty- free access, and in addition has agreements covering a range of topics as development, and reforms. Finally, Europe wants to sign a new agreement, the Economic Partnership Agreement, and is in negotiation with African countries. However, these negotiations for the EPA are in an impasse, as the deadline has been postponed due to troubling negotiations. African countries feel they are being pressured, and that these agreements are too much favoring Europe.

In conclusion, the trade agreements between India, Europe and Africa are a necessity for trade and therefore it was not expected to detect a substitution effect. However, the increasing trade with other partners than Europe and the negotiations with India might affect the negotiations between Europe and the African countries. The position of Africa in these negotiations is stronger as it becomes less dependent on Europe, the reluctance of African countries to renew the partnership agreements on Europe's terms indicate that Europe will have to compromise.

### **COMPARING INDIA AND CHINA**

In many of the available research on Asia's rise in the global economy, and their engagements with Sub-Saharan Africa, China and India are often treated as if they are equal. When analyzing the data and comparing these with the previous research of Keers and Pennink (2010) it seems

that India operates at a different level than China. India hosted its first India Africa Summit in 2008, while China already started actively engaging Africa in 2000 with its first conference on China Africa cooperation (FOCA 2004). Moreover, Pigato (2009) states that Chinese exports to Sub-Saharan Africa might pose a treat for producers in this region, and simultaneously compete with these producers with their exports to other regions, while India does not pose a similar threat as it focuses more on services that are not yet developed in Sub-Saharan Africa. This claim is supported by this research on the trade between India and Africa and was most present in the exports by oil exporting countries to India, while exports to Sub-Saharan Africa were still little. The research by Keers and Pennink (2010) showed that the trade between China and Africa is more comprehensive and that both imports and exports surged.

**Figure 344: China and India import from Sub-Saharan Africa (millions USD)**

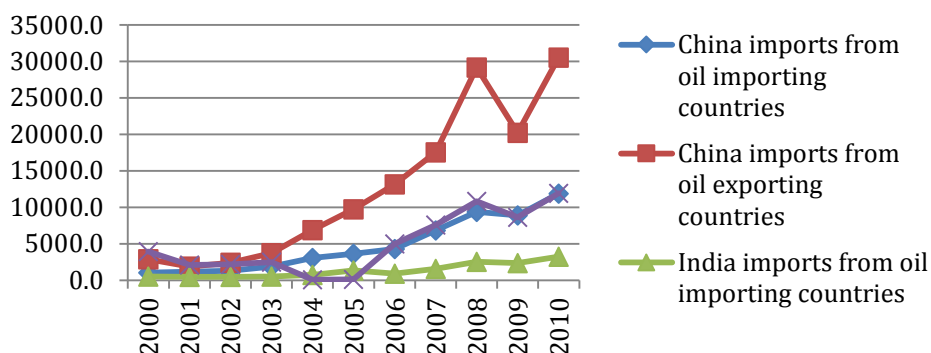




Table 14: China imports from Sub-Saharan Africa (millions USD)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
<b>South Africa</b>	1037	1173	1269	1841	2955	3444	4095	6608	9206	8676	11424
<b>Kenya</b>	4	6	6	9	17	18	24	28	35	30	39
<b>Tanzania</b>	5	3	7	28	70	171	152	199	132	194	402
<b>Nigeria</b>	293	227	134	72	463	527	278	537	510	898	1068
<b>Angola</b>	1843	722	1087	2206	4718	6581	10931	12885	22370	14661	22810
<b>Sudan</b>	732	938	1157	1442	1705	2615	1941	4114	6302	4659	6654

Source: IMF direction of trade statistics

Table 15: India imports from Sub-Saharan Africa (millions USD)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
<b>South Africa</b>	372	362	350	378	563	1182	782	1351	2269	2052	2916
<b>Kenya</b>	18	30	32	33	52	44	50	72	75	69	73
<b>Tanzania</b>	99	82	64	95	112	112	94	134	179	227	221
<b>Nigeria</b>	3919	2083	2157	2392	50	60	4808	6790	9175	5159	7553
<b>Angola</b>	0	0	5	2	1	2	168	749	1118	3117	3942
<b>Sudan</b>	7	8	20	79	28	31	22	16	510	344	441

Source: IMF direction of trade statistics

Figure 35: China and India export to Sub-Saharan Africa (millions USD)

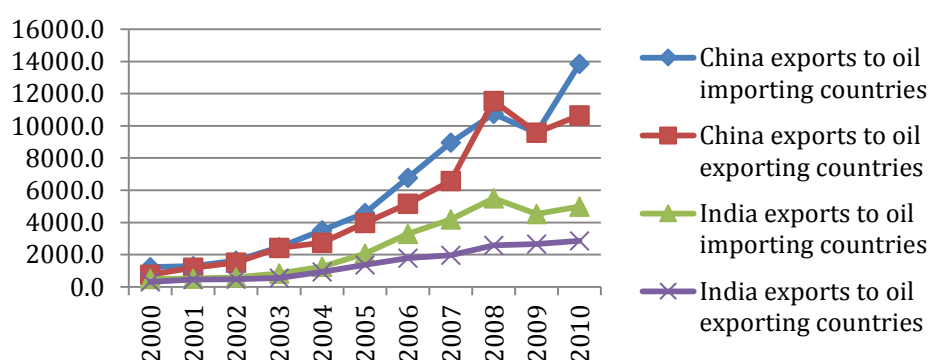


Table 16: China exports to Sub-Saharan Africa (millions USD)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
<b>South Africa</b>	1014	1051	1312	2030	2952	3826	5769	7429	8596	7366	10807
<b>Kenya</b>	133	139	183	242	349	457	622	932	1217	1278	1786
<b>Tanzania</b>	86	90	121	191	216	304	383	596	940	915	1251
<b>Nigeria</b>	549	919	1047	1787	1719	2305	2856	3800	6758	5478	6695
<b>Angola</b>	34	46	61	146	193	373	894	1241	2931	2385	2004
<b>Sudan</b>	158	227	392	478	816	1294	1417	1536	1851	1705	1955

Source: IMF direction of trade statistics

**Table 17: India exports to Sub-Saharan Africa (millions USD)**

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
<b>South Africa</b>	279	270	307	454	773	1210	1745	1954	2533	2057	2312
<b>Kenya</b>	133	163	175	195	286	593	1244	1664	1787	1486	1634
<b>Tanzania</b>	89	87	107	177	187	249	305	564	1183	975	1036
<b>Nigeria</b>	199	316	310	377	661	898	986	1142	1656	1536	1626
<b>Angola</b>	14	16	38	68	75	145	207	272	377	633	714
<b>Sudan</b>	100	111	120	115	197	318	599	547	544	495	518

**Source: IMF direction of trade statistics**

The difference in magnitude is clearly represented in the figures. China's exports and imports are higher than those of India in both oil importing and oil exporting countries. The trade relationship of India and China is stronger in oil exporting countries, but India and China export more to oil importing countries.

The comparison of outward foreign direct investments is based on estimates from Keers and Pennink's (2010) research, and on the research of Cheung, de Haan and Qian (2010). The outward direct investments of China show a substantial increase, from 0.5 billion in 2000, 2.5 billion in 2006 and the latest estimate is 6 billion dollar in 2010 towards Africa. The level of Indian outward foreign investments is presumably lower than China (Pradhan 2011), but the proposed investment of India, 6 billion dollar in Nigeria indicates that India is present as an investor. The outward investments of China are presumably higher than India's investments, given the difference in total budget, China's and India's budgets in 2008 were 53.8 and 18.8 billion dollar (Hong 2011).

The level of development assistance has increased substantially for India and China, both countries have a non-interference policy and their contributions to Africa are both aimed at developing infrastructure. However, India also focuses on the development a pan-Africa E-Network. In literature, India is praised for its small scale and focus on capacity building, moreover this sets India apart from China, which is criticized. Based on the research of Keers and Pennink (2010), and the analysis on Indian development assistance, the numbers are comparable, both countries reaching around 2 billion dollar annually.

In conclusion, this section illustrates the difference in magnitude in the trade relationship of India and China with Africa. The trade relationship of China is stronger and more comprehensive than India's trade relationship with Africa. India mostly imports from Africa, and then mostly from oil exporting countries, China also exports a lot to African oil exporters. Another difference is the focus of India on Nigeria, while China imports more from Angola and Sudan than Nigeria. The level of investments is expected to be higher for China, while development assistance is comparable

## **CONCLUSIONS**

The aim of this study was to analyze whether the growing economic relationship between India and Africa was a substitute for the traditional relationship between Europe and Africa. The addition of trade agreements to the model captures the developments in other factors, as turmoil in European negotiations go hand in hand with stronger ties between India and Africa. However, trade agreements themselves have not provided us with additional information on

the economic relation. Based on the developments in these subjects this study will conclude whether a substitution effect is indeed present. Furthermore, the engagements of India will be placed in perspective by comparing it with China.

The first component of the economic relationship under investigation was trade, although it is evident that the Indian African trade relationship is rising at an impressive pace this provides no substitution effect as the trade between Europe and the African countries simultaneously showed increasing growth. Moreover, the trade relationship between Africa and Europe is more extensive than the trade relationship between India and Africa. The trade between India and Africa is one sided, India's imports have grown, and mostly from resource rich countries, while Europe also imports a lot, but its exports are also at a high level. In terms of trade there is no substitution effect, however the expectation that India's presence in Africa is mostly resource driven is apparent.

The second factor in the economic relationship is foreign direct investment, and the level of outward foreign direct investment of India is increasing. Statements by Indian officials of 6 billion dollar of investments in Nigeria reflect this. Moreover, in South Africa many Indian companies are active, Tata and Mahindra & Mahindra are well known and have made large investments in South Africa. Europe is world's largest investor, and the FDI flows to South Africa fluctuate around 5-6 billion dollar with the exception of the year 2008. The investments in Nigeria have risen progressively to 3.5 billion dollar in 2006, after which it fell to around 2 billion dollar annually, and in 2009 even to a low of 700 million dollar. The precarious situation in the Niger delta, with attacks on oil refineries might pose a reason for the decrease of European investments. Overall, Africa is an attractive region for investments, with a rate of return of 17%. Europe and India are both active investors, but Europe investments are higher. Thus, this study cannot prove a substitute effect; both parties increasingly invest in Africa, which has a positive effect on Africa as it integrates the continent more and more with the world economy.

The third factor in the economic relation is development aid. Even though data on Indian development aid is scarce, it seems that India is increasingly contributing to the development of Africa. India always had a development aid program, which was relatively small and focused on capacity building, but its development assistance is growing. India uses aid as a channel to promote its importance of a global economy, and it has restricted its own dependence on aid, while at the same time raising its pledges of assisting other countries. Although, promised development aid is not the same as actual development aid, it is noteworthy that India pledged approximately 6.7 billion dollar in development aid over a period of 3 years, and remains the focuses on capacity building. The level of European aid is stable and Europe contributes 2-3 billion dollar annually, so the increased development assistance has not substituted for European aid. This is a good development for Africa, India and Europe have a different approach on development aid and Africa can benefit from multiple donors. India focuses more on infrastructure and E-networks, while Europe addresses governance reforms and improvement of human rights.

Finally, the rise of India in Africa is undeniable and profound in all aspects, but compared to the engagements of China, India still has a lot of ground to cover. China's relationship with Africa consists both high levels of imports and exports. The total outward investments of China are almost double that of India, but in aid assistance India operates at a similar level. The difference can be explained by the longer and more active role China has taken in its engagements towards the African region.

All in all, this research has found no substitution affect, as both Europe and India are intensifying their economic relationship with Africa. The economic relationship of India does not yet come at a cost for Europe's relationship with Africa. India's economic relationship seems to be stronger in resource rich countries, and points in the direction of India's engagements being mostly resource driven. The relationship of Europe with Africa is still larger than India and China. However, India's relationship might be more beneficial for Africa as it provides Africa with a trade surplus that enables Africa to reinvest this capital into their own economy.

Future research could investigate if South-South trade is becoming more important than North-South trade. Another interesting research gap would be to analyze the diplomatic ties between the BRIC members and Africa, against the diplomatic relationships between Africa and Europe, for instance by looking at which international organizations they share, the number of visits by diplomats, and their importance. Within Europe, there is a large ongoing debate on the effectiveness of development aid, and research into the different approach of developing countries. It would be interesting to investigate this from an African point of view, and analyze their opinion on the different approaches of Europe versus countries as China and India. Concluding, Trade agreements can be removed in follow up studies as it has not proved to add additional value to this research.

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## Composite Analysis of Means: Inquiry of CFO Roles, Responsibilities and Relationships in SDA North American Division Conferences

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### ABSTRACT

This examination was aroused by thoughts that perceptions of SDA Conference leadership impacts how roles, responsibilities and relationships of CFOs are viewed in terms of their understanding and working knowledge of CFO duties. Data collected in Bermuda, Canada and USA. Descriptive Statistical analysis of Means indicated significant differences among leadership perceptions.

**KEYWORDS:** CEO (Chief Executive Officer/President), CFO (Chief Financial Officer/Treasurer), Executive Board Members, expectations, General Conference (GC), leadership, North American Division (NAD), perceptions, responsibilities, roles, relationships, Seventh-day Adventists (SDA)

### INTRODUCTION

The Chief Financial Officer (CFO) represents the highest level of fiscal leadership and financial management service in the business sector (Witzel, 2010). However, changing times in the CFO's world have resulted in changing expectations. Dergel (2014) stated "CFOs' job descriptions depend on a great deal on the companies they work for" (p. 22). But what happens when job expectations change? Understanding expectations at work is critical for leadership effectiveness and efficiency, and also for employee productivity, satisfaction and retention in the work environment (Buckingham & Coffman, 1999). This statement regarding understanding expectations influences every employee in the organization at all levels.

### LITERATURE

#### Summation of CFOs Roles, Responsibilities and Relationships

The **role** of the chief financial officer has changed, evolved and expanded dramatically due to rapid globalization and economic changes in the corporate business sector and society (Corson and Miyagawa, 2012; Zalud, 2012; MacManus, 2011). "Traditionally, a CFO had a background in accounting and managed strictly financial matters. Today, it's much more than this and more than this in franchising. It's constantly evolving as business changes, particularly as a company turns in a new direction" (Anonymous, 2014). Corporations, governments and organizations continue to experience one financial crisis after another which has continued to significantly impact the perception, performance and position of chief financial officers (CFOs) in their organizations (Linden, 2012; O'Callaghan and Caulfield, 2006). The paradigm shift of the CFO's role has increased the influence of CFOs inside their organizations among departments,



executive boards, and stakeholders, as well as outside with Wall Street entities (Linden, 2012; Strategic Directions, 2004). This increase in CFO's influence has resulted in CFOs becoming a more dominant force in their organizations as the controllers of their company's financial resources (Witzel, 2010). CFOs who are committed to fully developing their financial leadership skills and influence add enormous value to their organizations (Corson and Miyagawa, 2012; Menkes, 2011; Voogt, 2010; Shepherd, 2010).

The CFO's role facilitates and necessitates a wide spectrum of relationships within the context of internal and external stakeholders comprising the financial community that are impacted by the organization's financial resources (de Jongh and Wielinga, 2011; Drucker, 1974; PricewaterhouseCoopers, 1999). A crucial component to the fulfillment of the organization's mission is the CFO's relationship with the chief executive officer and executive board as members of the organization's leadership team (Menkes, 2011; Gray, 1998; Carver, 1997). In many organizations CFOs and CEOs serve together as executive officers and business partners providing each other leadership and support to ensure the organization fulfills its mission and achieves its strategic goals and objectives (MacManus, 2011; Hartman, 2000; Cardillo, 1998). While expectations and perceptions of leadership may differ in some cases, it is vital to the organization's climate for CEOs and CFOs to communicate and work together, avoiding adverse relationships, to maximize the business operationalization of shareholder's value and stakeholder's interest (Shepherd, 2010; Millman, 2001).

The ***responsibilities*** of the chief financial officer has greatly increased over the years due to significant changes in global economies, governments, and globalization in the business and corporate society (Khiyara, 2015; Murphy, 2014; Corson and Miyagawa, 2012; Zalud, 2012; MacManus, 2011). While global corporations, governments and organizations continue to experience one financial crisis after another which affects the CFO's position, the ultimate impact of these internal and external factors is the increasing responsibility resting on CFO's to safely guide their company's through the financial risk and turbulence evidenced around the world (Teach, 2014; Corson and Miyagawa, 2012; Linden, 2012; Spanyl, 2011; Heffes, 2009; Swanson, 2007; Ehrenhalt and Ryan, 2007; O'Callaghan and Caulfield, 2006; Tenkate, 2006; Cunningham, 2005; Strategic Direction, 2004). Financial reporting and managing information in a creditable manner was also cited as a very critical and essential responsibility of the CFO (Goldberg and Bettinghaus, 2015; LeBlanc, 2012; Vallario, 2011).

The ***relationships*** of chief financial officers are vital to all aspects of an institution's services. According to Dergel (2014) "CFOs are not only perceived as leaders for the people who work under their authority in finance but for other executives in the company, as well" (p. 22). A crucial component to the fulfillment of the organization's mission is the CFO's relationship with the chief executive officer (CEO) and executive board; both of which require a close working relationship with the CFO (Robinson, 2015; Carver, 1997; Gray, 1998). In many organizations, the CFO, serving as a strategic business adviser (Anonymous, 2014) and consultant (McCann, 2016) to the CEO while they serve together as executive officers of the organization; working together as a team; and supporting one another to achieve the goals, objectives, and mission of the organization (Hartman, 2000; Cardillo, 1998). Regardless of whatever differences may surface, as members of the organization's top management and leadership team, it is essential to the well-being of the company for CFOs to perform ethically (Warmoll, 2015) and competently (Byrnes, 2014). As CFOs report to the CEOs and their Executive Boards, they must communicate and work together to maximize the value of the organization in all aspects of its operations and avoid having an adverse relationship (Segarra, 2014; Hagel, 2014; Krell, 2003; Millman, 2001).

### **CFOS IN THE SDA CONTEXT**

The emergence of the Seventh-day Adventist Church as a global financial organization, and its rapid growth (Adventist World – NAD 2013, p. 5) as a global financial entity operating in multiple countries and industries has necessitated the emergence and development of skilled financial leadership that add substantial value to the organization (Adventist World – NAD 2013; Corson and Miyagawa, 2012; Menkes, 2011; Witzel, 2010; Voogt, 2010; Shepherd, 2010). CFOs in SDA local conferences function in a similar capacity to CFOs in businesses, corporation and other not-for-profit organizations. The SDA Accounting Manual (2011) refer to the CFO as the individual who has been given primary responsibility for the financial affairs of an entity” (p.4).

As with the business and corporate sectors, SDA local conferences are also directly impacted by the changes in our global societies, and CFOs are expected to navigate their organization financially during these changing times (Hollein, 2013; Vallario, 2011; Quinn, 2011). Barsky and Catanach (2013) stated that there has been a shift in CFO responsibilities, skill set, and an apparent increase in CFO job responsibilities has occurred. As reflected in the changing organizational structure of the SDA church to accommodate its global mission in a changing world, so the responsibilities, understanding and working knowledge of SDA CFOs has appeared to change. However, it is not clear whether the expectations (Buckingham and Coffman, 1999), perceptions and work pertaining to the responsibilities of CFOs in SDA local conferences are clearly understood by conference leadership; specifically presidents, treasurers and board members.

### **METHODOLOGY**

A mixed methods research design (Creswell, 2014) was used in this study. Creswell (2003) “defines mixed methods research by incorporating the definition that focuses on collecting and analyzing both quantitative and qualitative data in a single study” (p. 210). A sequential exploratory design involving qualitative (Eriksson and Kovalainen, 2008; Nardi, 2003) and quantitative (Elsbach and Bechky, 2009) methods was utilized in the collection and analysis of the data.

In the qualitative phase, interviews were conducted in four conferences among the presidents (CEOs) and treasurers (CFOs). In the quantitative phase Descriptive Statistics were used to analyze the survey data. Analysis of Variance (ANOVA) and Chi-Square statistical data analysis were used to process and interpret the survey questionnaires. The Likert Scale (Tharenou, Donohue and Cooper, 2007) was used as a survey response from the participants to measure the degree of agreement from strongly disagree (1) to strongly agree (5). A composite aggregate of Means (*M*) were reported to assess the extend of agreeableness and significant differences among the three groups.

Random selectivity from a sample to a population to generalize was one of the critical factor (Tharenou, Donohue and Cooper, 2007; Nardi, 2003; Patten, 2000; Eisner, 1998; Drisko, 1997) in this study. A survey was developed and distributed to a targeted group of 57 presidents, 57 treasurers and 285 random selected executive board members in 57 Seventh-day Adventist local conferences comprising the countries of Bermuda, Canada and the United States of America.

## RESULTS

The results and analysis of this research highlights that significant perspective differences exist among conference presidents, treasurers and board members concerning their level of understanding and working knowledge of the nature and work performed by treasurers in their local conferences. These significant differences also existed in terms of the treasurer's roles and responsibilities being clearly defined and documented in their conference. A segment of the research question (1b) is expressed in the following manner pertaining to this topic: Is there congruence between the perceptions of the presidents, treasurers, and board members as they relate to how the roles, responsibilities, and relationships of the treasurer are communicated and understood? The level of congruence is expressed in the mean ( $M$ ) between the three groups.

The three groups tended not to agree on whether the treasurer's *roles* (presidents,  $M=3.71$ ; treasurers,  $M=3.10$ ; board members,  $M=3.55$ ), and *responsibilities* (presidents,  $M=3.66$ ; treasurers,  $M=3.11$ ; board members,  $M=3.50$ ) are clearly defined. Pertaining to the *roles* of the treasurer, the Student-Newman-Keuls Post-Hoc Test indicated that the treasurers responded to this expectation significantly lower than the board members and the presidents, but there is no significant difference between the responses of the board members and the presidents.

Regarding *responsibilities*, the same test indicated that treasurers responded to this expectation significantly lower than the board members and the presidents, but there is no significant difference in the responses between the board members and the presidents.

The three groups tended not to agree on whether they understood and have a working knowledge of the *roles* (presidents,  $M=4.38$ ; treasurers,  $M=4.18$ ; board members,  $M=3.74$ ), *responsibilities* (presidents,  $M=4.38$ ; treasurers,  $M=4.05$ ; board members,  $M=3.72$ ), *relationships* (presidents,  $M=4.41$ ; treasurers,  $M=4.05$ ; board members,  $M=3.77$ ) in their local conference. Pertaining to the *roles* of the treasurer, the Student Newman-Keuls Post-Hoc Test indicated that the board members responded to this expectation significantly lower than the treasurers' and presidents', but there is no significant difference between the responses of the treasurers and the presidents. Regarding *responsibilities*, the same test indicated that significant differences existed between the presidents, treasurers, and board members on how they responded to their understanding and working knowledge of this expectation. In reference to the treasurer's *relationship* to the president and board in their local conference, the test revealed that the board members and treasurers responded to this expectation significantly lower than the presidents', but there is no significant difference between the board members and the treasurers.

In spite of the significant differences between the presidents, treasurers, and board members pertaining to their level of understanding and having a working knowledge of the treasurer's *roles*, *responsibilities*, and *relationships* in their local conference; all three of the groups believe that the expected roles and responsibilities are clearly defined in the North American Division (NAD) and General Conference (GC) policy books. All three groups also tended to agree that it is the president's (CEO's) responsibility to communicate expectations, but they tended to disagree on whether expectations should be verbally communicated or in a written document.

## IMPLICATIONS

Pronounced implications surfaced in the unveiling of this study. The analysis and results of this research indicated that significant perspective differences exist among the aggregate of local conference leadership in the Bermuda, Canada and the USA, pertaining to presidents (CEOs), treasurers (CFOs) and board members concerning their level of understanding and working knowledge of the nature and working responsibilities performed by treasurers (CFOs)

in their local conferences. Concerning the quantitative survey questionnaires that were distributed to the NAD local conference presidents (CEOs), treasurers (CFOs) and board members, the presidents' (CEOs') response appears to reflect their having a higher level of understanding and working knowledge of the treasurer's responsibilities than the treasurers (CFOs) who "actually occupy the position and do the work".

The treasurers clearly did not perceive their responsibilities ( $M=3.11$ ) as clearly as presidents ( $M=3.66$ ) as indicated by lower means. This lack of agreement could create misunderstandings between the two leaders, (presidents and treasurers), as well as cultivate conflict in the leadership team. If the expectation of the treasurer (CFO) are not clearly defined and understood by presidents (CEOs), treasurers (CFOs), and board members; then there is a potential for confusion of expectations, loss productivity, and inter-relational conflicts among the conference leadership.

Because the board members ( $M=3.72$ ) are less confident than the presidents ( $M=4.38$ ) and treasurers ( $M=4.05$ ) of their understanding of the treasurers' responsibilities it may be helpful to have training sessions to orientate and provide a clearer understanding of the treasurer's work.

These strategies may enhance organizational effectiveness while fostering greater accountability and corporate governance.

Neglect to clarify expectations may conceivably result in problems that may impede organizational effectiveness and efficiency as well as create conflicting partnerships and relationships among the leadership team of presidents (CEOs), treasurers (CFOs), and executive board members. Analogous outcomes of expectations may also exist in other business entities and organizations, however, regardless of industry or sector, when expectations of the CFOs' responsibilities are not clearly defined, communicated or understood among the leadership team; a greater climate may exist for potential conflict between leadership and the governing board responsible for institution governance.

## CONCLUSIONS

The expected role, responsibilities and relationships of the treasurer (CFO) should be clearly defined, documented, and communicated in the policies of the governing local conference organizations. Policies regarding the treasurer's work should be updated to reflect the current understanding of presidents (CEOs), treasurers (CFOs), and board members and other key leaders in the organization. Treasurers (CFOs) should discuss their role and responsibilities with the presidents (CEOs) and board members of prospective employing organizations during the pre-employment interviewing stage to clarify expectations, definitions and understanding before assuming the position in the conference.

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