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Editorial

Journal of Econmics and Behavioral Studies (JEBS) provides distinct avenue for quality research in the ever-changing fields of economics & behavioral studies and related disciplines. Research work submitted for publication consideration should not merely limited to conceptualisation of economics and behavioral devlopments but comprise interdisciplinary and multi-facet approaches to economics and behavioral theories and practices as well as general transformations in the fileds. Scope of the JEBS includes: subjects of managerial economics, financial economics, development economics, finance, economics, financial psychology, strategic management, organizational behavior, human behavior, marketing, human resource management and behavioral finance. Author(s) should declare that work submitted to the journal is original, not under consideration for publication by another journal, and that all listed authors approve its submission to JEBS. Author (s) can submit: Research Paper, Conceptual Paper, Case Studies and Book Review. Journal received research submission related to all aspects of major themes and tracks. All submitted papers were first assessed by the editorial team for relevance and originality of the work and blindly peer reviewed by the external reviewers depending on the subject matter of the paper. After the rigorous peer-review process, the submitted papers were selected based on originality, significance, and clarity of the purpose. The current issue of JEBS comprises of papers of scholars from South Africa, Zimbabwe, Nigeria, Indonesia, Tanzania and Uganda. Moderating effect of environmental hostility on the entrepreneurial orientation, income diversification and its determinants, cultural diversity and its influence on the attitudes, the performance of maximum likelihood factor analysis, efficacy of wellness programmes as work-life balance strategies, biographical differences and employees' perception of safety control measures, prior perceptions and behaviour on cheating, gender differences in the perceptions of entrepreneurship hindrances, reported dissonance and post-purchase responses, international trade, foreign direct investment (FDI) & international technology transfer, influence of electronic commerce on business performance, modelling volatility persistence and asymmetry with structural break, black economic empowerment in South Africa, analysis of trade in goods between Indonesia and South Korea, challenges of mentoring in construction industry, frugality, family-cohesiveness and firm growth, the trade-offs between pro-poor and cost-reflective tariffs, development and marketing of financial service products, the "Buy Zimbabwe" Campaign and stock market volatility using GARCH models were some of the major practices and concepts examined in these studies. Current issue will therefore be a unique offer, where scholars will be able to appreciate the latest results in their field of expertise, and to acquire additional knowledge in other relevant fields.

Prof. Sisira R N Colombage, Ph. D.
Editor In Chief

Table of Contents

PAPERS

Journal of Economics and Behavioral Studies (JEBS)
Vol. 8, No. 6, December 2016 (ISSN 2220-6140)

Examining the Moderating Effect of Environmental Hostility on the Entrepreneurial Orientation - Performance Relationship

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Abstract: While the EO-performance nexus has received extensive attention in entrepreneurship literature, other studies suggest that the magnitude of this relationship is dependent upon the external environment and internal organizational processes. The objective of this study was to measure the effects of EO (innovativeness, risk-taking, proactiveness, autonomy and competitive aggressiveness) on SME performance, as well as to examine the moderating effect of environmental hostility on the EO-performance relationship in South Africa. The study showed thatwhile innovativeness and proactiveness does not have a significant effect on SME performance; risk taking propensity, competitive aggressiveness, and autonomy have a significant positive effect on SME performance. It was also seen that while the risk taking-performance relationship is negatively moderated by environmental hostility, the competitive aggressiveness-performance relationship is positively moderated by environmental hostility. This suggest the need for SMEs to always align their business strategies with appropriate EO dimensions to mitigate some of the negative consequences of operating in hostile business environments and improve the performance of their businesses.

Keywords: *Entrepreneurial orientation, SME performance, Environmental Hostility, South Africa*

1. Introduction

In today's vibrant and ever changing business environment, entrepreneurial orientation (EO) has gain significant recognition as a key ingredient that business can adopt to survive and grow as evident from existing strategy literature (Baker & Sinkula, 2009; Rauch et al., 2009; Liu et al., 2011; Runyan et al., 2008). EO has been found to be a vital ingredient for organizational success and a key factor in enhancing firm performance (Rauch et al., 2009; Wiklund & Shepherd, 2005). According to Rauch et al. (2009: 763) "EO represents the policies and practices that provide a basis for entrepreneurial decisions and actions". EO also refers to the set of approaches, decision making styles and practices used by entrepreneurs and managers to behave entrepreneurially (Tang et al., 2009). Wiklund & Shepherd (2003) consider EO as a firm-level strategy formulation process used by firms to carry out the central purpose of an organization, strengthen its vision, and create a competitive advantage. Also, numerous studies (Wiklund & Shepherd, 2005; Li et al., 2009; Hughes & Morgan, 2007) have shown that high EO firms outperform those with low EO. Hence EO is noted as firm-level strategic formulation process that businesses use to achieve a competitive advantage (Van Geenhuizen et al., 2008).

Furthermore, the external environment in which firms operate in has been identified as a significant factor that influences EO (Davis, 2007). This is because external environmental factors are capable of affecting the failure and success of businesses. Gathungu et al. (2014) expound that the external environment, gauged in terms of environmental munificence (i.e. favourable environmental conditions) or hostility (i.e. unfavourable environmental conditions), offers both opportunities and multifaceted challenges which businesses need to respond to in a creative manner. Kuratko & Hodgetts (2004) established that external factors could directly and or indirectly influence the entrepreneurial competence and performance of the business. Jabeen & Mahmood (2014) stress that in order for businesses to take advantage of the opportunities from the dynamic and competitive business environment; businesses need to refigure their existing strategies. Hence, in order for businesses to maintain their competitive edge and survive in this new business environment, they have to constantly examine their internal and external environment to identify threats and take advantage of opportunities (Ramlall, 2002).

Prior studies (Miller & Friesen, 1982; Wiklund & Shepherd, 2005), suggest that EO is not applicable in all environments. Consequently, the magnitude of the EO- performance nexus is reliant on the external environmental factors (Tang et al., 2009).While, a there exist a multiplicity of studies on the EO-performance nexus, interestingly; the findings have not been consistent. For example, while some scholars present strong evidence on the positive impact of EO on performance (e.g. Baker & Sinkula, 2009; Kaya, 2009; Naldi et al., 2007; Nelson & Coulthard, 2005; Rauch et al., 2009), others found no significant relationship (e.g. Frank et al., 2010), and yet another studies by Arbaugh et al. (2009) have showed mixed results. Lumpkin and Dess (1996) expound that the EO-performance nexus does not provide the full picture of the relationship and as such, more research is required to test the mediating and moderating effects of several factors on the EO-performance nexus to provide a more accurate depiction of performance outcomes. Over the years, researchers have widely examined EO under several control circumstances and moderating effects of environmental factors such as the industry or business environment such as dynamism, heterogeneity, and hostility of the firm (Lumpkin & Dess, 2001; Wiklund & Sheperd, 2005; Nelson & Coulthard, 2005) and organizational factors such as structure or characteristics of founder; the availability of critical resources like financial and social capital and networks (Harms et al., 2010; Walter et al., 2006; Wiklund & Shepherd, 2005) in many industry contexts. As far the external environment is concerned, Martins and Rialp (2013) suggested that within the premises of contingency theory, external environment factors has been identified as a key moderating variable for any successful strategy implementation. However, the construct of environmental hostility has not been extensively tested empirically by prior studies in South Africa. As such, it becomes important to research this construct as it will help uncovers fruitful insight on how SMEs in South Africa and other developing regions can refigure their existing strategies in the current competitive market, to enable them to seize opportunities and maintain their competitive edge. Consequently, the objective of this study is to determine the impact of EO on SME performance, as well as to examine the moderating influence of environmental hostility on the EO- performance relationship.

2. Literature Review

Entrepreneurial Orientation: EO has emerged over the years to become one of the most widely studied concepts in the field of entrepreneurship and business management. EO was put forth by Miller (1983) as comprising of three dimensions namely: innovativeness, proactiveness and risk taking. He explicated that these three dimensions of EO act together and "comprise a basic uni-dimensional strategic orientation" and therefore should be combined when conducting entrepreneurship research. As an extension to the three dimensional EO model, Lumpkin & Dess (1996) added two other factors (autonomy, and competitive aggressiveness) to form a five dimensional EO model. These five EO dimensions are believed to vary independently and thus recognize the multi-dimensionality of the EO construct where in businesses can have different combinations of these five dimensions

Dimension of EO: While a vast number of studies (Fatoki, 2014; Ferreira & Azevedo, 2008; Tirfe & Kassahun, 2014; Beliaeva, 2014; Rauch et al., 2009; Tang et al., 2009) have focused consistently on the three dimensions of EO, very limited studies have used all these five dimensions of EO (e.g. Hughes & Morgan, 2007; Callaghan & Venter, 2011; Kusumawardhani et al., 2009). This paper acknowledges that the five dimensions that are critical to EO are: innovation, pro-activeness, risk taking, competitive aggressiveness, and autonomy and as such all of them will be considered in this paper.

Innovativeness: Schumpeter (1934) was one of the pioneering researchers to acknowledge the key part played by innovation in the entrepreneurial process with regards to creating, developing and introducing new products, systems, processes and organizational structures. Lumpkin & Dess (1996:142) define innovation as "the firm's tendency to engage in, and support new ideas generation, novelty, experimentation, and creative process or research and development activities which may result in new products, services, or technological processes". These researchers further view innovativeness as the firm's willingness to open its organisational culture to new and creative ideas and depart from existing practices and technologies. Innovativeness has been identified as a significant source of growth for a firm (Dess & Lumpkin, 2005). Kropp et al. (2006) identified innovativeness as a vital factor for new business success. Researchers (Lumpkin et al., 2010; Piirala 2012) have established that innovativeness is necessary in sustaining a firm's viability as it is the generation of new ideas that lead to the improvement and or development of new products/markets that help in the sustainability of the business. This is because innovativeness helps in the improvement and or development of new products/markets necessary to deal with the rapid and continuously changing and uncertain environment in which businesses operate (Quaye & Acheampong, 2013). Moreover, Ngoze, & Bwisa

(2014), established that the innovativeness has positive impact on financial performance. Hence, based on the above discussion, it is hypothesized that innovativeness will positively influence SME performance.
Hypothesis 1: Innovativeness has a positive relationship with SME performance

Proactiveness: Proactiveness refers to how a business responds to market opportunities by developing an opportunity-seeking outlook whereby new products and services are introduced far ahead of competitors as a means of increasing the firm's competitive posture (Kreiser et al., 2002; Lumpkin & Dess, 2001).Proactiveness has been conceptualised as a mindset that focuses on identifying and evaluating new opportunities, monitoring the market trends and establishing new venture teams when anticipating for future demand and shaping the business environment (Lumpkin & Dess, 2001). These researchers also found proactiveness to have a positive impact on each of the performance measures. Dess & Lumpkin (2005) expounds that a proactive firm is able to identify and anticipate possible emerging problems and find solutions for them, which in turn acts as key competitive advantage, because competitors need to respond to the successful initiatives of the pioneer. Quaye & Acheampong (2013) pointed out that proactiveness is a significant EO dimension because of its forward-looking perspective. Ngoze& Bwisa (2014) established that the proactiveness has positive impact on financial performance. Also, Ambad & Wahab (2013) found that in Malaysia, environmental hostility positively moderated the relationship between proactiveness, risk taking and firm performance. Furthermore Gurbuz & Ayko (2009) observed proactiveness to have a significant positive influence on sales and employment growth. Moreover, Wang & Yen (2012) showed that proactiveness has a positive effect on the sales of the firms among Taiwanese SMEs in China. Hence following this line of discussion, it is hypothesised that proactiveness will positively influence SME performance.
Hypothesis 2: Proactiveness has a positive relationship with SME performance

Risk taking: Ogunsiji & Kayode (2010: 195) define risk taking as "the capacity of the entrepreneur to perceive risk at its inception and to find avenues to mitigate transfer or share the risk". Risk taking is also seen as the inclination of a firm to get involved in risky projects that have a high level of uncertainty with unknown outcomes and success probability, as a means of achieving the firm's objectives (Beliaeva, 2014; Miller, 1983). Lumpkin & Dess (2001) identified risk taking as one of the component of EO and a unique characteristic of entrepreneurial behaviour (Quaye & Acheampong, 2013). Timmons & Spinelli (2008) point out that risk taking is an intrinsic part in the creation of an entrepreneurial venture and the willingness to take this risk results in a potential reward. Kreiser et al. (2002) found that entrepreneurial firms were higher risk takers than non-entrepreneurial firms and also adopted a highly proactive approach in their quest for new opportunities. Also, Owoseni & Adeyeye (2012) observed risk-taking has a significant relationship with perceived SME performance. Moreover, Ngoze & Bwisa (2014) established that the risk taking has positive impact on financial performance. Hence, we expected that risk taking will have a positive relationship with SME performance.
Hypothesis 3: Risk taking has a positive relationship with SME performance

Competitive aggressiveness: Competitive aggressiveness is defined as "a firm's capacity to outweigh and be a head of rivals at grasping every opportunity" (Ogunsiji& Kayode, 2010:195). These researchers further see competitive aggressiveness as the freedom to work on one's ideas and initiatives. While competitive aggressiveness has been considered and examined as an attribute of pro-activeness (Razak, 2011).Lumpkin & Dess (1996) stress that these two dimensions of EO vary as competitive aggressiveness focuses on how a business deals with existing trends and market conditions in relation to its competitors while proactiveness focuses on a firm's quest for new market opportunities. Le Roux & Bengesi (2014) point out that given that SMEs operate in a fast-changing and intense worldwide competitive environment, competitive aggressiveness is required to maintain a competitive market posture given that consumers are exposed to a diverse range of products and services resulting in changing consumer tastes and preferences. As such competitive aggressiveness can be used as a driving mechanism to withstand the fierce competition and respond appropriately to existing and emerging competitive threats. Furthermore, Ngoze & Bwisa (2014) established that the competitive aggressiveness has a positive impact on financial performance. Hence following this line of discussion, it is hypothesised that competitive aggressiveness will have a positive relationship with SME performance.
Hypothesis 4: Competitive aggressiveness has a positive relationship with SME performance

Autonomy: Lumpkin & Dess (1996:136) view autonomy as "the independent action of an individual or a team in bringing forth an idea or a vision and carrying it through to completion". Autonomy can also be considered as the strong desire a person has to freely develop and implement his/her idea (Lumpkin et al., 2009). Coulthard (2007) identified autonomy as a vital factor in improving the performance of a business across different industries. Also, several researchers (Kusumawardhani et al., 2009; Covin et al., 2006; Rauch et al., 2009) are of the opinion when employees are given autonomy, they will be entice to act entrepreneurially and thus will help to enhance the performance of the business. Ngoze & Bwisa (2014) established that autonomy has positive impact on financial performance. Nonetheless, Davis (2007) fails to find a positive association between autonomy and SMEs performance. However, we expected autonomy to have a positive relationship with SME performance.

Hypothesis 5: Autonomy has a positive relationship with SME performance

Environmental Hostility as a moderating factor: The influence of environmental variables has always been acknowledged as an important moderating factor in the relationship between EO and performance (Davis, 2007). The three environmental moderating factors acknowledged by prior EO studies are environmental munificence, environmental dynamism and environmental hostility but this study will only focus on environmental hostility. Khandwalla (1977) considers an environment to be hostile when it is risky and stressful, with few opportunities. Miller & Friesen (1982) defined hostility as" the degree of threat to the firm posed by the multifacetedness, vigor and intensity of the competition and the downswings and upswings of the firm's principal industry". Covin & Slevin (1989) point out that hostility is usually displayed by the degree of threat a business faces and also characterised by intense competition, lack of business opportunities, overwhelming business climate and unsafe industry setting.

Prior studies that have examined the moderating role of environmental hostility on EO provided mixed findings. For example, while some studies (Mu & Benedetto, 2011; Zahra & Garvis, 2000; Martins & Rialp, 2013; Covin et al., 2006), have reported a strong empirical support for a positive relationship; other scholars (Becherer & Maurer, 1997; George et al., 2001) established a negative relationship; while some researchers have produced inconclusive findings (Covin & Slevin, 1989).With regards to EO dimensions, Gathungu et al. (2014) observed that environmental hostility threatens the survival and viability of a business. This is because a hostile environment negatively affects innovative activities within a business. Hostile markets are characterized by fierce competition, scarce resources and low levels of industry profitability and thus it is most possible that any business employing an overly innovative attitude will overextend them instead of conserving their limited resources. Kreiser et al. (2002) found a negative association between innovation and hostility, which is congruent with theoretical beliefs by Zahra & Bogner (2000: 165), who stated that "intense hostility in these markets might make aggressive gambling of new ventures' limited financial resources by offering radically innovative products a poor strategic choice". With regards to risk taking, Zahra & Garvis (2000) pointed out that while risk-taking would enhance the performance of businesses in moderately hostile environments, in extremely hostile environments businesses will be discouraged from taking unnecessary risks as it would erode the profits of the business. Goll & Rasheed (1997) also established that in hostile environment, the lack of resources would "lead firms to avoid excessive risk-taking and pay greater attention to the conservation of resources". As such, Zahra & Garvis (2000) posit that in excessively hostile environments businesses refrain from taking unnecessary risks.

Furthermore, Lumpkin and Dess (2001) established that the moderating effect of environmental hostility on proactiveness–performance nexus is usually unfavourable. This is because in hostile environment; the intensity of competition amongst rivalry puts more pressure on a business and thus necessitates a greater need for these businesses to interact amongst each other in order to create a more efficient business. Also, businesses refrain from experimenting on new strategies since hostile environment forces businesses to be more focused on conserving their limited financial resources. Committing limited resources to manage threats is adversative to the vital role experimentation and discovery play in enhancing proactiveness. With regards to competitive aggressiveness, Porter (1980) pointed out that businesses competing in fiercely competitive industries need to "tightly managed decentralization" and "strategic discipline". Also, given that there is a limited amount of decision making and strategic options amongst businesses competing in fiercely competitive industries, the limited availability or the lack of organization slack becomes less dreadful. Consequently, when environmental hostility is high, one will expect that businesses that are competitive aggressiveness to have a high business performance, as opposed to when environmental hostility is low. At the same time, while autonomy will entice employees to act entrepreneurially, which will in turn enhance the performance of the business; in a hostile environment given that resources are scare and there is a low level of industry profitability; businesses are forces to be more focused on conserving their limited financial resources and thus only projects which are deemed highly necessary will be completed. Hence, this study hypothesizes:

Hypothesis 6a: The Innovativeness-performance relationship will be negatively moderated by environmental hostility

Hypothesis 6b: The Proactiveness- performance relationship will be negatively moderated by environmental hostility

Hypothesis 6c: The Risk taking- performance relationship will be negatively moderated by environmental hostility

Hypothesis 6d: The competitive aggressiveness - performance relationship will be positively moderated by environmental hostility

Hypothesis 6e: The autonomy - performance relationship will be positively moderated by environmental hostility

3. Methodology

In this study a quantitative approach was adopted to measure the effects of EO (innovativeness, risk-taking, proactiveness, autonomy and competitive aggressiveness) on SME performance, as well as to examine the moderating effect of environmental hostility on the EO-performance relationship in South Africa. Data was collected using self-administered questionnaires. The sample consists of entrepreneurs in the Mangaung metropolitan municipality in the Free State province of South Africa. The Yellow pages directory was used to identify entrepreneurs owing to the lack of a database of entrepreneurs in the Free State and South Africa in general. Convenience sampling method was adopted and supplemented with snowball sampling. Convenience sampling was used because of the ease of accessibility of the respondents identified from the Yellow pages directory. The respondents which were identified from the Yellow pages directory were then visited at their specific business locations. Snowball sampling was then applied on the initial respondents as they refereed the researchers to other entrepreneurs operating in the Mangaung metropolitan municipality. A total of 300 questionnaires were distributed to the entrepreneurs and a 3 weeks period was given for them to answer the questionnaire. In other to increase the response rate, follow up call were made to the entrepreneurs to remind them to complete the questionnaire. Out of the 300 questionnaires that was issued, 270 was received from the entrepreneurs, but only 200 were fully completed and thus yielding a 66.7% valid response rate.

Variables and measures

Entrepreneurial Orientation and its dimensional variables: Prior studies have measured EO using either a one-dimensional or multidimensional construct (Alarape, 2013; Covin & Wales, 2011; Hughes and Morgan, 2007; Fatoki, 2014; Lumpkin and Dess, 1996). In this study, the Hughes and Morgan (2007) and Ofem (2014) multidimensional scale was adopted consisting of eighteen items of which three items each were used to form the sub-scales for innovativeness, competitive aggressiveness, proactiveness, and risk taking, while six items were used to form autonomy. In this study, the original Hughes and Morgan (2007) scale consisting of eighteen items and structured in a seven-point Likert-type scale were reconstructed to a five-point Likert-type scale ranging from strongly disagree (1) to strongly agree (5) as used in prior studies (e.g. Alarape, 2013; Fairoz et al., 2010). This study adopted this approach so as to classify SMEs as having a low, moderate, or high level of EO, as explained by Alarape (2013), where SMEs with an EO less than or equal to 3 are considered as having a low EO; SMEs with an EO greater than or equal to 3 but less than 4 are classified as having a low EO; SMEs with an EO greater than or equal to 3 but less than 4 are categorized as having a moderate level of EO; and SMEs with an EO of four and above are classified as having a high level of EO.

Control Variable: A firm's age indicates the number of years the business has been operational. In this study, the age of the business was used as a control variable, as used by prior studies (e.g. Hameed & Ali, 2011; Zahra & Garvis, 2000).

Environmental Hostility: Environmental hostility which is the moderating variable was measured using Miller & Friesen (1982) three item scale, as used in prior studies (Ambad & Wahab, 2013; Muhanna, 2006; Martins & Rialp, 2013; Zahra & Garvis, 2000). The three item scale was structured in a five-point Likert-type scale ranging from strongly disagree (1) to strongly agree (5).In order to get a composite index of environmental hostility, an average rating for each of the three questions was taken. Also, the higher the index, the more hostile the environment in which the business is operating in.

Firm performance: A combination of financial and nonfinancial variables was used in measuring SME performance. Owing to the fact that the SMEs owners were not willing to disclose their financial information, self-reported data was used to obtain information. The different measures used following previous studies (Hameed and Ali, 2011; Lysons and Farrington, 2012; Ong & Ismail, 2012) are (sales revenue, profits, number of employees, growth in market share and customer satisfaction).

4. Results

Profile of Respondents: Two hundred and eighty five questionnaires were distributed to SME owner-managers of which 200 were fully completed and returned (i.e. 70.1% response rate). The majority of respondents were males (68%) compared to females (32%). Also, 48% of the respondents were between the ages of 31 and 40; and 29% of respondent between the ages of 21-30. The majority of the respondent (70%) came from entrepreneurial families. Furthermore, more than fifty percent of the SME owner-managers had only attained an educational level up to matric. Moreover, Cronbach's alpha was used to examine the internal consistency of the variables for EO and environmental hostility. The following alpha values, 0.912, 0.904, 0.859, 0.705, 0.756 and 0.757 were obtained for risking taking propensity, proactiveness, innovativeness, autonomy, competitive aggressiveness and environmental hostility respectively. As such, all the constructs were considered to have a high level of internal consistency (alpha > 0.7). This thus validated the use of these measures for the analyses performed below.

Table 1: Correlation Matrix

		Mean	**S.D.**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
1	Risk taking propensity	3.57	0.97	1							
2	Proactiveness	2.05	0.90	-0.64**	1						
3	Innovativeness	2.63	0.70	-0.41**	0.90**	1					
4	Competitive aggressiveness	2.06	0.31	0.32**	0.27**	0.45**	1				
5	Autonomy	3.61	0.60	-0.47**	0.62**	0.60**	0.28**	1			
6	Environmental Hostility	4.13	0.36	-0.01	0.67**	0.75**	0.69**	0.39**	1		
7	Age (Log)	0.76	0.35	-0.03	-0.04	-0.10	-0.05	0.03	-0.12	1	
8	Performance	2.87	054	0.05	-0.14	0.21*	-0.01	0.18*	-0.14	-0.13	1

** Sig at 1%, * Sig at 5%,

Table 1 depicts the descriptive information and correlation matrix for the different EO dimensions, environmental hostility, SME performance, and the age of the business. Looking at the EO dimensions, it is observed that SMEs have a moderate level of risking taking propensity (Mean=3.57) and autonomy (mean= 3.61) and a low level of proactiveness (mean=2.05), innovativeness (mean=2.63) and competitive aggressiveness (2.06). These findings are congruent by the study by Yoon (2012) who established that SMEs had moderate levels of risk taking propensity. Likewise, Fairoz et al. (2010) showed that SMEs had low levels of proactiveness. Also, the results depict that the mean score for environmental hostility is 4.13, suggesting the SMEs in South Africa operate in a hostile business environment. This is congruent to the view by the Business Environment specialist (2014) that South African SMEs continue to face an extremely hostile business environment.

Table 2: Results on the moderating of Environmental Hostility effect on EO Dimensions construct

Factors	Model 1		Model 2		Model 3		Model 4	
	Beta	T-Value	Beta	T-value	Beta	T-value	Beta	T-value
Control Variables								
Constant		33.312**		10.098**		10.271**		4.664**
Log (Age)	-0.128	-1.809	-0.128	-1.827	-0.144	-2.047*	-0.191	-2.648**
Independent Variables								
Risk taking propensity (RT)			0.279	2.098*	-0.176	-1.203	-0.480	-2.437*
Proactiveness (PR)			-0.217	-0.989	-0.014	-0.055	-0.582	-1.782
Innovativeness (IN)			-0.033	-0.174	-0.012	-0.062	0.139	0.611
Competitive aggressiveness (CA)			0.215	2.079*	0.297	2.595**	0.512	3.379**
Autonomy (AT)			0.211	2.241*	-0.224	-2.376*	-0.186	-1.165
Moderating Variables								
Environmental Hostility (EH)					-0.255	-1.642	0.129	0.554
Interaction Items								
RT x EH							-0.496	2.136*
PR x EH							0.540	1.233
IN x EH							0.053	0.168
CA x EH							0.638	2.816**
AT x EH							0.392	1.541
Model Parameters								
R2	0.016		0.075		0.088		0.158	
Adjusted R2	0.011		0.046		0.055		0.104	
F-Value (sig.)	3.273 (0.072)		2.612(0.019)*		2.644(0.0.012)*		32.927 (0.001)**	
R2-Change	-		0.059		0.013		0.076	
F-Change	-		2.456(0.035)*		1.679 (0.102)		3.381 (0.006)**	

** Sig at 1%, * Sig at 5%,

Moreover, the results show the correlation matrix of all the five constructs of EO, environmental hostility, firm's age, and performance to illustrate inter-relationships among these constructs. It is observed that proactiveness, innovativeness, competitive aggressiveness and autonomy are positively correlated to environmental hostility and they are all statistically significant at the 1% level. According to Covin & Covin (1990) the positive correlation between competitive aggressiveness and environmental hostility suggest that in increasingly hostile environments, entrepreneurs are more inclined to adopt a more competitively aggressive strategy. This can therefore also be said for innovativeness, proactiveness, and autonomy as increasing these factors is vital for surviving in a hostile business environment. However, only risking taking does not have any significant relationship with environmental hostility. Also established is the fact that the firm age is negatively correlated to risk taking, proactiveness, innovativeness and environmental hostility, though the results are insignificant. This is congruent with Piirala (2012) who found no significant correlation between firm age and risk-taking amongst firms in Finland. In addition, this study observed that innovativeness and autonomy are positively correlated with SME performance at a 5% level of significance. Hameed and Ali (2011) also established a significant positive correlation between innovativeness and firm performance. This supports the view that innovation is a vibrant component in the success of a business. Likewise, the findings are in line with the arguments by Coulthard (2007) that autonomy positively related to SME performance. Environmental hostility had a significant negative relationship with SME performance. This outcome is consistent with that by Zahra & Garvis (2000) where environmental hostility was also observed to have a negative correlation with SME performance.

The results on Table 2 show the moderating effect on EO Dimensions and firm performance. Model 1 included only the control variable (firm's age) and the result show that F-value is insignificant ($p \geq 0.05$). Zahra & Garvis (2000) also used age as a control variable and established that age had a negative coefficient and was not statistically significant, which is congruent with the findings of this study. In Model 2, the control variable (firm age) and independent variables (RT, PR, IN, CA & AT) were included. The probability of the F-value is significant ($p<0.05$), indicating that the overall model is significant and thus valuable in predicting firm performance. These results addressed hypothesis H1 to H5. The EO dimensions of Competitive aggressiveness, risk taking and autonomy have a significant positive influence on SME performance. The results for innovativeness and proactiveness were insignificant. Consequently, hypotheses H1 and H2 were not supported while hypotheses H3, H4 and H5 are supported. The outcomes for hypotheses H1 and H2 were unexpected as many studies (Gurbuz & Ayko, 2009; Ngoze & Bwisa, 2014; Wang & Yen, 2012) have shown that innovativeness and proactiveness have a significant positive influence on firm performance. The outcomes for hypotheses H3, H4 and H5 are congruent with existing evidence. For example, several researchers (Ambad & Wahab, 2013; Owoseni & Adeyeye, 2012) and observed a significant positive relationship between risk-taking and perceived SME performance. Likewise, Le Roux & Bengesi (2014) recorded a significant positive relationship between competitive aggressiveness and SME performance; while Ngoze & Bwisa (2014) established that the risk taking, competitive aggressiveness, and autonomy dimensions of EO positively influenced the performance of a business.

In Model 3, the moderating factor (environmental hostility) was added to model 2. The results depict that the probability of the F-value is significant at the 5% level, overall significance of the model. The addition of environmental hostility to the model had little or no effect on the overall model as its prediction power had no significant increase (R^2-change = 1.3%; F-Change = 1.679; $p> 0.05$). However, as expected, the relationship between environmental hostility and firm performance was negative albeit the results are not statistically significant. In Model 4, the control variable the interaction items (RT x EH; PR x EH; IN x EH; CA x EH and AT x EH) were included in the model. The probability of the F-value indicates that the overall model is significant (F= 32.927; $p<0.05$) thus making it a good EO predictor of firm performance. Likewise, the inclusion of the interaction factors significantly enhances the predictability of the model as indicated by the significance of the F-Change value. It is observed that the addition of interaction variables enhances the variance explained by the model by 7.6 % (R^2-Change). This model addresses hypotheses 6a, 6b, 6c, 6d, and 6e. Environmental hostility showed a significant moderating effect only for competitive aggressiveness (β = 0.638; $P<0.05$) and risk taking propensity (β = -0.496, $p<0.05$). This indicates that environmental hostility has a positive moderating effect on the relationship between competitive aggressiveness and firm performance and a negative moderating effect for the risk taking – performance relationship. Consequently, only hypotheses 6c and 6d were supported. The moderating effect graphs for competitive aggressiveness and risk taking propensity are presented below to help in the interpretation of the moderating effects.

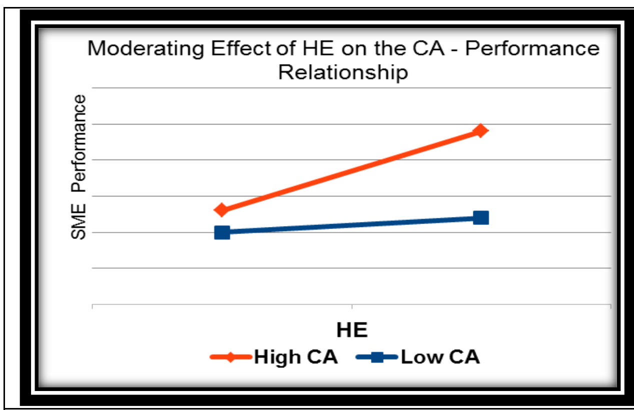

Figure 1: Moderating Effect of HE on CA-Performance

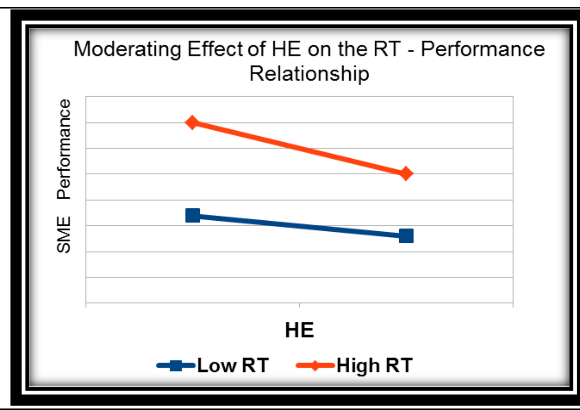

Figure 2: Moderating Effect of HE on RT-Performance

Figure 1 indicates the interaction between competitive aggressiveness and environmental hostility. As seen in Figure 1, businesses that have a high level of competitive aggressiveness tend to outperform those with a low level of competitive aggressiveness and this performance significantly increases when the business environment is highly hostile. This is in line with the arguments by Lunmpkin & Dess (2001) that the competitive aggressiveness of a firm will often be intensely related to superior firm performance in moments of substantial environmental hostility compared to when such hostility is minimal. Figure 2 depicts that interaction between risk taking propensity and environmental hostility. Generally, firms with high risk taking propensity perform better than firms with low risk taking propensity; however, the level of performance decreases as the environment becomes more hostile. This shows that risk taking is more intensely related with superior during periods of minimal environmental hostility as oppose to periods characterized by high hostility. This is in line with the findings by Zahra & Garvis (2000) who explicated that risk taking enhances firm performance when the environment is less hostile as most businesses refrain from taking risk during periods of high environmental hostility.

Managerial Implications: It is widely accentuated that one way of improving the performance of a business is by adopting an appropriate entrepreneurial behaviour. It is in this light that EO has grown in significance as an essential construct imperative in understanding how SME perform, grow, and succeed. The fact that only some of the EO Dimensions significantly influences SME performance suggest that at different phases of development EO dimensions might have an unequal importance in fostering firm performance. This is congruent with the views of Lumpkin and Dess (1996) who posit that different EO dimensions affect firm performance differently at any given phase of the firms' lifecycle. Consequently, businesses need not necessarily adopt all of the EO dimensions and should not also assume that each adopted EO dimension will significantly enhance the performance of the business. Also, the findings from this study depict strong evidence that a hostile business environment has a direct influence on the level of entrepreneurial behaviour exhibited by SMEs. Since SMEs in South Africa and many other developing countries operate in hostile business environments, the findings from this study provide valuable managerial implications to guide SME owners on strategies to adopt in enhancing their business performance and competitive posture. Converse to existing evidence innovativeness and proactiveness were seen to have no notable influence on firm performance while the other three EO dimensions showed a significant positive impact on SME performance. This is particularly important in South Africa and other developing countries given that most EO literature has focused mostly on the three dimensional model of EO (Risk taking propensity, innovativeness, and proactiveness) with little attention paid to competitive aggressiveness and autonomy. As such, since competitive aggressiveness and autonomy has been less investigated in EO literature in South Africa and other similar economies, the outcome of this study provides SME owners with new insights on EO dimensions that can help them to enhance the performance of their SMEs.

Moreover, while the findings affirm the positive influence of risk taking on SME performance, it is also seen that this relationship is negatively moderated by environmental hostility. Since risk taking might not be very profitable in periods of high environmental hostility (Zahra & Garvis, 2000), it is important for entrepreneurs in regions with high environmental hostility such as South Africa to be strategic risk takers and cautiously monitor and calculate the level of risk they can be able to take without eroding the profits of the business. However, where environmental hostility is low to moderate, entrepreneurs should adopt risk taking as a vital strategy for enhancing performance. This is because conducting business in hostile and unstable environments is very different from conducting business in stable and favourable environments (Ambad and Wahab, 2013) and thus necessitates the use of different business strategies for both markets to avoid jeopardizing the survival of one's business. Additionally, it is also observed that environmental hostility positively moderates the association of competitive aggressiveness with SME performance. As such, as entrepreneurs adopt competitive aggressiveness as a strategy for enhancing performance, they should be vigilant in examining the business environment such that as environmental hostility increase, they also increase the competitive aggressiveness of their businesses. The correlation results confirmed the views of Covin & Covin (1990) that businesses increase their competitive aggressiveness with increasing environmental hostility. This enables the business to remain competitive and effectively respond to threats from the external business environment.

5. Conclusion

In conclusion, the study showed that while innovativeness and proactiveness do not have a significant effect on SME performance; risk taking propensity, competitive aggressiveness, and autonomy have a significant positive effect on SME performance. It was also seen that while the risk taking-performance relationship is negatively moderated by environmental hostility, the competitive aggressiveness-performance relationship is positively moderated by environmental hostility. This study has provided valuable insights and shed more lights into how hostile environmental conditions influence entrepreneurial behaviors in South African SMEs. Findings from this study clearly posit that the environment plays a vital role in determining the EO levels in SMEs. The study showed that less investigated EO dimensions like autonomy and competitive aggressiveness were vital strategies for enhancing SME performance. Moreover, implications of environmental hostility as a moderating factor in the competitive aggressiveness and performance nexus as well as the risk taking – performance relationship were discussed. While risk taking propensity is more strongly associated with high SME performance when environmental hostility is low, competitive aggressiveness on the other hand is more sturdily associated with superior SME performance when environmental hostility is high. This is because firms tend to increase their competitive aggressiveness when the business environment becomes more hostile however; firms revert to a more cautious risk taking approach during times of high environmental hostility to avoid eroding their profits in risky business decisions. This suggest the need for SMEs to always align their business strategies with appropriate EO dimensions to mitigate some of the negative consequences of operating in hostile business environments and enhance their business performance. It is imperative for future studies to take into consideration the differential role of the five sub-dimensions of EO when conducting research in hostile business environments.

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Journal of Economics and Behavioral Studies (JEBS)
Vol. 8, No. 6, December 2016 (ISSN 2220-6140)

Income Diversification and its Determinants among Households in Eastern Cape Province, South Africa

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Abstract: Income diversification has been globally identified as a channel for household in reducing vulnerability to shocks, improve standard of living and reduce government fiscal burden. In poverty stricken Eastern Cape Province, the pattern and potential of income diversification for welfare improvement have not been explored. This study aims to examine the pattern of income diversification and investigate the factors that influence income diversification among households in the province. Utilizing the General Household Survey 2014, having 3033 households sampled from the province, the study employed descriptive statistics and Poisson regression model to examine determinants of income diversification. The result revealed that households in the Province are not diversified. It revealed that apart from transfers', majority (51.5 percent) of households in the province obtain income from only one source. Male headed households tend to have more income sources than the female headed households. Regression result indicates age of household head, population group of the head, education attainment of the head, engagement in agriculture, recipient of remittance and number of economic active member of the household were found to be statistically significant in influencing livelihood diversification. Strategies that can help household in the province diversify their income base need to be promoted, continual engagement in agriculture need to be further encouraged, and individuals and households need to be more informed on government entrepreneurship initiatives like the Broad Black Base Economic Empowerment.

Keyword: *Income Diversification, Eastern Cape Province, Poisson Regression*

1. Introduction

Poverty and food insecurity are both considered as complex and multidimensional interwoven phenomenon which are causes and effects of various factors that affect and reflect the standard of living of people. Improving individuals and household welfare with respect to reducing/eliminating poverty and food insecurity remains a vital developmental target of the global community. The reduction of poverty, hunger and undernourishment was identified by world governing bodies as a criterion for achieving other 2015 Millennium Development Goals (MDGs); it also remains number one and two agenda in the recently launched 2030 Sustainable Development Goals (SDGs). Currently, the South African government is battling with community, households and individual levels of poverty, inequality and food insecurity. According to StatSA (2014), less than 45.5 percent individuals and 32.9 percent of household are living below the upper bound poverty line set in the country in 2011. Of this population, the Eastern Cape Province was identified as the second province with highest (68 percent) individual poverty head count in the country. Also, report provided by the Eastern Cape Socio Economic Consultative Council (ECSECC) revealed that in 2014, about 56.6 percent of the population were below the lower bound poverty line in the province, 30.5 percent were below the lower bound food poverty line, inequality in the province was 62.5 percent and the human development index was 0.565. These households and individual are further entangled in debt web such that they have little or no bank savings to fall on when necessary. These statistics reveal developmental challenges prevailing in the province.

However, one of the indispensable targeted elements with positive potential in the fight against poverty, inequality and food insecurity are the livelihoods and livelihood strategies of individuals and households. Lloyd-Jones and Rakodi, (2014) stated that one of the most promising approaches to poverty reduction both in the urban and rural areas of developing countries is to encourage sustainable livelihoods for the poor and the diversification of these livelihoods. This takes account of individuals and households opportunities, resources and the sources of their vulnerability. Omobowale (2014) noted that livelihood systems are at the centre of poverty reduction and food security issues in different policy environments. These livelihoods are described as means of making a living. It comprises of capabilities/skills explored, resources utilized and activities required for a living (Carney, 1998). It involves various activities engaged in and possessions had in order to obtain and secure elementary requirements of life and eventually aid the living of people. Livelihood strategies are approaches or method adopted and choices make with respect to the utilization of assets, skills and engagement in activities to achieve livelihood goals. This strategy could be a singular or sole form of strategy (i.e. there is only one source of income, one activity engagement, and asset or skill exploration) or combined or diversified form of strategy (i.e. there are "more than one" income sources, activity engagements, asset or skill being used). Hussein et al. (1998) buttressed that livelihood diversification, migration and agricultural intensification are livelihood strategies employed by rural dwellers to improve their welfare. Hence, livelihood diversification which this study is focused on is entrenched in livelihood strategy.

Livelihood diversification according to Mandal (2014) is defined as the process by which rural households build an increasing diverse portfolio of activities and assets. Sekunmade and Osundare (2014) put is as attempts by individuals and households to find new ways to raise income in order to stay alive, lower all forms of risk and to improve their wellbeing. It occurs when a household unit produces a new product or renders a paid service without ceasing to producing any of the existing ones (Fabusoro et al., 2010). These portfolio of livelihood activities, income sources and asset has been identified as a core factor that influences farmer household economy (Cinner and Bodin, 2010; Liao et al., 2014). It however needed to be mentioned that livelihood diversification is not limited to rural household alone; it is a practice in the urban area also. Mehta (2009) stated that household livelihood diversification can be viewed from two perspectives; i) employment portfolio and ii) income diversification. Employment diversification explains that individuals and households members engage in different alternative choices in labour market and undertake different form of employments both formal and informal, in rural or urban areas as well. Income diversification on the other hand clarifies that individuals and households create non-agricultural income opportunities. Thus, income is sourced from different sources. It however need to be stated that the income from diversifications matter most as compared to employment choices or participation. Several studies (Babatunde and Qaim, 2010; Shehu and Sidique, 2014; Sitienei et al., 2014; Olale and Henson, 2013; Senadza, 2011; Adepoju and Oyewole 2014; Awotide et al., 2012; Mat et al., 2012; Owusu et al., 2011; Awotide et al., 2010) have shown that livelihood diversification have positive impact on household income, poverty, food security and nutrition, expenditure and inequality. Thus, considering the aforementioned background on the welfare situation in the Eastern Cape Province, and the potential impact of livelihood diversification, this study aims to understanding income diversification pattern in the province and its influencing factors. Specifically, the study aims to answer these questions 1) what is the income diversification pattern of households? and 2) what factors influences household income diversification? The paper is organised as follows; following the background is a brief empirical literature review, followed by the methodology. The fourth section present the analysis of data and discussion, the last section is the conclusion and recommendation.

2. Literature Review

In literatures, the number of income sources, share of off-farm income and income diversification index have been used as a proxy for income diversification. A study carried out in Ghana by Agyeman et al. (2014), indicates that age of heads of households had a significant negative relationship with diversification (SID), this implies that as heads of farm households increases in age, the less they diversify their income sources. This is as a result of lack of physical strength and financial resources to add on to their farm or Non-farm activities, since a majority of these activities are observed to be labour intensive. In Nigeria and Cambodia, Oyewole et al., (2015), Idowu et al. (2011), Fabusoro et al. (2010) and Kimsun and Sokcheng (2013) presented results of insignificance of age of household head contrary to the findings of Agyeman et al. (2014).

In terms of gender of the household head, gender had negative and significant effect on household income diversification (Awotide et al., 2012), which is in favour of the female headed household. Comparing both urban and rural areas in Vietam, Chuong et al. (2015), found that female headed households, shows to have a statistically significant effects on diversification of income sources in rural areas while they do not in urban areas. Studies are of the opinion that since female lack access to productive resources they resolve to engage in various income activities to meet their daily needs. Household size as a factor is hypothesized to be positively related to income diversification index and number of income sources provided there is higher number of economically active member in the household. Empirical evidence from Javed et al. (2015), Idowu et al. (2011) confirmed that household size is significantly and positively influence income diversification. Some other studies Adebayo et al. (2012), Babatunde and Qaim (2009), Khatun and Roy (2014) however found it to be negative and non-significant in influencing income diversification. Findings from the study of Awotide et al. (2012) also show that household size is significant but negatively influence income diversification. Thus, empirical findings present mixed results.

Babatunde anad Qaim (2009), Senadza (2012) and Vimefall (2015) examined the determinants of rural income diversification in Nigeria and Ghana respectively. The studies proxy income diversification by number of income sources. Consequently, the Poisson regression model was applied to achieve their objectives. Result from the study of Babatunde and Qaim (2009) shows that education, having productive assets, access to electricity, pipe-borne water had positive and significant impact on rural household income diversification. Surprisingly, household size, farm size, distance to market and access to credit were found to be insignificant. The positive significance of electricity and pipe-borne water shows the importance of infrastructural endowment however there is no clear link between access pipe-borne water and income diversification. Using a ZIP, the result of Senadza (2012) ascertain the importance of Average years of schooling of household (education), access to electricity on number of income sources. However contrary to the findings of Babatunde and Qaim (2009) distance to market (km), access to credit, farm size, household size and age of household head have significant impacts on number of income sources. Vimefall (2015) Applied a generalized Poisson regression on the determinants of number of income sources among female headed households in Kenya, findings of the study indicates that the number of income sources increases with the number of adults in the household, the level of education, the age of the head of household and the number of children aged 2-10 years. The study further found out after adding in all controls that having a monogamously married female head of household increases the number of income sources by a factor of 1.115 keeping all other variables constant, and having a widow as head of household increases the number of income sources by a factor of 1.047. Households with monogamously married female heads have more income sources than all other types of female-headed households.

3. Methodology

Study Area: The study was carried out in the Eastern Cape Province of South Africa. The Province is one of the nine Provinces in the country and it comprises of six district municipalities. The Province is located on the east coast of South Africa between the Western Cape and KwaZulu-Natal provinces. It borders the Northern Cape and Free State provinces, as well as Lesotho. The Province covers an area of 168,966km^2 which has been considered to be the second-largest province in South Africa by land size. In 2011, the province was estimated to have a population of about 6562053 people which account for about 12.7 percent of South Africa population, the third largest after KwaZulu-Natal and Gauteng Provinces respectively (StatsSA, 2014). Eastern Cape has excellent agricultural and forestry potential. Agricultural census carried out showed that the province has the highest number of household practising agriculture. The metropolitan economies of Port Elizabeth and East London are based primarily on manufacturing, the most important industry being motor manufacturing. The province is the hub of South Africa's automotive industry.

Data Source: Data is from the 2014 General Household Survey of South Africa. The GHS is a nation-wide survey conducted by the Statistic South Africa. A multi-stage design with probability proportional to size was used to identify and select primary sampling units (PSUs) and dwelling units (DUs) (Stat SA, 2015). While 25363 households were interviewed across the country during the exercise, a 93.7 percent response rate was achieved during the survey. The GHS gathered information on demographic characteristics of households and individuals, access to public assets, ownership of private assets, household welfare, and household livelihoods among others. Eastern Cape Province which is the study area of the paper has 3033 household that were sampled and 96.9 percent response rate was recorded.

Analytical Approach

Descriptive: Descriptive analytical methods such as frequency counts, percentages and tables were used to analyse some socioeconomic and demographic variables and income diversification pattern of household respondents.

Poisson Regression Model: Poisson regression is often applied when the dependent variable is a count variable, which in this case number of income sources is a count variable. Hence, following Senadza (2012), Poisson regression was used in identifying factors that does influence income diversification. The Poisson model specifies that y_i (number of income sources) is drawn from a Poisson distribution (not the normal or logistic distribution) with parameter (λ_i), which is the mean of number of income sources and related to a set of explained variables (X_i). According to Greene (2003), the general primary equation of a Poisson model reflecting it probability function or density function is;

$Prob\{Y_i = y_i \mid x_i\} = \frac{e^{-\lambda}\lambda^{yi}}{y_i!}, \ y_i = 0,1,2,$ ………………………………. (1)

With mean,

$E(y_i \mid X_i) = \lambda_i = exp(X_i^{'}\beta) = \exp(\beta_0 + \beta_i x_{ii} + \beta_2 x_{2i} + \cdots + \beta_k x_{ki})$…. (2)

The estimation form of the regression model for Poisson variable is;

$y_i = \lambda_i = exp(X_i^{'}\beta) + \varepsilon_i = \exp(\beta_0 + \beta_i x_{ii} + \beta_2 x_{2i} + \cdots + \beta_k x_{ki}) + \varepsilon_i$ …(3)

Where y is the number of income sources proxy for income diversification, and x_i is the set of independent variables determining income diversification. These include, sex of household head (male=1, 0= otherwise), age (years), education attainment, marital status (living together=1, 0= otherwise), access to electricity (yes=1, 0= otherwise), engagement in agriculture (yes=1, 0= otherwise), recipient of remittance (yes=1, 0= otherwise), pension(yes=1, 0= otherwise), households' size (number), size economic active member of the household and geographical location (urban=1, 0= otherwise).

4. Analysis and Discussion

Number of Income Sources, and Distribution of Diversification Status by Household Socio-economic Characteristics: A descriptive analysis of livelihood diversification in the Eastern Cape Province of South Africa is presented in tables 1 and 2. This is discussed with reference to number of income sources and the diversification status. Households with more than one income sources is considered as diversified and vice versa. The main income sources of households are salaries, income from business, agriculture income, remittance, pension, grants and income from other sources like rent, interest and dividends. Information obtained from the 2014 GHS revealed that majority (41.74) of the households get income from grants, the type of grant is however no explored. Going by this study definition of income diversification, income from remittance, pension and grants were excluded.

Table 1: Distribution of Households by Number of Income Sources

Number of Income Sources	Number of Households	Percent of Household
0	1318	43.46
1	1551	51.44
2	154	5.08
3	10	0.33

Source: Author's Computation from GHS 2014

Table 1 revealed further that the number of income sources by household in the province ranges between zero and three but only 5.41 percent of households sampled are having more than one income sources. It could be said that households in the province are absolutely not diversified.

Distribution of diversification status by households' characteristics is presented in Table 2. A household is considered diversified if it has more than one income sources. The table shows that a higher proportion of male headed household are considered diversified (67.68 percent) than the female headed households (32.32 percent). On the hand a higher proportion of female headed households are in the "not diversified" category. In the age of household head category, households with head between the age 41 and 60 years are seen to have the highest in both diversified (60.37 percent) and not diversified (38.9 percent) groups. It is worrisome to see that about 91.9 percent of household head in the most active age group are not having more than one income source or not having any income at all. Also, the table revealed that households having heads living together are considered diversified followed by singles and households that have widowed heads. However considering each of the household head marital status group, almost more than 90 percent of households of each group are not diversified.

Similar trend is observed in the household size group with respect to the proportion of households in each of the group that are not diversified. Specifically, 94.8 percent, 94.1 percent, 96.6 percent and 91.4 percent are considered not diversified by each of the household size group. However household size groups of 1 to 3 members and 4 to six members are the highest proportion of household size considered to be diversified. The role of education in livelihood diversification is buttressed in literature as providing skill and opportunity for entrepreneurship and to engage in other income generating activities. It is shown from the table 6.3 that households with a head attaining secondary education are more (50 percent) represented in the diversified group followed by household with heads with primary education (24.4 percent). Considering row-wise analysis of education attainment of the head, it is seen that expect for the household with head that attained a secondary education having 74.7 percent of households that not diversified, all other education attainment group have more that 90 percent of households that are not diversified.

It can be assumed that having a secondary education increases that chance of entrepreneurship of the household head. This is seen from the information further generated in the GHS that about 64.9 percent of households obtaining income from business have a head with secondary education. Geographical location is in no doubt important for livelihood diversification. In urban area where there is much population and economic activities, individuals and households have opportunity in engaging in multiple income generating activities that the rural areas. Among the considered diversified group, there is almost an equal geographical representation of household as 53.1 percent and 46.95 percent are located in the urban and rural area respectively. A row-wise check on the "not diversified" category revealed a similar trend like that of marital status and household size where majority of the household are not diversified. In the geographical location category, 94.1 percent and 95.1 percent of households are considered not diversified in the urban and rural area respectively. In general, households in the province cannot be said to be diversified. This is however not the case as seen in studies carried out in other part of Africa

Table 2: Distribution of Households by Diversification Status

Household characteristics		Not Diversified (%)	Diversified (%)	Total (%)
Sex of Household Head				
	Male	48.7	67.68	49.79
	Female	51.24	32.32	50.21
Age of Household Head				
	≤40	27.68	19.51	27.23
	41-60	38.90	60.37	40.06
	61≥	33.43	20.12	32.71
Marital Status				
	Living Together	37.72	62.8	39.80
	Divorced	2.69	3.66	2.74
	Separated	3.49	3.05	3.47
	Widowed	25.61	14.63	25.02
	Single	30.50	15.85	29.70
Household Size				
	1-3	53.50	51.83	53.41
	4-6	33.67	37.20	33.86
	7-9	9.86	6.10	9.66
	10-18	2.96	4.88	3.07
Educational Attainment of Head				
	No Education	11.06	6.10	10.79
	Primary	32.52	27.44	32.24
	Secondary	45.67	50.0	45.91
	Certificate and Diploma	6.49	6.10	6.47
	Higher Degree	4.26	10.37	4.59
Geographical Location				
	Urban	48.14	53.05	48.40
	Rural	51.86	46.95	51.60

Engagement in Agriculture			
Yes	37.19	51.83	37.98
No	62.81	48.17	62.02

Source: Author's Computation from GHS 2014

Factors Influencing Household Livelihood Diversification: Poisson regression model was fitted in order to estimate factors that influences livelihood diversification. The count of number of income generating sources served as the explained variable while a number of explanatory variables were examined. The independent variables considered for this model are household head characteristics (sex, age, education attainment, and marital status), access to electricity, engagement in agriculture, recipient of remittance, pension, and households' size, number of economic active member of the household and geographical location (urban). In addition to the estimated model, marginal effect of each independent variable on the dependent variable (number of income sources) and multicollinearity test to check the consistency and biasness of the estimated was further examined. The mean VIF of the multicollinearity test was found to be 1.29 and none of the individual variables have a VIF value above 5.00, and the tolerance level of 77.5 percent indicates the absence of any serious multicollinearity. Table 3 shows that of the eleven variables examined in the model, six variables (age of household head, population group of the head, education attainment of the head, engagement in agriculture, recipient of remittance and number of economic active member of the household) were found to be statistically significant.

At one percent level, the age of the household heads parameter was found to statistically influence income diversification of households head negatively. The marginal effect of the variable has a value of -0.005. This implies that a unit decrease in the age of household heads leads to 0.5 percent decrease in the number of income sources. This suggest that as the household heads' increase

Table 3: Poisson Regression Estimate

Variables	Coefficients	Standard Error	Z	P-Values	Marginal Effect
Constant	-0.6121	0.1604	-3.82	0.000	
Age of household head	-0.0102	0.0018	-5.80	0.000*	-0.0050
Sex of household head	0.0367	0.0490	0.75	0.454	0.0181
Population Group	-0.0699	0.0302	-2.32	0.020**	-0.0344
Education of head	0.0845	0.0275	3.07	0.002*	0.0416
Access to electricity	-0.0938	0.0780	-1.20	0.229	-0.0462
Engagement in Agriculture	0.1613	0.0611	2.64	0.008**	0.0810
Receive remittance	-0.4665	0.0773	-6.04	0.000*	-0.2019
Receive pension	-0.1067	0.1208	-0.88	0.377	-0.0501
Household Size	0.0043	0.0094	0.46	0.647	0.0021
Economic Active Size	0.6300	0.0244	25.87	0.000*	0.3101
Urban	0.0575	0.0618	0.93	0.352	0.0283

Source: Result Generated from STATA 12.
*,** indicate significant at 1 percent and 5 percent level of significance in age, ageing and other associated health challenges come in the head becomes less economically productive. The households' heads' ability to engage in other income generating activities becomes limited due to health status and diminishing physical strength.

Though the result is not in conflict with theoretical expectation and the findings of Senadza (2012), it is however contrary to the findings of Babatunde and Qaim (2009), and Vinefall (2015) who both found age of household head to be insignificant and significantly positive in Nigeria and Kenya respectively. The importance of education of a household generally and the head especially is ascertained by the result in Table 3. Education promote job mobility and skill acquisition that could be needed to engage in other economic activities. Education attainment of the head as shown in the Table 3 indicates a significant positive relationship with number of income sources (proxy for income diversification) at one percent level. This shows that higher the level of education of the head the higher will be the probability of the household in getting income from other sources. This corroborates the result from the studies of Babatunde and Qaim

(2009), Senadza (2012) and Vimefall (2015). The marginal effect of the education attainment of head variable of 0.0416 implies that a unit increase in the education attainment result in 4.1 percent increase in the number of income sources in the household. The probability of agricultural activities in increasing the number of income sources of a household is shown in the result of positive and significant coefficient of the variable at 10 percent in Table 3. The marginal effect result of 0.081 implies that a unit increase in participation in agriculture will increase the number of income sources by 8.1 percent.

Of the two transfer indicators examined (remittance and pension) in the model, only remittance indicates a significant relationship with income diversification. Table 3 shows that remittance variables has a negative influence on income diversification. The marginal effect result of -0.2019 implies that income diversification of households will reduce by 20.2 percent for a unit increase in remittance received by the household. This is contrary to the result of Sanadza (2012), who found an insignificant relationship between number of income sources and remittance recipients in Ghana. In reference to the influence of number of economic active member in the household on income diversification, the estimated result of the variable perform as expected, showing a very significant positive relationship with number of income sources (proxy for income diversification). In addition, the marginal effect estimate indicates 31 percent increase in the probability of a household diversifying her income sources as a result of a unit increase in the number of household that are economically active. It is surprising to see that access to electricity by household is considered as a public asset that could stimulate increase income sources with respect to engagement in entrepreneurship activities by individuals and household.

5. Conclusion and Recommendations

Livelihood diversification is important in the fight against persistent poverty in sub-Saharan Africa, including South Africa. This study investigates livelihood diversification and its determinants in the Eastern Cape province of South Africa. The study deduces that households in the province are inactive towards income diversification. This study advocates for formal or informal education training programmes for household heads and other adult members in order to improve their knowledge and skill acquisition for labour involvement and entrepreneurship coupled with mentorship and monitoring for successful entrepreneurship. Individuals and households need to be more informed on government entrepreneurship initiatives like the Broad Black Base Economic Empowerment. Furthermore, there is need for further enlightenment of households on the benefits of engaging in agriculture seeing that it has potential in enhancing household capability to diversifying its income base and improving their welfare consequently. This should be backed with continual development support in agricultural activities. Likewise, incentives or government assistance with conditions that will motivate households to income diversification could be adopted in the short term.

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Cultural Diversity and its Influence on the Attitudes of Africans and Indians toward Marketing Communication: A South African Perspective

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Abstract: Culture has been reported to be one of the major factors influencing attitudes toward marketing communication. However, identification across prevailing cultural dimensions could have unique implications for attitudes toward marketing communication. This paper examines how African and Indian cultural values may or may not influence attitudes toward marketing communication. It explores how Africans converge with or diverge from Indians with regards to culturally sensitive attitudes toward marketing communication, based on a Marketing Communication-Specific Cultural Values (MCSCV) model adapted from the individualism-collectivism constructs. Attitudes toward marketing were measured based on the advertising scale of the Index of Consumer Sentiment toward Marketing (ICSM) practices. Data generated for this study were based on responses provided by 283 and 92 African and Indian shoppers at the main shopping malls in the most predominant African and Indian townships in Durban, South Africa viz. Umlazi and Chatsworth, respectively. Analysis of Variance (ANOVA) and Categorical Principal Component Analysis (CATPCA) were conducted on the dataset. Findings revealed that both races displayed more individualistic than collectivistic tendencies toward marketing communication, but Africans exhibited more collectivistic tendencies than their Indian counterparts. In addition, respondents' individualistic tendencies have a significant influence on attitudes toward marketing communication which showed that consumers' indigenous cultural disposition play a moderating role on attitudes toward marketing communication. This study builds on the marketing literature by validating the implications of cultural diversity for marketing communication. The study emphasizes how the interplay between target markets' underlying cultural dispositions and cultural values held toward marketing communication, influence the consistency or inconsistency in consumers' attitudes toward marketing communication.

Keywords: *Culture, Individualism, Collectivism, Consumer behaviour, Advertising*

1. Introduction

Cultural diversity is a prominent issue in a country like South Africa, which has a history of social segregation (Ndhlovu, 2011) and a diversified racial classification consisting of Africans (80.5%), Coloured (8.8%), Indian (2.5%) and White (8.3%) (StatsSA, 2015). Such diversity lends itself to prejudiced interpretations of cues (Ghemawat and Reiche, 2011). The understanding of cultural differences is particularly crucial for successful advertising campaigns, given the proliferation of global trends (Uskul and Oyserman, 2010). While such understanding is not only important for enhancing the global competitiveness and adaptability of advertising campaigns, it is critical for generating sources of strategic competitive advantage. For example, MacDonald uses culturally sensitive campaigns and menus across the countries in which it operates (Jandt, 2013). Unilever is also known for adapting local contents and cultural cues to its products, packaging and marketing communication strategies (Quester, Pettigrew and Hawkins, 2011). However, the ability to understand culturally sensitive behaviour and adapt advertising campaigns to local contents is moderated by consumers' attitudes (Baek and Morimoto, 2012). de Mooij (2011) maintained that the predictability of attitude-based consumer behaviour has been linked to consumers' identification with the individualism and collectivism cultural dispositions. The author further argued that individualistic and collectivistic cultural dispositions are a reflection of the importance consumers place on the 'self' and 'community members', respectively. Morling and Lamoreaux (2008) also reported on the diversity in the attitudes of individualists and collectivists toward stimuli.

The dissemination of culturally sensitive marketing messages is one of the major challenges marketing practitioners encounter in a culturally diverse market such as South Africa (Ghemawat and Reiche, 2011). Regardless of the ubiquity of the spirit of Ubuntu; the implicit force that govern the values of South African camaraderie (Theron and Theron, 2010); diversity still exists amongst minority groups based on religion, language, and lifestyle (Du Plessis and Rousseau, 2007). South Africa has a unique cultural structure, consisting of various cultures and subcultures. The influence of the historical and socio-cultural framework of the South African society (Bhaktawar and Burger, 2010) on consumers' attitudes toward stimuli cannot be overemphasized (Soontiens and De Jager, 2008). While the latter is responsible for the proliferation of cultural diversity, there is a growing need for more research on how the cultural disposition of consumers influences the predictability of attitudes toward stimuli. Therefore, consumers' cultural diversity has implications for marketing practitioners, given the diversity in the interpretations consumers give to stimuli (Usunier and Lee, 2013). Research into cultural influences on consumer behaviour is especially needed in a multicultural society such as South Africa, given the scarcity of such research in Africa (Oyedele and Minor, 2012). The culturally diverse nature of the South African market therefore makes an investigation into how Africans[1] and Indians[2]of the South African origin, perceive marketing communication timeous. This study draws from Hofstede's individualism and collectivism dimension to develop a scale measuring consumer's marketing communication-specific cultural values (MCSCV). The objective of this paper is to investigate how consumers' individualistic or collectivistic disposition to marketing communication influences attitudes toward marketing communication. The paper will also explore how consumers' indigenous cultural dispositions moderate attitudes toward marketing communication.

Theoretical Background: Geert Hofstede's five cultural dimensions viz. Individualism-Collectivism, Masculinity-Femininity, Power Distance, Uncertainty Avoidance and Long-Short Term Orientation, which were borne out of his two pioneering cross-national studies including 100,000 IBM workers across 50 and 23 countries, respectively (de Mooij, 2011), have been largely adapted to test cultural influences on stimuli across diverse fields (Shulruf, Hattie and Dixon, 2011). Hofstede's cross-national study revealed that South Africa ranked high on the individualism index. However, the findings generated for South Africa were based on responses from white South Africans only. The findings further showed that India ranked low on the individualism index, which implies that India tends toward collectivism (Hofstede, Hofstede and Minkov, 2010). The individualism scores generated for South Africa negate the values fostered by the spirit of Ubuntu, which was coined from the following phrase: "umuntu ngu muntu nga bantu" meaning: "A person is a person through other people" (Oyedele and Minor, 2012).

The South African cultural values significantly show high collectivistic rather than individualistic tendencies. The underlying cultural framework of South Africans in general is centered on the tenets of Ubuntu. The values of Ubuntu are centered on striving toward living in harmony with community members. South African people generally view themselves as belonging together and inseparable from the community. A person is perceived by community members as ideal, if they possess Ubuntu virtues (Broodryk, 2008). However, the scores obtained for India confirm the prevailing cultural disposition identified in India viz. collectivism (Vaheed, Deshai and Waetjen, 2010). Therefore, the influence of the spirit of Ubuntu on Africans as well as the underlying cultural dispositions of South African Indians, based on their Indian origin, were problematised from a marketing communication point of view. Uskul and Oyserman (2010) argued that values are situation-specific. They further contend that consumers will switch values on different occasions in response to situational factors such as societal expectations, peer and reference groups, globalised and acculturated values. These findings tie with Fishbein's behavioral intentions model, otherwise known as the theory of reasoned action. Fishbein maintained that consumer behaviour is influenced by some attitudinal and social components which make consumers conform to situational factors which are determined by expectations from others (de Mooij, 2011). Adapting this theory to the present study leads to the proposition that situational factors will influence consumers' value switching behaviour.

The proliferation of these situational factors, given increasing global trends, makes consumers' value switching behaviour critical for marketing practitioners. This study aims to validate consumers' value switching behaviour from the point of view of Africans and Indians. While Hofstede's cross-national study reveals that Africans and Indians scored low on the individualism index (Hofstede et al., 2010), this study investigates the extent to which consumers' MCSCV influence attitudes toward marketing communication. The study also explores the relationship between consumers' underlying cultural values and attitudes toward marketing communication and, the implications of this for marketing practitioners. The following are the proposed hypotheses:
*H*1: Respondents' collectivistic tendencies will have significant influence on attitudes toward marketing communication

*H*2: Africans and Indians differ significantly based on the relationship between their demographic profile and attitudes toward marketing communication

[1]Africans are also referred to as black South Africans. [2]Indians are South Africans of Indian origin.

2. Literature Review

Attitudes are consumers' positive or negative evaluations of and response to stimuli, which are to a large extent based on learning and the interpretations given to learning (Blythe, 2008). Quester et al. (2011) also conceded to Blythe's proposition by affirming those consumers' attitudes toward stimuli range between positive and negative outcomes. Attitudes toward stimuli are not categorized as behaviour, but as moderators of behaviour. Attitudes toward marketing communication can vary based on the extent to which consumers perceive marketing communication as informative, annoying, dispensable, enjoyable and deceptive (Bearden et al., 2011). deMooij (2011) appraised attitudes from a cultural perspective by affirming that consumers in individualistic cultures show relatively consistent attitudes toward stimuli while attitudes toward stimuli in collectivistic cultures are inconsistent. Culture is the structure and the unconscious assumptions that give meaning to how the world operates (Samovar et al., 2010). The authors further reiterated that the former explain the "how" and "why" of a culture's collective action". Culture's role is evident in the interplay between the institutional and environmental factors influencing consumer behaviour. While cultural influences are visible in artifacts, values, practices, norms, rituals, and heroes, some cultural influences are not noticeable as intrinsic culturally sensitive consumer behaviour are often difficult to identify (Sen, Du, and Bhattacharya, 2016). Scholars such as Ghemawat and Reiche (2011) and Chan (2010) argued that globalisation and its agents are the major forces responsible for consumers' convergent cultural attributes. The authors further contend that due regard should therefore be accorded to the hybridisation of cultural values and its implications for marketing communication, as a result of acculturation. Instances of the proliferation of acculturated values are also prevalent in literature as acculturation is viewed by consumers as the 'ticket' into the global culture (Hofstede et al., 2010).

In addition, culture has been reported to be one of the antecedents to advertising avoidance (Prendergast et al., 2010). Brittany and Ronald (2011) also conceded to this notion by affirming that culture influences consumers' avoidance of social media advertising; advertisements on a webpage which also results in negative attitudes toward the advertised brand. Similarly, Baek and Morimoto (2012) contributed to this body of knowledge by confirming that advertising scepticism can result from cultural influences.A study conducted in New Zealand reveals the impact of beliefs, preferences for family members and marketing communication on consumers' attitudes towards local and national brands, to confirm that brands are symbolic in the formation of an identification with national identities. Consumers therefore use brands to facilitate cultural meanings and national identities (Bulmer and Buchanan-Oliver, 2010). The use of numbers and colors in marketing communication has also been identified as critical across cultures (Jandt, 2013). Solomon's (2013) commentary also confirmed the culturally diverse use of marketing communication cues across cultures. The author gives an analogy of cultures which prohibit the use of women, nudity, displays of underwear on mannequins, inappropriate non-verbal communications and modes of dressing in advertisements. For example, the attachment of luck to the number 'seven' in Western countries, and to the number 'eight' in Asian countries such as China, influenced the timing of the last Olympics held in Beijing on 8/8/2008 at 8:00pm.

Nevertheless, the global culture has penetrated into most cultures as the hybridisation of cultural values has become the norm in many societies (Chan, 2010). However, consumers' demographics, the media, socio-political and institutional factors play a huge role in the pace at which acculturation takes place. Cultural gaps often persist in certain cultures in the event where consumers revert to indigenous cultural cues (Okoro, 2012). As such, efforts should be geared toward permeating the gap created by global and indigenous values. While there exists no standardised approach in permeating cultural gaps, Oyserman (2011) argued that the cultural context in which communication occurs serves as the most fundamental component of human interactions. In other words, there is a linear relationship between consumers' cultural context and the information consumers perceive as vital. The author distinguishes between two modalities of context-specific communication cultures: high-context and low-context communication cultures. Moreover, the IC cultural dimension has been linked to context-specific communication cultures. Sciffman and Wisenblit (2015) reported that people with individualistic cultural dispositions are easily persuaded by low-context communication cues while collectivistic cultures are more persuaded by high-context messages.

While people in individualistic societies have expressed likeness for personal goals and fulfilments, collectivistic societies are said to have preferences for in-group activities. From a South African perspective, the lessons fostered by Ubuntu values portray a deeper understanding of collectivism (Theron and Theron, 2010). While individualistic tendencies are common in Western countries, many Eastern countries, 'Arab-speaking' nations, African countries (excluding South Africa) and Asian countries tend towards collectivism. While cross-cultural consumer behaviour has not gained widespread popularity in South Africa, Hofstede's cross-national rankings show that South Africa ranked high on the individualism index (Hofstede and Hofstede, 2005); collectivistic dispositions have been identified in South Africa. Scholars opine that values fostered by Ubuntu have to a large extent contributed to the collectivistic outlook of the South African culture (Mufane, 2003). However, particular caution is advised in preventing the fallacy of predicting individual values based on country-level variables. Country-level variables are indicative of societal values which are not applicable to all ethnic groups in a country (Kalliny et al., 2011). Uskul and Oyserman (2010) confirmed that information is interesting and relevant when culturally framed and conveyed. Consumers have positive attitudes towards advertisements and are convinced by them when information processing is relatively simple. The cultural context of advertisements plays a pivotal role in the parameters consumers use to define 'fluent information'. de Mooij and Hofstede's (2011) findings offered a context-specific evaluation by affirming that individualists relate to advertising campaigns emphasising personal goals like; independence, achievement, fulfilment and individual rewards, whereas, advertising campaigns portraying in-group interactions and connectedness are more persuasive in collectivistic cultures. The structure of advertising campaigns could be an antecedent of the aforementioned scenario as Chaharsoughi and Yasory (2012) reported that marketing communication strategies could be used as a tool in the formation of values which could inform consumer behaviour.

As such, an inquiry into the African and Indian cross-cultural consumer behaviour is timeous in South Africa. While standardised country-level cultural attributes have not been established, collectivistic tendencies have been identified amongst African (Broodryk, 2008) and Indian consumers in South Africa (Vaheed et al., 2010). Although the indigenous factors responsible for this resemblance differ, the manifestations of the dominant cultural influences amongst these two racial groups are fundamentally similar. This notion is supported due to the commitment to relational and communal obligations (Burgess et al., 2002). While literature identified collectivistic tendencies amongst Africans and Indians, empirical evidence is paramount in validating this proposition from a marketing communication perspective. Nevertheless, the self-concept has been identified as one of the antecedents of culturally sensitive behaviour (Kopalle et al., 2010). Hawkins and Mothersbaugh (2010) reported that the self-concept is the lens through which consumers view themselves and thus, the picture consumers see when looking inward. Culture plays a pivotal role in how the 'self' is viewed. Two basic categories of the self-concept exist: the independent and interdependent self-concepts. While these categories are analogous to Hofstede's individualism versus collectivism cultural dimension, the independent self-concept is shaped by personal achievements, desires and attributes, which makes individuals with an independent self-concept perceive themselves based on their accomplishments and social status (Shulruf et al., 2011).

On the contrary, Usunier and Lee (2013) argued that the interdependent self-concept is coined by communal and social involvements. Consumers who have interdependent self-concepts believe that fulfillment in life are rooted in the commitments to in-group activities. Individuals with an interdependent self-concept are defined by their obedience and connectedness to societal norms and values. The authors reiterated further by affirming that individuals with interdependent self-concepts view themselves as not being able to survive without others. Hence, interactions that enhance togetherness are favored. Most consumers fall in between the independent and interdependent continuum. These categories of self-concepts exert huge influence on consumer behaviour. Preferences for products, consumption patterns and marketing communication differ across variations in self-concepts. For instance, individuals with independent self-concepts relate more to advertisements emphasizing personal achievements while advertisements portraying in-group activities are more effective amongst individuals with interdependent self-concepts (Samovar et al., 2010), which makes the self-concept critical in determining the underlying attributes amongst consumers in individualists and collectivists societies. Some of these key differences are indicated in Table 1:

Table 1: Key differences between Individualist and Collectivist Societies

Characteristics	Individualist	Collectivist
Language	Members of individualistic societies spontaneously use the word "I".	Members of collectivistic societies avoid the use of the word "I".
Personality	Individualists tend to be extroverts.	Collectivists tend to be introverts.
Emotions	Happy moods are encouraged and sad moods are discouraged.	Happy moods are discouraged and sad moods are encouraged.
Consumption patterns	Members' consumption patterns are not influenced by the society.	Members' consumption patterns are influenced by the society.
Sources of information	Information is primarily sourced from media.	Information is sourced from social interactions.
Goals	The ultimate goal of every individual is self-actualization.	Ultimate goals are harmony and consensus.

Source: Adapted from Hofstede et al., (2010)

As indicated in Table 1, individualists are independent, priorities personal interest over in-group interests and tend to visualize people's behaviour based on personal experience. As a result, individualists are prone to be opinion leaders (Jandt, 2013). On the other hand, collectivists are interdependent, priorities in-group interests over personal interest and tend to generalize behaviour based on information derived from the group. By implication, collectivists are likely to take interests in and respond to advertising appeals emphasizing activities related to the family and the community (de Mooij, 2011). It is pertinent to emphasize that the focus should not only be directed at diversity, rather practitioners should take cognizance of cultural homogeneity. Taking an in-depth look at cultural values and in particular Hofstede's framework, research to date has identified a common ground and overlap along Hofstede's five cultural dimensions. Hence, efforts should be geared toward creating a balance in identifying societal cultural attributes. At the crux of this growing debate is the ability to carefully design strategies to identify possible diversity or homogeneity of cultural values, which could redress the challenges encountered in creating strategic competitive advantage (Ghemawat and Reiche, 2011).

3. Methodology

Cross-cultural marketing research has been predominantly studied from the emic approach; insider perspective and etic approach; outsider perspective (Usunier and Lee, 2013). The epistemological stance of this study is embedded within the emic approach. Since cultural influences are more predominant in distinct culturally clustered townships (Hofstede et al., 2010), the population units of this study comprised Africans and Indians residing in respective clustered townships in the city of Durban, South Africa. The research design for this study is both exploratory and descriptive in nature. Efforts were geared toward determining the appropriateness of the population units, during the preliminary exploratory phase of the study. A group of academics at the Durban University of Technology, South Africa, unanimously recommended the population units of this study. The fluidity of cultural values makes the use of standardized cultural measures vital in cross-cultural research (de Mooij, 2011). Since the focus of this research lies in investigating the elements of culturally constructed marketing communication values which have implications for attitudes towards marketing communication, a quantitative survey design was employed to accomplish the aim of the study. The sampling strategy for the study was largely influenced by the population representation of both races. The study draws on Gaski and Etzel's (1986) advertising scale of ICSM to measure attitudes toward marketing communication using the informative, annoying, dispensable, enjoyable and deceptive sub-constructs. The measures for culturally diverse marketing communication values were adapted from

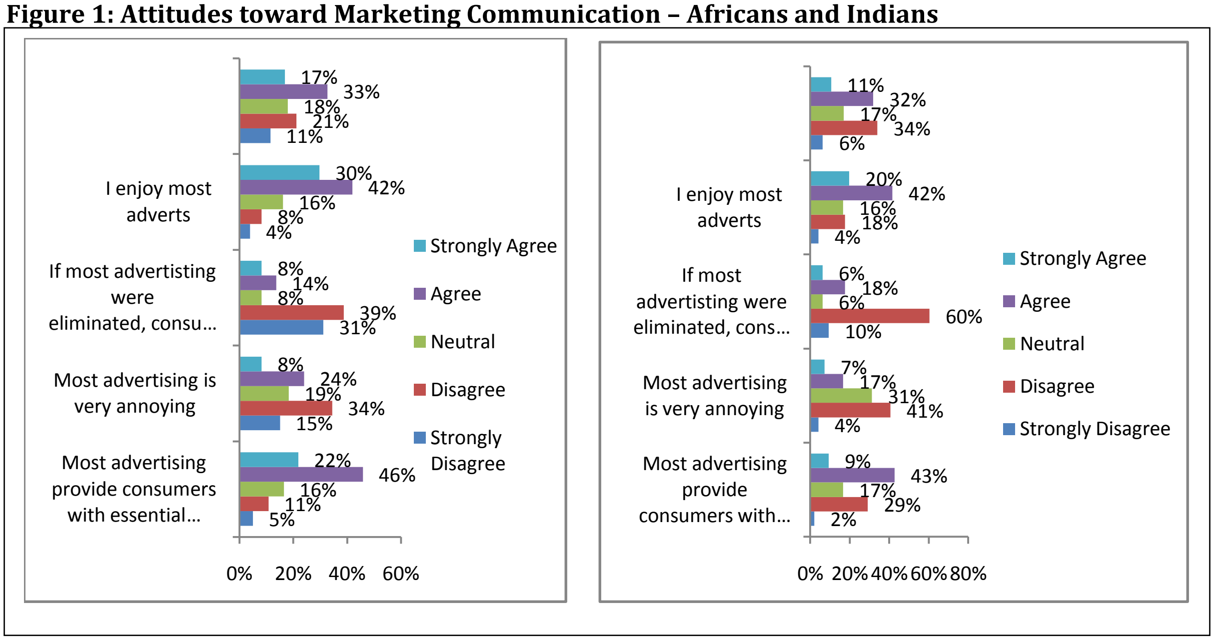
Hofstede and Hofstede's (2005) individualism and collectivism dimension using a 5 point Likert scale. The measures were designed to investigate the extent to which preferences for inner-directed motives and outer-directed motives moderate attitudes toward marketing communication. As such, it was important to determine the extent to which attitudes toward marketing communication were influenced by personal and in-group opinions of marketing communication.

Using a mall-intercept approach, a self-administrated questionnaire was distributed to the sample units at shopping malls located in the most popular African and Indian townships in Durban, viz. Umlazi and Chatsworth, respectively. The questionnaire for this study was translated into the native language of the African sample population viz. isiZulu, being the most prevalent medium of communication amongst the African sample. An isiZulu language practitioner was employed for the translation and two trained isiZulu speaking field assistants were also employed during the data collection. The most prevalent medium of communication amongst the Indian sample is English; hence the questionnaire for the Indian sample was administered in English language, although an Indian field assistant was employed during the data collection. The culturally embedded nature of the townships necessitated the need to ensure the data collection process was conducted in a culturally sensitive manner and complied with standardized ethical principles. A total number of 375 questionnaires were administered to respondents. While 283 completed questionnaires were received from Africans, all 92 questionnaires administered to Indians were fully completed, of which 81% and 19% were African and 19% Indian males, while 66% and 34% were African and Indian females, respectively. The majority of the African respondents fall within the age range of 18 and 24 years old, while 32% of the Indian respondents fall within the age range of 45 years and older. Data were analyzed using the Analysis of Variance (ANOVA) at a 95% level of significance and Categorical Principal Component Analysis (CATPCA).

4. Results and Discussion

This study investigated respondents' attitudes toward marketing communication using the informative, annoying, dispensable, enjoyable and deceptive sub-constructs. The findings as shown in Figure 1 reveal that African respondents showed more inconsistent attitudes toward marketing communication than Indians. A further investigation reveals that African respondents perceive advertisements as more informative than their Indian counterparts, Indian respondents view advertisements as more annoying than their African counterparts. The cumulative result of attitudes toward marketing communication for both Africans and Indians shows that 49% of African respondents agree more with the measures on attitudes toward marketing communication than Indians (41%).

Figure 1: Attitudes toward Marketing Communication – Africans and Indians



The dispensable measure reveals that African respondents consider advertisements as more dispensable than their Indian counterparts. However, African respondents perceive advertisements as more enjoyable and deceptive, compared to their Indian counterparts.
*H*1: Respondents' collectivistic tendencies will have significant influence on attitudes toward marketing communication.

The MCSCV measures are shown in Table 2. The first four measures viz. IND, were aimed at investigating respondents' individualistic tendencies toward marketing communication whilst the last four measures, viz. COL represent collectivistic measures. The mean scores obtained for the MCSCV measures reveal that both African and Indian respondents showed more individualistic than collectivistic tendencies toward marketing communication. However, both races scored low on item IND 3, which relates to respondents' preference for advertisements that portray personal needs rather than family needs. The result obtained further shows that both respondents deviated significantly from the mean as they scored high on item COL 3, which relates to the statement 'I often prefer advertisements that focus on how my family can benefit from the advertised product'.

Table 2: MCSCV Measures and Mean Values

IND/COL	***Measures***	**Mean values for Africans**	**Mean values for Indians**
IND: 1	The opinions of my friends do not affect my buying decisions, as long as I am convinced by the advertisements of the products	3.15412	3.89583
IND: 2	I am more persuaded by advertisements that show personal achievements	4.10036	3.79167
IND: 3	I prefer advertisements that stress my needs rather than my family's needs	2.98566	2.83333
IND: 4	My choice of media has nothing to do with my family's opinion	3.39068	3.82292
COL: 1	My beliefs about advertisements are very similar to those of my parents	2.62724	2.88542
COL: 2	I would sacrifice not buying a preferred product if my family did not like the advert	2.54481	2.45833
COL: 3	I often prefer advertisements that focus on how my family can benefit from the advertised product	3.91757	3.89583
COL: 4	Everyone in my family likes the same advertisements	2.34767	2.42709

Note: Scale 1 = strongly disagree; 5 = strongly agree

The ANOVA conducted to investigate the influence of MCSCV on respondents' attitudes toward marketing communication is shown in Table 3 below. Respondents' individualistic, collectivistic and overlapping tendencies toward marketing communication and their respective influence on attitudes toward marketing communication were tested for both races. The p-values for the individualistic, collectivistic and overlapping tendencies are 0.00485 ($p<0.05$), 0.1427($p>0.05$), and 0.82847 ($p>0.05$), respectively, at 95% level of significance.

Table 3: Analysis of Variance for MCSCV and Attitudes toward Marketing Communication

ANOVA

	Df	***SS***	***MS***	***F***	***Significance F***
Regression	3	3.06236389	1.02079	3.783	0.0107278
Residual	371	100.119076	0.26986		
Total	374	103.18144			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	2.5693387	0.19048029	13.48874	5.1E-34	2.1947823	2.943895	2.1947824	2.9438951
Individualism	0.1094338	0.03861922	2.833661	0.00485	0.0334938	0.185374	0.0334938	0.1853738
Collectivism	0.0630449	0.04291912	1.46892	0.1427	-0.0213503	0.147441	-0.0213503	0.1474402
Overlapping	0.0362139	0.16702114	0.216822	0.82847	-0.292213	0.364641	-0.2922126	0.3646407

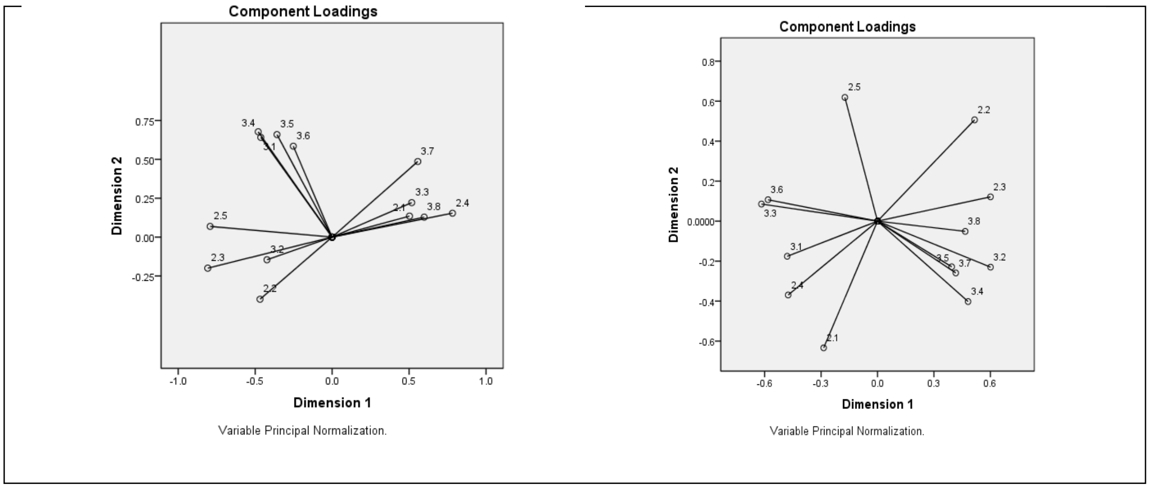
This finding shows that both races displayed more individualistic than collectivistic tendencies toward marketing communication. The finding also reveals that respondents' individualistic tendencies toward marketing communication has the most significant influence on attitudes toward marketing communication, which implies that respondents' with higher individualistic tendencies showed more favorable attitudes toward marketing communication. The result further confirms that there is a dissonance between the cultural disposition of consumers toward marketing communication and consumers' predetermined indigenous cultural dispositions. While this proposition is based on the sample of this study, such dissonance could also exist beyond this sample. Hence, the data does not support $H1$. The five items which measured attitudes toward marketing communication were numbered 2.1 – 2.5 while the items for the MCSCV were numbered 3.1 – 3.8 for COL and IND measures respectively. The CATPCA results as shown in Table 5 reveal that while Africans are more collectivistic than their Indian counterparts, both races scored low on the dispensability item, although Indians scored higher on the enjoyability item and low on the deceptive item.

Table 5: Variance Accounted for by Africans and Indians - Centroid Coordinates

Items	**Africans Dimension1**	**Dimension 2**	**Indians Dimension1**	**Dimension 2**
2.1	0.148	0.413	0.254	0.033
2.2	0.288	0.275	0.233	0.166
2.3	0.378	0.052	0.661	0.057
2.4	0.297	0.155	0.660	0.129
2.5	0.164	0.391	0.642	0.018
3.1	0.349	0.058	0.339	0.417
3.2	0.436	0.069	0.222	0.067
3.3	0.397	0.013	0.306	0.121
3.4	0.290	0.172	0.259	0.462
3.5	0.307	0.074	0.136	0.440
3.6	0.360	0.026	0.179	0.371
3.7	0.277	0.077	0.362	0.313
3.8	0.326	0.024	0.375	0.135
Active Total	4.017	1.799	4.626	2.729
% of Variance	30.899	13.837	35.584	20.99

As shown in Figure 2, the Indian sample accounted for more variance compared to their African counterparts, although the collectivistic items accounted for more variance among the African sample, compared to the Indian sample. This finding further reiterates the saliency of the collectivistic disposition of Africans and the individualistic disposition of Indians, in relation to attitudes toward marketing communication, which does not support $H1$.

Figure 2: Component Loadings of Attitudes toward Marketing Communication and MCSCV for Africans and Indians



*H*2: Africans and Indians differ significantly based on the relationship between their demographic profile and attitudes toward marketing communication

The influence of respondents' demographic profile on attitudes toward marketing communication was tested at 95% level of significance. The breakdown of the p-values for the demographic profile of respondents is indicated in Table 4.

Table 4: Analysis of Variance for Demographic Statistics and Attitudes toward Marketing Communication

ANOVA

	Df	*SS*	*MS*	*F*	*Significance F*
Regression	6	2,41782969	0,4029716	1,4716975	0,1867434
Residual	368	100,76361	0,2738142		
Total	374	103,18144			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	3,361061	0,14562691	23,079942	1,609E-73	3,0746954	3,647426	3,0746954	3,647426
Gender	0,020236	0,05676961	0,3564605	0,7217	-0,0913974	0,131869	-0,091397	0,13187
Race	-0,172891	0,07507089	-2,303042	0,0218335	-0,3205132	-0,025269	-0,320513	-0,02527
Marital Status	-0,006161	0,05032889	-0,122425	0,9026291	-0,1051298	0,092807	-0,10513	0,092807
Age Group	0,027710	0,02321555	1,1936033	0,2334021	-0,0179416	0,073369	-0,017942	0,073362
Education level	-0,049979	0,03861674	-1,294246	0,1963922	-0,1259167	0,025957	-0,125917	0,025958
Monthly Income	-0,016596	0,04603546	-0,360514	0,7186699	-0,107122	0,073929	-0,107122	0,073929

Gender: p-value = 0.7217 > 0.05 (5%), not significant. Race: p-value = 0.0.0218335 < 0.05 (5%) significant. Marital Status: p-value = 0.9026291 > 0.05 (5%) not significant. Age Group: p-value = 0.2334021 > 0.05 (5%) not significant. Education level: p-value = 0.1963922 > 0.05 (5%) not significant. Monthly Income: p-value = 0.7186699 > 0.05 (5%) not significant. This finding reveals that respondents' race is the only significant demographic factor influencing attitudes toward marketing communication, thus, all the other demographic factors tested in this study viz. age group, marital status, education level and monthly income have no significant influence on attitudes toward marketing communication.

This study has revealed that the interplay between consumers' indigenous cultural values and the cultural values held toward marketing communication have implications for consumers' attitudes toward marketing communication. This phenomenal interplay is not unfounded, considering the proliferation of the global culture, as observed by Uskul and Oyserman (2010), Chan (2010) and Schwaiger and Sarstedt (2011). Furrer, Liu and Sudharshan (2000) reported that consumers with higher individualistic tendencies have higher expectations of stimuli and tend to be independent and self-centered. Since such consumers place a high value on the self, it is not surprising that they will expect to be rewarded accordingly. However, consumers with higher collectivistic tendencies priorities in-groups activities that portray interdependence, fulfil communal obligations and loyalty to community members. In other words, activities that enhance harmony and peace with community members are prioritised in collectivistic societies (Shulruf et al., 2011). Hence, allegiance to the implicit institutional structures that govern behaviour in collectivistic cultures could play a huge role in the manifestation of multiple responses to stimuli.

Similarly, Oyserman (2011) maintained that although cultural values are shared, their manifestations are influenced by contexts. While respondents from both races showed 'favorable' and 'unfavorable' attitudes toward marketing, this finding is not unexpected as it corresponds with de Mooij's (2011) argument which elucidated that the exhibition of inconsistent attitudes toward stimuli is a common phenomenon in collectivistic cultures as opposed to consistent attitudes demonstrated by individualists. This implies that respondents' individualistic tendencies toward marketing communication (cultural specifics) cannot be equated to respondents 'cultural universals', as respondents' inconsistent attitudes toward marketing communication is an indication of their indigenous collectivistic dispositions. While prior research has generally reported a dissonance between consumers' indigenous dispositions and culturally contextualized dispositions, this study extends that knowledge based on the influence of the latter on attitudes toward marketing communication, from the African and Indian perspectives. The study highlights the predominant attributes of the two racial groups by drawing from the saliency of the individualism and collectivism cultural variations. The attitudes exhibited by both Africans and Indians suggest that efforts be geared toward developing strategies that override the unfavorable attitudes and harness the favorable attitudes exhibited by Africans and Indians.

This study has revealed that the idea of merely translating marketing communication messages into segment markets' local languages has proven to be unsustainable. Multicultural marketing extends beyond language translation, not only because this could lead to loss of meaning and zapping, but owing to the fact those consumers' marketing communication-specific cultural values also play a role in segment markets' attitudes toward marketing communication. Conversely, while consumers' subcultures and demographics serve as key segmentation variables, the overarching influence of racial identities on attitudes toward marketing communication cannot be overemphasized. The study provides guidelines for promoting cultural sensitivity in marketing communication strategies globally and serves as a pointer to prevailing challenges eminent in transforming local brands into global brands vis-à-vis an attitudinal approach.

5. Conclusion and Recommendations

In sum, the ability of marketing practitioners to develop culturally sensitive marketing communication strategies is dependent of the flexibility of campaigns to prevailing cultural cues in target markets. As such, marketing practitioners should acknowledge the changing needs of consumers by adapting strategies accordingly. The cultural sensitivity of marketing communication strategies is beneficial to both consumers and marketing practitioners, in terms of its ability to redress prevailing cultural misunderstanding. The adaptability and sensitivity of marketing communication strategies is therefore critical for generating new sources of strategic competitive advantage, given that consumers' attitudes toward marketing communication could be a reflection of their underlying cultural disposition and cultural values held toward marketing communication.

It is apparent that the alignment of marketing communication strategies to prevailing consumers' cultural dispositions remains one of the key sources of strategic competitive advantage. Fundamental to the operationalisation of the aforementioned will be an investigation into prevailing cultural cues in target markets, especially marketing strategies designed for target markets residing in clustered geographical locations with a shared history of transitory cultural diversity. The dynamic nature of socially constructed cues, particularly with the combination of social media cues demand that marketing practitioners adapt transcending cultural values accordingly. The application of this understanding to marketing strategies can serve as a platform for enhancing mass customization. Due to limited advertising budgets, it is recommended that marketing strategies incorporate consumers' overlapping individualistic and collectivistic tendencies by combining cues which transcend between both cultural dimensions, in order to offset potential culturally sensitive attitudes. The demonstration of the need for self-actualization in marketing strategies, while embracing communitarianism, could trigger reverse psychological effects in attitudes toward marketing communication.

It will be equally important to identify the influence of potential dissonance between cultural values. As such, future research could shift the focus of this study to other dimensions such as power distance, masculinity-femininity, uncertainty avoidance and long-short term orientation. It will be equally important to examine these dimensions cross-culturally, in order to generate new insights about the intensity of the underlying cultural forces influencing consumer behaviour across cultures and societies, especially in uniquely multicultural societies. Also, experimental investigations of cultural influences on the actual behaviour of consumers in the real shopping experience could also open new lines of research in cross-cultural marketing research. Such research could enhance our understanding of cross-cultural marketing communication and the sensitivity of global marketing communication strategies.

Acknowledgement: The authors of this paper acknowledge the support of the Durban University of Technology, South Africa for the findings of this paper, which form part of the results of a larger academic study conducted under the auspices of the university.

List of Abbreviations: MCSCV - Marketing Communication-Specific Cultural Values

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Journal of Economics and Behavioral Studies (JEBS)
Vol. 8, No. 6, December 2016 (ISSN 2220-6140)

The Performance of Maximum Likelihood Factor Analysis on South African Stock Price Performance

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Abstract: The purpose of this paper is to explore the effectiveness and applicability of Maximum Likelihood Factor Analysis (MLFA) method on stock price performance. This method identifies the variables according to their co-movement and variability and builds a model that can be useful for prediction and ranking or classification. The results of factor analysis in this study provide a guide as far as investment decision is concerned. Stock price performance of the seven well-known and biggest companies listed in the Johannesburg stock exchange (JSE) was used as an experimental unit. Monthly data was available for the period 2010 to 2014.Details of a trivariate factor model is: Factor 1 comprises of Absa and Standard Bank (Financial sectors), Factor 2 has Shoprite and Pick 'n Pay (Retail sectors) while Factor 3 collected Vodacom MTN and Sasol (Industrial sectors). The companies contribute 46.9%, 12.7% and 10.8% respectively to the three sectors and these findings are confirmed by a Chi-square and the Akaike information criterion to be valid. The three factors are also diverse and reliable according to Tucker and Lewis and Cronbach's coefficients. The findings of this study give economic significance and the study is relevant as it gives investors and portfolio manager's sensible investment reference.

Keywords: *Maximum Likelihood Factor Analysis, stock prices*

1. Introduction

Factor analysis is well-known as a statistical method applied in social sciences. In most cases, scholars apply this technique in conducting researches related to psychology. This has led to people falsely believing that the technique is a psychological theory. The development of this technique was essentially to lend a hand in the field of psychology by mathematically explaining psychological theories as far as social aptitudes and conduct is concerned. The methodological procedure for factor analyses is complex and has few guidelines. As noted by Costello and Osborne (2005), there are so many options that this technique offer, but different software packages provide different terminologies which in most cases remain unexplained. The goal of factor analysis is to reduce a vast number of variables according to their relationships and combining those variables into few factors (Muca et al., 2013). In particular, factor analysis is a data reduction technique pioneered by Spearman et al. (1904).The technique can also be used in exploratory or confirmatory studies. Alternative technique to factor analysis is Principal component analysis (PCA). PCA is variance based while factor analysis is covariance based. Cao (2010) however noted that PCA is used by some authors as an *ad hoc* procedure to collect the factors. The author is of the idea that even though the two techniques are closely related, they should be used autonomously. Factor analysis has been reported to be effective under the assumption that the data does not suffer from serial correlations. It should be noted that financial time series data collected over short time intervals such as a week or less is usually associated with serially correlated errors. To protect this assumption, parametric models are recommended to also correct the linearity of the data. On the contrary, Tsay (2005) recommended the use of factor analysis to the residual series. This study explores the effectiveness and applicability of the maximum likelihood factor analysis (MLFA) method in modelling stock price performance in the context of South Africa. Wang (2003) warned that the data from this sector is one of the extremely hard to model with in all fairness due to lack of linearity and parametric nature of the data.

Stock marketers are expected to employ a suitable model(s) to predict stock prices as well as buying and selling of appropriate stock at the right time. This, however, becomes almost impossible if incorrect information on such stocks is relied on due to the use of ineffective model(s). Authors such as Lev and Thiagarajan (1993), Wu et al. (2006) and Al-Debie & Walker (1999) mentioned some of the studies which used the fundamental analysis methods, a well-known method for stock analysis. These authors explained that such studies developed trading rules on the basis of the information linked to macroeconomics, industry, and companies. Tsang et al. (2007) and Ritchie(1996) emphasised that the fundamental analysis assumes stock price is dependent on its intrinsic value and expected investment returns. This method however has its own short comings depending on the desired predictions to be produced. As suggested by a number of authors, the fundamental analysis is suited when the desire is to produce long-term estimations. Al-Radaideh et al. (2013) recommends the use of this method in both short-term and medium term speculations.

Based on this reason, the current study proposes the application of maximum likelihood factor framework to stock price of South Africa. Studies on the analysis of stock performance in this country have not been fully exhausted especially where the application of the proposed method is concerned. Accordingly, none of the work published ever lent the help of MLFA method to analyse stock price performance of the proposed companies. This method unlike other factor analyses types, affords the researcher to make further diagnosis of the model to confirm its effectiveness before it could be recommended for further analysis. It has also been used by scholars in developing countries and the world at large. The findings may help stock marketers in South Africa to make informed decisions regards to this sector and this may also help boost its performance in the future. The study is beneficial to scholars in respect of the methodology and filling a gap in literature. The findings of the current study could also be appealing for portfolio management in that a factor model vividly condenses complex data for variable estimate. Factor analysis results further gives a perfect representation of the foundation of portfolio risk (Cheng, 2005). The author further highlighted that a factor model may be found useful in relating securities returns to a set of factors.

2. Literature Review

Exploratory Factor Analysis method has in the hitherto been used successfully and has been found to be a powerful tool in data analysis in many areas of study. Several studies on the analysis of stock market have been conducted worldwide but most of them applied other nonlinear models such as the Autoregressive Conditional Heteroscedasticity (ARCH) and a family of the Generalized Autoregressive Conditional Heteroscedasticity (GARCH). Majority of studies around the world have investigated the stock performances using factor analysis technique save for South Africa. Studies which include that by Kumar (2013) employed factor analysis method in determining the factors associated with the performance of stock markets in India. The data used was collected from the national stock exchange (NSE) website of India covering the period from January 2001 to May 2013. The findings revealed industrial performance as one of most dominant factors of stock markets in this country since it accounted for a high percentage of variance compared to other factors. Cheng (2005) used factor analysis technique to study fundamental patterns of the relationship between eight stocks in New York. The data used was collected from the New York Stock Exchange and NASDAC spanning the period from January 1998 to December 2004. Estimation methods such as principal factor analysis and MLFA were used to achieve the study objective. The findings revealed three primary factors, and MLFA proved to outperform its counterpart as it provided more accurate estimations for weekly rates of returns.

Hui (2005), applied factor analysis framework for do portfolio diversification. The study aimed to explore possibilities for diversifying into the United States and Asian Pacific markets in the perspective of a Singaporean investor. The ten weekly stock market indices were collected from the Data Stream of the National University of Singapore covering the period from 1 January 1990 through 30 June 2001. Empirical results revealed two extracted factors from the indexes with the first factor having most significant loading on Hong Kong, the Philippian, Korean, Singaporean as well as Thailand. Australia and New Zealand were dominated by the second factor with Japan, the United States and Taiwan favoured by a different factor. The findings identified United States, Australia and Japan as the three most appropriate and well-developed markets for risk diversification. Taiwan was suggested as the second market for diversification. Xin (2007) used factor analysis in Chinese stock market to reduce the number of the listed companies. The data used was the 2008 medium-term financial targets of 30 companies listed in the mainland China. The author chose eight financial targets to analyse, interpreting the special meaning of each factor. The study found that in a large number of the financial targets in annual report of listed companies, eight original targets can be replaced with the three new factors. A conclusion was reached after observing the factor scores that three common factors were irrelevant, meaning that the information which was included in the factors was non-repetition. Furthermore it was found that for each stock, the high or low scores of its one special factor do not affect other factor scores. It is only the three factors that have reflected most difference in stocks.

Another study which soughtinternational portfolio diversification was done by Valadkhani et al. (2008).The study further sought toexamine relations among the stock market returns of 13 economies.Monthly datacovering the period December 1987 to April 2007 were analysed. The study followed the frameworks of PCA and MLFA in examining discernable patterns of stock market relationships. The results revealedhighly correlated stock returns in a number of Asian countries. Factor loadings were also reported to be highly significant on the first factor. Rotated factor loadings confirmed a significant and linear association between Singaporean, Thailand, Phillipinean, Malaysian, Hong Kong, Indonesian, Taiwan, and Korean stock returns.The results further indicated due to the co-movement in stock returns of the United Kingdom, Germany, United States, Australia, and Japan, these markets could be represented by the second factor loading. Făt andDezsi (2012) also used factor analysis methods to investigate possibilities for portfolio diversification internationally. The study sought to specifically answer the question, "does it pay off?" This study further investigated the underlying structure between the markets. The data used consisted of the 12 daily stock index closing prices covering the period 19 September 1997 to 5 May 2012. Daily data consisted of 3848 observations for each market. The study findings reported significant correlations among the countries with similar economic performance and those situated in the same regions. Furthermore, the results of the two methods had similar implication. What was also revealed by the study were the three main integrated regions such as developed markets from Asia, emerging markets from Europe and two outliers being Romania and Slovakia. Other studies that employed factor analysis on stock markets were done by Gu and Zeng (2014), Bastos and Caiado (2010), Illueca and Lafuente (2002), Shadkam (2014), Tuluca and Zwick (2001) among others. None of the studies published was undertaken in Africa, let alone South Africa. This proves that there is still a gap to fill and awareness has to be made to African stock marketers.

3. Methodology

The initial step in data analysis is ensuring the readiness of data for analyses. Since the data is collected over a period of time, it is essential to impose relevant transformations and check if it does not violate most pertinent assumptions of factors analyses. Once these issues have been looked at, proposed primary data analysis methods are used. Sections 3.2.1 and 3.2.2 give brief description of the preliminary and primary data analyses methods respectively.

Preliminary data analysis: In order to continue safely with the application of factor analysis, the assumptions of linearity must hold. Stock prices are non-linear in nature, so the data should be transformed to linearity. Therefore, this study proposes the application of the Regression Specification Error Test (RESET) in order to uphold this assumption. The test is derived from linear regression model expressed as univariate $AR\ (p)$:

$$X_t = \beta_0 + \sum_{j=1}^{p} \beta_j X_{t-p} + \varepsilon_t, \tag{1}$$

where according to Gujarati (2003)$\beta_0, \beta_1, \beta_2, \dots \beta_p$are model parameters and $\varepsilon_t$is an independently and identically distributed (iid) random variable having a mean equal to0 and a variance $\delta^2{}_\varepsilon$. The purpose of AR (p) is to ensure that the error ε_t is minimised (Xaba et al., 2016). For selection of value p that minimizes a certain information criterion,the test statistic according to Rencher (2003)is defined as:

$$F^* = \frac{SSR_0 - SSR_1\ )/r}{SSR_1/(n-p-r)} \sim F_\alpha(r, n-p-r), \tag{2}$$

where $r = s + p + 1$. At the α level, the null hypothesis of linearity is rejected in favour of the alternative hypothesis if $F^* > F\alpha(r, n-p-r) or prob\ (F^*) < \alpha$ implying that the true specification is linear.

Due to the nature of the data used in this study, the stationarity tests were performed and reported accordingly. According to Tsay (2010), the price series of an asset tend to be non-stationary as this series have been collected over certain time period. This is as a result of no fixed stock price level. If the series follows a non-stationary process, persistence of shocks will be infinite. Furthermore, in order for the assumptions of asymptotic analysis to be valid, the variables in the regression model should be stationary (Brooks, 2002) also to avoid spurious regression results. Several unit root tests are available. This study followed the methodology of the Augmented Dickey Fuller (ADF) unit root test. Though not really appropriate, it is advisable to examine the autocorrelation function (ACF) of a series whilst testing for unit root (Brooks, 2002).The ACF may mislead the authors as they have a tendency of revealing extremely persistent but static series. The author therefore discourages the use of the ACF or partial ACF (PACF) in determining the stationarity of the series. Instead of using the ACFs and PACFs, Brooks (2002) and Greene (2003) advice on conducting some formal hypothesis testing procedure that answer the question about unit roots. Hence this study employed the most recommended unit root test.

The ADF test is calculated to assess $H_0: \phi = 1$ verus $H_1: \phi < 1$ in the equation:

$$y_t = \phi y_{t-1} + \mu_t. \tag{3}$$

On the contrary, Brooks (2002) suggests the following regression rather than (3):

$$\Delta y_t = \psi y_{t-1} + \mu_{t,} \tag{4}$$

so that a test of $\phi = 1$ is equivalent to a test of $\psi = 0$ (since $\phi - 1 = \psi$). The ADF tests the three kinds of equations such as $\tau, \tau_\mu, \tau_\tau$ which are used in the presence of a constant, trend and when both the constant and a deterministic trend are present respectively. The observed statistics for the Dickey-Fuller (DF) test is:

$$DF = \frac{\hat{\psi}}{S\hat{E}(\hat{\psi})}. \tag{5}$$

The test (5) follows a non-standard distribution. If $p$number of lags of the response variable is 'augmented' then the alternative model becomes:

$$\Delta y_t = \psi y_{t-1} + \sum_{i=1}^{p} \alpha_1 \Delta y_{t-1} + \mu_{t,} \tag{6}$$

giving birth to the ADF and still conducted on ψ.The augmented test statistic (5) becomes:

$$ADF = \frac{1-\hat{\psi}}{S\hat{E}(\hat{\psi})}, \tag{7}$$

$\hat{\psi}$denoting the least squares estimate of ψ. If the observed absolute value is greater than the critical value, no differencing is required since the series has been rendered stationary. Reject $H_0: y_t \sim I(1)$ in favour of the alternative hypothesis $H_1: y_t \sim I(0)$ if the observed statistic (7) is in excess of the critical value.

Primary Data analysis: This section presents a review of MLFA method. This factor analysis method is recommended by Hair et al. (2010), Tabachnick and Fidel (2001), and Tsay (2005), some of the well-known authors in the field of multivariate analysis. According to Richard and Dean (2002),factor analysis may be considered a descriptive technique to determine the covariance relationship of a considerable number of variables. The correlated variables may be collected into few unobservable and uncorrelated factors. Richard and Dean (2002) notes that X could be treated as an observable random vector. The associated stochastic properties to this variable having$p$factors are its mean denoted asμ, and a covariance matrixknown as Σ. In a factor model,Xhas a linear relationship with latent factors symbolised as $f_1, f_2, \ldots, f_m$. These are alsocalled common factors. Additionally, the model has p sources of variation denoted as $\varepsilon_1, \varepsilon_2, \ldots, \varepsilon_p$,known as specific factors. Given a multiple set of variables, represented as k, Richard and Dean (2002), Rencher (2003), and Wichern and Johnson (2007) suggest the following equation to represent a factor model:

$$\begin{aligned} X_1 - \mu_1 &= l_{11} f_1 + l_{12} f_2 + \cdots + l_{1m} f_m + \varepsilon_1 \\ X_2 - \mu_2 &= l_{21} f_1 + l_{22} f_2 + \cdots + l_{2m} f_m + \varepsilon_2 \\ &\vdots \\ X_p - \mu_p &= l_{p1} f_1 + l_{p2} f_2 + \cdots + l_{pm} f_m + \varepsilon_p, \end{aligned} \tag{8}$$

where$x = x_1, x_2, \cdots, x_p$, $\mu = \mu_1, \mu_2, \cdots, \mu_p$, $f = f_1, f_2, \cdots, f_m$,$\varepsilon = \varepsilon_1, \varepsilon_2, \cdots, \varepsilon_p$.The coefficient l_{ij} is known as the loading of the i_{th} variable on the j_{th} factor. It must also be noted that the i_{th} specific factor ε_t is associated only with the i_{th} responsex_i. The $p-$deviations $x_1 - \mu_1, x_2 - \mu_2, \ldots, x_p - \mu_p$are expressed in terms of $p + m$ unobservablerandom variables$f_1, f_2, \ldots, f_m$, $\varepsilon_1, \varepsilon_2, \ldots, \varepsilon_p$. Given these many unobservable variables, it may be hopeless to directly verify a factor model from observations on $x_1, x_2, \ldots, x_p$. One may wish to test additional assumptionsabout the F and ε random vectors,implying that certain covariance associations can be checked in (10). It is therefore assumed that $E(F) = 0$, $Cov(F) = E(FF') = I$, $E(\varepsilon) = 0$, $Cov(\varepsilon) = E(\varepsilon\varepsilon') = \Psi$, $Cov(X) = LL' + \Psi$, or $Cov(X, F) = L$ and $\delta_{ii} = l_{i1}^2 + l_{i2}^2 + \cdots + l_{im}^2 + \Psi_1$ with:

$$Var(X_i) = \tilde{h}_i^2 + \Psi_1. \tag{9}$$

Tsay (2010) defines the i_{th} communality as the sum of squares of the loadings of the i_{th} variable on the m common factors.Prior to factor extraction, it is advisable to determine the possible number of factors to retain. The study used a proportion of variance for this purpose. The corresponding proportion from R is $\sum_{i=1}^{p} \frac{\hat{\lambda}_{ij}^2}{p}$. The contribution of all m factors to $tr(S)$ or p is therefore $\sum_{i=1}^{p}\sum_{j=1}^{m}\hat{\lambda}_{ij}^2$ with the sum of squares of all elements is $\hat{\wedge}$:

$$\sum_{i=1}^{p}\sum_{j=1}^{m}\hat{\lambda}_{ij}^2 = \sum_{i=1}^{p}\hat{h}_i^2 = \sum_{j=1}^{m}\theta_j. \tag{10}$$

The value of m should be relatively large such that the sum of variance accounted contributes sufficiently to $tr(S)$ or p. According to Richard and Dean (2002), the same process can benefit the principal factor method, in which prior estimates of communalities could form $S - \hat{\Psi}$ or $R - \hat{\Psi}$ even though $S - \hat{\Psi}$ or $R - \hat{\Psi}$ will often have some negative eigenvalues. As values of m range from 1 to p, the cumulative proportion of eigen values, $\frac{\sum_{j=1}^{m}\theta j}{\sum_{j=1}^{p}\theta j}$, will exceed 1.0 and then reduce to 1.0 as the negative eigenvalues are added (Rencher, 2003). Note that 80% is reached for a lower value of m, something that is impossible for S or R.A strategy is to choose m equal to the value for which the percentage first exceeds 100%.Hair et al. (2010) suggested a thumb rule of 60% for the sum of the variance accounted for to retain the minimum number of factors. This study adopts Hair et al. (2010) thumb rule as a guiding principle.

Maximum Likelihood Factor Analysis: The assumption of multivariate normality (MVN) needs to be met before this method can be used (Marcoulides, 2008). If the common factors F and the specific ε factors are assumed to follow a normal distribution, then maximum likelihood estimates (MLE) of the loadings and observed variables should be obtained. When $\mathbf{F_j}$ and ε_j are both normal, the observations $\mathbf{X_j} - \boldsymbol{\mu} = \mathbf{LF_j} + \varepsilon_j$ are also normal resulting in the likelihood: L (μ, Σ) = $(\boldsymbol{2\pi})^{-\frac{np}{2}}|\Sigma|^{-\frac{n}{2}}\boldsymbol{e}^{-\left(\frac{1}{2}\right)\boldsymbol{tr}\left[\Sigma^{-1}\left(\sum_{j=1}^{n}(x_j-\bar{x})(x_j-\bar{x})' + n(\bar{x}-\mu)(\bar{x}-\mu)'\right)\right]}$

$$=(\boldsymbol{2\pi})^{-\frac{(n-1)p}{2}}\left|\Sigma\right|^{-\frac{(n-1)}{2}}\boldsymbol{e}^{-\left(\frac{1}{2}\right)\boldsymbol{tr}\left[\Sigma^{-1}\left(\sum_{j=1}^{n}(x_j-\bar{x})(x_j-\bar{x})'\right)\right]} \times (\boldsymbol{2\pi})^{-\frac{p}{2}}\left|\Sigma\right|^{-\frac{1}{2}}\boldsymbol{e}^{-\left(\frac{n}{2}\right)\left[\left((\bar{x}-\mu)'\Sigma^{-1}\right)(\bar{x}-\mu)\right]} \tag{11}$$

Equation (11) is dependent on $\boldsymbol{L}$ and Ψ through $\Sigma = \boldsymbol{LL}' + \Psi$. Let $\boldsymbol{X_1}, \boldsymbol{X_2}, \cdots, \boldsymbol{X_n}$ which is a random sample from $\boldsymbol{N_p}(\boldsymbol{\mu}, \Sigma)$, where $\Sigma = \boldsymbol{LL}' + \Psi$ is the covariance matrix for the $\boldsymbol{m}$ common factor model. The MLE $\hat{\boldsymbol{L}}$, $\hat{\Psi}$, and $\hat{\boldsymbol{\mu}} = \bar{\boldsymbol{x}}$ maximize $\boldsymbol{L}'\Psi^{-1}\boldsymbol{L} = \Delta$ subject to $\hat{\boldsymbol{L}}'\hat{\Psi}^{-1}\hat{\boldsymbol{L}}$, being diagonal.The MLE of the communalities are defined as $\tilde{\boldsymbol{h}}_i^2 = \tilde{\boldsymbol{l}}_i^2 + \tilde{\boldsymbol{l}}_{i2}^2 + \cdots + \tilde{\boldsymbol{l}}_{im}^2$ for $\boldsymbol{i} = \boldsymbol{1}, \boldsymbol{2}, \ldots, \boldsymbol{p}$.

Factor rotation: This study used a transformation technique that helps make the interpretation of the factor structure easy. Factor loadings calculated from an orthogonal transformation have the same ability to reproduce the covariance (or correlation) matrix. This transformation corresponds to a rigid rotation of the coordinate hence it is called factor rotation. If $\hat{L}$ is the $p \times m$ matrix of estimated factor loadings in MLFA, then:

$$\hat{L} *= \hat{L}T, \text{where } TT' = T'T = 1 \tag{12}$$

is a $p\times m$ matrix of "rotated" loadings. The estimated covariance or correlation matrix remains stable since:

$$\hat{L}\hat{L}' + \hat{\Psi} = \hat{L}TT'\hat{L} + \hat{\Psi} = \hat{L} * \hat{L} *' + \hat{\Psi}. \tag{13}$$

Equation (13) indicates that the residual matrix:

$$S_n - \hat{L}\hat{L}' - \hat{\Psi} = S_n - \hat{L} * \hat{L} *' - \hat{\Psi}, \tag{14}$$

remain unchanged. As noted by Richard and Dean (2002), the specific variances $\hat{\Psi}_i$, and the communalities h_i^2 alsoremain unchanged.There are variety of methods proposed when $m > 2$,most common technique being the varimax. This technique uses rotated factor loadings that maximise the variance of the squared loadings in each column of$\hat{\wedge}*$. The size of the loadings in a column has a bearing on the variance. Similar loadings in a column bring down the variance to be nearly equal to 0. Likewise, the variance approaches maximum as a result of square loadings approaching 0 and 1.Varimaxrotation method attempts to either improve the loadings by making them small or large so as to improve their interpretation (Rencher, 2003). This procedure however fails to give an assurance that all variables will favour only one factor. In all honesty, none of the available procedures can lead to such finding irrespective of the data used.

Factor loadings and the variance are validated for convergence as suggested by (Napper et al., 2008). Factor loading is not a correlation, but rather a measure of the unique association between a factor and a variable. Pattern matrix is interpreted rather than the structure matrix and the reason is pragmatic- it is easier (Tabachnick and Fidell, 2007). The two matrices show different results, such as high and low loadings which are more evident in a pattern matrix. Factors with loadings in excess of 0.32 are considered significant (Tabachnick and Fidell, 2007). Significant loadings suggest that the associated variable is a good measure of the factor.

Goodness of Fit of the factor model: This section discusses the goodness of fit test of factor model. This will affirm the adequacy of the m-factor model for generating the observed covariance's or correlations. The null hypothesis is $H_0: \sum = \Psi + \wedge\wedge'$ where $\wedge$ has dimensions $p \times m$, and the alternative hypothesis is that $\sum$ is any $p \times p$ symmetric positive definite matrix. The test statistic becomes:

$$\chi^2 = \left[N - 1 - \frac{1}{6}(2p + 5) - \frac{2}{3}m\right] ln \frac{|\Psi + \hat{\wedge}\hat{\wedge}'|}{|S|}, \quad (15)$$

where $\hat{\Psi}$and $\hat{\wedge}$are the solutions of the maximum likelihood equation, S is the sample covariance matrix. If the null hypothesis is in fact true, as N becomes large, the statistic tends to be distributed as chi-squared variate with$v = \frac{1}{2}[(p - m)^2 - p - m]$degrees of freedom and the null hypothesis of exactly m common factors is rejected at the α level if $\chi^2 \geq \chi^2_{\alpha;v}$ and accepted otherwise.

Construct validity: The final process is to evaluate the rotated factors for each variable in order to determine importance of the variables to factor structure. The evaluation process start by re-specifying the factor model owing to (1) deletion of a variable(s) from the analysis, (2) the desire to employ a different rotational method for interpretation, (3) extraction of different number of factors if needs be, or (4) it can go to the extent of changing from one extraction method to the other (Hair et al., 2010). Cronbach's alpha and Tucker and Lewis reliability coefficient were used to asses the reliability of the constructs. These coefficients measure how well set of items measure a uni-dimensional latent construct. The two measures range between 0 and 1 with the latter being preferred the most (Cronbach and Shavelson, 2004). Tucker and Lewis coefficient should on the other hand be greater than or equal 0.95 for a factor solution to be considered acceptable (Floyd and Widaman, 1995) with coefficients closer to unity being more desirable (Rossi et al., 2013).

4. Empirical Evidence

The data and assumptions: This study used daily returns for seven stocks listed on the Johannesburg Stock Exchange (JSE) which are ABSA, Standard bank, Shoprite, Pick n Pay, Sasol, MTN and Vodacom. Daily stock returns were collected from January 2010 through December 2014 each consisting of 1248 observations. This data was available at the time of request.The Statistical Analysis Software (SAS) version 9.3 registered to the SAS Institute Inc. Cary, NC, USA and IBM software packages for social scientists (SPSS) version 23 was used for data analysis. The data was subjected to the Box-Cox transformation due to its power to normalise the data and capability to stabilise the variance and improve effect size in the analysis. Furthermore, these data transformation tools constitute important elements of data cleaning and preparation for statistical analyses(Osborne, 2010). A transformed data favours the MLFA method as it performs well when the data is normally distributed. A modified Turkey idea by Box and Cox to take the form of the Box-Cox transformation is presented as:

$$y_t^\lambda = \frac{(y_t^\lambda - 1)}{\lambda}, \text{ where } \lambda \neq 0; \quad (16)$$

$$y_t^{\lambda} = log_e(y_i), \text{ where } \lambda=0, \quad (17)$$

wherey_t is defined as the return is for any time, t.

Presented in Figure 4.1 are the original time series plots for the seven stock prices from January 2010 to December 2014.

Figure 1: Original time plots of the seven stock prices

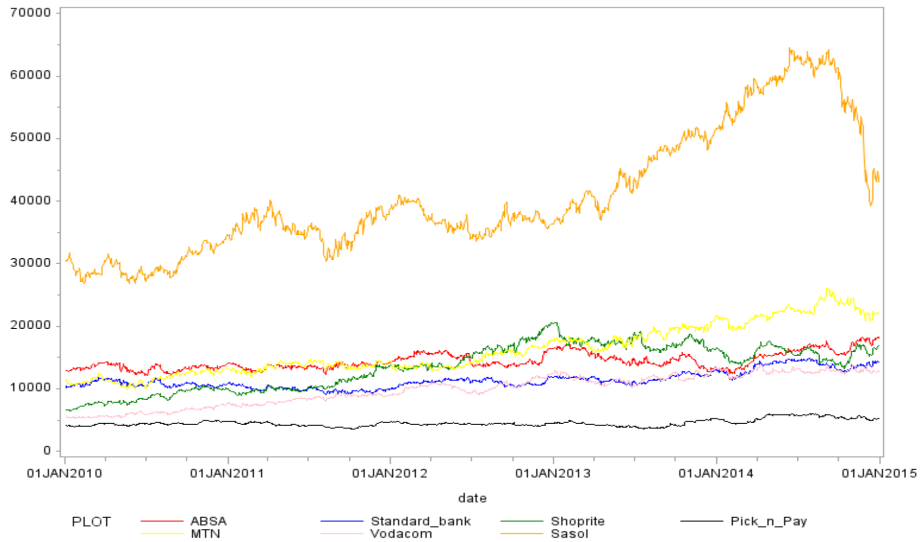

Figure 1 shows results for investigation into properties of time series data used in the study. Stock prices exhibit positive linear trend with seasonal fluctuations during some of the periods. Sasol had a sudden sharp decrease in stock prices between the years 2012 and 2015, with MTN showing a steady increase from 2010. The stock prices of these companies suddenly decelerated towards the end of 2014. Pick 'n Pay appears to be the only company with a constant line from 2010 through 2015. This implies that this company's stock prices performance have been constant with very insignificant changes throughout the years according to the findings. Standard bank, ABSA and Shoprite show mild fluctuations in stock prices between 2010 and 2014 and a ditch towards the end of 2014 and early 2015. This could mean a challenging period for these companies implying a loss in their part during that period. Sasol seem to be the only company that have been surviving the storm all these years except for the beginning of 2015.The stock price performance was at its peak between 2014 and 2015. Though MTN prices were high during these years, the sales of this company were far less than those of Sasol. Most of the stock prices seem to be weakly stationary at levels since none of the stochastic error properties, such as constant mean and variance are revealed. There are time epochs revealed by the seven stock prices implying the possibility of nonlinearity. Upon transformation of the data, all the seven series became stationary at once (see Figure 2) and also conformed to normality and linearity standards (see Table 1).

Figure 2: Log transformed plots of the seven stock prices

Table 1: Linearity and normality test results

Variables	Linearity RESET p-values	Decision	Normality Kolmogorov-Smirnov p-values	Decision	Stationarity ADF p-values	Decision
ABSA	<.0001	Do not reject H_0	<0.0100	Do not reject H_0	<0.0001	Reject H_0
Standard bank	<.0001	Do not reject H_0	0.09160	Do not reject H_0	<0.0001	Reject H_0
Shoprite	<.0001	Do not reject H_0	<0.0100	Do not reject H_0	<0.0001	Reject H_0
Pick ‘n Pay	<.0001	Do not reject H_0	<0.0100	Do not reject H_0	<0.0001	Reject H_0
MTN	<.0001	Do not reject H_0	<0.0100	Do not reject H_0	<0.0001	Reject H_0
Vodacom	<.0001	Do not reject H_0	<0.0100	Do not reject H_0	<0.0001	Reject H_0
Sasol	<.0001	Do not reject H_0	<0.0100	Do not reject H_0	<0.0001	Reject H_0

Both the RESET and Kolmogorov-Smirnov$p$-values fail to reject the null hypotheses of linearity and normality at 10% significance level respectively. On the other hand, the ADF test rejects the null hypothesis of unit root complimenting the results in Figure 2. These findings confirm the applicability of MLFA to the seven stock prices with success.

Findings from MLFA: This section presents the results of MLFA method. Prior to the extraction of relevant factors, a thumb rule was applied as a guiding principle to decide on the appropriate number of factors to retain. The current study adopts Hair et al. (2010) proportion of variance criterion to help determine the number of factors and the results are summarised in Table 2.

Table 2: Eigenvalues of the Correlation Matrix

	Eigenvalue	Difference	Proportion	Cumulative
1	3.282	2.393	0.469	0.469
2	0.890	0.137	0.127	0.596
3	0.752	0.125	0.108	0.703
4	0.628	0.054	0.090	0.793
5	0.573	0.039	0.082	0.875
6	0.534	0.191	0.076	0.951
7	0.342		0.049	1.000

The rule confirms that only 3 factors are significant and should be retained. The first three factors account for about 70.3% variance and this is in excess of the benchmark of 60% as suggested by Hair et al. (2010).The

MLFA method is then used to extract the three factors and the results are summarised in Table 3.The factor structure is intended to determine relationships between variables and the factors.

Table 3: MLFA solutions

Variables	Unrotated factor loadings			Varimax rotated factor loadings		
	Factor 1	Factor 2	Factor 3	Factor 1	Factor 2	Factor3
ABSA	0.751	.	.	0.726	.	.
Standard bank	0.809	.	.	0.642		.
Shoprite	0.605	.	.	.	.	0.559
Pick'n Pay	0.441	.	-0.324	.	.	0.551
MTN	0.639	.	.	.	0.581	.
Vodacom	0.519	.	.	.	0.575	.
Sasol	0.566	.	.		0.418	.

According to the results in Table 3, the seven variables are all in support of the first factor (see unrotated factor solutions). All these variables have high loadings on this factor as opposed to others. No significant loading is evident as far as the second factor is concerned, however factor 3 has only one significant loading from Pick'n Pay. As a result of various factors' model representative variables are not prominent. This makes interpretation of these results somehow cumbersome. Hence orthogonal rotation was implemented as discussed in previous sections to transform the results so as to be able to clarify the exact meaning of each variable on a factor and also to decide on the naming of common factors. The results of the rotated factors as seen in Table 3 shows ABSA and Standard bank loading high on the first factor and MTN, Vodacom and Sasol on the second factor. Shoprite and Pick 'n Pay is definitely significant members of the third factor. The three factor coefficients in Table 3 are evaluated with the least squares technique according to the standardised scoring coefficients and presented as linear combination of the seven stock prices following (8) as:

$$
\begin{aligned}
f_1 &= 0.567x_1 + 0.392x_2 - 0.059x_3 - 0.079x_4 - 0.089x_5 - 0.097x_6 + 0.048x_7 \\
f_2 &= -0.151x_1 + 0.118x_2 + 0.003x_3 - 0.066x_4 + 0.378x_5 + 0.369x_6 + 0.168x_7 \\
f_3 &= -0.025x_1 + 0.003x_2 + 0.419x_3 + 0.396x_4 + 0.042x_5 - 0.049x_6 - 0.026x_7
\end{aligned} \tag{18}
$$

This is a final MLFA model for the seven stock prices where x_1 to x_7 represent Absa, Standard bank, Shoprite, pick 'n Pay, MTN, Vodacom and Sasol and f_1 to f_3 are the latent factors. It is evident that Absa and Standard Bank have positive significant contribution to the financial sector while others have proven to have little contribution on this sector. This evidence is proven by the standardised coefficients of each variable. The findings are consistent with the interpretation of Table 3. MTN, Vodacom and Sasol still remain significant positive contributors to the Factor 3 (Industrial sector) so does Shoprite and Pick 'n Pay to Factor 2 (Retail sector). The MLFA model (18) was next checked for adequacy using the chi-square test and the AIC. Factor solutions were also assessed for consistency and convergence using Cronbach's alpha and the Tucker-Lewis coefficients. The latter also checks if the fitted model has reasonable number of factors or not by testing the null hypothesis that certain number of factors are sufficient against the alternative that at least one common factor is needed. The results are summarised in Table 4.

Table 4: Model evaluation test results

Null hypothesis	Prob>ChiSq	Akaike's Information Criterion	Tucker and Lewis's Reliability Coefficient	Cronbach's alpha coefficient
H_0: 1 common factor is sufficient($m = 1$)	142.9337(<.0001)	115.369	0.9188	0.902
H_0: 2 commonfactorsare sufficient($m = 2$)	61.396 (<.0001)	45.590	0.94116	0.895
H_0: 3 common factors are sufficient($m = 3$)	5.528 (>0.1369)**[1]	-0.448**	0.99257**	0.911**

[1] *Indicate significant results*

The chi square results in Table 4 confirm that three factors are needed to explain the seven stock prices. The observed probability on the parenthesis associated with the third suggested hypothesis is significant leading to the acceptance of this hypothesis. Moreover, the AIC attain its minimum value at three common factors implying that three factor solutions are appropriate for these data. Therefore, based on these findings, the seven stock prices can be explained by three common factors. The solution on the third iteration was so close to the optimum to such an extent that PROC FACTOR could not find a better solution. Consequently, SAS displayed the message that convergence criterion is satisfied for three factors as confirmed by Tucker and Lewis's reliability coefficient corresponding to the third hypothesis.As suggested by SAS institute Inc., it is prudent to repeat PROC FACTOR analyses with different prior communality estimates on the appearance of similar message. This ensures the correctness of the factor solution as different prior estimates could lead to similar solution or most probably to even worse local optima, as indicated by the information criteria or the chi-square values. While Cronbach's alpha confirms that the three factors solution is diverse and reliable, the coefficient for the third solution is more significant emphasising this model to be favourable.

5. Conclusion

This paper delivers a first-hand enquiry into communal factor behind day-to-day stock price activities of some of the South African largest and well-known companies listed on the Johannesburg stock exchange. Using the daily data set for ABSA, Standard bank, Shoprite, Pick n Pay, MTN, Vodacom and Sasol covering the period January 2010 to December 2014, a trivariate common factor model for the seven companies was estimated. By modelling the seven stock prices, we implicitly assumed update on monetary rudiments is aggregated in either equity market. As a result there is a common trend of cumulated random information arrivals interconnecting these stock indices. It should be noted that studies on stock performance worldwide and in South Africa have been conducted, but none of these studies analysed stock performance of the seven companies. This makes it difficult for the researcher to compare the current study findings with those already published around the area due to this difference. The findings revealed that among the seven stock indexes, Absa and Standard Bank are the predominant sources of price (attributes a weight of 46.9%) and both are in favour of the first factor (Financial sector). While Shoprite and Pick 'n Pay contributes up to 12.7% to the total variation of the common factor (Retail sectors); Sasol, MTN and Vodacom attribute a weight of 10.8% to the third factor (Industrial sectors). Using a Chi-square test and the AIC, it was confirmed that the three factor models are suitable implying that instead of treating seven companies as individuals, MLFA suggests they be treated as collectives since they share common stochastic trend. The findings suggest that banking institutions in South Africa is the most contributing factor to the well-being of the country. One could infer that, possibly the banking institution contributes more towards tax revenue of the country. Conversely, the contribution that industrial companies make to the economic growth of South Africa is a little bit lower than that of retail companies.

The three factors were also found to be diverse and consistent with the seven variables according to Cronbach's alpha, and Tucker and Lewis reliability coefficients. The findings confirmed that the information included in these factors is non-repetition. Treating these companies as groups could help save time during the period when annual financial reports are delivered and also when policy makers score or rank the companies listed on stock exchange according to their stock price or sales performance. A model of Financial sector (Factor 1) can be used as a classifier for all companies dealing with finances and model 2 (Factor 2) is recommended to use for identification or classification of all retail outlets. The last model (Factor 3) is suitable for any industrial company classification. The findings differ from those by Kumar (2013) which identified industrial performance as one of most dominant factors of stock markets in India. Maximum likelihood factor analysis method has been proven to be effective in reducing multitudinous financial stock prices to few latent factors. The findings of this study are in support of other studies that used MLFA. Factor analysis provides a clear reflection of overall target financial significance. The findings of this study are relevant as it gives investors more reasonable investment reference. One would make an informed decision when selecting a company to make an investment. Stock marketers may also refer to the findings of this study when reworking policies around stocks. They may further use the three MLFA models to make projections of the stock prices for the three sectors into the future. The findings may lessen investors and financial advisors' tasks during the time when they are buying or selling the stocks. The study makes a valid methodological contribution which scholars and financial analysts may refer to. Though the results of this study are not generalizable to the entire world or other sectors such as macroeconomics, etc. the framework may be followed by scholars analysing similar data sets. Future studies may take into consideration many other companies which were not included in the data. Furthermore, MLFA method may be used in conjunction with other statistical techniques such as logistic regression and discriminant analyses where the three sectors will be used as independent variables to a dichotomous or polychotomous variable of interest.

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The Efficacy of Wellness Programmes as Work-Life Balance Strategies in the South African Public Service

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Abstract: This paper aimed to evaluate the wellness programs adopted by the South African Public Service to ascertain their efficacy at addressing work-family challenges and aiding employees to achieve work-life balance. Understanding the effectiveness of wellness programmes as work-life balance strategies is necessary especially when the cost of implementing such strategies is considered exorbitant. Many institutions have put in place work-life balance strategies, but discrepancies concerning definitions, formulation and implementation could make it impossible for them to fully reduce work-family challenges and assist employees in achieving the envisaged work-life balance. A sequential transformative mixed-methods study design was adopted. Data was collected using self-report questionnaire administered to 307 individual managers. Additionally, 11 top management members were interviewed. The major findings are as follows; (a) significant relationship exists between the wellness programmes and work-life balance strategies (b) wellness programmes qualified to be addressed only as life strategies because they did not address work challenges faced by employees. (c) work-life balance strategies predicted only 7.1% of the variations in wellness programmes in the South African Public Service. The peculiarity and value of this article lies in the discovery that work and life balance strategies adopted by organisations may not address employee work and life challenges and assist them in achieving work-life balance. Summarily, wellness programmes are not work-life balance strategies, and the South African Public Service should endeavour to adopt strategies that could assist employees in balancing work and family needs.

Keywords: *Wellness Programmes, Work-Life Balance Strategies, Work-family challenges, Employee Assistance Programmes (EAPs)*

1. Introduction

Contemporary organisations face the growing need to increase efficiency in product and service delivery globally. To achieve this, organisations must attract and retain the benefits of international, diverse and very technologically sound and high performing employees. Where these quality of employees are available, it is reported that they struggle to achieve balance between work and family challenges (Newaz & Zaman, 2012). Work-life balance (WLB) could be viewed as the simultaneous satisfaction that an individual employee has about his/her work and family situations; achieved through the use of work-life balance strategies (WLBS) implemented at a workplace. In this context, employment may no longer be satisfactory to an employee because it pays more or provides job security and prospects for rapid growth in the organisation. Rather, employments decisions could be made based on the ability of the present or potential employer to implement policies that are supportive in assisting employees achieve balance between work and family. Dunne (2007) reports that organisations that are unable to put in place work-life balance strategies such as flexible work arrangements have begun to lose very skilled and talented employees especially at the management level to the workplaces considered more family supportive and flexible. But in the public sector, WLBS are seen as arrangements made in order to conform to legislative requirements to provide for dual-earner families and address gender issues. However, the arrangements made by organisations towards employee wellbeing could possess WLB elements but may be unable to assist workers in achieving WLB regularly and consistently (Kossek, Lautsch & Eaton, 2006). The South African Public Service adopted the wellness programmes to assist her employees in managing work and family-related challenges. The key objective of this paper was to determine if the wellness programmes were able to assist employees to satisfactorily manage their work and family challenges and achieve WLB.

2. Literature Review

In this section, the literature on various variables that was relevant to the research on the efficacy of the wellness programmes as WLBS adopted by a municipality in South Africa are reviewed. The aim of conducting a literature review was to assist in proffering appropriate examination, analysis and interpretation of the subject towards the conceptualisation of suitable strategies for assisting employees in addressing their work-life challenges. Hence, the expected result could be the achievement of meaningful WLB by the employees investigated. Research has revealed that family and work are interconnected, in the light of this, interest in the development of approaches to advance understanding into the interface among them has grown among scholars and practitioners (Voydanoff, 2005b).

Theoretical foundations: The segmentation theory (O'Driscoll, Ilgen, & Hildreth, 1992; Zedeck & Mosier, 1990; Zedeck, 1992), person-environment fit theory (Edwards, Caplan, & Harrison, 1998; Edwards & Cooper, 2013), conservation of resources (COR) theory (Hobfoll, 2001, 2011; Hobfoll & Lilly, 1993) and the demands, resources and strategies model (Voydanoff, 2005a, 2005b) helped in providing useful conceptualisations. Segmentation theory proposes that work and life are two mutual but exclusive spheres that do not influence each other (Guest, 2002; Sumer & Knight, 2001). Based on this theory, the strategies crafted to address each sphere's challenges could be suitably designed to address the challenges existing in the domain. The person-environment fit theory is a double–barrel approach that focuses on the individual and environment in the study of stress to ascertain the features and influence of stress (Edwards et al., 1998; Endler & Magnusson, 1977; Pervin, 1989). It suggests that wellness, mannerisms and conduct are jointly influenced by the environment and the individual. The theory is core to studies in workplace behaviour, industrial psychology and management of human resources (Edwards, Cable, Williamson, Lambert, & Shipp, 2006; Edwards et al., 1998; Holland, 1997; Kristof, 1996; Walsh, Craik, & Price, 2000). It is useful to the present paper in providing clarity to the stress-environment interface and its implication on strategies.

COR theory predicts that the major determinant variable in stress development is the loss of resources (Hobfoll, 2001). Hobfoll (2001, p. 337) states that such resources 'are those objects, personal characteristics, conditions, or energies that are valued in their own right, or that are valued because they act as conduits to the achievement or protection of valued resources' The prediction of this theory is that stress is inevitable where resources are perceived to be vulnerable, lost, forfeited, and uneven; or if people as individuals or groups are unable to see the way of enhancing and securing their resources either by personal or collaborative efforts (Hobfoll, 2001). Since people try to receive, keep, enhance and secure everything that is maximally valuable (Hobfoll, 2001), the implication is that they will use important resources to manage themselves, their engagements in social relationships as well as the way in which they arrange themselves to behave and align with the larger society (Hobfoll, 2011). This paper engaged the COR theory in investigating how individual employees used the adopted strategies at the municipality in South Africa.

The demands, resources and strategies model considers the fact that employees nowadays face numerous unavoidable challenges regarding WLB (Campione, 2008; Delgado & Canabal, 2006; Mauno & Rantanen, 2013; Minnotte, 2012; Voydanoff, 2005a). Therefore, employees look for ways and means of managing the demands at work and at home. It was assumed in the study that resources present at work – such as wellness programmes – could assist employees in managing work and family demands and achieve WLB.
When people perceive that the challenges in the environment are more than the resources available to manage them, the situation is appraised as being stressful (Crawford, LePine, & Rich, 2010). Therefore, WLB could be derived from evaluating the relative challenges and resources pertaining to family and work responsibilities. Demands include those designed or mental claims that playing a particular role makes on an individual. Examples of demands are norms and expectations that a person is required to conform to in the course of performing a mental or physical task. Resources comprise those organised or mental assets which could be used in improving performance, reducing challenges or developing more resources (Voydanoff, 2004). The research on which this article is based aimed to ascertain if employees perceived that they achieved WLB by using the WLBS (in this case wellness programmes) in place at the municipality.

Work-life balance strategies: According to Kelly, Kossek, Hammer, Durham, Bray, Chermack (2008), WLBS are those intentional policies that organisations adopt to effect changes in practices, guidelines and/or culture so as to lessen the effect of work and family demands on the employees, as well as to support workers outside the workplace. Casper and Harris (2008) suggest that although workplaces usually offer WLBS with the aim of promoting positive outcomes (Osterman, 1995), an understanding of the actual achievement of this goal is of paramount importance. Echoing this view, Kelly et al. (2008) report that notwithstanding the spread of these strategies, abundance of literary work done on work- and family-related matters (Pitt-Catsouphes, Kossek, & Sweet, 2006), as well as the publicity that the subject is receiving from the media, organisations do not know which strategies to adopt in order to assist employees in managing their work and family demands. WLBS can be classified into three groups: flexible working programmes (FWPs), family-friendly programmes, and health and wellness programmes. According to Caillier (2013), FWPs are those that offer workers the required flexibility to achieve WLB, for example, telecommuting, a compressed workweek and flexi start and finish. Flexitime is the most commonly FWP adopted by organisations for reasons ranging from job satisfaction to performance (Baltes, Briggs, Huff, Wright, & Neuman, 1999). Caillier (2013), reports that workplaces using FWPs could have their employees put in additional time at work including delivering services to citizens outside normal workday time. This suggests that flexitime would be appropriate to the needs of employees in the public service, especially municipalities. In a compressed workweek job schedules are compacted to permit employees to work fewer than 10 days every fortnight and particularly exceed eight hours per workday. It is different from flexible start and finish because time of work is aligned to the routine of starting and finishing times for all employees that participate in the arrangement (Caillier, 2013). Telecommuting refers to the arrangement where employees carry out some of their functions outside the contemporary office setting by using information and communication technology (ICT). This approach could result in work being done from home, at specific outposts in a region or any place where the employee has access to ICT (Baruch, 2001). Job sharing, part-time work, and maternal and paternal leave arrangements are other arrangements related to flexible time (Gunavathy, 2011).

The next group of WLBS, family-friendly benefits, include child and dependent-elderly relative care. In government organisations, child care in particular consists of assistance with on-site services, resource and referral services, and subsidies. The last group of WLBS is health and wellness programmes. Health and wellness programmes include health carnivals, bulletins, preventive programmes, gymnasium, weight loss facilities, counselling, and stress management programmes (SHRM, 2009). Fleetwood (2007), citing Gambles, Lewis, and Rapoport (2006), reaffirms that even though various adaptable work programmes seem to have the potential to assist individuals in achieving WLB, a number of these practices restrain the successful achievement of WLB. The South African public service adopted wellness programmes as WLBS to assist the employees in managing their work-life challenges and possibly achieve WLB. This article examines the efficacy of the wellness programmes among professional level employees at a municipality in the South African Public Service.

The South African Public Service inherited an institutional legacy from the apartheid government and a responsibility to help the government of the day to right the many wrongs of the apartheid era. As reported by May and Govender (1998), Miraftab (2004) and Özler (2007), the apartheid regime had a discriminatory structure of labour which largely segregated the black and the coloured population of South Africa. The poverty rate during the apartheid era was approximately 68% among blacks (May & Govender, 1998; Özler, 2007). Children were unshielded from the violence of those days both at home and in the larger community; they were equally exposed to hunger, irregular nurturing and education (May & Govender, 1998). Most of the professional-level employees surveyed at the municipality seem to have been children raised during the apartheid years, as demonstrated by the demographic data collected for this article. Approximately 62.2% of respondents were aged between 36 and 55 years. By 1994, the emergent South African nation with its municipal administration was saddled with the responsibility of administering the local governments which formerly served a segmented (small) portion of the populace. With the transformation into a democratised era where metropolitan governments were the leading creation (Cameron, 2005; Miraftab, 2004), most employees are confronted with the effects of the HIV/AIDS pandemic, chronic diseases, dependent-elderly relative and child care, alcohol/substance abuse and debt-related challenges (life stressors) as well as too much work, absence of autonomy, job stress, and role ambiguity/function clash (work stressors). In order to cope with these challenges, resources in the workplace addressing both work- and family-related challenges are needed. To support employees and assist them in managing these challenges, the municipality adopted the wellness programmes as prescribed by the Department of Public Service and Administration (2008). Although a number of studies discovered that notable negative association exists between WLB and WLBS (Ezra & Deckman, 1996; Hill, 2005; Hill, Ferris, & Märtinson, 2003; Hill, Märtinson, Ferris, & Baker, 2004), some studies report that there were either non-existent or weak linkages among WLBS adopted by organisations and work-family clash (Anderson, Coffey, & Byerly, 2002; Batt & Valcour, 2003; Haar & Spell,

2004) or satisfaction with work (Shinn, Wong, Simko, & Ortiz-Torres, 1989). Thompson, Jahn, Kopelman, and Prottas (2004), found that aspects of WLBS associated positively with workers' emotional obligation to the organisation, but had no effect on family-work challenges. The discussion of wellness programmes as WLBS is presented below.

The wellness programmes: There are fundamental assumptions underpinning the adoption of WLBS. Felstead, Jewson, Phizacklea, and Walters (2002) Concur on four theories that describe the elements underlying an organisation's adoption of WLBS. These are institutional theory, organisational adaptation theory, high commitment theory and situational theory (Wood, 1999). Institutional theory postulates that organisations mirror and adapt to the influence of societal norms, though to differing levels (DiMaggio & Powell, 1983; Oliver, 1991; Powell & DiMaggio, 2012). The need to sustain compliance with societal norms fuels the differences in the levels of adaptations. Large corporate sector organisations and the public sector institutions usually easily conform to regulations due to their visibility resulting from size, and accountability to their constituencies. Situational theory is considered more practical in its method because it submits that workplaces merely respond and try to counter issues of stress as they emerge in their WLBS use. To Osterman (1995) this is known as the pragmatic reaction theory. This perspective views the adoption of WLBS by an organisation as emanating from neither variation in the national value structures as recommended in the institutional and organisational adaptation theories, nor the beginning of the ground-breaking human resources strategies as suggested by high commitment theory. Instead, it is founded on the establishment of defined challenges that threaten organisational performance and profit (Felstead et al., 2002).

The municipality under study adopted wellness programmes in line with the Employee Health and Wellness Strategic Framework for the public service which was based on the World Health Organisation (WHO) Global Plan of Action on Workers' Health 2008-2017, the International Labour Organisation's (I L O) Decent Work Agenda in Africa and the recommendations of the report of the WHO's Commission on Social Determinants of Health (DPSA, 2008). The objective was to enable the formulation of strategies to manage HIV/AIDS, tuberculosis (TB), and wellness in the public service. The adoption of this programme as a WLB strategy may be attributed to the institutional and situational theories described above. Sieberhagen, Pienaar, and Els (2011) report that organisations are increasingly recognising the challenges relating to workers' wellbeing (Hooper, 2004) and that there is heightened public interest in the integration of wellness events and the responsibilities of the employers (Hillier, Fewell, Cann, & Shephard, 2005). Consequently, programmes such as Employee Assistance Programmes (EAPs) and Employee Wellness programmes (EWPs) have been established to investigate matters regarding wellness of employees in the workplace (Frey, Osteen, Berglund, Jinnett, & Ko, 2015; Sieberhagen et al., 2011). These scholars confirm that both EAPs and EWPs address wellness issues.

Traditionally, the reason for establishing EAPs was to assist employees with their domestic problems that had the potential to undermine their work performance. The initial EAPs concentrated on addressing alcohol and substance misuse which negatively affected workers' performance. For example, a number of the first EAPs focused on addressing issues emanating from abuses relating to alcohol and substance which undermine employees' productivity. But in contemporary times, a number of EAPs integrated dependent-elderly relative care, domestic relationship counselling, stress management, legal advice, financial/debt counselling, HIV/AIDS counselling, and substance/alcohol abuse counselling (these are life strategies) to help workers address their personal life challenges (Benavides & David, 2010). The scholars are of the view that these interventions are formulated to detect, remedy and rehabilitate workers whose individual challenges are meddling with productivity at work. They further reported that employees perceived the programmes as having the objective of treating workers' personal problems so that they do not degenerate to the point of permanently affecting the employees' performance at work. EAPs are reactionary programmes intended to alleviate prevailing adverse situations by attending to core issues (subjective, psychological and medical) in the way they affect an employee's performance at work (Benavides & David, 2010).

Likewise, wellness programmes are designed to promote employees' awareness of their wellness needs as well as to facilitate personal psychological and physiological change towards promoting individual health and a supportive workplace. Leiter and Durup (1996) reported that EWP activities are particularly targeted towards providing relief to employees from stress emanating from substance/alcohol abuse, finance/debt issues, medical and chronic diseases, career crises and job demands (Tuwai, Kamau, & Kuria, 2015). Basically, most of the strategies adopted by EWPs are counselling-based and their use is voluntary. By their formulation and design, EWPs are not structured to address work-related issues (Reynolds & Bennett, 2015) such as job stress, function vagueness or role clash, and/or absence of autonomy and their outcomes on employees' stress levels. In addition, the services rendered through wellness programmes to employees are targeted towards personal and health-related matters rather than work-related issues. **Participation in wellness programmes is limited by factors such as stigmatisation (Gerber, 1995; Naidoo, & Jano, 2003) as well as trust and confidentiality-related issues (Sieberhagen et al., 2011). Also, a**ccording to Gunavathy (2011), although corresponding interventions appear to be under the umbrella of WLBS, sound knowledge of the concept *per se* is still grey. The municipality (which, for the purpose of confidentiality, will not be named) in the South African Public Service investigated in this article adopted the wellness programmes as WLBS to assist employees in addressing their work- and family-related challenges.

Shamian and El-Jardali's (2007) examination of the implementation of wellness programmes in the healthcare sector showed that the work environment had improved significantly due to legislation and governmental policy which combined empirical information and inculcated information from literature. Edries, Jelsma, and Maart (2013) found wellness useful in enhancing health-related manners and employees' perception of quality of life. Brown, Gilson, Burton, and Brown (2011) and Ho (1997) reported that employees who participated in the wellness events showed greater levels of satisfaction with their jobs than those that did not participate. Després, Alméras, and Gauvin (2014) suggested that a new breed of studies on the assessment and development in practices regarding employee health and wellness is needed. In the context sketched above, this paper was significant in assessing the work-life practices at the municipality and guiding the development of an effective WLB strategy that could address employees' work-life challenges and assist in the achievement of WLB. To achieve this objective, individual benefits were assessed in order to ascertain their efficacy. According to Casper and Buffardi (2004), the examination of the various strategies may have distinctive results on workplace outcomes and possibly relate in predicting outcomes. The expected outcome of the paper is that the adoption of WLBS could lead to reduction in work and family stress and the achievement of WLB by employees.

Work-life balance: The concept of balance has been seen and defined from numerous perspectives. While a number of scholars have written on WLB from the context of role conflict (Akanji, 2012; Carlson & Kacmar, 2000; Eagle, Icenogle, Maes, & Miles, 1998; Eagle, Miles, & Icenogle, 1997; Hobson, 2011; Jones, Burke, & Westman, 2013; Kossek, Pichler, Bodner, & Hammer, 2011; Netemeyer, Boles, & McMurrian, 1996), others like Staines (1980), Cushing (2004) and MacInnes (2005) have carried out the review of the literature in the area of connection amidst work and non-work (Wong & Ko, 2009). Their findings contribute to the debate on WLB; yet not much has been written on how WLB connects to other variables that could affect its achievement. Darcy, McCarthy, Hill, and Grady (2012), report that WLB is not a "one size fits all" concept; rather, it is a subjective concept that should be designed by the individual to suit his/her objectives of achieving satisfaction, involvement and time balance. In line with Darcy et al. (2012), this article suggests that the peculiarity and dynamism of each individual's person and situation at work and home define their satisfaction at any given time. An individual's subjective feeling of satisfaction concerning personal time and involvement with work and family could be contrary to the satisfaction of his/her family members and employer and colleagues or possibly his/her health. Burke (2009) is of the opinion that most workers would rather work for shorter periods of time, even though only a few of them really understand what they prefer. Although this paper did not examine the details of the effect of long hours of work and work addiction on employees' work and/or family domain, it was concerned with the satisfaction that the individual derives from distributing his/her time and energy, highlighted by the level of involvement among the various work and family demands and roles. Though the concept of WLB has been a subject of scholarly and political discussion (Felstead et al., 2002) in Europe and America since the 1960s, it is comparatively new in the African context. However, Kalliath and Brough (2008) report that even though many conceptualisations of WLB exist in the literature, there is a scarceness of direct, properly established measures of the concept. In addition, the scholars suggest that, in the absence of direct assessment of WLB, it is tedious to evaluate the efficacy of WLBS on basic organisational and individual outcomes. Hence, there is worth in examining WLB by assessing the strategies in place at a workplace. The research on which this article is based examined the efficacy of wellness programmes as WLBS at a municipality in South Africa.

3. Methodology

Being an exploratory study, a sequential transformative mixed methods study design was adopted. Both the quantitative and qualitative data collected concurrently (through the survey questionnaire) and sequentially (by in-depth interviews) were equally prioritised (Creswell & Garrett, 2008; Hanson, Creswell, Clark, Petska, & Creswell, 2005; Morgan, 2007). This is because the data collected from one-on-one interviews and open-ended questions were expected to disprove, validate or augment the data collected from the survey questionnaires. Therefore, the data collected and analysed in the paper are based on the assumptions of Hanson et al. (2005) sequential transformative mixed methods.

Sample selection and questionnaire administration: The target population for this study was 7 000 professional-level employees and the sample of participants in the study was 307 professional-level employees and 11 other members of the municipal top management that were interviewed. The sample respondents were drawn from the Safety and Social Services, Infrastructure, Human Settlement, HR, Governance, Finance and Procurement and Economic Development clusters of the municipality. Primary data were gathered from a survey of heads of units, senior managers, managers, co-ordinators, and supervisors. Data were collected over a six-month period and the study recorded a response rate of approximately 84%. A factor analysis method was engaged in classifying the WLBS while descriptive and inferential statistics were used in analysing the extent to which WLBS contributed to the wellness programmes. To establish the strategies that made up the wellness programmes, 10 different WLBS were described in the survey instrument. Respondents marked ‘yes’ to concur with the adoption of a strategy and ‘no’ to signify that it was not adopted by the municipality. Through exploratory factor analysis, the 10 selected strategies were classified into two, namely life strategies (for strategies addressing life challenges) and work strategies (for strategies addressing work demands). Descriptive statistics was employed in determining the frequencies of the responses to items relating to the WLBS scale that was adopted.

Measures: The variables in this paper were measured using responses from scales adapted to the study from validated measures that had been used previously. To measure WLBS, participants were asked to respond on a dual response ‘Yes’ and ‘No’ WLBS scale in order to establish the strategies in place at the municipality. A factor analysis was subsequently utilised to group the strategies according to their effectual patterns into two groups, namely life strategies and work strategies. The pattern that emerged categorically placed the WLBS into two distinct domains: work and life strategies. The wellness programmes were assessed by using the work-life wellness scale tested and adapted to the study. Respondents were asked to rank on a 5-point scale ranging from (1) strongly disagree to (5) strongly agree; the effect of the wellness programmes in assisting them to cope with various work and family-related challenges. Some of the items on this scale were ‘The work-life balance strategies in place at the municipality help me cope with work-related issues like function vagueness’ and ‘The work-life balance strategies in place at the municipality help me cope with my family related issues of parenting.’ The researcher appraised all aspects of work- and family-related challenges examined in this paper and included them as items in the scale so as to collect meaningful data.

WLB was measured as an outcome variable on a two-dimensional scale assessing job satisfaction and job involvement. The job satisfaction scale used in this paper emerged from the factor analysis of the function vagueness/role conflict scale. Four scales were initially used to assess WLB, but after exploratory factor analysis, three scales, namely family involvement, satisfaction balance and time balance scales were discarded because they cross-loaded on other factors in the study. But the job satisfaction and job involvement scales used to assess WLB in this paper exhibited high internal consistency and Cronbach’s alpha coefficient (α) were 0.938 and 0.794 respectively. Analysis relied fundamentally on individual self-reports to examine organisational and individual resources. Prior studies suggest that valid data providing useful insight into organisational properties could be collected from such data (Lincoln & Zeitz, 1980, cited in Pandey & Wright, 2006).

4. Results

Exploratory factor analysis was conducted using the IBM SPSS version 22 to ascertain the validity of the instruments, correlation coefficient and regression analysis of the quantitative data. IBM NVivo was used in organising and analysing qualitative data. The results from the various variables are presented below.
Work-life balance strategies at the municipality. Table 1 presents an assessment of WLBS in place at the municipality by highlighting 10 distinct strategies and respondents' views on their availability at the municipality.

Table 1: Frequencies and percentages of responses to items on the work-life balance strategies

Description	Frequency		Percentage	
	Yes	No	Yes	No
Stress management	223	84	72.63%	27.36%
Domestic relationship counselling	203	104	66.12%	33.88%
Substance/alcohol abuse counselling	271	36	88.27%	11.73%
HIV/AIDS counselling	278	29	90.55%	9.45%
Financial/debt counselling	235	72	76.55%	23.45%
Work from home on *ad hoc* basis	31	276	10.10%	89.90%
Job sharing	76	231	24.76%	75.24%
Compressed workweek	54	253	17.59%	82.41%
Telecommuting	91	216	29.64%	70.36%
Career break	67	240	21.82%	78.18%

The respondents that marked 'Yes' to the question eliciting information as to the availability of various strategies at the municipality, such as stress management, domestic relationship counselling, substance/alcohol abuse counselling, HIV/AIDS counselling and financial/debt counselling, were 72.6%, 66.1%, 88.3%, 90.6% and 76.5% respectively. These results confirm that most respondents were of the opinion that the municipality had adopted stress management, domestic relationship counselling, substance/alcohol abuse counselling, HIV/AIDS counselling and financial/debt counselling as WLBS. However, concerning work from home on an *ad hoc* basis, job share, compressed workweek, telecommuting and career break, the results indicate 89.9%, 75.2%, 82.4%, 70.4% and 78.2% respectively. These results show that most employees were of the opinion that these strategies were not adopted by the municipality. In summary, the municipality adopted stress management, domestic relationship counselling, substance/alcohol abuse counselling, HIV/AIDS counselling and financial/debt counselling. These strategies have been identified in the WLBS literature as health and wellness programmes (Caillier, 2013). Hence, the municipality's wellness programmes particularly addressed health and wellness issues [issues relating to life (family)]. However, work from home on an *ad hoc* basis, job share, compressed workweek, telecommuting and career break (Caillier, 2013) had not been adopted by the municipality in the South African Public Service as strategies to assist employees in coping with their work and family-related challenges.

Table 2: Wellness programmes address work-related issues

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	67	21.82	21.82	21.82
	Disagree	64	20.85	20.85	42.67
	Neutral	99	32.25	32.25	74.92
	Agree	66	21.50	21.50	96.42
	Strongly agree	11	3.58	3.58	100.00
	Total	307	100.00	100.00	

Use of wellness as a work-life balance strategy to address work-related challenges: From the results presented in Table 2 below, it is evident that the majority of the respondents represented by 32.2% (99 respondents) took a neutral stand with respect to the question, while 67 respondents representing 21.8% of the participants disagreed strongly and 64 others (20.8) also disagreed that the wellness programmes assisted them in managing their work-related challenges. Sixty-six participants (21.5%) agreed that the wellness programmes helped them in managing their work-related issues and the remaining 3.6% strongly agreed with the statement. The feedback on the item yielded a mean of 2.64 and a standard deviation of 1.147. The results indicate that over 42% of the participants expressed the view that the wellness programmes did not assist them in coping with their work-related challenges, while 37% others agreed with the statement.

Use of wellness programmes as a work-life balance strategy to address family-related issues: The outcome presented in Table 3 indicate that 23.8% of the respondents strongly disagreed that the wellness programmes helped them in coping with their relational issues and 20.5% others also disagreed with the statement. By taking a neutral stand a total of 104 respondents representing 33.9% did not express any view on the statement while 19.2% and 2.6% strongly agreed and agreed respectively that the wellness programmes helped them in coping with their relational challenges. The mean and standard deviation derived from this item were 2.56 and 1.125 respectively. This result shows that 44.3% of the total respondents disagreed with the statement while 21.8% agreed that the wellness programmes assisted them in managing their relational challenges. Table 3 presents the outcomes of the responses to this item.

Table 3: Wellness programmes address family-related issues

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	73	23.78	23.78	23.78
	Disagree	63	20.52	20.52	44.30
	Neutral	104	33.88	33.88	78.18
	Agree	59	19.22	19.22	97.40
	Strongly agree	8	2.60	2.60	100.00
	Total	307	100.00	100.00	

This is an unexpected result because the majority of the respondents were married and according to the literature, wellness programmes are designed to address family-related demands. The reason for this result could be linked to the findings of the qualitative data analysis. Some of the findings are unawareness of the programme, inaccessibility to the programme, stigmatisation, confidentiality and trust issues, as well as cultural beliefs. These findings of the qualitative data analysis are substantiated in the literature by various scholars (Gunavathy, 2011; Naidoo & Jano, 2003; Sieberhagen et al., 2011). This result could also be linked to the fact that the programme was an EAP, which the literature has shown to be a reactive strategy (Benavides & David, 2010). It is also corroborated by Kelly et al. (2008) supposition that workplaces that have adopted WLBS may be reacting to emerging viewpoints that suggest that good employers are those that adopt initiatives that are family-friendly.

Contribution of work-life balance strategies to the wellness programmes: Although the descriptive statistics presented in Tables 1, 2 and 3 showed that half of the number of WLBS adopted by the municipality identified more with life strategies addressing personal and family challenges, the inferential statistics results provide more clarity on the situation, as shown in Table 4. The regression model presents an R square of 0.077 and adjusted R square of 0.071. This implies that the model (WLBS) predicts 7.1% of the variations in wellness programmes at a municipality in the South African Public Service. It is significant at $p < 0.01$ indicating that there is a substantial association between the independent variables at the two dimensions of WLBS and the wellness programmes (dependent variable). These results led to the finding that WLBS contribute to wellness at the municipality in the South African public service. The standardised Beta and matching P values for life strategies and work strategies ($\beta = 150$, $p <.01$) and ($\beta = 235$, $p < .001$) respectively, indicate that work strategies made the most meaningful contributions to the model in comparison to life strategies. In addition, this confirms the descriptive statistics results that, although the wellness programmes adopted at the municipality was more of an EAP (addressing life-related issues) than a holistic WLB strategy; its efficacy in addressing the employees' relational issues was negligible. The wellness programmes would have made meaningful contribution to assisting employees in addressing their work-life issues if the work strategies tested in the study were integrated into it. This is supported by Voydanoff's (2005a) border theory which postulates that work and family are inseparable spheres, therefore activities and resources need to be tailored to address them simultaneously.

Table 4: Work-life balance strategies as predictor of wellness programmes

Independent variable	R	R square	Adjusted R square	F	Beta	T	P
	.28	0.08	0.07	12.73			
Life strategies					150	2.73	.00
Work strategies					235	4.27	.00
Constant					-	12.01	.00

Having established that there is a significant relationship between the wellness programmes and WLBS, it is necessary to ascertain if the WLBS assisted employees in achieving meaningful WLB.

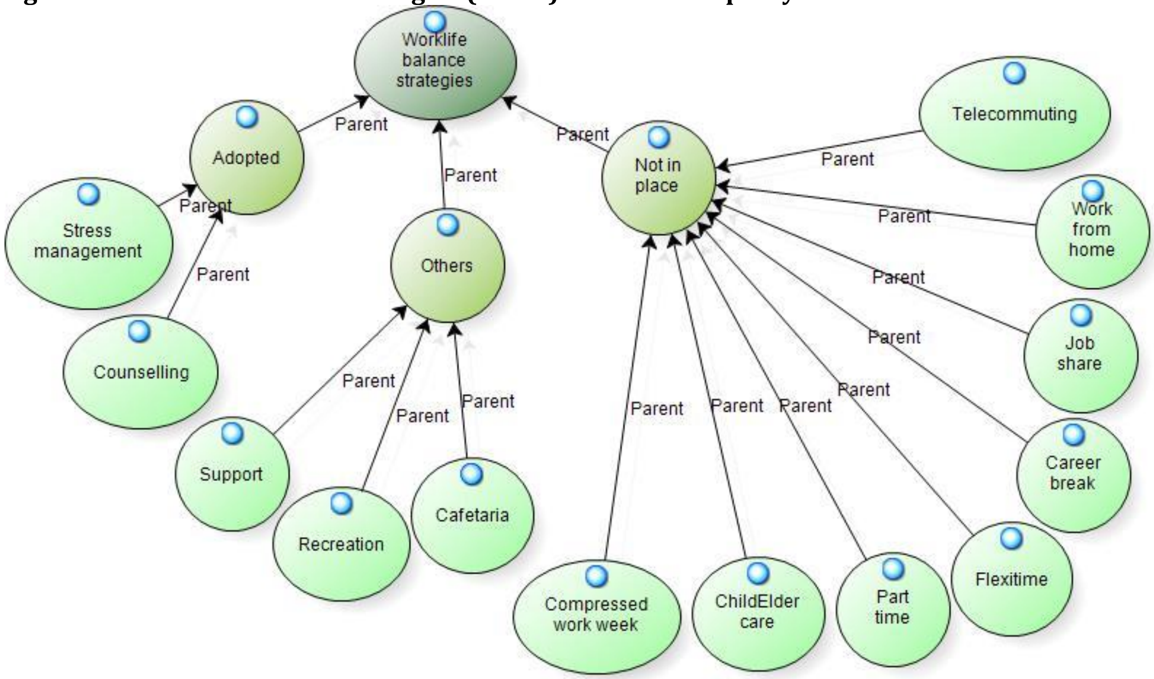
Work-life balance: The outcome variable in this paper is WLB indicated by satisfaction with work and family situations. The result of the effect of the WLBS on WLB is presented in the regression model below (Table 5). Consider the result of the R square at 0.003 and adjusted R square of 0.004. This shows that work and family strategies predict only 0.30% of the variations in WLB at a municipality in the South African Public Service. This is insignificant at $p > 0.05$ confirming that there is no significant relationship between WLBS and WLB. The standardised Beta and corresponding P values for work strategies and family strategies ($\beta = 0.053$, $p > 0.05$) and ($\beta = 0.005$, $p > 0.05$) respectively. Although none of the independent variables (family and work strategies) contributed significantly to the model, family strategies were most insignificant.

Table 5: Effect of work-life balance strategies on work-life balance

Independent variables	R	R square	Adjusted R square	F	Beta	T	P-value
	.05	.00	.00	.43	-	-	.65
Work strategies					.05	.93	.36
Family strategies					.00	.09	.93
Constant						23.08	.00

Qualitative data analysis: The qualitative data was gathered from 11 selected interviewees among top management employees at the municipality and responses from open-ended questions included in the questionnaire. There were no restrictions as to choice of alternative answers in closed-ended form to participants. The qualitative responses highlighted participants' perspective on the WLBS implemented by the municipality and ways of improving them. Most respondents were of the opinion that domestic relationship counselling, substance/alcohol abuse counselling, HIV/AIDS counselling, stress management and financial/debt counselling were implemented by the municipality. They further suggested the WLBS that were not in place at the municipality. Below in Figure 1 is the presentation of the responses from participants with respect to the WLBS including those adopted and not adopted by the municipality. The word *"parent"* in the figure below does not constitute any significant implication to the study but are NVivo generated labels for sources of data flow. Parent node is the main container of topics or themes in a particular factor. It aggregates the coding references from *child* nodes. Opening a parent node reveals the information coded directly to it and those coded at the first-level child nodes.

Figure 1: Work-life balance strategies (WLBS) at the municipality



Discussion of findings: The research reported in this article was designed to examine the efficacy of wellness programmes in addressing employee work-life challenges and achievement of WLB at a municipality in South Africa. The paper combined 10 major work-life balance strategies [(1) life strategies: domestic relationship counselling, stress management, substance/alcohol abuse counselling, HIV/AIDS counselling, financial/debt counselling and (2) work strategies: work from home on an *ad hoc* basis, job share, compressed workweek, telecommuting and career break)] by integrating the segmentation theory (Zedeck, 1992) and the demands, resources and strategies model (Voydanoff, 2005a, 2005b) in assessing the wellness programme as a WLBS. This result (categorisation) is supported in the literature by Zheng, Kashi, Fan, Molineux, and Ee (2015, p. 11). The outcome demonstrates that the wellness programme adopted as WLBS categorically addressed family-related demands; hence work strategies were not in place at the municipality in the South African Public Service. This result aligns to the segmentation theory's (Guest, 2002; Lambert, 1990; O'Driscoll et al., 1992; Staines, 1980; Sumer & Knight, 2001; Zedeck, 1992) assumptions that work and the non-work domain are dissimilar and have no relationship with one another; therefore, strategies addressing both domains could be distinctly formulated and implemented.

This finding is in line with conventional study on HR policies in explaining the characteristics of WLBS in place in the South African Public Service (De Cieri, Holmes, Abbott, & Pettit, 2005; Kossek et al., 2006; Kossek & Ozeki, 1999). Additionally, it confirms that the wellness programmes adopted by the public service are clearly health and wellness programmes (Caillier, 2013). Health and wellness, according to S. E. Hobfoll (2011) conservation of resources theory are of primary value to the individual. Therefore this result supports the use of salience as moderator in person-environment and stress studies of satisfaction and wellness (Judge, Locke, Durham, & Kluger, 1998; Locke, 1976; Rice, McFarlin, Hunt, & Near, 1985). The non-adoption of work strategies by the municipality corroborates Ngo, Foley, and Loi (2009) citation of Poelman and Saibzada (2004) and confirms that wellness programmes were not holistic WLBS since only life-related issues and not work-related demands (Kim & Wiggins, 2011) were addressed. This result is consistent with the literature and qualifies the wellness programme as an EAP (Benavides & David, 2010). However, Zheng, Molineux, Mirshekary, and Scarparo (2015) reported that flexible work practices were more beneficial in aiding employees to develop their coping strategies than health and wellness programmes. Yet, these strategies were not adopted by the municipality. Therefore, employees did not achieve WLB at the municipality by using wellness programmes.

Qualitative data provided more substantive information on the effect of the non-adoption of work strategies by the public service. The data confirmed that employees wished that strategies like telecommuting, job share, work from home on ad hoc basis and part-time work could be implemented at the municipal workplace. Additionally, the qualitative data supported the claim that wellness programmes at the municipality could not be addressed as holistic WLBS because they did not enhance employees' experiences with work and family domains as supported in the literature (Felstead et al., 2002; McCarthy, Darcy, & Grady, 2010; Thompson, Beauvais, & Lyness, 1999). The findings of this paper also support the claims of Batt and Valcour (2003) that the challenges of work and life domains could not be solely tackled through initiatives that are crafted to give flexibility and restrict general work demands. This result is beneficial in predicting outcomes and this is supported in the literature (Arthur, 2003; Casper & Buffardi, 2004; Grover & Crooker, 1995; Kossek, Baltes, & Matthews, 2011). It also furthers knowledge in the study of wellness programmes by ascertaining that wellness programmes are life strategies. This highlights the need to formulate domain-based WLBS to address pertinent workplace and family-related challenges.

For the purpose of advising prospective practices to improve employees' work-life experiences in the South African public sector, the following discussion provides the appraisal of the findings regarding wellness and WLBS. To find the extent to which work-life strategies (work strategies and life strategies in this paper) predicted wellness programmes at the municipality in the South African public service, the strategies (work and life strategies) were subjected to a regression model. The adjusted R square showed that the WLBS were responsible for 7.1% of the variations in wellness programme at the municipality. This is not surprising because, in line with Caillier (2013) categorisation of WLBS, wellness programme as one of the sub-categories of the construct is designed to assist employees with health and wellness issues. Incidentally, in this paper, work strategies made a more important contribution to the model than life (family) strategies, indicating that if work strategies were integrated into the wellness programmes, employees' achievement of WLB could be influenced in a more meaningful way (Guest, 2002; Voydanoff, 2005b). Furthermore, Zheng, Kashi et al. (2015) submission in the literature was also corroborated by the findings of this paper.

5. Conclusion

The idea behind this paper is that the investment in the human capital of an organisation should not only be justifiable but must result in higher employee satisfaction, health and better services. This paper revealed that work strategies and family strategies jointly predicted wellness programmes at the municipality, therefore the finding is useful in bridging the gap in the literature, as suggested by Skinner and Chapman (2013), by evaluating the practice at the municipality in the South African Public Service. This result, therefore, has satisfied the second objective of this paper. The result confirms the novelty of this paper in classifying WLBS into two distinct and practical categories (work strategies and life strategies) and furthers knowledge on the efficacy of wellness programmes as WLBS.

Limitations and recommendations: The study reported in this article examined the efficacy of the wellness programmes as WLBS in a municipality at the South African Public Service. The results are limited to the municipality in the South African Public Service, but comparable studies could be conducted at the provincial and the national levels of the South African Public Service for triangulation. In agreement with Després *et al*. (2014), further study is recommended into the effect of wellness programmes for the purpose of improving workplace environments. The primary data collected are the result of personal responses from participants. A further limitation is that the paper did not investigate the mechanisms underpinning the linkages between the uses of wellness programmes and achievement of satisfaction with the family situation. It is suggested that future studies could address this gap by investigating the intervening processes. Researchers could possibly examine how to align work and family strategies to address the work and family needs of employees towards assisting them in achieving meaningful balance. Although several scholars have written on the achievement of WLB and the use of various WLBS (Darcy et al., 2012; De Cieri et al., 2005; Greenhaus, Ziegert, & Allen, 2012), the concept of alignment of strategies is new to the field of study and needs to be studied further. Such study may identify practical characteristics of work and life strategies that provide further evidence of peculiarity in addressing effectively work and family challenges and assisting employees in achieving WLB. Also, this study was of a cross-sectional design, therefore the results may not be construed to be directly supporting Jeffrey R Edwards and Rothbard (2000) 'cross-domain processes that include resource drain, resource generation, and positive and negative spillover' cause and effect rendition. Although there may be certain theoretical assumptions that support the supposed cause and effect relationship, experimental study (wherein resource drain and resource generation are manipulated) may be needed to make such strong inferences about causality.

The main aim of WLBS should be to reduce stressors that reduce employee satisfaction with work and family situations. Due to the significant effect that work and family –related challenges have on employees, work-life balance strategists need to be pragmatic in formulating and designing work-life balance strategies that address domain-specific needs. This could be achieved through proper investigation of the major work-related stressors and family-related stressors in order to match strategy to stressor. For instance, an employee facing absence of autonomy at work may be unable to overcome the stressor by using the wellness programmes. Therefore, it is recommended that management lead in championing the formulation, implementation (building WLBS portfolio) and promotion of WLBS at the municipality. This way, the strategies best suited to workplace stressors and employees' work and family demands will be formulated and implemented. Effectively crafting a WLBS portfolio demands various skills, including aspects of management (change, project, communication), as well as strategic planning, implementation, monitoring and evaluation of the outcomes. Management need to be seen (not just heard) as being supportive of WLBS. When management endorsement is seen in the promotion of the policies (by way of campaigns, slogans, publicity and support), use by employees will be encouraged and possibly sustained.

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Journal of Economics and Behavioral Studies (JEBS)
Vol. 8, No. 6, December 2016 (ISSN 2220-6140)

Analysing Biographical Differences on Employees' Perception of Safety Control Measures with Special Emphasis on the Cost Thereof at a Colliery

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Abstract: The purpose of this article is to determine whether biographical differences influence employees' perception on safety control measures and the cost thereof. A quantitative research approach was followed for which data were collected by means of a structured questionnaire from 151 employees at a colliery in South Africa. Exploratory factor analysis was used to reduce the employees' perceptions into nine factors. This was followed by an analysis of means using one-way analysis of variance (ANOVA) and t-tests to determine differences between perceptions of these factors and the biographical groupings of the employees. Five biographical variables were included, namely (i) years of experience, (ii) English proficiency, (iii) qualification, (iv) gender, and (v) designation. Within a meta-theoretical conceptual scope, a cross-sectional analysis revealed the following statistically significant perception differences: Firstly, from a biographical variable view, English proficiency groupings differ significantly among six of the nine factors. Secondly, from a factor classification view, both direct and indirect cost of work accidents/injuries and perceptions in relation to direct and indirect cost of an unsafe work environment differ significantly in three biographical variables, namely years of experience, English proficiency and qualification. To be more specific, the most experienced group (21+ years' of experience), the poor/fair, and even to a lesser extent, the good English proficiency groups and the group with no tertiary training should be educated especially about the effect that work accidents, injuries and an unsafe work environment have on the direct and indirect costs of the colliery. The study recommend that the employees with higher qualifications, excellent English proficiency as well as those with relatively fewer years of experience should do higher risk jobs as they are more receptive to safety rules and procedures.

Keywords: *Biographical factors, colliery, mine, production costs, safety controls*

1. Introduction

The importance of the study surfaces against the backdrop that workplace safety is an organisational issue that continues to be a great concern within firms, resulting in negative implications on financial and human capital. This is evident in the South African mining industry where mine accidents have resulted in 96 and 71fatalities in 2013 and 2014, respectively, while 3 136 mine workers suffered injuries in 2013 and 2 686 in 2014 (DMR, 2013 & 2014/15).It is believed that between 1900 and 1991, approximately 7 000 miners were killed in South Africa and more than one million were permanently disabled (Inggs, 2016).Injuries make it impossible for mine workers to perform their duties at work resulting in the loss of income and loss of quality of life, and this produces a humanitarian and a socio-economic problem. Accidents also result in enormous costs for firms and sometimes lead to the closure of mining companies and thereby increase the unemployment rate within the country. Unfortunately, these crippling injuries and fatalities are the result of not new but repeat accidents (Chamber of Mines, 2015). Statistics indicate a drop in fatality and injury rates since the end of the apartheid era (1994). However, mine workers are still dying in the country's mines due to accidents. Therefore, the Minister of Mineral Resources, Advocate Ngoako Ramatlhodi, continues to place an emphasis on the health and safety of mine workers. The government also continues to use the provisions of the Mine Health and Safety Act to ensure that mine workers have a safe and dignified work environment and will not rest until this is achieved (DMR, 2014/15). According to the requirements of this act, the mining industry must have safety control mechanisms in place to ensure safety, for the employees to adhere to safety measures and ensure their own safety, and as a result, enable the mining companies to reduce accidents and costs due to accidents.

It is crucial therefore for the entire firm to ensure compliance and adherence to safety rules, to share the same attitude towards safety, and to understand the consequences of non-compliance in relation to production cost. In this regard, previous studies have investigated employees' perceptions and attitudes with regard to different safety aspects in the workplace. For example, a 'safety climate questionnaire' was used by, *interalia*, Hecker & Goldenhar (2014), Laurence (2005) and Glendon & Litherland (2001). Harvey et al. (2002) used the 'safety attitude questionnaire' developed by Donald & Carter (1993). English & Branaghan (2012) referred to the 'safety compliance questionnaire' developed by Mason et al. (1995). These mentioned studies did not pay very much attention to the relation between workplace safety and production costs. Theories stipulate an association among firm safety and production costs. Some production costs can be traced directly to safety, namely costs are spent on safety mechanisms to increase safety performance, which leads to cost savings due to reduction in accidents and injuries (Son et al., 2000). Furthermore, indirect costs that cannot be traced directly to an accident or injury were also incurred at the workplace (Cloete & Marimuthu, 2015). The argument of the study is that although direct and indirect costs can objectively be quantified, employees' perspectives, which are much more subjective, may shed light on this issue from a different angle, i.e. analysing employees' perception of inadequacies in the safety aspects and their understanding of the relationship between safety and production costs. Therefore, the purpose of the study is to determine the influence of biographical differences on employees' perception of safety control measures and the cost thereof. Related studies applied biographical variables to identify views of different employee groups in the workplace (Van der Walt et al., 2016; Smit et al., 2015; Donald et al., 2015; Apreko et al., 2015). Similarly, this study exploited employees' views based on five variables, namely (i) years of experience, (ii) English proficiency, (iii) qualification, (iv) gender, and (v) designation.

This article forms part of a greater research project investigating safety control mechanisms and production costs at a colliery in South Africa. The broader aim was to identify the tools that can be applied to make visible the areas for improvement in relation to safety, commitment and application of or compliance with the safety rules within firms and thereby reduce accidents and accident costs within this vital industry to ensure sustainability. The first part (Mokoena & Oberholzer, 2015) applied a deductive theory-testing methodology and developed a questionnaire that focused on safety control mechanisms in relation to (i) firms' compliance, (ii) employees' compliance, (iii) employees' attitudes, and finally paid special attention to (iv) production costs. The questionnaire was completed by 151 employees at a colliery and an exploratory factor analysis reduced employees' perceptions into nine manageable factors. Data for this study were obtained from the first part's results and the rest of the 151 completed questionnaires. This study followed a quantitative method and built thereupon by employing an analysis of means (one-way analysis of variance (ANOVA) and t-test) to determine differences between perceptions (of these nine factors) and the five mentioned biographical groups of the employees. Within a meta-theoretical conceptual scope, a cross-sectional analysis was used to determine whether there are statistically significant differences from a (i) biographical groupings view, and (ii) a factor classification view. The layout of the study is as follows: The next section provides a background, including the conceptual scope and a literature review. This is followed by the method, findings and a discussion. The study is summarised and concluded in the final section.

Conceptual scope: This study was done within the conceptual scope of a meta-theory, which is "a theory devised to analyze a theory" or "the investigation and analysis of theories" (Collins English Dictionary, 2012). Stephen Hawking says in this regard: "Any physical theory is provisional, in the sense that it is only a hypothesis: you can never prove it. No matter how many times the results or experiments agree with some theory, you can never be sure that the next time the results will not contradict the theory." (Hawking s.a.). With reference to this quote, this study does not aim to test some theories or hypotheses based on biographical differences, for example to prove Henwood et al. (2008) Gender Theory that safety is more salient to women than men. The purpose of this study rather is to determine different biographical groups of employees' perceptions at a colliery and the results may differ from investigating another firm. Nevertheless, this study's results may serve as a good example to establish hypotheses for future studies. Furthermore, the construct of the nine factors may also be used in any other firm to determine inadequacies by investigating biographical differences of employees' perceptions with regard to safety measurements and the cost thereof.

2. Literature Review

Biographic variables: Maree & Pietersen (2015) state that important information can be obtained by including biographical questions in a survey. Main-type variables are, for example, age, qualification, gender, home language, marital status, income and occupation. Studies such as those by Van der Walt et al. (2016), Smit et al. (2015), Donald et al. (2015) and Apreko et al. (2015) also studied biographical variables of employee groups in the workplace. In this study, biographical variables are investigated within the context of the South African mining industry. Variables included in the study, firstly, is years of experience. The safety culture perspective of workers may be influenced in the era it was established. For example, during the apartheid era (before 1994), mine workers were oppressed and their safety was not an important aspect of the apartheid laws. The mine workers did not have the right to complain or strike if they had concerns about their safety and positions were occupied based on skin colour and not qualification. However; the current laws give mine workers rights, especially in relation to their safety. Among these rights, miners are given the right to refuse dangerous work and the right to leave dangerous working places (RSA, 1996). Secondly, English proficiency is included because it may have an influence on effective communication. English is the most commonly used business and commercial language in South Africa (South Africa Info, 2015), but this is the mother tongue of only 9.6 percent of the population (Statistics South Africa, 2011). In addition to language proficiency, the third biographical variable, qualification, is included because approximately 30 percent of mine workers are illiterate (Thwala, 2008). Fourthly, gender is included, and finally, designation is included to determine whether there are perception differences between mine managers and workers.

Safety control: Sevim & Gedik (2010) define safety controls as all 'methodised works' used to detect, examine and prevent workplace dangers. If hazards cannot be eliminated, they must be mitigated through safety controls to reduce the harmful degree of accidents. Safety is therefore the protection from harm or danger. Therefore, safety control entails the protection of employees at work from danger, especially in the mines. It can be achieved through occupational safety, which is the elimination of conditions that may pose danger to the health and safety of employees in the workplace (Noe et al., 2014). Due to implementation costs that are incurred to ensure employee safety, some firms still do not have safety measures in place. Nevertheless, there are firms that do their utmost best to provide safe workplaces for miners even though a many mine workers believe that safety rules must be broken to get the job done (Laurence, 2005). This was validated by Paul & Maiti (2007) that risky behaviour is a common cause of accidents. This indicates that safety measures can be put in place; however, if they are overlooked, accidents will occur and result in injuries and fatalities. For this reason, the safety culture within a firm should be improved. Lu & Tsai (2008) define safety culture as "…the principles, standards, attitudes, views, perceptions, competencies and patterns of behaviour that indicate the commitment of employees to safety, the style and the know-how of an organization's health and safety management."

Special emphasis on production cost: The South African mining industry is considered to be production- and profit focused. This was confirmed and substantiated by Busani Masango who has worked in different mines in South Africa that mining companies do not put sufficient safety measures in place to prevent accidents. All they care about is profit and fail to realise the enormous costs that are incurred due to accidents. He also stressed that "working conditions in the mines are unbelievable" (Inggs, 2016). Firms that are production oriented do everything possible to achieve the set production and profit targets. However, these high production targets and constraints of time put a great deal of pressure on the employees, and as a result, they are encouraged to take shortcuts and violate safety rules, which jeopardise safety compliance and decrease the safety levels of operations (Masia, 2010). Consequently, the country has failed to reach its target of zero harm in 2013 and still has the highest fatality frequency rate (0.09) when compared to the international benchmarks, USA (0.07), Canada (0.07) and Australia (0.02) (Chamber of Mines, 2015). At times, mine workers are exposed to dictatorial management styles and a 'don't care' attitude from the managers encouraging employees to take risks and removing employees' focus off the safety controls (Masia, 2010).

Mine workers in South Africa are exposed to known and unknown hazards; as a result, their chances of being killed or suffering severe non-fatal injuries due to accidents are very high compared to employees in the private industry. Sari et al. (2009) established that fatal injuries in the mining industry were nearly 12 times the rate of private industry resulting in an increase in the production cost and a decrease in profitability for the industry. To ensure safety and prevent accidents and costs, management's commitment and enforcement of the application of safety rules are essential. This can be achieved through the allocation of resources towards safety controls and the implementation of ways and means to better understand the reasons why employees break rules or why rules are ineffective. The hazardous nature of mining can result in a large number of miners being exposed to injury or death in the mines, which creates a negative effect on the financial performance of mining companies, as costs are incurred (Fernandez-Muniz et al., 2009). These costs include cash and disability benefits, as well as medical expenses for the injured employees and damage to property. The costs that are incurred due to accidents increase the production cost and therefore result in a decrease in profitability (Ural & Demirkol, 2008). The hazardous nature of mining also imposes additional costs as mines are required by law to have safety regulations and standards in place to ensure the safety of employees. Past studies, such as those by Conaway (1972) and Trienekens & Zuurbier (2008) acknowledge that the costs of meeting the safety standards are enormous as the cost of producing coal increased significantly after implementation.

Production cost: Cloete & Marimuthu (2015) define cost as a resource given up in order to realise a specific objective. Horngren et al. (2015) noted that production cost is the combination of three elements: direct material, direct labour and manufacturing overheads. Direct labour as defined by Cloete & Marimuthu (2015) is the cost incurred in the conversion of raw material into finished goods while direct material is the main ingredient of the product. Production overheads (indirect costs) are cumulative costs incurred during production, but cannot be directly attributed to complete products. Examples of production overheads are repairs, depreciation and maintenance. Mining companies also incur these costs in the normal operations of the business.

Direct cost: Son et al. (2000) posit in the Safety Control Cost Theory that there is a relationship between safety performance and costs. Therefore, this theory propagates that the higher the design, implementation and safety levels to be achieved, the lower the overall costs incurred within the organisation will be. To achieve higher levels of safety, extra costs are incurred and these costs will normally be borne by the employer. It can therefore be concluded that under a perfect state of safety, there will be no accidents and as a result there will be no costs associated with accidents. Based on the results, the study will establish employees' perceptions as to whether or not the colliery in question has safety measures in place to guarantee workplace safety. It will also determine whether or not the implementation and the application or the lack of safety control measures is perceived to increase or reduce the production cost at the colliery under review.

Indirect cost: The Indirect Cost Theory of Accident Prevention (Brody et al., 1990) affirms that for every accident that occurs, indirect costs are incurred. Indirect costs are the costs that are incurred by firms due to accidents, but cannot be directly attributed to a specific accident (Cloete & Marimuthu, 2015). Indirect costs are also referred to as hidden costs because many employers are not aware of these costs. For this reason, these costs are not insured and are entirely absorbed by the employer. HW Heinrich (1959), who began analysing work accidents in the late 1920s, concluded that indirect costs are substantial and generally a multiple of direct costs incurred due to accidents with an average ratio of 4:1 (indirect costs/direct costs) (Brody et al., 1990). Some researchers have come to the conclusion that the sum of indirect costs due to accidents constitutes a potentially fruitful source of savings and are therefore likely to motivate owners to invest in preventive measures. For example, 350 disabling accidents in Quebec in 1988 incurred an indirect cost in excess of $1 100 per accident and $2 900 per time lost per accident (Brody et al., 1990). The authors revealed that by recognising the uninsured indirect costs and by making this information available to all employees, costs can be minimised through accident-reducing activities that are regarded as more profitable through prevention. This study will attempt to determine employees' perceptions as to whether or not there are any indirect costs that are incurred due to accidents at the site and highlight the implications that these indirect costs have on the production cost at the colliery under study.

Summary of argument and research questions: According to the Safety Control Cost Theory and Indirect Cost Theory, costs are incurred in order to put accident prevention measures in place. These costs can be incurred due to safety training that is provided to employees, safety incentives, staffing for safety, provision of safety facilities and safety programmes in order to improve safety performance and as a result reduce accident costs. Investing in safety must be viewed as a means to improve the bottom line and naturally to reduce the incidence of injuries. This is because, if there is a high safety investment, the chances of incurring high injury cost become relatively low. On the other hand, if investments in safety are low, the chance of sustaining high injury cost can be relatively high (Teo & Feng, 2011). This was substantiated in the study by

Son et al. (2000) at SI Construction Company in Korea over a period of three years (1993-1995). The study concluded that when the rate of investment increased, the accident rate, direct cost, indirect cost, cost of damage and the total cost were reduced. However, if companies continue to increase investment in safety, this can trigger an increase in the total cost. The argument of the study is that although direct and indirect costs can objectively be quantified, employees' perspectives may shed light on this issue from a different angle. That will be helpful to answer two research questions; firstly, which groups of employees need to be educated on how safety performance can reduce direct and indirect production cost?, and secondly, what management actions should be enhanced to improve safety performance to reduce production costs?

3. Methodology

Within the conceptual scope of a meta-theoretical approach, a quantitative research paradigm was adopted as this study seeks to quantify data and apply some statistical analyses. Structured questionnaires were distributed with the intention of analysing different employee perceptions according to biographical variables, namely designation, gender, years of experience, qualification and English proficiency with regard to the compliance of the colliery, adherence and application of safety rules by the employees, as well as the production cost within the colliery using a one-way ANOVA and t-test. The population of the study was a colliery in South Africa with 1 023 employees, including top management. A sample of 218 mine workers was randomly selected to represent the entire population by completing structured questionnaire.151 usable questionnaires was returned. The questionnaire, consisting of 56 five-point Likert scale questions/items, ranging from 1, strongly disagree to 5, strongly agree was used to examine the participants' perceptions. The items were divided into five sections, namely (i) biographical information, and four constructs, namely (ii) the compliance of the colliery with safety legislation, (iii) established the employees' compliance regarding the application of safety controls, (iv) determined the perceptions and attitude of participants towards safety controls, and (v) established the participant's' perceptions with regard to safety controls and production cost. The questionnaire contained modified questions adapted from questionnaires used by the following authors: Laurence (2005), Glendon & Litherland (2001), Cox & Cheyne (2000), Donald & Canter (1993)– Safety Attitude Questionnaire–Harvey et al. (2002) and Mason et al. (1995). A number of new questions were developed by the researcher to place a greater emphasis on production costs and safety controls.

Table 1: Reliability of the factors and results

Factor number	Names of factors	Percentage of variance explained	Reliability
1	Organisational compliance to safety legislation	49.12	0.92
2	Management commitment	12.27	0.49
	Cumulative %	61.46	
3	Employees' compliance and commitment to safety	41.91	0.86
4	Supportive work environment	17.78	0.44
	Cumulative %	59.69	
5	Employees' perceptions on safety culture	45.95	0.90
	Cumulative %	45.95	
6	Direct and indirect cost of work accidents and injuries	25.36	0.84
7	Direct and indirect cost of unsafe work environment	13.51	0.87
8	Work environment in relation to safety and indirect cost	9.63	0.68
9	Cost reduction due to adherence to safety	7.89	0.71
	Cumulative %	56.39	

(Source: Authors' computations with the aid of SPSS version 21.0)

Experts in the accounting and safety field established the content and construct validity to ensure that the questionnaire contains the concepts it intended to cover by enabling the researcher to identify and eliminate problematic questions in relation to wording and the arrangement of questions. Exploratory factor analysis was employed to establish the underlying dimensions of the four constructs. Cronbach's alpha was computed for sections(ii) to (v) to determine the reliability of the scale with scores of 0.87, 0.80, 0.77 and 0.86, respectively. In total, nine factors were identified, i.e. factors 1 and 2 from section (ii), the compliance of the colliery with safety legislation, factors 3 and 4 from section (iii), established the employees' compliance regarding the application of safety controls, factor 5 from section (iv), determined the perceptions and attitudes of participants towards safety controls, and factors 6, 7, 8 and 9 from section (v), established the participant's' perceptions with regard to safety controls and production cost. The names and the reliability of the nine factors are indicated in Table 1. All factors have reliability scores above the acceptable level of 0.70, except for factor 2 (0.49), factor 4 (0.44) and factor 8 (0.68). Data of the five biographical variables are exhibited in Table 2, including the groups and the number of respondents of each variable's group. Note that 'English proficiency' is the only variable where all 151 respondents selected a group. Only 149 and 147, respectively, selected a group with regard to the other variables.

Table 2: Biographical data of respondents

Experience	1-10 years	11-20 years	21+ years
n = 149	n = 68	n = 42	n = 30
English proficiency	Poor + fair	Good	Excellent
n = 151	n = 39	n = 76	n = 36
Qualification	No tertiary	Tertiary	
n= 149	n = 54	n = 95	
Gender	Male	Female	
n= 149	n = 90	n = 59	
Designation	Management	Non-management	
n= 147	n = 62	n = 85	

(Source: Authors' computations with the aid of SPSS version 21.0)

The data from the questionnaire were analysed using a one-way ANOVA and t-test to establish differences between group means and their significance (Clow & James, 2014). As per Table 2, ANOVA was effectual to analyse experience and English proficiency, since there are more than two independent groups, while the t-tests were effectual to analyse qualification, gender and designation, since only two independent groups' means were compared. Differences were considered significant if the p-value was less than or equal to 0.05, while a p-value greater than 0.05 was considered not significant (Naidoo & Maseko, 2012). Regarding the ANOVA, if significant differences were found, post hoc comparison, based on Turkey's HSD test, was utilised to establish exactly where the differences were found (Clow & James, 2014). Regarding the t-test, Levene's test for equality of variances was used to determine whether equal variances were assumed/not assumed.

4. Results and Discussion

Results of the exploratory factor analysis: The appendix indicates the results of the analysis of the questionnaire. The exploratory factor analysis analysed 50 of the 56 statements (questions) into nine factors. To establish the number of factors under each section, eigenvalues were examined. The study followed Kaiser's criteria to extract factors – the eigenvalue >1 rule and the scree test (Williams et al., 2010). Under sections (ii) and (iii), two factors were identified, three under section (iv) and six under section (v). It was then established which questions loaded onto these factors and rotated using Varimax with Kaiser Normalisation to improve the loadings of these questions. The rotated component matrix revealed items that loaded onto more than one factor, those that loaded below 0.5 and the factors that loaded fewer than three items. Only variables whose loadings were greater than 0.5 were accepted. Factors with fewer than three items were rejected due to the declaration by Varonen and Mattila (2000) that it takes at least three variables to define a factor. The items that loaded onto more than one factor and were all below 0.5 were also rejected in order to simplify and improve the interpretability of factors (Field et al., 2013). Nonetheless, the questions that loaded onto more than one factor were allowed to represent the factor with the highest loading, provided the loading is >0.5 (O'Toole, 2002). At the end of this process, nine factors (appendix) were identified, in the sequence of two each from sections (ii) and (iii), one from section (iv) and four from section (v).

The overall employees' perceptions with regard to safety and related production costs indicate that the colliery investigated is in a sound position, because employees understand the good work done by the colliery/management, understand their own role in the safety process and understand the relationship between safety and production cost. Note that factors 1, 2, 4, 6, 8 and 9 consist of positive individual statements that were presented in the questionnaire (appendix). With the five-point Likert scale in mind, all six of these factors' means are above the mid-point of 3, implying that the respondents agree with these (positive) statements. Factors 3, 5 and 7 consist of a number of negative statements. On average, all these mean averages are lower than 3, implying that respondents disagree with them, which is good. These averages indicate the agreement of the employees regarding the compliance of the colliery to safety legislation, management commitment and reduction of costs at the colliery due to the implementation and application of safety measures (factors 1, 2 and 9). In the next section, a more in-depth analysis was done to determine significant differences between different groups.

Analysis of means: Table 3 is a cross-sectional exhibition that summarises all the significant mean differences of groups' perceptions. Firstly, from a biographical variable view, English proficiency groupings differ significantly among six of the nine factors. Secondly, from a factor classification view, both direct and indirect cost of work accidents/injuries (factor 6) and perceptions in relation with direct and indirect cost of an unsafe work environment (factor 7) differ significantly in three biographical variables, namely years of experience, English proficiency and qualification. Note that there are no significant mean differences found for factors 2, 4 and 8, and also no significant differences for the two biographical variables, gender and designation.

Table 3: Cross-sectional analysis of significant differences between groups

Factor	Biographical variables Experience	English proficiency	Qualification
1		Excellent and poor + fair Excellent and good	
3		Excellent and poor + fair	
5		Poor + fair and good Poor + fair and Excellent	
6	11-20 and 21+ years	Excellent and poor + fair	No tertiary and tertiary
7	0-10 and 21+ years	Excellent and poor + fair Excellent and good	No tertiary and tertiary
9		Excellent and poor + fair	

(Source: Authors' computations with the aid of SPSS version 21.0)

The rest of the discussion is a detailed analysis of all the statistically significant mean differences from a biographical variable view.

Differences identified between years of experience: Table 4 exhibits the results where significant differences were found between groups' experiences (0-10 years, 11-20 years and 21+ years) according to the one-way ANOVA. The means of each group are given in parentheses.

Table 4: Posthoc results of differences between years of experience using the Turkey HSD test

Dependent variable	Years of experience		Mean differences	Std. error	Sig.
Factor 6	11-20 years (3.67)	0-10 years (3.52)	0.15	0.150	0.564
		21+ years (3.16)	0.51	0.182	*0.017
Factor 7	0-10 years (2.83)	11-20 years (2.70)	0.13	0.205	0.796
		21+ years (2.23)	0.60	0.229	*0.027

(Source: Authors' computations with the aid of SPSS version 21.0)
* Significance at 0.05 level.

It can be hypothesised that experienced workers are aware of and understand the physical hazards and the cost implications thereof (Kecojevic et al., 2007; Paul & Maiti, 2007). For example, retraining, passage of time and regular cost reports presented at the safety meetings are believed to equip older workers with experience and thereby make them aware of safety requirements (Choudhy & Fang, 2008). This is because training emphasises safe work practices that prevent accidents (Lanoie & Trotter, 1998). For factor 6 (Perceptions of direct and indirect cost of work accidents and injuries), the mean score is the highest for the middle (11 to 20 years) experience group (3.67) and it is significantly higher than the mean score of the 21+ year group (3.16). Note that the statements included in Factor 6 are positively stated, implying that a higher score indicates a higher degree of agreement. Conversely to the literature, experienced employees at the Colliery have the lowest score, probably because experienced employees have been exposed to accidents for more time and are no longer worried about the hazardous environment, encouraging employees to take shortcuts resulting indirect and indirect costs. Furthermore, these 21+ experience group started working before 1994, the apartheid era, when mine safety was not regarded as a high priority, relative to the period after 1994. Consequently, it seems that the most experienced group has the lowest awareness on how failures, injuries and accidents negatively influence production costs indirectly. The statements included in Factor 7 (Perceptions of direct and indirect cost of unsafe environment) are as such that the lower the score the better. Significant mean differences are found between the extreme groups, 0 to 10 years (2.83) and 21+ years (2.23). Consistent with the literature (Kecojevic et al., 2007; Paul & Maiti 2007), this results in some degree of a lack of awareness by the less experienced employees on how an unsafe environment can increase production costs.

Differences identified between means for English proficiency levels: A lack of understanding of safety measures may results in cost accumulation for firms as it was identified by Stevens (2010). He argued that limited English proficiency has economic implications, low productivity and increased safety problems that affect the cost of production. Table 5 exhibits significant differences between groups' English proficiency levels according to the one-way ANOVA.

Table 5: Post-hoc results of levels of English proficiency using the Turkey HSD test

Dependent variable	Years of experience		Mean differences	Std. error	Sig.
Factor 1	Excellent (4.57)	Poor + fair (4.11)	0.47	0.129	*0.001
		Good (4.21)	0.37	0.113	*0.004
Factor 3	Excellent (1.96)	Poor + fair (2.53)	-0.57	0.200	*0.013
	Good (2.37)		-0.41	0.175	0.051
Factor 5	Poor + Fair(2.55)	Good (2.14)	0.41	0.171	*0.046
	Excellent (1.83)		0.72	0.201	*0.001
Factor 6	Excellent(3.64)	Poor + fair (3.29)	0.36	0.151	*0.050
	Good (3.33)		0.32	0.155	0.104
Factor 7	Excellent (2.06)	Poor + fair (2.82)	-0.76	0.235	*0.004
		Good (2.85)	-0.79	0.206	*0.000
Factor 9	Excellent (4.06)	Poor + fair(3.62)	0.44	0.179	*0.045
		Good (3.86)	0.20	0.157	0.427

(Source: Authors' computations with the aid of SPSS version 21.0), * Significance at 0.05 level

Factor 1's (Organisational compliance with safety legislation) mean for employees with excellent English proficiency is significantly higher than the means of the poor + fair (4.11) and the good (4.21) groups. Although the scores of 4.11 and 4.21 are materially above the mid-point of 3, it is clear that these two groups relatively lack some knowledge about the effort of the colliery to comply with safety legislation. Opposite to factor 1, where a higher score is the better, factor 3 (Employees' compliance and commitment to safety) consists of negative statements where a lower score indicates higher employee compliance and commitment to safety. The results reveal that employees with an excellent (1.96) English proficiency have significantly lower scores than the poor + fair (2.53) groups. Factor 5's (Employees' perceptions on safety culture) statements are also as such that a lower score is better, indicating a better safety culture. For factor 5, the mean score of the poor + fair (2.55) group is significantly higher than the excellent (1.83) and good (2.14) groups. Dimirkesen & Arditi (2015) believe that knowledge and skills development regarding safety is transferred through training and communication, which may also result in improved safety culture. However, safety training, presentations and communication are conducted in English. Due to language barriers, there can be misunderstandings.

Factor 6 (Perceptions on direct and indirect cost of unsafe environment) consists of positive statements, and therefore the higher the mean score the better. Again, there is a significant mean difference between the extreme groups excellent (3.64) and poor + fair (3.29) insinuating that the limited English proficiency of the latter may lead to poorly trained employees due to failure to understand presentations. This may result in employees who get involved in unsafe acts resulting in the accumulation of costs. Factor 7 (Perceptions on direct cost and indirect in relation to work accidents)contains negative statements, where the lower the mean the better. The excellent group's (2.06) mean is significantly lower than the means of the good (2.85) and poor + fair (2.82) groups. It could be because of the difficulty to understand work-based instructions due to poor English proficiency resulting in accidents as the employees do not know what they are expected or instructed to do (Trajkovski & Loosemore, 2006). Factor 9 (Perceptions on cost reduction due to adherence to safety measures and procedures) consists of positive statements, which implies the higher the mean the better. Again, there is a significant difference between the two extreme groups, excellent (4.06) and poor + fair (3.62) groups. English language proficiency may reduce errors that result in accidents. This is because the employees understand the safety rules and procedures well and they also have the ability to make suggestions regarding rules that are impossible to apply, resulting in improved employee confidence, job satisfaction and morale, argued Mikulecky (2011).

Differences between means for qualification: Table 6 exhibits the results of the t-test to determine significant mean differences between the two groups' qualification, i.e. no tertiary and tertiary education. For both factors 6 and 7 equal variances were assumed.

Table 6: t-test results of qualification levels using Levene's test for equality

Dependent variable	Years of experience		Mean differences	Std. error	Sig.
Factor 6	No Tertiary (3.15)	Tertiary (3.66)	-0.51	0.127	*0.021
Factor 7	No Tertiary (2.42)	Tertiary (2.78)	-0.36	0.177	*0.013

(Source: Authors' computations with the aid of SPSS version 21.0)
* Significance at 0.05 level (one-tail)

Factor 6's (Perceptions of direct and indirect cost of work accidents) results show that the respondents with no tertiary qualifications' (3.15) means are significantly lower than those with tertiary qualifications (3.66). The probable reason could be that it is easy for the employees with additional qualifications to understand the safety rules and procedures, safety practices, hazards and the consequences of accidents better than those with lower or without qualifications (Vinodkumar & Bhasi, 2009). Factor 7's (Perceptions in relation to direct and indirect costs of unsafe environment) results show significant differences between the participants with tertiary qualification (2.42) and those with no tertiary qualification (2.78). This difference may be because of the failure to understand the rules and procedures and hazards associated with different tasks, failure to apply proper procedures, taking risks and shortcuts and failing to understand the cost implications of these acts due to lower qualifications.

Differences between means for gender and designated groups: After a t-test was done, no significant differences were found between male and female participants. All p-values were above 0.05. The designation identifies the position held by the respondents at the colliery. The employees at the colliery were grouped into two groups, i.e. management and employees. Management included pit superintendent, assistant pit superintendent, safety officers, foremen and supervisors, while safety representatives, operators and others (administration, finance and human resources) were classified as employees. No significant differences were identified between management and employees (p-values were >0.05).

5. Conclusion

Different employee perceptions were revealed regarding the nine factors identified from the completed questionnaires. The overall employees' perception with regard to safety and related production costs indicates that the colliery investigated is in a sound position, but a more in-depth analysis of biographical variables identified some weaknesses by finding significant differences between different groups. The purpose of the study can be summarised to make conclusions about the research questions of which groups of employees need to be educated on how safety performance can reduce direct and indirect production costs and what management actions should be enhanced to improve safety performance to reduce production costs. It was evident from this study that the biographical variables(i) years of experience, (ii) English proficiency and (iii) qualification have a statistically significant influence on the perceptions of employees in relation to safety and production cost. To be more specific, and to answer the first research question, the most experienced group (21+ years' of experience), the poor + fair and even the good English proficiency groups and the group with no tertiary training should be educated especially about the effect that work accidents and injuries (factor 6) and an unsafe work environment (factor 7) have on the direct and indirect costs of the colliery. This will enable the colliery to reduce costs incurred due to accidents as the Indirect Cost of Accident Prevention Theory affirms that, for every accident that occurs, there are indirect costs incurred. Furthermore, no differences were established regarding gender and designation, which implies that male and female employees and employees from top management to operators share similar perceptions in relation to safety and production costs.

Focusing on the second research question, the study firstly found that as the employees at the colliery gain experience, the less concerned they become about safety rules and procedures. The concern is specific in the group with 21+ years' experience, which was exposed to a culture of less safety awareness during the apartheid era. Consequently, the less experienced employees should work in the hazardous areas of the colliery and could be used to demonstrate to other employees how to work safely as these employees seem to be more safety conscious than the experienced ones. This is somewhat strange; however, it will enable experienced employees to learn the behaviours and attitudes of inexperienced employees as the Social Learning Theory submits that people learn through observing others' behaviours and attitudes. This is also an indication that experienced employees at the colliery have more chances of being involved in accidents. This raises a concern and it is important that not only the experienced employees at the colliery should change their attitudes and perceptions about safety, but also management. Therefore, management actions should include that managers walk the talk and show commitment to safety, as this can influence the employees' perceptions regarding safety by signalling implied obligation for the workers to act in a safe manner. This includes that management should also provide the employees with support and assurance that the firm cares for their well-being as the employees with supportive perceptions are more compliant with safety procedures. Moreover, attention should be paid to experienced employees who seem to be ignorant of the safety measures and the costs associated with work accidents and injuries, as this may increase health and safety problems and result in negative economic implications for the colliery. Finally, the retraining of experienced workers is recommended in order to provide information on current safety issues and as a reminder of the importance of safety and the cost implications of accidents. This will provide the means of making accidents more predictable so that they can be avoided easily through the application of safety controls and therefore reduce accidents and costs in relation to accidents.

Secondly, regarding to English proficiency, the study found significant perception differences between the groups in six of the nine factors. The group whose English proficiency is indicated as excellent shows a significantly higher notion as the poor + fair group, and to a lesser extent the good English proficiency group, with regard to safety aspects and the direct and indirect costs associated with it. Therefore, employees with excellent English proficiency can understand the processes, hazards and their cost implications better than others, as communication errors and misunderstanding of safety policies and measures can be circumvented. As a result, they are expected to have more positive mind sets and attitudes in relation to safety, because language barriers can affect one's perceptions and attitudes towards safety. In the light that the minority of South Africa's population (9.4 percent) indicates English as first language, management's action required in this regard should include that the colliery considers providing the safety rules, procedures and training to employees in their mother tongue to avoid misunderstandings.

Thirdly, the study found significant perception differences between employees with different levels of qualification. Management action in this regard should be focused on employees without tertiary qualifications. They should be provided with training and education about the various safety processes, hazards associated with different jobs as well as their consequences to enable them to take responsibility for their own safety and the safety of others. Communication channels have to be opened in order to fully understand the concerns of the employees and initiate the development of trust between management and employees so as to provide assurance to the employees about the importance of safety and that their organisation cares about their well-being. To summarise, the management actions needed, and to answer the second research question, it is recommended that the employees with higher qualifications, excellent English proficiency as well as those with relatively fewer years of experience should do higher risk jobs as they are more receptive to safety rules and procedures.

The study uses the factors that influence safety culture (compliance, individual attitudes and management commitment) to identify the areas for improvement within the colliery in relation to safety, safety culture and the application of safety rules to reduce costs associated with accidents. In a country where mine safety does not receive the priority it deserves, any change in work culture and mind set will have to overcome considerable resistance from all quarters to ensure safety in the country's mines. This study will therefore enable firms especially, in the South African mining industry, to evaluate the state of safety within their firms at any point in time and to design safety interventions and management programmes targeting the sub-groups based on qualification, experience, English proficiency, designation and gender to improve any specific deficiencies in relation to safety and therefore reduce costs in relation to safety. The major limitation of this article is that the results are based on one colliery. Although managers in the mining sector can learn from this experience, the results cannot be generalised as other mines may have different dynamics. Nonetheless, the study provides avenues for further research as indicated earlier and the same study can be replicated and conducted at other mines, and a comparison study can be conducted to determine differences between mines and to enable the generalisation of findings.

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Appendix

Below are the statements from the questionnaire. This is the authors' computations with the aid of SPSS version 21.0). The following 5-point Likert scale below was applied:

Strongly disagree	Disagree	Moderately agree	Agree	Strongly agree
1	2	3	4	5

Factor 1: Organisational compliance to safety legislation (average of means = 4.27)

Statement	Mean	S.D.
There are safety measures to ensure the safety of employees	4.37	0.687
Personal protective equipment (PPE) is provided freely at all times	4.34	0.727
There are safety procedures to guide the performance of tasks	4.32	0.742
Employees are made aware of possible hazards associated with their jobs	4.27	0.772
There are regular safety control meetings	4.27	0.754
There is a safety policy regarding the safety of employees	4.26	0.803
Effective documentation ensures the availability of safety procedures	4.21	0.742
Management learns from past mistakes and implements corrective measures	4.19	0.778
The organisation is up to date with the safety legislation	4.17	0.707

Factor 2: Management commitment (Average of means = 3.88)

Safety representatives are involved in putting together the safety procedures	4.05	0.89
Management considers safety to be equally as important as production	4.02	1.013
Supervisors seldom discipline employees who break the safety rules	3.57	1.188

Factor 3: Employees' compliance and commitment to safety (Average of means = 2.33)		
Safety rules are only for inexperienced workers	1.94	1.152
I can get the job done quicker by ignoring the safety rules	2.04	1.190
I often deviate from safety rules	2.28	1.135
Sometimes I fail to understand which rules to apply	2.36	1.106
I have difficulty getting hold of written safety rules	2.42	1.147
Some safety rules are impossible to apply	2.57	1.171
There are too many safety rules that one cannot remember	2.70	1.173
Factor 4: Supportive work environment (Average of means = 3.37)		
Safety rules are written in the language that I understand well	3.47	1.249
Employees often give tips on how to work safely	3.47	1.059
I have found better ways of doing my job	3.17	1.232
Factor 5: Employees' perceptions on safety culture (Average of means = 2.12)		
Safety is not my role	1.84	1.116
Working safety rules remove skills	1.84	1.154
It is necessary to break the safety rules to get the job done	2.07	1.126
Safety rules are used only to protect management's back	2.16	1.110
Acting with common sense is safer than acting within safety rules	2.20	1.074
Sometimes I do not understand why I have to follow the safety procedures	2.28	1.112
Safety rules make easy tasks complicated	2.44	1.269
Factor 6: Direct and indirect cost of work accidents and injuries (Average of means = 3.53)		
Work accidents result in the loss of production	3.89	1.033
Work injuries result in a high absenteeism rate	3.69	1.110
Failure to apply safety measures results in employees getting suspended	3.66	0.984
Failure to comply with safety controls leads to employee dismissal from work	3.58	1.058
Safety measures have reduced the compensation paid to employees every year due to accidents	3.43	1.125
Suspensions/dismissals result in the organisation paying overtime to the employees	3.33	1.189
Equipment idles due to injuries/suspensions/dismissals	3.14	1.110
Factor 7: Direct and indirect cost of unsafe work environment (Average of means = 2.65)		
Small injuries should not be reported as they reduce safety bonuses	2.19	1.375
I was hospitalised due to work injury	2.27	1.455
Employees leave the organisation due to lack of safety	2.46	1.321
The organisation was penalised due to lack of safety	2.75	1.308
My productivity has been affected by an injury I sustained at work	2.95	1.402
The organisation has received an incentive from the government in relation to safety	3.3	1.361
Factor 8: Work environment in relation to safety and indirect cost (Average of means = 4.06)		
There are safety incentives and bonuses to encourage employees to work safely	4.25	0.814
Competent safety staff ensures a safe working environment for the employees	4.10	0.844
Availability and correct use of PPE helps me to avoid work injuries	4.06	0.791
The organisation provides adequate safety facilities	3.84	1.030
Factor 9: Cost reduction due to adherence to safety (Average of means = 3.85)		
Adequate safety procedures lead to less damage to property and equipment in the organisation	3.87	0.947
Safety measures have reduced the costs in relation to accidents	3.86	0.935
Safety measures at work have reduced the cost of fatalities	3.81	1.072

Journal of Economics and Behavioral Studies (JEBS)
Vol. 8, No. 6, December 2016 (ISSN 2220-6140)

Academic Dishonesty: Prior perceptions and behaviour on cheating of Bachelor of Accountancy Freshmen at a Zimbabwean university

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Abstract: Academic dishonesty is a perennial problem the world over. Financial scandals that have rocked the world of business have refocused attention on the education of business students in general and accounting students in particular. Both accounting students and accountants have been found to have a low moral campus by some studies. The study examined the perceptions and behaviours on cheating of 61 accounting freshmen prior to any university instruction. Accounting freshmen had a remarkable understanding of what constituted cheating, and had indulged in one form of cheating or the other. Cheating behaviour varied with gender, religiosity, age and Advanced level points. The study recommends among other things staggering of courses within the examinations venue and universities coming up with clear policies on academic dishonesty and recycling of examinations.

Keywords: *Academic dishonesty, cheating, cheating behaviour, accounting freshmen*

1. Introduction

Academic dishonesty is a perennial problem in institutions of high learning the world over. Numerous studies have been carried out mostly in the developed countries probing various facets of this phenomenon. The focus of the studies has been among others been: why and how students engage in academic dishonesty; prevalence of academic dishonesty; strategies to curb the malice and so on. Academic dishonesty has implications on the evaluation of students' abilities at institutions of learning (Lupton et al., 2000; Michaels and Miethe, 1989). Lupton et al. (2002) argue that students who engage in academic dishonesty reduce their level of learning and ability to apply what they would have learnt. This problem is carried to societal level where there is a high probability that students who engaged in academic dishonesty continue with unethical practices at the workplace (Lawson, 2004; Nonis and Swift, 2001; Sims, 1993).

Unethical practices at places of work have resulted in financial scandals such as the Enron and demise of accounting firm Arthur Andersen. In 2003 it is estimated that fraudulent activities cost United States businesses about US $50 billion per year (Coffin, 2003). According to the KPMG Africa Fraud Barometer (2012) the reported fraud in Zimbabwe for example in the last six months of 2011 was valued at US$1, 2 billion. The same publication estimates fraud perpetrated by employees at 29% and management around 23% during the same period. On the job crimes or fraudulent activities cut across all sizes of businesses from the large corporations to small and medium sized businesses. The higher education system inputs its graduates into national systems that are also riddled with unethical practices such as fraud. Academic dishonesty thus becomes a major issue of concern not only to the institutions of higher learning and business but society at large (Klein et al., 2007; Adeniyi and Taiwo, 2011). It is submitted that academic dishonesty does not suddenly become an issue of concern at institutions of higher learning because a student has been admitted. Research has confirmed that academic dishonesty is quite high, in high school/secondary education (Cizek, 1997). Incidence of cheating which is a form of academic dishonesty has been found to increase with more years of schooling.

Most of the researches on academic dishonesty have been carried out in the developed countries with very little in the developing countries particularly on the African continent. Adeniyi and Taiwo (2011) noted that in Nigeria only about seven studies have been done on academic dishonesty. The lack of studies in the area does not necessarily show that all is well, but may be due to other factors. Henceforth the primary motivator for this study was to determine the extent to which accounting freshmen had academic dishonesty, particularly cheating ingrained in them prior to any university or college instruction. Some research has concluded that both accounting students and accountants have a lower moral reasoning ability than other professions or population groups (Armstrong, 1987; Lampe and Finn, 1992, 1994; Ponemon and Glazer, 1990; St Pierre et al., 1990). On the other hand other studies, for example Jeffrey (1993) did not attest to low moral reasoning of accounting students. Low moral reasoning ability has far reaching implications as far as ethical behaviour is concerned.

Understanding accounting freshmen's predisposition to academic dishonesty (particularly cheating) prior to university or college education will help faculty in ensuring an atmosphere that curbs the incidence of academic dishonesty is put in place. Secondly ethical behaviour of accountants has been attributed to socialisation within the accounting profession (Ponemon, 1992). However on admission, before any university instruction there is definitely very little or no socialisation at all to speak of on accounting freshmen. The study was therefore designed to get a snapshot picture of the perceptions and behaviour of accounting freshman towards cheating by answering the following research questions:

- How do freshmen define cheating?
- What are the perceptions of freshmen to cheating?
- How much had freshmen cheated prior to coming to university or college?
- Do age, gender, and advanced level points have an effect on freshmen's perceptions and behaviour on cheating?
- What is the effect of other factors such religiosity on freshmen's perceptions and behaviour on cheating?

From the above research questions the following objectives for the research were drawn:

- To ascertain freshmen's definition of cheating
- To establish freshmen's perceptions on cheating
- To find the extent of cheating behaviours of freshmen prior to university instruction
- To establish the degree to which age; gender; and advanced level points affected freshmen's perceptions and behaviour on cheating
- To evaluate the effect of religiosity on freshmen's perceptions and behaviour on cheating.

2. Literature Review

Academic dishonesty prevalent as it is, there is no agreed definition of what it is. There has been a tendency to use academic dishonesty interchangeably with academic misconduct (Oakley, 2011). In this study the two terms will be used synonymously. Academic dishonesty means different things to different people, in other words it is dependent on one's perspective (McCabe, 2005; McCabe and Trevino, 1993). Kibler et al. (1988:1) defined academic dishonesty as "forms of cheating and plagiarism which result in students giving or receiving unauthorised assistance in an academic exercise or giving credit for work which is not their own." Taylor et al. (2001:1) posit that academic dishonesty includes "cheating and plagiarism, the theft of ideas and other forms of intellectual property whether published or not." It is clear that the common thread that runs across the various definitions is that academic dishonesty consists of but is not limited to cheating and plagiarism. Another factor observed by Robertson (2008:16) on definitions of dishonest is that they describe "techniques for obtaining information in an unethical manner."

Michaels and Miethe (1989:870) defined cheating as the "fraudulent means of achieving scarce valued resources." They further assert that cheating is a learned behaviour. From a theoretical perspective it is not easy to define cheating concedes Oakley (2011; 22). Brownwell (1928:764) was of the view that "being a cheater is something like being a criminal-it depends upon being caught." Plagiarism is defined by Oxford Concise Dictionary (1976) as taking and using another person's ideas as one's own. This includes thoughts, writings, and inventions and so on. Marsh (2007) further expounded on plagiarism by referring to it as literary theft. Advances in technology particularly the internet have resulted in the "cut and paste" type of plagiarism Scanlon (2006).

The lack of an agreed definition of academic dishonest or some of its forms like cheating has several implications. First and foremost this can increase the incidence of cheating among students because they may not perceive their actions as such (Partello, 1993; Rodabaugh, 1996). Students indeed see certain behaviours as not constituting cheating such as collaboration on assignments (Eskridge and Ames, 1993; Singhal, 1982). Institutions of higher learning should provide students with a definition of academic dishonesty (Karlins et al., 1988). For example in Zimbabwe, The Midlands State University Ordinance 2 subparagraph 1.2 expects students to have "a high level of personal integrity and development sense of responsibility towards others." The ordinance does not explicitly mention academic dishonesty or the several forms that it may take. Similarly the University of Zimbabwe Ordinance 30 has a similar clause word for word (paragraph 1.2). Oakley (2011:22) in a random check of what constituted academic dishonesty among some United States universities noted that "universities have not clearly or unanimously defined academic dishonesty or academic misconduct." It then follows that there is a great possibility that the many studies in the area were not necessarily measuring the same phenomena.

The weaknesses discussed above have not dissuaded researchers from probing other variables thought to have a bearing on academic dishonesty. One such variable has been the area of major at university or college. Of particular interest to this study are business students vis a vis other programmes more so because accounting falls into this broad classification (Oakley, 2011). Several studies have indicated a high prevalence of academic dishonest among business students compared to other disciplines (Cox, 2009; Meade, 1992; McCabe, Butterfield and Trevino, 2006; Bowers, 1964). For instance McCabe and Trevino (1995:209) in one of their studies noted that "one of the most discouraging findings in the student phase the research was that students who aspire to a career in business consistently reported the highest level of academic dishonesty." Contrary findings were reported by Iyer and Eastman (2006:108) who observed that "business students did not cheat more than did non business students." Their results were similar to those of Brown's study (1996). With respect to accounting students compared to other disciplines Brown and Saunders (1999:41) "did not find accounting majors to be more ethical than other business students." This finding resonates well with the conclusion drawn by Borkowski and Ugras's (1998) meta-analysis of 47 studies dealing with ethical behaviour of business students. They concluded that academic major had no effect on ethical behaviour.

Another interesting variable on academic dishonesty has been gender. There is no agreed position on the effect of gender on academic dishonesty. As early as 1957 Anderson concluded that female students were more moralistic and cheated less compared to their male counterparts. This has been confirmed in other studies were significant differences in ethical judgments were noted between genders (for example Ricklets, 1983; Beltramini et al., 1984; Al-Qaisy, 2008). On the other hand some studies have concluded that there is no significant difference between males and females as far as ethical behaviour and moral reasoning (Rest, 1986; McCuddy and Perry, 1996; Jones and Kavanagh, 1996). However of particular interest to this study are findings that tend to link accounting students and practitioners' ethical attitudes along gender. Ameen et al. (1996) found that female accounting majors were less tolerant than males of unethical behaviour a finding similar to that of Pierre et al. (1990). Upper echelons of accounting firms were found to exhibit lower levels of moral reasoning (Ponemon, 1990; Shaub, 1994). The management in these firms were predominantly male at 83% (Shaub, 1994). Sweeney's study (1995) came up with results similar to those of Ponemon and Shaub above. Of particular interest in this study is whether there is this ethical predisposition in accounting freshmen along gender, more so given anecdotal evidence for example that whistle-blowers in the Enron and WorldCom were women (Sherron Watkins and Cynthia Cooper respectively).

Age has also been found to have an effect on ethical attitudes/behaviour. Borkowski and Ugras (1998) in their meta-analysis of 47 studies found that students became more ethical with age. Kohlberg (1981) in his theory of moral development posits that individuals mature morally in the course of life, *ceteris paribus.* Indeed there is a growing body of research that suggest that young college students cheat more than older and more mature students (Baird, 1980; Franklyn-Stokes and Newstead, 1995; McCabe and Trevino, 1997). In addition to age Whitley (1998) found that younger and unmarried students cheat more compared to older and married students. In Zimbabwe the normal age to start grade one is 7 years and one should enter university at around 20 years and thus accounting freshmen are relatively young adults. On the extreme Michaels and Miethe found older students more likely to cheat compared to younger ones. Bennet (in Wilkinson and Pickett, 2009) contends that demographic variables such as age, gender education, etc. do not have an effect on academic dishonesty but rather attitudinal characteristics such peer influences, ethical positions and their interrelationship. However it would seem more empirical researches to date resonate well with the theory that ethical behaviour is affected by age among other variables.

According to CIA World Factbook (2011) the religious make up of Zimbabwe is 50% syncretic; 25% Christian; 24 indigenous; and 1% Muslim and other religions. Kohlberg (1981:336) defines religion as "…a conscious response to, and an expression of the quest for the ultimate meaning for moral judging and acting. As such the main function of religion is … to support moral judgment and action as purposeful human activities." Religiosity is generally associated with higher ethical attitudes especially with regard to student cheating (Allmon et al., 2000: Barnett et al., 1996). In their study Conroy and Emerson (2004:361) concluded that" religiosity is significantly correlated with ethical perceptions." By definition religiosity is a person's degree of religious commitment or devotion ((Peacock and Poloma, 1998; Koenig et al., 1997). Koenig et al. (1997) came up with three dimensions or religiosity: organisational, non-organisational and intrinsic. This study is particularly interested in non- organisational religiosity that is the amount of time spent in private religious activities such as prayer and meditation (Rowatt and Kirkpatrick, 2002). Finally academic performance as far as it influences academic dishonesty is now explored. Klein et al. (2007) noted that "the lower the GPA *(grade point average)* and the younger the student, the higher the level of cheating." This finding is consistent with other similar studies done (Crown and Spiller, 1998; Whitley, 1998; Kerkvliet and Sigmund, 1999; Zastro, 1970). Even earlier studies have associated academic dishonesty with low intelligence of the student (Brownell, 1928; Hettherington and Feldman, 1964; Johnson and Gormly, 1972). The minimum entry requirements into the Bachelor of Accountancy Honours at the Zimbabwean university where this study was carried out is two advanced level passes among other things. Stiff competition over the years has meant that only students with the highest 'A' level points are admitted into the programme. As part of efforts to address the gender disparities female students with lesser points than male students are taken. It follows that the accounting programme takes some of the best academic performers at 'A' level.

3. The present study

A questionnaire was administered to accounting freshmen during the first semester at the university in 2013. The instrument was administered during the period of student registration prior to the commencement of lectures. This was before the introduction of online registration. Registration is done by the Chairpersons of departments and other lecturers. The researcher being a member of the faculty personally administered the questionnaire to accounting freshmen who registered when the researcher was on duty. The registration duty rooster is drawn up by the chairperson and no particular criteria are followed on who should be registering and on what particular day. Henceforth the researcher had no influence whatsoever on those who registered on this particular day.

The questionnaire used items adapted from a similar study by Klein et al. (2007). Nine of the items were from Klein et al. study and the tenth was put by the research probing a common phenomenon in free sitting tests and exercises observed over the years. Houston (1986) found that answer copying is related to the degree of acquaintanceship among students. The first section sought to ascertain students' perceptions of what constituted cheating using three possible responses:

- Cheating
- Trivial cheating
- Not cheating

The next section was probing the frequency with which students may have indulged in any of the ten behaviours. This was based a nominal scale with only two possible responses either "I have done this" or "I have not done this". Finally the last section was on demographic variables and covered:

- Age
- Gender
- Religion
- Non-organisational religiosity
- Advanced level points

Students were guaranteed of anonymity and were given the questionnaire to complete during the time they were waiting for faculty to do the registration formalities. Sixty one questionnaires were administered on the specific day and were all returned. Only two questionnaires were unusable. The sixty-one freshmen who took part in the survey represented about 33% of the full time freshmen admitted to the Bachelor of Accountancy programme during the that academic year.

4. Results

The average age of the respondents was 19.44 years within the age range of 18 to 23 years. Seventy one percent of the respondents were aged 19 and 20 years. Out of the 59 respondents 24 were males, 33 were females and 2 did not indicate their gender. Interestingly all respondents professed to be Christians. In terms of academic performance, 25 had 15 Advanced Level points (42.4%) and the remainder 14 points (34 students). A further analysis showed that 9 females (36%) had 15 points and a 15 (47%) had 14 points. On the other hand male freshmen with 15 points were 16 (64%), and 17 (53%) had 14 points. While the possibility of students indicating better passes could not be ruled out the passes were generally in sync with the academic profiles of students admitted into the programme that year.

Perceptions of cheating: Ninety three percent of the students considered "Copying another student's homework or assignments" as cheating. On a scale '3 is Cheating', '2 is Trivial cheating', and '1 is not cheating' the mean score was 2.93 with a standard deviation of 0.254. This was the highest mean for all the ten statements and also with the smallest standard deviation thus showing that there was a high degree of agreement on what constituted cheating as far as the statement was concerned. The results are similar to the mean of 1.63 obtained in Klein et al.'s study (2007) Sitting close to a friend during examinations was not considered as cheating by 66% of the respondents (mean 1.47 and standard deviation 0.728). The implication of this is that this may increase cheating more so because students do not perceive such as cheating (Partello, 1993; Rodabaugh, 1996).There is more likelihood that students who prefer to sit close together during examinations have an ulterior motive, that of collaborating one way or the other which is also cheating. Sitting arrangements or space is a situational factor that may affect cheating behaviour as noted by Houston (1986) who argues that students appear to cheat more in large and crowded classrooms. It would seem that students have a good understanding of what constitutes cheating in 6 out of the 10 statements with means between 2.80 and 2.93 and standard deviations between 0.254 and 0.581. Results of the perceptions are shown in Table 1.

Table 1: Students' perceptions: What constitutes cheating? (Means- 3 cheating, 2 trivial cheating, 1 not cheating)

Statement	Mean(n=59)	Standard deviation
1. Copying another student's homework or assignments	2.93	0.254
2. Allowing another student to copy your homework or assignments	2.66	0.633
3. Collaborating on assignments you are supposed to do alone	2.66	0.685
4. Taking notes and other materials not allowed into the examination venue	2.90	0.443
5. Looking or copying from someone else's examination answers during a test	2.90	0.402
6. Allowing someone else to copy from your examination answers during a test	2.80	0.581
7. Finding out what is on an examination before taking it	2.81	0.572
8. Telling another student what is on the examination before taking it	2.64	0.713
9. Programming extra help or information into a calculator, cell phone or some other device that you then use in an examination	2.85	0.519
10. Sitting close to a friend during examinations	1.47	0.728

Cross tabulations were also done to further analyse perceptions of students on what constitutes teaching. Chi-square testing was not done since the sample size was less than 100. As a rule of the thumb Chi-square tests are more useful with sample sizes of 100 and above. Fisher's Exact Test would have been the next best alternative but was not going to provide more useful results since the research was interested in getting an overview on entry, without delving much into the variables in the study. To this end therefore a relative analysis was done based on the number that perceived a statement as outright cheating. Male students had a relatively relaxed view on statements 4, 6,7,8,9 and 10 (Table 1) compared to female students. It can thus be inferred that a relaxed view on cheating may actual increase the propensity of the male students to indulge in the same. Females on the other hand were relaxed on statements 1, 2, and 5. There was no gender based difference on what constitutes, cheating on statement number 3. The results on gender seem to agree with previous studies that seem to suggest that males cheat more than females (Ford and Richardson, 1994).

Those students with 14 points at Advanced Level had a relaxed view of cheating on statements 1 to 5 and 9. On statement 6 there was no difference in perception between freshmen with 15 and 14 points. Freshmen with 15 points were more tolerant in their definition of cheating on statements 8, 9 and 10. This finding is consistent with other studies for example, Crown and Spiller (1998) who found that students with relatively lower grade point averages cheat more (see also Klein et al., 2007). It was also noted that freshmen aged 21 to 23 years were consistent in defining statements 1,4,5,6 and 9 as outright cheating compared to the 18 and 19 years age group (88.1%). Age in earlier studies is also a factor that has a bearing on cheating, the young the student the higher the level of cheating (Crown and Spiller, 1998; Whitely, 1998; Klein et al., 2007). Freshmen aged 18 years perceived statements 4 and 5 as outright cheating like the 21, 22, and 23years age groups. There was no clear pattern on the rest of the statements between the various age groups. Students who prayed once a week perceived statements 1 to 5 and 7 as outright cheating. This was followed by those who prayed more than once a week with statements 1, 3 and 4 considered as outright cheating. Interesting enough freshmen who claimed to pray daily only, out did the other groups on statement 6, 9 and 10.

Frequency of cheating: About 51% of freshmen had allowed another student to copy homework or assignments (Mean 3.49 and Standard deviation 0.504).Similarly, Klein et al. (2007) in their study 51.5% students had allowed another student to copy homework or assignments. Trailing next was collaborating on individual assignments with 44.1% and a mean of 3.49 and standard deviation at 0.504.Students often do not feel that collaborating on assignments is cheating (McCabe and Cole, 1995). A further 40.7% had sat close to a friend during examinations (Mean 3.59 and Standard deviation 0.495). Freshmen (30.5%) admitted to copying another student's homework or assignments (Mean 3.69 and Standard deviation 0.464).Behaviours least indulged in by freshmen were statements 4, 5,7and 9 (Table 2).Lin, et al., (2006) found freshmen to have more academically dishonesty behaviours in the above behaviours save for that on sitting close to a friend. The results are more telling of the fact that freshmen come to university with cheating behaviours already ingrained in them.

Students aged 21 and above reported not to have indulged in cheating forms, statement 4, 7, 8 and 9. The 19 and 20 years age group representing 71.1% of the sample admitted to allowing another student to copy their homework or assignments (60% and 50% respectively). Between these two age groups the 19 years group had the highest percentage of cheating behaviour on statements 2,3,4,5,7,8,9 and 10 which seems to confirm earlier researches younger students cheat more compared to older students (Baird, 1980). Comparing the 18 years age group to the 19 year age group, the young freshmen appeared to have cheated less on statement 1,2,3,8 and 10.

Table 2: Students' cheating behaviour (3=I have done this; 4=I have not done this)

Statement	Mean(n=59)	Standard deviation
1. Copying another student's homework or assignments	3.69	0.464
2. Allowing another student to copy your homework or assignments	3.49	0.504
3. Collaborating on assignments you are supposed to do alone	3.56	0.501
4. Taking notes and other materials not allowed into the examination venue	3.95	0.222
5. Looking or copying from someone else's examination answers during a test	3.95	0.222
6. Allowing someone else to copy from your examination answers during a test	3.93	0.254
7. Finding out what is on an examination before taking it	3.95	0.222
8. Telling another student what is on the examination before taking it	3.90	0.305
9. Programming extra help or information into a calculator, cell phone or some other device that you then use in an examination	3.95	0.222
10. Sitting close to a friend during examinations	3.95	0.495

Cross tabulation of cheating behaviour against Advanced Level points shows that 14 pointers admitted to cheating more than those with 15 points on statements 2,3,4,5,6,7,9 and 10. This seems to confirm earlier research findings that students with lower grade point averages are more likely to cheat (Crown and Spiller, 1998). Freshmen with 15 points had copied another student's homework or assignments and told others what was on the examination more times compared to those with 14 points. Significant differences between these two groups were on statement number 3 where 50% of students with 14 points had collaborated on individual assignments compared to those with 15 points at 36%. This was followed by statement 1 where 36% of freshmen with 15 points had cheated compared to the other group with 26%. The question is how reflective are high school results of the actual academic ability of students within the Zimbabwean context.

Male freshmen reported cheating more times compared to females on statements 1, 3, 4, 5, 6, 7, and 9 which behaviour is consistent with earlier studies (Baird, 1980) Female students had cheated more than males on statements 2, 8 and 10. Fifty eight percent of the female respondents had allowed another student to copy their homework or assignments (males, 48%). While more male freshmen had collaborated on individual assignments and more females had sat close to friends during examinations the differences are not great (collaborating males 45%, females,42%; sitting close males 39%, females 42%). Nine percent of the males reported programming extra help (statement 9); copying someone during a test; and finding what is on the examination before taking it, behaviours which none of females had indulged in.

Freshmen who prayed daily cheated more than the other groups on statements 1 and 3 (34% and 49% respectively). The group that prayed once a week were at their worst in relation to the other groups on statements 5, 8 and 9 (14%, 29% and 29% respectively). Those who prayed more than once a week but not daily had not indulged in cheating behaviours in statements 3, 5, 6, 7, 8, and 9, and were the worst cheaters on statements 2 and 4 only. Students who prayed once a week had not taken prohibited materials into the examination venue, neither had they allowed someone to copy their examination answers nor finding what is on the examination before taking it. Interesting enough the group that reported praying daily had partaken in all the ten behaviours. There was no difference on statement 10 between those who prayed once a week and those who prayed daily. Eighty four percent of the students with 15 points prayed daily compared with those with 14 points (76%). On the other hand 92% of the females (n=24) prayed daily, so did 70% of the males. The highest percentage of those who prayed once a week, were found to be males at 18%. All the students aged 21 years prayed daily followed by the 18 years group at 90%; then 19 years at 80% and 20 years at 76%. It is worth noting that the study was based on self-reporting and there is a tendency of respondents to under report. Social desirability bias can also not be ruled out. Perhaps those students who claimed to pray once were probably telling the truth compared to the rest as shown by behaviours they had not indulged in. Again the result in many ways resonates with Moring's study (1999) where 80% of the Christian students admitted to cheating in high school and college.

5. Conclusion and Recommendations

The results of the study have shown that freshmen had a fairly good definition of what constituted cheating as captured in ten survey statements. However the most agreed form of cheating was copying another student's homework or assignments. Sitting close a friend during an examination was not considered cheating by most of the respondents. On the face value it is not cheating but what would be the motivation to sit close to a friend in an examination. This brings to the fore the argument that what constitutes cheating is dependent on one's perspective (McCabe, 2005; McCabe and Trevino, 1993). It is therefore not surprising that 40.7% of all the respondents admitted to having done this. Cheating behaviour is increased where students perceive certain behaviours as not cheating (Partello, 1993; Rodabaugh, 1996). Even given the good level of what academic dishonesty is by freshmen there is still need for institutions of higher learning to include and clearly define academic dishonesty in their ordinances. The department and the university in question should come up with clear definitions and policies to curb academic dishonesty (Klein et al., 2007). Indeed as observed by McCabe and Trevino (1996) students are unlikely to cheat where they are aware of the institutions policies on academic dishonesty.

At the university in question, during sessional examinations the problem of friends sitting close together is minimised by having the students sit in alphabetical order. However where students are not registered they are likely to sit anywhere as there would be no printed examination slips with their names. The forced sitting arrangement is also defeated were students come in late into the examination venue or purport not to have seen their attendance slips. The sitting space between candidates in examinations is also a factor, more space in between reducing the incidence of cheating. The university in question has inadequate facilities with most build before independence to cater for a very small student population. With freshmen showing this propensity it is imperative that faculty puts in place pre-emptive measures and minimise giving intra-sessional examinations were students sit freely. It would be worthwhile to have students sit close to those sitting for a different paper. For instance Row A will have students sitting for say Management, followed by Row B sitting for Introductory Financial Accounting, then Row C say Corporate Finance and the order is repeated from row D onwards. Such a sitting arrangement though cumbersome can be done for both sessional and intra-sessional examinations. Caution should be however exercised on the examination duration the staggering should be ideally for papers with the same duration. In addition care should be taken not to mix answer sheets from different papers. Decreasing the invigilator student ratio would also assist as well as maintaining a gender balance in the examination venue. It is conceded that there are already other measures already in place and the study recommendations are meant to buttress such.

Male freshmen were found to be more relaxed in their definition of what constitutes cheating compared to females. In seven out of the ten statements more male students had cheated compared to females. This finding is in agreement with other studies that have found male students cheated more than females (Anderson, 1957; Baird, 1980; Ameen et al., 1996; Al-Qaisy, 2008). While all the respondents were Christians, the ratio of female students that prayed daily was relatively high compared to males (92% and 70%). This finding may be explained by prior research indicating that higher levels of religiosity are associated with stronger ethical attitudes (Conroy and Emerson, 2004; Smith and Oakley, 1996). It must however be emphasized that the studies referred to above did not measure religiosity on gender lines. In the current study the suggestion is that females in the sample reported less cheating compared to males probably because they were more religious than them. The majority of freshmen admitted into the accounting programme at the university were males. While there is very little or nothing public universities can do on gender and religiosity faculty should be on guard and maintain a gender balance in say group assignments.

As reported earlier on freshmen with 14 points or less were found to have cheated more times in eight out of the ten statements compared to those with 15 points. Zastro (1970:157) in a review of five studies concerning undergraduate students concluded "cheating is less prevalent among students with high grades," a finding which is mirrored in the current study. Students whose academic performance is low have been found to cheat more compared to high performers (Crown and Spiller, 1998; Klein et al., 2007; Baird, 1980). In the current study 15 female students (47%) and 17 male students (53%) had 14 points. Freshmen with 14 points prayed daily less compared to those with 15 points. This finding is consistent with Bloodgood et al. (2010) were they found that highly intelligent individuals displayed less cheating if they were also highly religious. These results may be indicative of a gap in knowledge which needs to be filled that of academic performance versus gender and religiosity.

The most egregious behaviours freshmen had engaged in were: allowing another student to copy one's homework or assignment (51%); collaborating on individual assignments (44.1); copying another student's homework or assignments (30.5%); and sitting close to a friend during examinations (40.7%). Klein et al. (2007) also found that copying or allowing another to copy as well as collaborating on assignments were the most common cheating behaviours. These figures may be the tip of an iceberg considering that the probability of under-reporting in self reporting studies can be as high as 83% with a low of 39% (Sheers and Dayton,) This can also be confirmed by the difference between those who admitted copying other students' homework or assignments and those who allowed the same. Copying and being copied is often a reciprocal exchange and there is every possibility that those who allowed copying also copied. The prevalence of the behaviours above prior to university instruction has several implications. First and foremost when faculty give assignments the feedback they get may not be reflective of the student's own performance. This fact is further compounded if the assignments contribute towards coursework thus threatening "scholarship as well as the validity of academic performance" (Oakley, 2011:46). This also means the cheater being is a "free rider and therefore gets higher marks than he or she deserves" (Magnus et al., 2002:125). It must be emphasised that even when students should work individually on assignments or homework they still collaborate and work together (McCabe and Cole, 1995).

Another fact is that the freshmen in this study had probably engaged in the said behaviours at high school where admittedly there is less pressure. At high school students only sit for two major examinations: Ordinary Level after 4 years of study and Advanced Level after 2 years of study. There is likely to be more pressure on the students at university considering that they have two examination sessions every academic year. This pressure and any other factor which may serve as a handicap will invariably "produce dishonest behaviour" in the student (Parr, 1936). Faculty are therefore advised to reduce as much as possible the weighting on assignments contributing towards coursework and give more tests and exercises under examination conditions. This is a plausible recommendation but it poses a few challenges in public universities particularly in Zimbabwe where a programme may have over 300 students and the teaching load per lecture is 3 classes (that is about 900 students) often without a teaching assistant. Qualitative courses can make use of anti-plagiarism software in checking for other forms of academic dishonesty but this is not easy with courses like accounting. It is not easy for faculty to detect most of the cheating behaviours and thus the need "for faculty to be very explicit about their policies regarding outside-classroom work and academic honesty" (Klein et al., 2007:204). While the number of students that admitted to finding what is on the examination and telling another student the same was low such behaviours were likely to be common at university level as in Klein et al. study (2007). There was a high likelihood of students assisting one another in an examination (Jendreck, 1992). To this end therefore faculty should desist from recycling examinations, tests, assignments, etc. Universities need a clear policy on the issue of recycling examinations with some suggesting a minimum period of three years.

The current study has shown that accounting freshmen had academic dishonesty ingrained in them prior to any university instruction. Further studies on freshmen in various disciplines may help to shade more light on whether accounting students are indeed different from the other groups. Research has also shown that other situational factors have a bearing on academic dishonesty such, writing a tough examination in a small room, lack of adequate supervision or invigilation (Baird, 1980). Thus it is imperative when considering the number of students to enrol to consider the facilities available and their capacity. Even where facilities permit large classes have been found to increase the incidence of cheating (Nowell and Laufer, 1997). One intervention to large classes has been the use of teaching assistants but caution still needs to be exercised. Magnus et al. (2002) found that students taught by teaching assistants were 32% more likely to cheat than students taught by faculty.

The results of this study should be considered in light of several factors. First and foremost the study used the self-reporting approach which is the most common approach and has been shown to provide reasonably accurate estimates (Cizek, 1999). Students may either under or over-report depending on their experiences (Whitley, 1998; Williams and Paulhus, 2004). Reliability is also a problem in self –reporting surveys and academic dishonesty under- reporting varies between 39% and 83 % of students' surveyed (Scheers and Dayton, 1987). What this may mean is that reported levels or extent of academic dishonesty may be worse than or higher than survey results obtained at any particular point in time. The focus of the study was to highlight that accounting freshmen come to university already initiated into the rites of cheating or academic dishonesty as it were. Research is required on whether university education reduces or increases their propensity to engage in unethical practices.

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Journal of Economics and Behavioral Studies (JEBS)
Vol. 8, No. 6, December 2016 (ISSN 2220-6140)

Gender Differences in the Perceptions of Entrepreneurship Hindrances: A Case of Vocational Education Students in Zimbabwe

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Abstract: Despite the compelling evidence on the capacity of gender biases rooted in subjective beliefs and assumptions to shape recognition and evaluation of business opportunities, there is limited research on whether females and males in resilient, economically troubled economies such as Zimbabwe conceive entrepreneurial constraints differently or in similar ways. In view of literature that highlights some marked gender variations in perceived feasibility and desirability of participating in entrepreneurial ventures, the current study explored whether femalestudents at Zimbabwean vocational education institutions would be more inclined to perceive entrepreneurial barriers differently than their male counterparts. A total of 365 students identified through simple random sampling were invited to participate in the study. On completion of the survey, 160 questionnaires were successfully completed, presenting a response rate of 43.8%.The findings reveal that there were no significant differences between male and female students in their perceptions of entrepreneurship support, regulatory and socio-cultural barriers. However, males had stronger perceptions of financial barriers while females had stronger perceptions of personal barriers. The implication of these findings is that the Government of Zimbabwe should institute and implement more gender parity-based measures to ensure prospective entrepreneurs' transformative reflection on venture creation, and more inclusive access to and participation in entrepreneurial activities.

Keywords: *Gender differences, entrepreneurship barriers, students, Zimbabwe*

1. Introduction

While the contribution of gender parity to entrepreneurship is conceived to be critical to the advancement of entrepreneurship, hitherto job creation, economic growth and innovation in developing economies (Daim, Dabic, & Bayraktaroglu, 2016; United Nations Development Programme African Human Development Report, 2016), gender gaps still persist in entrepreneurial activity (Rubio-Bañón & Esteban-Lloret, 2016) in Africa. Rubio-Bañón and Esteban-Lloret (2016) are concerned that although the female and male entrepreneurship rates vary across countries due the influence of different roles and stereotypes on entrepreneurial behaviour, feminine entrepreneurship tends to be slower than masculine entrepreneurship. The South African entrepreneurial experience also exhibits persistent gender disparities in engagement in total entrepreneurship activity. Herrington et al. (2010) reports that South African men are 1.5 times more likely than women to be involved in early-stage entrepreneurial activity. The same entrepreneurial gender gaps are replicated internationally. Worldwide, notwithstanding the importance of their contribution in terms of entrepreneurship variety, the numbers of female entrepreneurs were lower than those of male entrepreneurs in almost every country especially in terms of Total Entrepreneurial Activity, except for Ghana, Costa Rica, and Australia (Kelley et al., 2010; Daim et al., 2016).

Understanding the relationship between gender and entrepreneurship activity is critical particularly in view of the inclusive research in this domain. Elam (2008) argue that an analysis of changes in predicted probabilities of nascent entrepreneurship across countries by gender and perceptions reflect similar patterns found among the general population. Elam (2008) elaborates that men were found to be more optimistic, confident and to possess social capital conducive to engage in nascent entrepreneurship than women in most countries. More so, an examination of Empirical Bayes predicted probabilities of nascent entrepreneurship across gender, perceptions and countries indicated that the gender gap in nascent entrepreneurship was actually more pronounced among those individuals with favourable perceptions of business start-up than those without. In other words, men and women who feared failure and stated a lack of start-up skills did not expect to see opportunities for business start-upshared similar possibilities of nascent entrepreneurship than their more confident optimist counterparts (Elam, 2008). While this study demonstrates how gender predicts entrepreneurial activity, other studies demonstrated gender variations in the perceived desirability of entrepreneurship activity across countries. For instance, Daim et al. (2016) explores how perceived feasibility and desirability impacted entrepreneurial behavior of students of different gender in 10 countries. Perceived desirability differences between genders per country showed that with regard to levels of difficulty associated with entrepreneurialactivities, there were statistically significant differences between genders in Croatia, whereas there were no statistically significant differences between gendersin Austria, France, Israel, Lithuania, Poland, Slovenia, India,and the rest of the world.

More so, the perception that men make better entrepreneurs than women might further account for the gender gap in entrepreneurship which shows no signs of shrinking, and has important implications for policymakers' efforts to close it (Shane, 2015). Using three randomized experiments (two in the United States and one the United Kingdom) Thébaud (2015) empirically tested the theoretical argument that widely shared cultural beliefs about men's and women's abilities in entrepreneurship (i.e., "gender status beliefs") systematically influence the social interactions during which an innovative entrepreneur seeks support from potential stakeholders for his or her new organisation. The studies, which manipulated the gender of the entrepreneur and the innovativeness of the business plan, consistently revealed that gender status beliefs disadvantage typical women entrepreneurs vis-à-vis their male counterparts. However, innovation in a business model has a stronger and more positive impact on ratings of women's entrepreneurial ability and overall support for their business ideas than it does for men's. In view of the importance of aligning entrepreneurial ventures to investors' preferences during early stages of business start-up, Brooks, Huang, Kearney, and Murray (2014) conducted experiments which involved participants watching videos of business start-up pitches during a business plan competition. The researchers randomly assigned voices of different gender to narrate otherwise identicalpitches. In another experiment, participants watched a single video in which the entrepreneur's gender was randomly assigned. Their findings suggest that across the different settings (three entrepreneurial pitch competitions in the United States) and two controlled experiments, investors preferred entrepreneurial pitches presented by male entrepreneurs compared to pitches presented by female entrepreneurs, even when the content of the pitches were the same. This result was moderated by physical attractiveness and attractive males were considered particularly persuasive whereas the physical attractiveness of female entrepreneurs did not matter.In a study that examined technology licensing officers' preferences of academic inventors' spinoff companies, Shane, Dolmans, Jankowski, Reymen and Romme (2015) found that technology licensing officers were significantly more likely to dissuade the inventor from starting a company to exploit an other wise identical venture by an otherwise identical inventor if the inventor were female rather than male.

In view of the reality that increasing the number of female entrepreneurs implies heightened entrepreneurship variety in economy (Verheul et al., 2004; Daim et al., 2016) and that the possession of positive entrepreneurial beliefs and values (e.g. value opportunity recognition, strong self-efficacy) shapes perceived entrepreneurial capabilities (see Ajzen, 2006; Farrington, Gray and Sharp, 2012), there is scope to examine the influence of gender on perceptions of entrepreneurship barriers especially in resilient, economically depressed economies like that of Zimbabwe. While the growing body of literature that examined the Zimbabwean entrepreneurial context focuses on the entrepreneurial challenges facing the general population (Chitsike, 2000; Nani, 2011; Zindiye, Chiliya & Masocha, 2012; Nyamanzwa, Mapetere, Mavhiki & Dzingirai, 2012 Manuere et al., 2013), these studies tend to ignore the effect of gender on the perception of entrepreneurial barriers amongst pipeline entrepreneurs (e.g. university students), the research gap that this study attempts to close.The complexity of addressing the influence of gender perceptions on entrepreneurial barriersarises from the different domains in which female and male-led enterprises are often located in the economy. Male entrepreneurs tend to pursue ventures across a broad spectrum of industries, whereas female entrepreneurs predominantly pursue ventures that focus on female consumers such as fashion, cosmetics, and cooking (Brooks et al., 2014) and the Zimbabwean entrepreneurs are no exception. The uniqueness of the Zimbabwean entrepreneurship scenario arises from a combination of factors: a cash-strapped national government which seems to recognise entrepreneurship but struggles to productively fund emerging entrepreneurs (Ndofirepi, 2016), prevalence of vendor graduates which conjures images of the paucity of the entrepreneurial opportunities (Rambe, Ndofirepi and Dzansi, 2015), the general underrepresentation of women in innovation driven entrepreneurship and the prevalence of informal, low capital intensive businesses, which render low economic returns (Rambe and Ndofirepi, In Press).

To further our understanding on the gender-entrepreneurial barriers relationship, this study sought to establish whether the female students at a Zimbabwean Vocational Education institution perceived entrepreneurship impediments differently when compared to their male counterparts. The research, therefore, addressed the following research questions;

Do female students have a stronger perception of entrepreneurship support barriers than males?

Do female students have a stronger perception of regulatory barriers to entrepreneurship than males?

Do female students have a stronger perception of personal barriers to entrepreneurship than males?

Do female students have a stronger perception of financial barriers to entrepreneurship than males?

Do female students have a stronger perception of social cultural barriers to entrepreneurs than males?

The rest of the paper is structured as follows: Firstly, the extant literature on the relationship between gender, economic development and entrepreneurship is reviewed. This is followed by an outline of the research methods and processes applied in the study. Thereafter, the findings are then discussed. Lastly, implications, limitations and recommendations for further studies are offered.

Theorisation of Perceptions of Entrepreneurial Barriers: Our study on gendered perceptions of entrepreneurial barriers is informed by two entrepreneurial intention models, Shapero and Sokol (1982) entrepreneurial event model and David Harper's (2003) theory of entrepreneurial discovery. Shapero's model suggests that entrepreneurial intentions are directly shaped by perceived feasibility, perceived desirability of entrepreneurial activity and propensity to act (Shapero and Sokol, 1982; Dabic et al., 2012). Perceived feasibility is tied to belief in individual capacity and capability to influence desirable behavioural outcomes, that is, entrepreneurial behaviour. This concept closely approximates perceived behavioural control concept of the theory of planned behavior. Perceived desirability closely relates to one predisposition to act in a particular way. The perceived desirability can be aligned tothe propensity to act (Fitzsimmons and Douglas, 2011; Dabic et al., 2012). The concepts perceived feasibility, perceived desirability of entrepreneurial activity and propensity to act are invariably shaped by the prevailing entrepreneurial climate including the associated social cultural norms, financial, institutional and intellectual challenges that prevail in the social environment.

Haper's (2003) theory of entrepreneurial discovery focuses on individual values, in particular that individuals (of particular gender) with a strong sense of control and self-efficacy are the most likely to be alert to entrepreneurial opportunities (cited in Elam, 2008). The theory emphasises the presence of a sense of personal agency as a primary factor that drives an individual'swillingness to engage in entrepreneurship (O'Driscoll and Rizzo, 2015). This implies that individuals with high sense of control and self-efficacy may conceive ideal business opportunities and potential economic gains in complex, troubled economic situations whereas those with lower sense of control and limited self-efficacy may perceive economic challenges exclusively. This is particular so, given that risk taking, one of the key elements of the entrepreneurial process, is associated with a willingness to commit more resources to projects where the cost of failure may be high (Madichie, Hinson & Ibrahim, 2013). Harper (2003, p. 14) observes that this personal agency "comprises two cognitive elements- beliefs in the locus of control (or contingency expectations) and beliefs in self-efficacy (or competency expectations)." This implies that entrepreneurial discovery is a consequence of a combination of ideal contextual influences that support entrepreneurial propensity, self-beliefsand personal competencies to effect changes that bring entrepreneurial results. For a potential entrepreneur with low self-efficacy, therefore, the prevalence of unconducive situational conditions may serve as barriers to his/her pursuit of entrepreneurship discovery.

At the macro level, the entrepreneurial discovery theory conceives freedom to act as a key value driving the rates of alertness and entrepreneurship activity in a given society (Harper, 2003, Elam, 2008). Harper examines how freedom as an institutional value shapes the constitutional, legal, economic, social and political rules of the game that affect people's perceived causal capabilities (Harper, 2003; Elam, 2008) with regard to entrepreneurship. The reasons for fewer female entrepreneurs worldwide are unequal access to finance, some legal restrictions and discriminatory practices and unequal access to and use of technology (United Nations Development Programme *Human Development Report*, 2016). The Report elaborates that 42%of women worldwide did not have a bankaccount in 2014 and the proportion waseven higher in developing countries (50%). More so, in the 22 countries covered by the Global Entrepreneurship and Development Index, married women did not enjoy the same legalrights as married men, and in 8 countrieswomen did not enjoy the same legal access toproperty as men (United Nations Development Programme *Human Development Report*, 2016). These statistics are typical examples of how socio-economic and legal barriers may block female potential entrepreneurs from engaging in entrepreneurship or psychologically processing their entrepreneurial propensity.

In the African context, the limited freedom of women to conceptualise and engage in entrepreneurship manifests in the high gender inequity in SMME ownership partly due to constraining employment opportunities and slow integration of small-sized enterprises into the formal economy (United Nations Development Programme *African Human Development Report*, 2016). A World Bank study (2015) found that among the 40 sub-Saharan countries, only eight demonstrated gender balance in SMME ownership or a situation favourable to women.By the same token, a survey conducted on new entrepreneurial start-ups in the technology sector (including software development and services, e-commerce and online services, gaming, and telecoms and mobile services) in the Arab states in 2013 revealed that 75% of these companies had male founders while only 23% of entrepreneurs were female (Wyne, 2014). This gender inequity in ownership, itself a consequence of multiple socio-economic (e.g. limited access to loans for female potential entrepreneurs), legal (e.g. demands for collateral security which most female entrepreneurs may not have) and political constraints set a bad precedence for entrepreneurial propensity and may project negative connotations about women's engagement in and willingness to create new ventures. The logical consideration of individuals' values and institutional processes in this theory demonstrates the complementarities of personal and macro factors in business opportunity recognition and business start-up, the same way individual factors (e.g. one's gender) may shape the perceptions of entrepreneurial barriers, which mayundermine one's willingness to pursue new venture creation.

2 Literature Review

Gender and economic development: The question of whether gender parity improves economic activity remains a contentious issue. Literature reveals that many arguments for equal participation of women and man in economic activity have been values-driven rather than function-based (Chant & Sweetman, 2012; Roberts & Soederberg, 2012; Bergeron & Healy, 2013). Generally, there is a perception that encouraging women to participate in economic activity brings gender diversity in the economy, which is an ideal quality to society. This is particularly in view of the concentration of women in labour intensive and less capital and technology intensive industries. For instance, Wyne's study (2014) reported that the low female representation in technology oriented start-ups (e.g. software development and services, e-commerce and online services, gaming, and telecoms and mobile services) pointed to the need for more inclusive educational programmes and gender diversity to expand the pool of innovation. By the same token, Brooks, Huang, Kearney, and Murray's (2014) study conducted in the United States affirms that male and female-led ventures tend to focus on differenttypes of market opportunities with differing levels of growth potential. They elaborate that male entrepreneurs tended to pursue venturesacross a broad spectrum of industries, whereas female entrepreneurspredominantly pursued ventures that focus on thefemale consumer, such as fashion, cosmetics, and cooking.This research demonstrates that distinct gender gaps persist in men and women's economic contribution to national economies within countries.

There is growing consensus thatsmart economics encourage gender parity in economic participation, which doubly benefits both women and the country at large through invigorated economic output, better-quality development for the future generations, and augmented gender diversity in institutions and policies (Harcourt, 2012; Ravenga and Shetty, 2012a,b).The inverse is also true-gender inequity accelerates unbalanced growth, uneven development and results in net financial outflows.The African Human Development Report (2016) reports that the pervasive gender gap in economic and entrepreneurship activities is constrainingAfrica's achievement of its full economicpotential – averaging a loss of about $95 billion annuallysince 2010 in Sub-Saharan Africa alone.The Global Gender Gap Report (2013)illustrates that the economic disempowerment of women through failure to invest in their education costed the Asia and Pacific region US$16 billion to US$30 billion annually (Bekhouche, Hausmann, Tyson, & Zahidi 2013). Apart from that, the Global Gender Gap Report (2014) proclaims that the narrowing of the male and female participation gap in the labour force accrues the USA and European Union approximately 9% and 13% of GDP per annumrespectively (cited in World Economic Forum, 2015).The picture cast in the aforementioned studies is that although much progress has been made in empowering women in the economic spheres of life, they still lag behind men.

Gender and entrepreneurship: Personal factors such as individual traits, psychological, behavioural and motivational influences (Langowitz & Minniti, 2007; Urban, 2010; Farrington, Gray and Sharp, 2012), socio-economic and institutional factors are often highlighted as the explanations for gender based differences in perceptions of entrepreneurial opportunities and barriers (Pérez-Pérez & Avilés-Hernández, 2015). Akehursta, Simarrob and Mas-Tur (2012) cite psychological factors such as personal drive (to have control over one's destiny, make personal decisions and achieve the most out of oneself) and perceptual aspects (the ability to identify entrepreneurial opportunities in the business environment, risk-perception, perceived entrepreneurial capabilities, tolerance for ambiguity and uncertainty) as key influences of the ability of women to engage in entrepreneurship.

Psychological factors include male and female students' perceived self-efficacy and locus ofcontrol to create and operate businesses successfully. For Ajzen (1991), the psychological aspects relate to "how hard people are willing to try and how much effort they are planning to exert, in order to perform the behavior" (Ajzen, 1991, p. 181)such as new venture creation.If the psychological aspects capture the perceived ease of creating a business in view of the socio-economic context and socially ascribed gender roles and responsibilities, then females and males may be differentially positioned with regard to their perceptions of establishing business businesses. The Human Development Report (2015) highlights that comparingunpaid care work (e.g. housework, such as preparing meals for the family, cleaning the house and gathering water and fuel, as well as work caring for children, older people and family members who are sick) and paid work there continues to be pronounced imbalances across genders, reflecting local values, social traditions and historical gender roles in Africa. In view of the intermingling of psychological beliefs and social construction of gender roles, entrepreneurial barriers and opportunities may be conceived differently by female and male students.

Behavioural intentions are often proposed as a means of explaining why some individuals embark on entrepreneurial activity and others do not (Ariff, Bidin, Sharif & Ahmad, 2010; Engle et al., 2010; Farrington, Gray and Sharp, 2012; Fretschner, 2014). For instance, the Theory of Planned Behaviour is one of the popular theories for explaining entrepreneurial intentions and decisions to engage in and reluctance to engage in entrepreneurship behaviour (Ajzen, 1991; Lortie, and Castogiovanni, 2015; Tsordia and Papadimitriou, 2015). According to this theory, a person's attitude towards a behavior, subjective norm, and perceived behavioural control are significant factors that determine his intentions (Ajzen, 1991) to engage in entrepreneurship. Attitude towards behaviour is perceived as "the degree to which a person has a favourable or unfavourable evaluation or appraisal of the behavior in question" (Ajzen, 2002, p. 5) such as engagement entrepreneurial behaviour. If a student conceive participation in new venture creation to be ideal to their situated context and given circumstances (e.g. resource base, general environment), she would be more inclined to engage in such behaviour than if evaluated the contexts and circumstances to be negative.

Farrington, Gray and Sharp's (2012) study reported different motivational factors for female and male engagement in entrepreneurship. While female students expressed the needs for increased flexibility and autonomy as their main motivations for intending to engage in self-employment, male studentsperceived self-employment to provide them with more time to meet business responsibilities. Farington et al.'s (2012) study reported that due to household and child-rearing responsibilities which still dominate most women's social life, female business owners perceived having their own business to allow them autonomy, flexibility to vary activities and freedom to regulate working hours more than males did. To the contrary, men were less likely to see themselves as being responsible for household and child-rearing duties but were more likely to see their role as providing for their families. This created the perception that having their own business would require more work and less flexibility in order to meet these commitments. Again, women's family roles such as manning the household mean that they have to share the time available to them between parenting and engaging in economic activity (Nani, 2011). Thus, time constraints restrict women to less time consuming informal sector entrepreneurial activities rather than starting a formal business. More so, female roles such as being key providers for families entice them to seek to secure consistent and reliable sources of income (Elborgh-Woytek et al., 2013). Hence, they may shun risky and growth-oriented ventures and focus on those simple projects that guarantee extra income to the family.

Social desirability and viability: At the socio-economic level, issues of social desirability and viability of entrepreneurial ventures created by men and those incubated by women is brought into sharp focus. A study conducted by Dabic, Daim, Bayraktaroglu, Novak and Basic (2012) study on gender differences in university students' attitudes towards entrepreneurship revealed that compared to males, female students are less willing to start their own businesses. They identified significant gender differences in terms of perceived feasibility and perceiveddesirability especially that although they feel more supported by their families, females are less self-confident,tenser, and reluctant to engage in entrepreneurship compared to males. In terms of entrepreneurial intention, thereare fewer gender differences among students; although differences relating to self-confidence and family support still exists. Sánchez-Escobedo, Díaz-Casero, Hernández-Mogollón and Postigo-Jiménez (2011) examined perceptions of the public image of the entrepreneur, along with the desirability, viability and intentionality of students towards creating their own business to establish possible gender differences in the perceptions and attitudes of university students towards entrepreneurship. Data analysis using bivariate and multivariate techniques revealed that gender plays a significant role in how the figure of the entrepreneur is perceived and in the intention to generate new businesses.The theory of planned behaviour emphasises the importance of subjective norm, that is, significant and knowledgeable others (educators, business consultants, friends and family) in shaping students' uptake of entrepreneurial behaviour (see Ajzen, 2001; Solesvik, Westhead, Kolvereid & Matlay, 2012; Tsordia & Papadimitriou, 2015). Female and male students may be differentially positioned in their subjective norms' influence on therecognition of entrepreneurial opportunities and barriers. The socially constructed gender roles and societal expectations of men and women can position them differently in their motivations for identifying entrepreneurial opportunities' or barriers and acting on them. Daim, Marina Dabic and Elvan Bayraktaroglu (2016)'s study, which tested student gender against entrepreneurial desirability and feasibility in 10 countries, revealed significant differences between genders and countries in their perceptions of desirability and feasibility of entrepreneurial behavior.

Gender differences are also noticeable at the motivation to engage in entrepreneurship as well at the qualitative non-economic entrepreneurial outcomes. A study conducted by Herrington and Kelley (2012) on the factors driving sub-Saharan African entrepreneurship revealed that women engaged in entrepreneurship to raise income to look after their families, pay for their children's schooling, to achieve financial autonomy and to improve their status in society. As such, women tend to engage in necessity-driven entrepreneurship compared to opportunity-driven entrepreneurship. With reference to the relationship between gender and entrepreneurship outcomes, the research evidence is inconclusive. Bosma et al. (2013) study on the growth expectations of male and female entrepreneurs in both factor and innovation driven economies revealed that females had relatively lower growth expectations as compared to their male counter parts. Meek and Sullivan (2013) observed that while many studies find significant differences between men and women in economic outcomes of entrepreneurship, explanations for these differences vary widely. Their study reports that male and female entrepreneursdiffered with regard to several relationship-oriented, non-economic entrepreneurial outcomes, while showing no differences in regards to traditional economic outcomes.

Gender and entrepreneurial opportunity and barriers: The intricate connection between gender and entrepreneurship can be explored from the personal, institutional, regulatory and societal perspectives. At the personal level, psychological and cognitive aspects, concrete motivation (desire for progress and autonomy, need for achievement and fulfilment etc.) and individual subjective perception (risk tolerance, self-confidence, recognition of business opportunity etc.) are conceived to be instrumental in shaping student decisions to engage in or desist from entrepreneurship (Pérez-Pérez and Avilés-Hernández, 2016). The institutional imperatives tend to consider the role of the family in supporting and socialising women into entrepreneurial behaviour. The family can foster or hinder the females' willingness to undertake new ventures through providing or withholding the economic resources to start a business (Pérez-Pérez and Avilés-Hernández, 2016). Research evidence suggests that women experience more complexity in their career choices in view of work value-time than men due to the need to balance their work and family roles (DeTienne & Chandler, 2007). However, family can also serve as anagent of socialisation that can stimulate women's entrepreneurial spirit, activating their keenness to continue with the existing family business or daring to create their own (Pérez-Pérez & Avilés-Hernández, 2016).

Regulatory factors focus on administrative and legal frameworks, processes and procedures that facilitate and hinder the pursuit of new venture creation. The gender mainstreaming laws in Zimbabwe recognise the need for and provide proactive interventions for increasing female participation in economic activity, though clear gender-sensitive policies in the funding of emerging businesses are yet to emerge. This scenario can be contrasted with the Vietnamese case. A Gender Equality Law passed by the National Assembly of Vietnam in 2006 makes several provisions that make female participation in entrepreneurship a profitable activity. The Vietnam Women Entrepreneurs Council's (VWEC) (2007) highlights that Article 12 of this law specifies that "women and men are equal in establishing enterprises, conducting production and business activities, managing enterprises as well as in accessing information, capital, markets and human resources". The same article also provides "measures to promote gender equality in the economy" stipulating that (a) enterprises employing many female workers shall be given preferential treatment in terms of finance and taxation in accordance withlegal regulations (VWEC, 2007). The Vietnam case parallels the South African experience. Although the South African constitution is considered as one of the most progressive legal documents in the world, there no hard evidence for public funding institutions' preferential treatment of women in extending credit or gender sensitive taxation for female-owned and female-operated businesses.

Some studies also consider the socio-economic characteristics of women (age, education, income or finance, professional experience, social norms) as individual factors influencing female entrepreneurship (Pine, Lerner & Schwartz, 2010; Pérez-Pérez & Avilés-Hernández, 2016; Rubio-Bañón& Esteban-Lloret, 2016). Due to high demands for a consistent income and pressing household commitments, Bosma et al. (2009) acknowledge that the percentage of women entrepreneurs is higher in countries where the general income per capita is small and where women have no other option for making a living (such as Angola, Bolivia and Peru) and lower in countries where the general income per capita is high (such as Israel, Germany and the UK) (Bosma et al., 2009). Another barrier to women advancement in entrepreneurship is lack of adequate funding. Pine, Lerner and Schwartz (2010) highlight the disconcerting fact that a large percentage of women's businessesare very small and not part of the formal economy, factors which explain why they tend toreceive less financial support from public institutions. More so, women and men are differentially positioned in terms of access to credit financing. Godwin et al. (2006) argue that women are discriminated when trying to access resources needed for their business. The fact that more women than males are in small, informal, livelihood-oriented entrepreneurship (LOEs) as compared to growth-oriented entrepreneurship often further compound the problem. A study on the women's entrepreneurship development in Vietnam highlights that more men (80%) than women (72%) are in growth-oriented entrepreneurship (GOE) (The Vietnam Women Entrepreneurs Council's (VWEC), 2007). This gender gap means that more men stand a better chance of securing funding as they concentrate on businesses founded on a solid grasp of economic opportunities than LOEs, which struggle to secure funding due to their informal or semi-formal orientation.

The concentration of most women in non-technical fields of education training (e.g. social sciences, humanities, arts) and their limited visibility in the commercial (business, entrepreneurship) and STEM disciplines constrain women's capacity to function in the entrepreneurship field due the highly technical nature of new venture creation. The lack of technical skills tends to prevent them from entering and sustaining businesses in technical sectors (Pine, Lerner & Schwartz 2010) and consequently, women have managed to penetrate the entrepreneurial arena but have failed to realise entrepreneurial success (Glover, 2002). Regrettably, most women predominantly attain the stages of qualifying or obtaining the relevant skills and obtaining entry or setting up a business but fail to persist and finally advance entrepreneurially (Pines et al., 2010). Even when entrepreneurship education is provided to prop the germane entrepreneurial skills of both gender, research seems to suggest that significant differences are noticeable across different gender. For instance, Shinnar, Hsu, and Powell's (2014) investigation of the influence of entrepreneurship education in strengthening entrepreneurial self-efficacy (ESE) and entrepreneurial intentions (EI) revealed that while ESE increased for both males and females, this increase was statistically significant only for the male students.

Social norms and gender stereotypes also serve as strong barriers to women entrepreneurship. The Theory of Social Role demonstrates how gender stereotypes conspire with social customs that define appropriate behaviour for women and men to project the male group as more inclined to have higher domain or achievement attitudes, while women are reduced to care behaviours and docility (Eagley, 1987; Rubio-Bañón& Esteban-Lloret, 2016). These social constructions of gender roles position men as ideal candidates for entrepreneurial activity while women's role are pushed to the periphery and restricted to the homestead. Therefore, the male group is configured as the ideal to start and run businesses (Bird & Brush, 2002) and women are often conceived to provide best models of entrepreneurship propensity exclusively. Usually, female entrepreneurship is stereotyped with features that are incompatible with those observed in entrepreneurs who have achieved success in their business activities (Rubio-Bañón& Esteban-Lloret, 2016).

3. Methodology

Research design: The objective of this study was to establish if any statistically significant differences in the perception of entrepreneurship barriers existed amongst students of different gender. The study employed a quantitative descriptive research design to accomplish this goal. According to Saunders et al. (2009), such a design requires that the researcher adopts a detached approach involving observation and measurement of variables as they exist without contamination of the data through direct, intensive interaction with respondents. Thus, the study was guided by the positivist paradigm that assumes that research must always employ scientific procedures, which are confined to what is observable and measurable. A positivist approach and descriptive design cohered with this study' intention to describe nature of the relationships between gender variable and entrepreneurial variable at a particular point. These approaches were also consistent with this study's commitment to generalisethe findings to the study population. More so, the outcomes from a quantitative study can be statistically verified for their reliability and significance.

Data collection: Data was collected using a self-completion questionnaire made up of close ended question items expressive of the following variables; entrepreneurship support, regulatory, personal, financial and socio-cultural barriers.The co-authoradministered the questionnaire to the respondents during lectures in early March 2016 over a one week period. Respondents were randomly selected from a sampling frame created using class name lists. Consistent with the ethics regulating academic inquiry into human subjects, students were apprised of the purpose of the study, their anonymity, voluntary participation in the study. All the sampled students expressed interest to participate in the study.

Respondents: Vocational education students doing an introductory course in entrepreneurship at a polytechnic in Zimbabwe were targeted for the study. These came from various academic faculties namely, Humanities, Applied Sciences, Creative Arts, Business and Engineering. The target population comprised almost 500 students from whom 365 were randomly sampled. Of these 365 respondents, a total of 169 respondents successfully completed and returned the questionnaire.

The validity and reliability research instrument: Validity refers to whether a research tool measures what it is actually intended to measure (Cooper & Schindler, 2011). In other words, it ascertains the truthfulness of the results emanating from data which was gathered using a particular research instrument. On the other hand, reliability relates to the ability of a research instrument to generate consistent results when applied to the same target population at different times (Bryman & Bell, 2011). Thus, a high level of reliability and validity of a research instrument enhances the quality of a research study.For the current study, the theoretical variableswereevaluated using self-rated, item measuring scales designed by the researchers on the basis of the literature they reviewed. The responses to the items were made on a 5-point Likert scale.

The exploratory factor analysis and Cronbach's alpha testwere conducted to assess the validity and reliability of the instrument respectively (see Tables 1 and 2). A principal component analysis (PCA) was conducted on the initial 43 items measuring barriers to entrepreneurship, with orthogonal rotation (Varimax). The preliminary test results revealed evidence of substantial factor cross-loading. Consequently, the items which were cross-loading were removed, leaving 29 items on questionnaire. A second round of PCA was then conducted on the revised instrument. The Kaiser–Meyer–Olkin measure verified the sampling adequacy for the analysis, KMO = 0.76, which is above the acceptable limit of 0.5 (Field, 2009). Bartlett's test of sphericity χ^2 (253) = 5504.564, p < .000, indicated that correlations between items were sufficiently large for principal component analysis. An initial analysis was run to obtain eigenvalues for each component in the data. Five components had eigenvalues over Kaiser's criterion of 1 and in combination explained 66.861% of the variance. On the basis of Kaiser's criterion, five components were then retained. Table 1 shows the factor loadings after rotation. The items that cluster on the same components suggest that component 1 represents a perception of financial barriers, component 2 social and cultural barriers, component 3 a perception of personal barriers, component 4 a perception of regulatory barriers and component 5 a perception of entrepreneurship support barriers. The preceding results confirm convergence validity of the measures in the questionnaire.

Table 1: Rotated component matrix

	Financial Barriers	Social and Cultural Barriers	Personal Barriers	Regulatory Barriers	Entrepreneurship Support Barriers
Banks do not readily give credit to start-up companies without financial records	0.87				
Banks do not readily give credit to start-up companies without business history	0.785				
Lack of collateral security to secure finance from a bank	0.75				
It is hard to find family members who can provide loan advances to launch a new ventures	0.721				
It is hard to find friends /acquaintances who can provide loan advances to launch a new ventures	0.719				
Banks do not readily give credit to start-up companies without a credit history	0.682				
Lack of own savings or assets	0.501				
Cultural values and norms that discourage entrepreneurship		0.515			
Lack of family/peer role models in successful business		0.529			
Lack of entrepreneurial role models in local communities see first one		0.634			
Extreme perception of risk			0.917		
Too much uncertainty about the future			0.832		
Lack of information about business start-ups			0.728		
Fear of failure			0.532		
Lack of marketing skills			0.526		
Lack of managerial or financial expertise			0.47		
Limited tolerance for ambiguity			0.483		
Multiple bureaucratic procedures and constraints for founding a new company/ start up				0.462	
High taxes and fees when registering conducting business				0.858	
High taxes and fees encountered when operating the business				0.772	
Corruption of regulatory authorities				0.71	
Lack of locational benefits (e.g. law tax regimes for start-up that locate in export processing zones, corridors					0.697
Absence of qualified resource consultants					0.515
Lack of financial incentives for new companies or start ups					0.422
Absence of tax incentives such (low interest rates from banks for business start-ups)					0.653
Limited business training programmes for potential and current business owners.					0.631
Absence of business incubators.					0.586
Lack of and service support for new start-ups and companies					0.519
Lack of promotional materials from government and business promotion agencies					0.577

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 11 iterations.

The researchers conducted a Cronbach's alpha tests on the items that loaded under the five factors which were identified. The results are shown in Table 2.

Table 2: Reliability analysis

Construct	Number of items	Cronbach'sapha
Perception of financial barriers	7	0.814
Perception of social and cultural barriers	3	0.774
Perception of personal barriers	7	0.783
Perception of regulatory barriers	4	0.734
Perception of entrepreneurship support barriers	8	0.782

The results show a satisfactory level of reliability, with each construct having alpha coefficients of the minimum accepted level of 0.7 (George & Mallery, 2016).

4. Results

Profile of respondents: The results are presented starting with descriptive statistics followed by the inferential statistics. Table 3 illustrates the profile of the respondents by gender, age, marital status and their respective fields of study. The results highlight that a majority of respondents were female (58.6%) while the remainder were male. Also, slightly more than half (50.3%) of the respondents were in the 20 to 30 years age category, followed by those under the age of 21 years (37.3%) and lastly the 31 to 40 years (12.4%) group respectively. In addition, 83.4% of the respondents were not married while only 16.6% were married. A majority (53.8%) of the respondents came from the Engineering division, while Applied Sciences and Business comprised16.6 % and 20.7 % of respondents respectively. The Creative Arts division contributed only 4.1 %.

Table 3: Profile of respondents

	N	%
Gender		
Male	70	41.4
Female	99	58.6
Total	169	100
Age groups		
Under 21 years	63	37.3
20 to 30 years	85	50.3
31 to 40 years	21	12.4
Total	169	100
Marital Status		
Never married	141	83.4
Married	28	16.6
Total	169	100
Field of Study		
Applied sciences	28	16.6
Business	35	20.7
Creative arts	7	4.1
Engineering	99	58.6
Total	169	100

Summary statistics for numeric variables: Prior to conducting inferential statistical tests, the composite scores for each construct measured were deduced and descriptive statistics compiled (see Table 4). The observations for total entrepreneurship support barriers ranged from 16.00 to 33.00, with an average of 26.38 (*SD*= 4.64). The observations for total regulatory barriers ranged from 10.00 to 25.00, with an average of 19.62 (*SD* = 3.91). The observations for total personal barriers ranged from 9.00 to 39.00, with an average of 24.29 (*SD*= 7.57). The observations for total financial barriers ranged from 17.00 to 40.00, with an average of 30.88 (*SD* = 6.44). The observations for total socialcultural barriers ranged from 10.00 to 45.00, with an average of 30.08 (*SD* = 7.81). The general pattern of data suggests high means relative to maximum scores for perception of entrepreneurship barriers.

Table 4: Means table for numeric variables

Variable	M	SD	n	Min	max
Total entrepreneurship support barriers	26.38	4.64	169.00	16.00	33.00
Total regulatory barriers	19.62	3.91	169.00	10.00	25.00
Total personal barriers	24.29	7.57	169.00	9.00	39.00
Total financial barriers	30.88	6.44	169.00	17.00	40.00
Total social cultural barriers	30.08	7.81	169.00	10.00	45.00

Inferential statistics: To generate answers to the research questions, the researchers sought to determine if the means for the composite scores for dependent variables were significantly different across the gender categories. This can be done using either a parametric or non-parametric test depending on the normality of the data under study. Parametric techniques are suitable for data which is normally distributed. In contrast, non-parametric techniques are appropriate for data which is not normally distributed. The Shapiro-Wilk test was conducted to determine whether the composite scores for perception of financial barriers, perception of social and cultural barriers, perception of personal barriers, perception of regulatory barriers and perception of entrepreneurship support barriers could have been produced by a normal distribution. The results of the test, which are illustrated in Table 5, were statistically significant for most of the constructs except one. This suggests that the composite scores are unlikely to have been produced by a normal distribution, thus normality cannot be assumed. Resultantly, the Mann-Whitney U test which is a non-parametric technique used to determine if there is a significant difference between two groups (e.g., men versus women) on a scale level dependent variable was deemed appropriate for the current study. The test is an alternative to the independent samples t-test and does not share the independent samples t-test's distributional assumptions.

Table 5: Shapiro-Wilk W test for normal data

Variable	Obs	W	V	z	Prob>z
Perceived entrepreneurship support barriers	169	0.95586	5.661	3.953	0.00004
Perceive regulatory barriers	169	0.95476	5.802	4.010	0.00003
Perceived personal barriers	169	0.99105	1.148	0.315	0.37625
Perceived financial barriers	169	0.95182	6.180	4.153	0.00002
Total social and cultural barriers	169	0.96010	5.117	3.723	0.0001

Mann-Whitney U test fordifferences in perception of entrepreneurship support barriers: A Mann-Whitney two-sample rank-sum test was conducted to examine whether there were significant differences in perception of entrepreneurship support barrier between the categories of gender. There were 70 observations in group 1(males) and 99 observations in group 2 (females). The results of the Mann-Whitney U Test were not significant, U = 3944.5, $z = -1.66$, $p = .096$. The mean rank for group 1 was 91.85 and the mean rank for group 2 was 79.25. This suggests that the distribution of perception of entrepreneurship support barriers for group 1(males) is not significantly different from the distribution of perception of entrepreneurship support barriers for group 2(females). Table 6 presents the results of the Mann-Whitney U Test.

Table 6: Mann-Whitney U test for perception of total entrepreneurship support barriers by gender

Variable	Males *Mean Rank*	Females *Mean Rank*	U	Z	P
Total entrepreneurship support	91.85	79.25	3944.5	-1.66	.096

Mann-Whitney U test for differences in the perception of total regulatory barriers to entrepreneurship: A Mann-Whitney two-sample rank-sum test was conducted to examine whether there were significant differences in the perception oftotal regulatory barriers to entrepreneurship between the classes of gender. There were 70 observations in the males group and 99 observations in the females group. The results of the Mann-Whitney U Test were not significant, U = 3773, $z = -1.11$, $p = .265$. The mean rank for males was 89.40 and the mean rank for females was 81.00. This suggests that the distribution of totalregulatorybarriers for males is not significantly different from the distribution of totalregulatorybarriers for females. Table 7 presents the results of the Mann-Whitney U Test.

Table 7: Mann-Whitney U test for totalregulatorybarriers by gender

	Males	**Females**			
Variable	*Mean Rank*	*Mean Rank*	U	*z*	*p*
TotalRegulatoryBarriers	89.40	81.00	3773	-1.11	.265

Mann-Whitney U test for differences in perception of total personal barriers: A Mann-Whitney two-sample rank-sum test was also conducted to examine whether there were significant differences in totalpersonalbarriers between the levels of gender. There were 70 observations in group 1(males) and 99 observations in group 2(females). The results of the Mann-Whitney U Test were significant, U = 2254, $z = -3.79$, $p< .001$. The mean rank for males was 67.70 and the mean rank for females was 96.50. This suggests that the distribution of TotalPersonalBarriers for males is significantly different from the distribution of TotalPersonalBarriers for females. Table 8 presents the results of the Mann-Whitney U Test.

Table 8: Mann-Whitney U test for totalpersonalbarriers by gender

	Males	**Females**			
Variable	*Mean Rank*	*Mean Rank*	U	*Z*	*P*
TotalPersonalBarriers	67.70	96.50	2254	-3.79	< .001

Mann-Whitney U test for differences in perception of total financial barriers: A Mann-Whitney two-sample rank-sum test was conducted to examine whether there were significant differences in totalfinancialbarriers between the levels of gender. There were 70 observations in group 1(Males) and 99 observations in group 2(Females). The results of the Mann-Whitney U Test were significant, U = 4581.5, $z = -3.71$, $p< .001$. The mean rank for males was 100.95 and the mean rank for females was 72.75. This suggests that the distribution of totalfinancialbarriers for males is significantly different from the distribution of totalfinancialbarriers for females. Table 9 presents the results of the Mann-Whitney U Test.

Table 9: Mann-Whitney U Test for TotalFinancialBarriers by Gender

	Males	**Females**			
Variable	*Mean Rank*	*Mean Rank*	U	*Z*	*P*
TotalFinancialBarriers	100.95	72.75	4581.5	-3.71	< .001

Mann-Whitney U test for differences in perception of total social cultural barriers: A Mann-Whitney two-sample rank-sum test was conducted to examine whether there were significant differences in total social cultural barriers between the categories of gender. There were 70 observations in the males group and 99 observations in the females group. The results of the Mann-Whitney U Test were not significant, U = 2915.5, $z = -1.66$, $p = .097$. The mean rank for males was 77.15 and the mean rank for females was 89.75. This suggests that the distribution of total social cultural barriers for males is not significantly different from the distribution of total social cultural barriers for females. Table 10 presents the results of the Mann-Whitney U Test.

Table 10: Mann-Whitney U Test for totalsocialculturalbarriers by gender

	Males	Females			
Variable	*Mean Rank*	*Mean Rank*	U	*z*	*p*
TotalSocial and CulturalBarriers	77.15	89.75	2915.5	-1.66	.097

Discussion: The aim of the study was to establish if there were any gender-driven differences in the perception of barriers to entrepreneurship amongst vocational education students. The findings from this study demonstrate mixed results with no clear pattern on the effect of gender differences on the perceptions of barriers to entrepreneurship activities by Zimbabwean vocational education students. From the first research question, it was hypothesised that they were statistically significant differences in the perception of entrepreneurship support barriers across the gender groups. The null hypothesis was supported since the *p*-value of 0.096 was larger than 0.05, indicating non-significance at 5% level. Thus, it was concluded that they were no significant differences in perceived entrepreneurship barriers amongst female and male students at the same educational levels. If exclusion and inclusion encapsulate having, or not having, access to critical assets, services and resources (Room, 1995, Pines et al., 2010), then it can be argued that university entrepreneurial educators equally equipped both female and male students (i.e. prospective entrepreneurs) with inclusive entrepreneurial education, pre-requisite entrepreneurial capabilities and competencies to identify and recognise perceived entrepreneurial challenges. Theabsence of a significant genderdifferences in perceptions is somehow inconsistent with Powell and Eddlestone (2013) and Belwal, Tamiru and Singh's (2012) findings that females in developing countries felt that socio-economic interventions in their economies disproportionately favoured male entrepreneurship against male entrepreneurship.

The absence of significant differences in perceived entrepreneurship support barriers amongst female and male students, however, coheres with Nani (2011) and Zindiye et al. (2012) revelations on the prevalence of gender inclusive entrepreneurship support for emerging entrepreneurs in Zimbabwe. The development of a supportive regulatory and incentive environment is one such expression of entrepreneurial support. Zindiye et al. (2012) observe that the government of Zimbabwe has taken far-reaching measures to redress the hindrances to new venture creation and entrepreneurship. The measures include the institution of the Small Business Act, Business Formation and Licensing Procedure and the Reporting and Administrative Requirements, which are all intended to enhance the ease of registering and running of small informal business, render training and service support for new start-up companies in Zimbabwe. This is particularly important in view of Muchena's (2009) claim that most female-owned businesses in the country operate in the informal, low paying informal sector. More so, since necessity entrepreneurship dominates the Zimbabwean economic landscape, the lack of significant gender differences can also be attributed to the universal impact of "push factors" that may drive both genders to engage in entrepreneurship. The gender balance, therefore, can be attributed to the prevalence of necessity [driven] entrepreneurship among women in developing countries (Bosma et al., 2009; Pines et al., 2010). To the extent that the findings of the current study reflected a lack of difference in the perception of barriers to entrepreneurship, one may assume that perhaps policies to support entrepreneurship give equal importance to both genders. With reference to the status of women empowerment in Zimbabwe, Muchena (2009) cited the entrenchment of progressive gender equality and affirmative action in the national constitution and other policy interventions. 2007).

The second hypothesis postulated that there were significant differences on the perception of regulatory barriers entrepreneurship between male and female students. Again, the null hypothesis was supported as the *p*-value of 0.256 for the Mann-Whitney test was larger than 0.05.The absence of significant gender-based differences in perceptions of regulatory barriers was not surprisinggiven that the Zimbabwean government created two ministries to deal with issues of gender equality and women empowerment in business. The Ministry of Women Affairs, Gender and Community Development deals with the acceleration of gender mainstreaming in different ministries and public departments, the advancement of women empowerment through SMME development and addresses issues of gender equality in business and professional occupations. The Ministry of Small and Medium Enterprise and Cooperative Development deals with the development of small businesses, finance and administration services in ways that advance gender mainstreaming in funding, resource mobilisation and technical advisory services to prospective and existing emerging entrepreneurs. Research evidence suggest that where policy and legal frameworks for gender mainstreaming in entrepreneurship exists, gender gaps in perceptions of business propensity and ultimately entrepreneurship tend to be breached (The Vietnam Women Entrepreneurs Council (VWEC), 2007).

The results of the Mann-Whitney test on whether they were significant differences on the perception of personal barriers to entrepreneurship suggest that the null hypothesis was rejected since the *p*-value for test was less than 0.05. Thus, significant differences existed across gender groups.The mean score of 96.50 for women exceeded that of men (67.70) and this finding is consistent with literature which has suggested that potential women entrepreneurs perceive more personal barriers to entrepreneurship than men (Mboko & Smith-Hunter, 2009; Mboko & Smith-Hunter, 2010; Chirisa, 2013).The barriers that often constrain women engagement in entrepreneurship range from their low socio-cultural status and constrained access to corporate and information networks (Rodríguez & Santos, 2008; Pérez-Pérez and Avilés-Hernández, 2016), a lack of emotional and psychological support, credible role models and the necessary knowledge to promote female participation in entrepreneurship (Krueger and Brazeal, 1994, Dabic et al., 2012). Other barriers include challenges in reconciling family and business responsibilities (Moore & Buttner, 1997; Brush, De Bruin, & Welter, 2009) and limited education and training of women as entrepreneurs and entrepreneurship (Pineda, 2014). According to Chitsike (2000) personal barriers to entrepreneurship by women emanates from cultural norms and values, which generally condition women's minds to have self-doubt about their abilities to establish and run growth-oriented businesses successfully.

However, our findings were inconsistent with findings in conventional literature as they showed that male students perceived more financial barriers to entrepreneurship when compared to female students. Findings from some studies relating to barriers to women entrepreneurship in Zimbabwe suggest that women generally encounter more financial hindrances relative to men (Chitsike, 2000; Nyamanzwa et al., 2012; Nani, 2011; Gwakwa & Chikukutu, 2015). A possible explanation for this discord may be the wide-reaching efforts undertaken by the Zimbabwean government to ensure equal access to economic resources and participation in entrepreneurial activities by both genders. For instance, since year 2000, the government has consistently had in place a dedicated Ministry of Women' Affairs, Gender and Community Development, which is responsible for ensuring gender parity in empowerment and developmental issues. At the same time, there exists a full Ministry of small and Medium Enterprises whose entrepreneurship promotion programmes have generally favoured youth and women as the previously disadvantaged members of the community (Nani, 2011; Zindiye et al., 2012; Gwakwa & Chikukutu, 2015). The effectiveness of such efforts perhaps explains why females now perceive less financial barriers to entrepreneurship than men. The results for the Mann Whitney test for differences in perceptions of social and cultural barriers to entrepreneurship demonstrate that females had a higher mean score of 89.75 compare to the score of 77.15 for males. However, the distinction was no statistically significant at the 5% level as reflected by the p-value of 0.097. In spite of the lack of statistical significance of the difference, the stronger perception of social and cultural hindrances are consistent with findings of some scholars that cultural norms are critical barriers to women's participation in political, social and economic activities (Chitsike, 2000; Gaidzanwa, 2004; Nani, 2011; Mazonde & Carmichael, 2015) .

5. Theoretical and practical implications and Conclusion

The current study was informed by the Shapero and Sokol (1982) entrepreneurial event model and the theory of Harper' entrepreneurial discovery. For Shapero and Sokol (1982), the existence of a significant event, such as a push or pull factor, which disrupts and changes the trajectory of an individual's life could explain one's decision to engage in entrepreneurship or their reluctance to do so. Push factors include job loss, job dissatisfaction and a salary cut or a demotion. Pull factors comprise the existence of a perceived rewarding market opportunity, need for independence and promulgation of support structures for new business start-ups, which actually encourage entrepreneurship (Ismail, Shamsudin & Chowdhury, 2012; William & Williams, 2014). In view of the excessive deflationary environment in Zimbabwe characterised by extensive joblessness in the formal sector, severe cuts in salaries in the civil service and the private sector, and the absence of job prospects may compel students of both gender to consider entrepreneurship. In the same vein, the existence of supportive policy structures and interventions in the Zimbabwean context may also be activating the spirit of entrepreneurship among students. The absence of significant statistical differences across gender with regard to the perceived entrepreneurship barriers suggests that even though entrepreneurial events (e.g. push factors) are supposed to trigger entrepreneurship, the wider recognition of entrepreneurial barriers by both gender could be an inhibitor entrepreneurship. It can be inferred that while trigger events may trigger entrepreneurial propensity, the reality is that the effective exploitation of an entrepreneurial event is a consequence of the perceived plausibility and perceived desirability of the entrepreneurial behavior. Research shows that the effect of the trigger event is subject to one's perception of the plausibility of entrepreneurial behaviour (Krueger et al., 2011; Ngugi & Gakure, 2012).

While Haper's (2003) theory of entrepreneurial discovery emphasises the possession of self-control and self-efficacy as critical to the recognition to entrepreneurial opportunities, it can be inferred from the findings these qualities are insufficient for the pursuit of entrepreneurship if the macro-economic environment is not sufficiently supportive and ideal for SMMEs to thrive. The lack of statistically significant gender differences on student perceptions of entrepreneurial support point to the fact that both males and female students conceived lack of various support systems (finance, training, skills) as impediments to entrepreneurship, even though these students may have possessed self-control and self-efficacy required to engage in entrepreneurship.

The lack of statistically significant gender differences among both gender with regards to regulatory barriers, through surprising (as females were expected to have higher statistically significant perceptions), demonstrates the difficulty of conducting businesses in a highly regulated, economically distressed environment. While the theory of entrepreneurial discovery alludes to the fundamental importance of individual freedom from regulatory controls as a basis for entrepreneurial propensity (Harper, 2003; Elam, 2008), the recognition of regulatory barriers across gender points to how multiple regulatory and policy constraints may compromise the pursuit and practical application of entrepreneurial intentions. Consistent with Shapero's model, which suggests that entrepreneurial intentions are directly shaped by perceived feasibility and propensity to act (Shapero and Sokol, 1982; Dabic et al, 2012), it can be argued that the prevalence of entrepreneurial barriers can be inimical to the fostering of perceived feasibility of businesses and undermines prospective entrepreneurs' propensity to pursue business ventures.

The findings from the current study revealed that males and females only had different perceptions on the existence of financial and personal hindrances to entrepreneurship. Male respondents felt financial factors were a stronger impediment to them when compared to females. On the other hand, female respondents had significantly stronger perceptions of personal barriers to entrepreneurship when compared to males. The implications of these findings are as follows;

- The strong perceptions of financial barriers among males compared to females suggest that the targeting of females in financially inclusive interventions could be replicating financial prejudices and disadvantages for men. More gender inclusive financial interventions may need to provide differentiated financial services and offering for both men and women. The implication is that while gender inclusive policies need to target womencontinually, they should also be specialised financial offerings for men to ensure that they are not marginalised by good intention policies that advance women financial interests.

- Female respondents had significantly stronger perceptions of personal barriers to entrepreneurship when compared to males which were attributed to many factors. These perceptions of barriers were conceived to arise from women's competing family and business commitments, their perceived low socio-cultural status, constrained access to corporate and information networks, a lack of emotional and psychological support, credible role models and the necessary knowledge and limited education and training of women as entrepreneurs and entrepreneurship. The competing family responsibilities and low socio-cultural status of women implies that radical transformations in the configurations of power in the family and society should unfold through multiple interventions. These include theequalisation of decision making in the family, increasing supplementary sources of income for women, the need to increase gender based forums for exchange of financial information sources and financial networks among women, and the creation of group or community-based saving groups to reduce dependence on debt funding. Other interventions may include the provision of psycho-social support systems such as women entrepreneurship clubs to increase the self-efficacy and self-esteem of womenwith regard to entrepreneurship.

- Although it is a positive step that a previously disadvantaged group (women) now perceives fewer barriers to entrepreneurship, it is also counter-productive to have men perceiving more hindrances because of the measures implemented to correct the previous imbalances.This is particularly significant in a context of high unemployment where entrepreneurship careers and self-employment are the conceived as the most significant panacea to the problem. The introduction of differentiated public and private systems of entrepreneurial training, financial management and resource mobilisation support systems targeting different groups would ensure more balance entrepreneurship growth intentions and expectations across both gender.

Finally, further research on barriers to students' entrepreneurship could investigate the effect of other demographic factors like age group, marital status and field of study on the perceptions of entrepreneurial barriers. Further studies should encompass diverse institutions of higher learning so as to corroborate the findings of this paper.

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Journal of Economics and Behavioral Studies (JEBS)
Vol. 8, No. 6, December 2016 (ISSN 2220-6140)

Synthesizing the Relationship between Reported Dissonance and Post-Purchase Responses in High Involvement Decisions Using Structural Equation Modeling (SEM)

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Abstract: This study develops and validates a scale to assess the impact of reported dissonance on post-purchase responses (attitude change, trivialisation, selective exposure, justification) respectively and applies the instrument to high involvement consumers. A sample of 200 new motor vehicle buyers who purchased from a leading and reputable motor vehicle company in KwaZulu-Natal, South Africa, was drawn using stratified random sampling based on range of motor vehicle (bottom, middle, top) and month of purchase. Initially, exploratory factor analysis (EFA) was used to extract the factors. The reliability of the modified questionnaire was then assessed using Cronbach's Coefficient Alpha. Thereafter, confirmation factor analysis (CFA) was used to establish if the measurement model is a good fit and to develop and test the model structure in SEM, which generated a good model fit. Pearson r was computed to assess the relationship amongst the dimensions. Using structural equation modelling, the results support significant inverse relationships between reported dissonance and attitude change, trivialisation and justification respectively. Whilst the inverse relationship between reported dissonance and selective exposure was supported using correlation, it was not confirmed using SEM. Recommendations, based on the findings, are presented and are directed at reducing reported dissonance and effectively managing post-purchase interactions and responses.

Keywords: *Post-purchase evaluation, reported dissonance, attitude change, trivialisation, selective exposure, justification*

1. Introduction

In an environment of endless choices marketers have realised that it is easier to keep existing customers than to attract new ones. Hence, against this experience, marketers need to understand the consumer after the purchase because post-purchase evaluation channels post-purchase attitude (cognition, feeling, behaviour) towards the product or brand purchased. It is important to note that post-purchase response will depend on the type of consumer decision and therefore, differ for habitual, limited and extended decision-making. This study therefore, aims to synthesize the delicate relationship between post-purchase evaluation and response after the purchase of a motor vehicle. In particular, this study focuses on negative post-purchases responses and assesses the impact of reported dissonance on post-purchase responses (attitude change, trivialization, selective exposure, justification) respectively. Reported dissonance creates unpleasant feelings, psychological discomfort and stress for the customer which based on the theory of cognitive dissonance by Festinger (1957) would mean that the customer will engage in activities to restore consistency. When a customer engages in an expensive and long term purchase such as a motor vehicle purchase and experiences dissonance he/he may change his/her attitude in favour of the purchased brand (attitude change), trivialize the importance of the feature which does not meet his/her satisfaction in the purchased product (trivialization), choose to read more literature (brochures/newspapers) about the purchased product and ignore that of competitor products that were foregone (selective exposure) or justify the purchase, for example, that the foregone alternatives were not value for money (justification). The consumer may engage in one or more of these activities in attempts to reduce stress brought about by the dissonance in attempts to reintroduce balance.

The need for decision-making and, influencing variables: The primary decision that consumers engage in is whether to spend or to save. This decision will be determined by several influences, which can be divided into internal or individual influencing variables (needs, motives, personality, perception, learning, attitudes) and external or environmental influencing variables (culture and sub-culture, social influences, reference groups, family, economic demand factors, business and marketing influences) (Blackwell, Miniard & Engel, 2006; Brijball Parumasur & Roberts-Lombard, 2012; du Plessis & Rousseau, 2003; Hawkins, Best & Coney, 2001; Hawkins & Mothersbaugh, 2013; Hoyer, MacInnis & Pieters, 2013; Koklič & Vida, 2009; Peter & Olson, 2010; Schiffman & Kanuk, 2014; Solomon, Bamossy, Askegaard & Hogg, 2006). Evidently, consumers do not function in isolation (Brijball, 2003) as these variables continuously and concurrently intercept and have a significant impact on the consumer's ultimate choice. This means that in any decision process, the consumer draws external information and assimilates it with his/her internal variables such as needs, attitudes and perceptions. The choice outcome may also be influenced by the past, the act of recalling and personality factors (Brijball, 2000). Many of these learned behaviors and ways of thinking are unconscious (Blackwell et al., 2006). Over and above past product experiences, the expectation of forthcoming outcomes of an action may also impact the selection in a current purchase situation dictated by choice alternatives and a given context (du Plessis & Rousseau, 2003). The consumer decision-making process comprises of five stages, namely, recognizing the problem, searching for alternatives, evaluating the alternatives, making the purchase and post-purchase utilization and assessment, and involves both psychological and physical activities. Since the stages in the process are not necessarily linear but fluid and rather intertwined (Koklič & Vida, 2009; Schiffman & Kanuk, 2014), the consumer can launch into any stage or activity in the process and even bypass stages depending on the type of decision.

Type of decision-making: The concepts of internal and external search imply that the type of decision-making determines the extent of search effort. A distinction can be made between habitual, limited and extended decision-making with are respectively associated with minimal, limited and extensive search effort. Habitual decision-making occurs when the consumer purchases an item without considering alternatives largely due to prior product experience and satisfaction thereby decreasing the need for information search and further evaluation and can be categorized into brand loyalty and repeat purchase behaviour. Limited decision-making takes place when the consumer engages in little alternative evaluation. The individual engages in extensive internal and external information search, often uses numerous sources and thoroughly evaluates multiple alternatives in extended decision-making (Dubey, 2014; Hansen, 2005; Hoelzl, Pollai & Kastner, 2011; Koklič & Vida, 2009; Peter & Olson, 2010). In other words, extended decision-making involves a high level of complexity and extensive problem-solving. Extended decision-making is therefore characterized by conscious planning especially when durable products are purchased and when the purchase is important as it requires a large capital outlay (van der Walt, Strydom, Marx & Jooste, 1996). As one moves from habitual to limited to extensive decision-making the level of consumer involvement (motivation to act) and product involvement (importance of product class to self-identity thereby triggering strong attitudes and preferences) also increases (Wilkie, 1990; Traylor, 1981). Involvement is the extent of personal relevance of the brand or product which influences the individual's perception of its value and importance to the consumer (Peter & Olson, 2010). Hence, in low involvement the consumer does not identify with the product, care about it, nor consider it to be essential to his/her belief system, and may passively accepts information and may act without thinking (Horton, 1984). In high involvement decision-making, however, the consumer perceives the product as being important to his/her self image, will engage in greater information search and in extensive thought processes. Even after the purchase, the individual is likely to engage in detailed evaluation of the purchase.

2. Theory underpinning the study

Festinger's (1957) cognitive dissonance theory which was later revised by Elliot Aronson (1968) underpins the study. The original theory claims that the individual consumer strives toward consistency within the self, that is, to attain inner balance among thought, feelings, values and actions. According to Brehm (1992), the theory assumes a strong relationship between cognitions about behaviour and the environment. The underlying concept of congruence is the understanding that an individual's thinking, perceptions, attitudes and actions interact in logical and profound ways. Prior to making any major decision, the consumer encounters conflicts between two or more alternatives. Even after making the decision and engaging in purchase behaviour, the consumer evaluates the wisdom of the decision. However, when inconsistency occurs post-decision and post-action, dissonance arises and creates a noxious state thereby, triggering pressures to eliminate or reduce it (Festinger, 1957; Zajonc, 1960). This study therefore, explores the strategies that consumers in high-involvement purchases adopt in attempts to reduce dissonance. Numerous studies have been undertaken to evaluate the use of attitude change to restore consistency (Assael, 1992; Cooper & Fazio, 1984; Ginter, 1974; Goethals and Cooper, 1975; Kunda, 1990; Wright, Rule, Ferguson, McGuire & Wells, 1992; Zaltman & Wallendorf, 1983). Researchers have also explored consumers' efforts to attain consonance through trivialization (Simon, Greenberg & Brehm, 1995) whilst others have investigated the use of selective exposure (Bell, 1967; Brown, 1961; Ehrlick, Guttman, Schonbach & Mills, 1957; Engel, 1963; Lowe & Steiner, 1968; Lord, Ross & Lepper, 1979; Venkatesan, 1973). Furthermore, researchers have studied consumers' use of justification in attempts to reduce stress and felt dissonance (Aronson, 1968; Brehm & Cohen, 1962; Frey, Kumpf, Irle & Gniech, 1984; Geva & Goldman, 1991; Greenwald, 1969; Wicklund & Brehm, 1976; Zajonc, 1960). Evidently, the majority of the studies relating to dissonance reduction strategies, though very enlightening, useful and having laid the foundations for future research, have been conducted a while ago. Furthermore, there are no studies, to the researchers' knowledge, that have explored the use of all these strategies (attitude change, trivialization, selective exposure and justification) against each other in one study, which the current study aims to do.

Post-purchase evaluation: Whilst the decision-making process involves various stages, this study focuses on how the consumer in extended decision-making feels after the purchase and therefore, embeds the study in the domain of post-purchase evaluation. Post-purchase evaluation relates to the consumer's assessment of the how the purchased product or service is performing in terms of the set criteria (Peter & Olson, 2010). It is the consumer's interpretation of the purchase outcome. Consumers prefer to believe that the purchase decision made was the best one but the insufficient information encountered seldom allows such an unequivocal assurance. The lack of adequate information and the lack of technical knowledge, where required, make it difficult for consumers to thoroughly evaluate alternative products available in the market thereby resulting in uncertainty regarding the correctness of the decision made.

The phase after the purchase incorporates various forms of psychological processes that consumers can undergo after the purchase. Whilst it is maintained (Blackwell et al., 2006; Walters & Bergiel, 1989; Wilkie, 1990) that the result of purchasing can either be positive (satisfaction) or negative (dissatisfaction) and involve an emotional response to the evaluation of the purchase, du Plessis and Rousseau (2003) include another possible outcome in the form of a neutral assessment (Donoghue, de Klerk & Ehlers, 2008; Laufer, 2002; Ndubisi & Ling, 2006; Schiffman & Kanuk, 2014). Before the act of purchase, consumers develop expectations regarding the consequences of the purchases. The feedback from the purchase serves to either confirm or reject these expectations. *Satisfaction* occurs when the outcome meets the consumer's expectations and when the chosen alternative falls short of meeting expectations in important ways such that *unconfirmed expectations* exits, dissatisfaction occurs giving rise to cognitive inconsistency.

After a dissatisfying purchase, the consumer's reaction may be verbal or behavioral (du Plessis & Rousseau, 2003). Whilst a positive verbal response may cognitively reinforce purchase intentions, negative ones may result in rumors. Equally dangerous to the latter is indifferent verbal responses or responses which can evoke suspicion among other potential consumers. Positive behavioral responses generally relate to repeat buying behavior or brand loyalty when satisfaction is experienced. A behavioral complaint that is negative can be private (for example, warning friends and family) or public (complaining to the organization and demanding redress or taking legal action) or brand switching in the case of dissatisfaction and also negative word-of-mouth communication (Ladhari, 2007; Soscia, 2007; Zeithaml, Bitner & Gremler, 2006). A neutral behavioral response incorporates inertia (because it is not worth the time and trouble to engage in evaluation) or impulse buying in the case of indifference (Assael, 1992).

Sometimes consumers experience conflict after the purchase as they are unsure of the correctness of the decision. This doubt or anxiety is particularly prevalent when the consumer engages in a tough, important and enduring decision. This type of anxiety is called post-purchase dissonance which occurs because making a rather permanent commitment to a selected alternative demands foregoing the attractive characteristics of the unchosen alternatives (Hawkins et al., 2001; Hoelzl et al., 2011; Lamb, Hair, McDaniel, Boshoff & Terblanche, 2008; Solomon et al., 2006) and is therefore, a violation of expectancy. In some cases consumers may changes their attitudes and thinking in attempts to minimize the dissonance. They will try to reestablish a balance in their psychological make-up by searching for information that supports their decision or by changing information about the product/service that creates the anxiety, thereby engaging in *cognitive dissonance* (du Pleassis & Rousseau, 2003). Each consumer has numerous cognitions about him/herself or other people and the decisions he/she makes. If these elements follow logically from the other, 'consonant cognitions' exist but if there is logical inconsistency 'dissonant cognitions' arise (Wilkie, 1990). Post-purchases responses are significantly impacted by economic demand concerns because the more expensive the product, the greater will be the financial risk and the more intensive will be level of satisfaction or dissatisfaction. It is important to note that the current study focuses on negative post-purchase evaluation, that is, reported dissonance rather than satisfaction.

Since dissonance produces unpleasant feelings and psychological discomfort, the individual will take action to reduce the extent of dissonance experienced. People usually reduce cognitive dissonance by *changing their attitudes* to reestablish congruence with their behaviour and this often entails reevaluating the chosen brand more favorably than alternatives (Brijball Parumasur & Roberts-Lombard, 2012; Schiffman & Kanuk, 2014). Furthermore, consumers may decrease the significance they attach to the components in the dissonant relations through the use of *trivialization* or alternatively, cognitions can be added to make the attitude-behaviour relationship seem more rational, logical or justifiable. Simon, Greenberg & Brehm (1995) noted three conditions under which trivialization are more likely than attitude change:

a) When the preexisting attitude is very important, consumers trivialize the cognitions rather than change their attitudes.
b) Consumers are more likely to trivialize when the opportunity to evaluate the salience of the cognitions precedes the opportunity to reflect their attitude.
c) After one engages in purchases that run contrary to one's attitude, making important values or issues salient results in trivialization rather than attitude change.

Another dissonance reduction strategy is *justification* meaning that when an attractive alternative is rejected, the dissonance which arises can be reduced by justifying the decision (Heitmann, Lehmann & Hermann, 2007; Wang & Shukla, 2013). This means that consumers will explain why engaging in a certain purchase surpasses the reasons against performing it thereby making the selected alternative seem even more favourable than it originally was by finding something attractive about it. This makes the chosen alternative more attractive and decreases the attractiveness and value of the unchosen alternatives thereby causing greater variance between the purchased item and the unchosen options. In addition, a consumer experiencing cognitive dissonance may attempt to reduce it by engaging in *selective exposure*. Dissonance theory maintains that consumers are inclined to encounter attitude-consonant information and to steer away from attitude-dissonant information in attempts to establish cognitive consonance and avoid cognitive dissonance. Thus, in managing dissonance consumers are likely to emphasize the positive features of the chosen alternative and highlight the negative qualities of unchosen options. Therefore, to avoid confronting dissonance, consumers will:

a) Avoid exposure to or ignore dissonant or potentially damaging information.
b) Seek out positive information or attempt to be exposed to information that adds consonant elements.
c) Weaken existing dissonant elements.
d) Reduce the salience of the issue which led to dissonance.
e) Resort to a combination of the aforementioned strategies (Assael, 1992; du Plessis & Rousseau, 2003; Engel & Blackwell, 1982; Frey, 1982; Hoelzl *et al*., 2011).

Advertising provides an avenue of relief to post-purchase dissonance. Numerous researchers (Brown, 1961; Ehrlich, Guttman, Schonbach & Mills, 1957) substantiate the existence of enhanced advertising readership by recent motor vehicle buyers. Readership of motor vehicle advertisements tends to be higher among owners of a specific make than among non-owners (Bell, 1967; Brown, 1961; Ehrlich *et al*., 1957). However, Engel (1963) does not explain this strategy of dissonance reduction in terms of selective exposure but defines it in terms of figure-and-ground relationships explaining that advertisements that previously escaped the consumer's attention are now noticed because after the purchase of the motor vehicle the buyer has become more alert about it and adds that the consumer will not necessarily avoid unpleasant information. Nevertheless, Engel and Blackwell (1982) reiterates that the consumer encountering dissonance will 'buttress' the selected alternative by obtaining additional information. During the process of post-purchase evaluation, post-purchase learning takes places as the consumer through his/her new experience discovers new information, adjusts attitudes and stores the new knowledge in memory as inputs for future purchases thereby providing feedback for future purchases. Hence, although post-purchase assessment is the last stage, the process of decision-making does not necessarily end. The information gained as a result of purchase and post-purchase evaluation is stored in the individual's memory as part of his/her experiences only to be recalled when entering into another purchase decision-making process. Therefore, consumer buying decisions are the result of rational decision-making and involve problem recognition, search and processing of information, evaluation of alternative, response and post-purchase evaluation and behaviour (du Plessis & Rousseau, 2003). The only variation in different purchases is the emphasis the individual places on the different steps in the process of decision-making and this depends on the subjective importance attached by the consumer to the purchase and his/her level of involvement.

3. Methodology

Approach: The study adopts a quantitative, cross-sectional research design that aims to assess the relationship between negative post-purchase evaluation (reported dissonance) and post-purchase response (attitude change, trivialisation, selective exposure, justification) respectively.

Participants: A sample of 200 brand new motor vehicle buyers was drawn using the stratified random sampling technique. Only new motor vehicle buyers (within Kwa-Zulu Natal, South Africa) who concluded their purchases in one major, reputable and leading motor vehicle manufacturing company were considered. The sample for this study was proportionately stratified on the basis of two controls or criteria (range of motor vehicle purchased, month of purchases) since these sub-groups are expected to have different parameters on the potential to experience cognitive dissonance and the level of reported dissonance. Representativeness was achieved by drawing a proportional percentage of consumers in the different ranges of motor vehicles purchased. The motor vehicles purchased were divided on the basis of price into `bottom of the range' (47.25 % of sample), `middle of the range' (33.75 %) and `top of the range' (19 %). Secondly, time of purchases served as a further control as only those buyers who owned their new vehicles for a period of up to seven months were included in the study to avoid cognitive intrusion. The adequacy of the sample was determined on the basis of the Kaiser-Olkin Measure of Sampling Adequacy (0.912) and Bartlett's Test of Sphericity (4481.579; $p < 0.000$), which respectively showed suitability and significance. The results indicate that the normality and homoscedasticity preconditions are satisfied.

Instruments: The measuring instrument was a self-developed, preceded, standardised questionnaire comprising of Sections A and B. Section a included motor vehicle specific variable, namely, range of vehicle (bottom, middle and top of range) and month of purchases. Section B included 8 items relating to reported dissonance which comprised of 3 items measuring cognitive dissonance and 5 items tapping into anxiety experienced. Section B also included 20 items relating to post-purchase response which comprised of 5 items measuring attitude change, 4 items tapping into trivialisation, 7 items exploring selective exposure and 4 items measuring justification as a potential post-purchase response. The dimensions of reported dissonance and post-purchase response were measured using a 5 point Likert scale.

Procedure: The mail survey was used and hence, the questionnaires were self-administered. The questionnaire, together with a covering letter indicating the purpose and need for the study was posted to sample subjects, using the postal services. Each respondent was contacted telephonically informing them of the arrival of the questionnaire, already posted. The questionnaires were numbered so as to follow up on non-responses. Those who did not respond within two weeks were again telephoned to remind them of the purpose of the study, so as to ensure a suitable response rate. A self-addressed envelope and stamp was provided so respondents need not bear a financial cost, thereby increasing the return rate.

Statistical Analysis: When designing the initial questionnaire, face and content validity were prioritised by including all aspects of reported dissonance that related to anxiety and cognitive dissonance as these items surfaced repeatedly in terms of negative post-purchase evaluation. In addition, all possible post-purchase responses that surfaced in the literature review relating to post-purchase response were included, namely, attitude change, trivialisation, selective exposure and justification. The validity of the questionnaire was statistically assessed using Exploratory Factor Analysis (EFA) to identify and extract the factors and Confirmatory Factor Analysis (CFA) to establish if the measurement model is a good fit. The reliability of the modified questionnaire was statistically assessed using Cronbach's Coefficient Alpha and generated a high level of inter-item consistency (Cronbach's Alpha = 0.7). The results of the study were analysed using the Pearson Product Moment Correlation and structural equation modelling (SEM) using AMOS. SEM was used to assess the relationship between reported dissonance and attitude change, trivialisation, selective exposure and justification respectively. Hence, SEM 1was used to draw conclusions on the following hypotheses:

H_1: There is a significant, inverse relationship between reported dissonance and attitude change.
H_2: There is a significant, inverse relationship between reported dissonance and trivialisation.
H_3: There is a significant, inverse relationship between reported dissonance and selective exposure.
H_4: There is a significant, inverse relationship between reported dissonance and justification.

An inverse relationship between reported dissonance and the post-purchase responses is hypothesised because it is believed that as the level of reported dissonance increases, the buyer's motivation to engage in the post-purchase response (attitude change, trivialisation, selective exposure, justification) decreases. Basic parameters for the interpretation of SEM are provided in Table 1.

Table 1: Basic Parameter for the interpretation of SEM

Index	Abbreviation	Parameter for interpretation
Chi-square/degrees of freedom ratio	CMIN/DF	Should be 2 or less than 2 to reflect a good fit (Ullman, 2001).
Goodness of fit index	GFI	Should be greater than 0.9 (Byrne, 1994).
Root Mean Square Error of Approximation	RMS or RMSEA	Should be less than 0.08 (Browne & Cudeck, 1993) but should not exceed 0.08 (Hu & Bentler, 1999).
Comparative fit index	CFI	Should exceed 0.93 (Bryne, 1994)
Root mean square residual	RMR	The smaller the RMR, the better the model. RMR smaller than 0, 5 indicates good fit (Zen, 2007).
Tucker Lewis Index	TLI	TLI greater than or equal to 0.9 indicates acceptable model fit (Zen, 2007).

4. Results

Table 1 A: Exploratory Factor Analysis generating pattern matrix

Item Code	Component				
	1	**2**	**3**	**4**	**5**
RD3	0.890				
RD2	0.879				
RD4	0.878				
RD5	0.864				
RD6	0.860				
RD7	0.840				
RD8	0.838				
RD1	0.827				
JUST2		0.805			
JUST3		0.722			
JUST4		0.682			
JUST1		0.638			
AC1		0.606			
AC2		0.645			
TRIV4			0.811		
TRIV2			0.804		
TRIV3			0.800		
TRIV1			0.683		
AC3				0.684	
AC4				0.681	

AC5	0.649	
SE6	0.618	
SE7	0.716	
SE4		0.847
SE2		0.794
SE1		0.757
SE5		0.585
SE3		0.496

Measurement model and factor structure: The study assesses the relationship between *reported dissonance* and *attitude change, trivialisation, selective exposure and justification* respectively using a self-developed questionnaire comprising of 28 items relating to these five constructs. Exploratory factor analysis with varimax rotation was conducted to assess how the key constructs cluster (Table 1A). From Table 1 A, it is evident that 8 items (RD3, RD2, RD4, RD5, RD6, RD7, RD8 and RD1) as highlighted under Factor 1 were included in the study to measure *reported dissonance*. Four items in Factor 2 were included but the 5th and 6th items (AC1 and AC2) were excluded as the items related to attitude change. Hence, the 5 items selected in Factor 2 relate to the post-purchase response called *justification*. The 4 items that loaded significantly in Factor 3 relate to the post-purchase response of *trivialization*. Three items in Factor 4 were included but the 4th and 5th items (SE6 and SE7) were excluded as the items related to selective exposure. Hence, the 3 items selected in Factor 4 relate to the post-purchase response called *attitude change*. The 5 items that loaded significantly in Factor 5 relate to the post-purchase response of *selective exposure*. The aforementioned Factors have eigenvalues >1 and account for 70.12% of the total variance. The selected items, statements and their items loadings are presented in Table 2.

Table 2: Selected Items, Statements and Item Loadings

Item Code	Statement (RD = Reported dissonance, JUST = Justification, TRIV = Trivialization, AC = Attitude change, SE = Selective exposure)	Item Loading	Communalities
RD1	I wish I had selected an alternative make of car when I was making my decision to purchase.	0.827	0.779
RD2	My choice of car has left me discontent.	0.879	0.827
RD3	I wish I could return my car for another make.	0.890	0.868
RD4	When I think of the choice of car made, I feel tense and disappointed.	0.878	0.835
RD5	I feel uncomfortable about the decision I made.	0.864	0.835
RD6	I feel I made the wrong decision regarding the motor vehicle I chose.	0.860	0.886
RD7	My choice of car makes me feel that I have not made the best decision.	0.840	0.820
RD8	I still wonder whether I made the correct decision.	0.838	0.804
AC3	Any doubts about the correctness of my decision have been overcome by positive feedback obtained from my family.	0.684	0.603
AC4	Positive feedback from friends regarding the car I chose has convinced me of the correctness of my decision.	0.681	0.685
AC5	Any doubts about the correctness of my decision have been overcome by positive feedback from advertisements reflecting the performance of the car I chose.	0.649	0.576
TRIV1	The positive features of unselected alternatives, that are non-existent in my car, are not important to me.	0.683	0.703
TRIV2	The positive features of unselected alternatives, that are non-existent in my car, are unnecessary items that increase the price of the car.	0.804	0.757
TRIV3	The positive features of unselected alternatives, that are non-existent in my car, are trivial.	0.800	0.754
TRIV4	The positive features of unselected alternatives, that are non-existent in my car, are not part of my needs.	0.811	0.728
SE1	I only read motor vehicle advertisements reflecting the car I bought.	0.757	0.647
SE2	I avoid people who are likely to talk negatively about the car I purchased.	0.794	0.659
SE3	People who express negative views about the car I bought do so out of	0.496	0.404

	ignorance.		
SE4	I do not read advertisements reflecting other makes of vehicles, other than the one I selected.	0.867	0.776
SE5	I do not give attention to negative views about my car.	0.585	0.451
JUST1	Considering my finances, my choice of car is the most suitable one.	0.638	0.550
JUST2	It is easy for me to explain why I chose the car I did.	0.805	0.770
JUST3	The excellent performance of my car outweighs the price and effort expended.	0.722	0.710
JUST4	I believe that 'I got good value for money' by choosing the make of car that I did.	0.682	0.748

The final 24 item questionnaire, therefore, defined reported dissonance in terms of 8 items, attitude change using 3 items, trivialization in terms of 4 items, selective exposure using 5 items and justification in terms of 4 items and the average communalities after extraction is 0.72. The overall final questionnaire comprising of negative post-purchase evaluation and post-purchase response items reflected a high level of inter-item consistency (Cronbach's Alpha = 0.755) with dimensional reliabilities being very strong: Reported dissonance (α = 0.970), Attitude change (α = 0.822), Trivialisation (α = 0.871), Selective exposure (α = 0.782) and Justification (α = 0.866). Thereafter, confirmatory factor analysis (CFA) was used to verify the measurement model. Model identification was attained, and the indices for global fit reflects that the model sufficiently represented the data with CMIN/DF = 1.714, GFI = 0.856, RMSEA = 0.060 and a comparative fit (CFI) of 0.955. CMIN/DF should ideally be 2 or less than 2 (Ullman, 2001) to reflect a good fit, GFI should be >0.9 (Bryne, 1994), RMS or RMSEA should be <0.08 (Browne & Cudeck, 1993) but should not exceed 0.08 (Hu & Bentler, 1999) and CFI should exceed 0.93 (Byrne, 1994). Bollen (1989) emphasizes that these criteria simply serve as guidelines. Hence, the model adequately represents the input data particularly taking cognisance of the large sample of 200 motor vehicle consumers being studied (Brijball Parumasur & Parumasur, 2016). It was hypothesised that:

H_1: There is a significant, inverse relationship between reported dissonance and attitude change.
H_2: There is a significant, inverse relationship between reported dissonance and trivialisation.
H_3: There is a significant, inverse relationship between reported dissonance and selective exposure.
H_4: There is a significant, inverse relationship between reported dissonance and justification.

Correlations between the constructs are reflected in Table 2 A.

Table 2 A: Pearson Correlations of the dimensions

Dimension	**Post-purchase response**			
	Attitude change	**Trivialisation**	**Selective exposure**	**Justification**
Reported dissonance	-0.525*	-0.461*	-0.119*	-0.717*

* p < 0.01

Table 2 A reflects that there is a significant, inverse and moderate relationship between reported dissonance and attitude change at the 1% level of significance. Hence, hypothesis 1 may be accepted. Furthermore, there is a significant, inverse and moderate relationship between reported dissonance and trivialisation at the 1% level of significance. Hence, hypothesis 2 may be accepted. Table 2 also reflects a significant, inverse but weak relationship between reported dissonance and selective exposure at the 1% level of significance. Hence, hypothesis 3 may be accepted. In addition, there is a significant, inverse and strong relationship between reported dissonance and justification at the 1% level of significance. Hence, hypothesis 4 may be accepted. It is evident that as reported dissonance increases the post-purchase response, irrespective of form (attitude change, trivialisation, selective exposure, and justification), decreases.

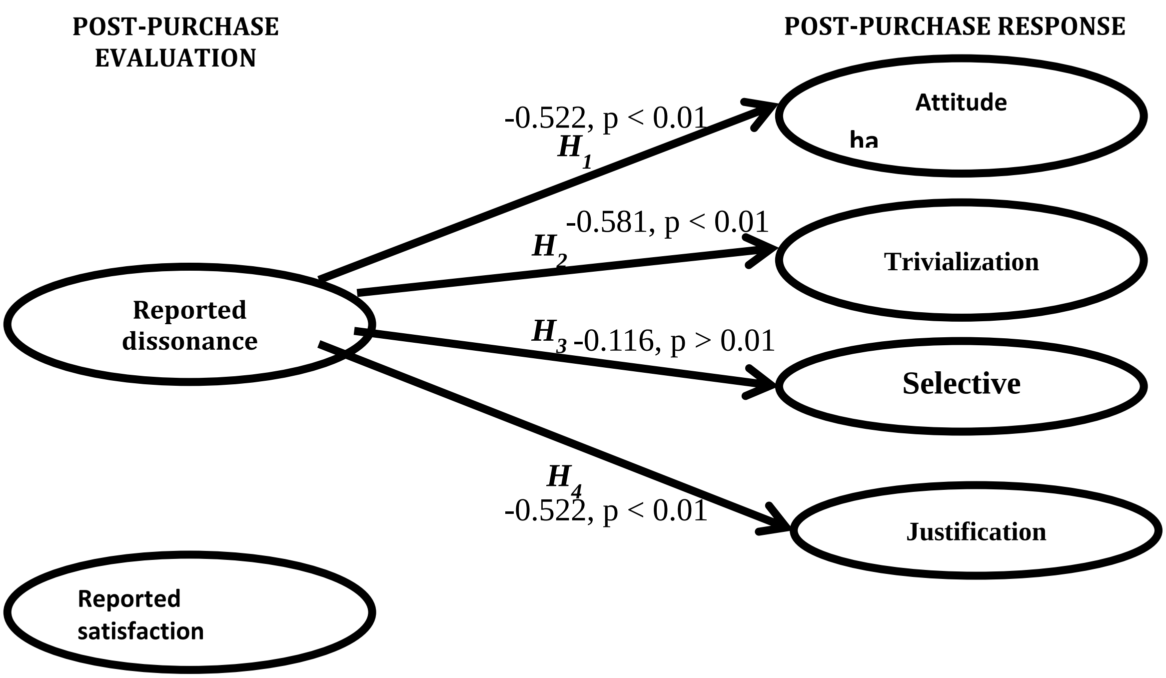
Table 3: Standardised regression coefficients of the variables

Dimension Reported dissonance	Estimate	S.E.	P
Attitude change	-0.522	0.078	0.000*
Trivialization	-0.581	0.092	0.000*
Selective exposure	-0.116	0.072	0.105
Justification	-0.522	0.066	0.000*

* p < 0.01

Structural model: The structural model of the relationship between reported dissonance and the post-purchase responses (attitude change, trivialisation, selective exposure, justification) was tested by performing SEM analyses using AMOS. The structural model, as depicted in Figure 1, evaluated the hypothesised regressions (Brijball Parumasur & Parumasur, 2016). The hypothesised model, as depicted in Figure 1, provided a good fit to the data which indicated that the model represents the data well with CMIN/DF = 1.636, RMR = 0.101, GFI = 0.860, RMSEA = 0.057, a comparative fit of CFI = 0.959 and TLI of 0.953. Table 3 and Figure 1 depict the standardised regression coefficients estimated by SEM analyses using AMOS. The process of analysis assumes a causal structure between the constructs and enables the estimation of direct effects as depicted in Figure 1. Figure 1 includes both reported dissonance and reported satisfaction as both are part of post-purchase evaluation. However, in accordance with the jurisdiction of this study, the SEM structure depicts the regression estimates extending from reported dissonance only.

Figure 1: Maximum Likelihood Regression (MLR) Estimates for the hypothesized model



The structural model indicates that there is a significant, inverse and moderate relationship between reported dissonance and attitude change at the 1% level of significance. Hence, Hypothesis 1 may be accepted. The implication is that as the level of reported dissonance increases, the motivation to change one's attitude in favour of the purchased brand decreases. Furthermore, there is a significant, inverse and moderate relationship between reported dissonance and trivialisation at the 1% level of significance. Therefore, Hypothesis 2 may be accepted. As anticipated, the results imply that as the level of reported dissonance increases, the motivation to minimise the importance of the forgone attractive alternatives or to reduce the unhappiness with the unattractive features in the chosen motor vehicle decreases. In addition, reported dissonance and justification are significantly and inversely related with moderate strength at the 1% level of significance. Hence, Hypothesis 4 may be accepted. The implication is that as reported dissonance increases, the motivation to justify the incorrect choice and not having made another selection decreases. However, the structural model indicates that there is no significant relationship between reported dissonance and selective exposure. Hence, Hypothesis 3 may not be accepted. As previously indicated, a substantial amount of variation in the model is explained by the relationships depicted in the model and the correlations support the hypotheses. Although the structural model supports 3 of the 4 hypotheses, the model accounts for 70.12% of the total variance thereby providing support for the model's fit.

Discussion: The results of the study, based on correlation, indicate that negative post-purchase evaluation or reported dissonance is inversely and significantly related to all post-purchases responses (attitude change, trivialization, selective exposure, justification) respectively. As predicted, the relationships are inverse because as the level of reported dissonance increases, consumers are less motivated to engage in post-purchases responses. This may be attributed to intense disillusion, anxiety (Hawkins et al., 2001; Hoelzl et al., 2011; Lamb et al., 2008; Solomon et al., 2006) and unhappiness with the choice which cannot be reduced by adopting any of the post-purchase responses. Such a response is especially likely if the purchase is an expensive one that demands a large capital outlay where the finance could have been used for other purchases and when several attractive alternatives were rejected in making the current unfulfilling choice (Blackwell et al., 2006; Schiffman & Wisenblit, 2015). The results of the study also indicate that consumers are most likely to engage in justification, attitude change and trivialization and least likely to engage in selective exposure.

In this study, structural equation modeling also confirmed significant, inverse relationships between the level of reported dissonance and the post-purchase responses of attitude change, trivialization and justification with all having moderate strengths. However, structural equation modeling did not confirm a significant relationship between reported dissonance and selective exposure. As anticipated, the causal structure enabled the estimation of the direct effects from reported dissonance to attitude change, trivialization and justification with moderate strength and inverse direction. The implication is that the consumer after the purchase will only reevaluate the chosen brand more favorably than alternatives (attitude change) and/or decrease the importance of the elements involved in the dissonant relations and/or add cognitions to make the attitude-behaviour relationship seem more rational (trivialization) and/or engage in selective exposure or justify the decision if the possibility of reestablishing congruence in cognitions still exists. In other words, the results indicate that there is a threshold beyond which buyers will recognize that any attempts to engage in post-purchase responses (attitude change, trivialization, selective exposure, justification) will be futile. Simon et al. (1995) maintain that consumers are more likely to trivialize when the opportunity to evaluate the salience of the cognitions precedes the opportunity to reflect their attitude. It is clearly evident though, that reported dissonance inversely impacts on post-purchases responses (attitude change, trivialization, selective exposure, justification) and a buyer may engage in any one or a combination of post-purchase strategies in attempts to restore congruence and reduce stress caused by the dissonance. The SEM structure did not espouse the relationship between reported dissonance and selective exposure and this may be attributed to the constant exposure of online and other information such as social media that reduces one's opportunity to be selective over what one wants to be exposed to.

5. Recommendations and Conclusion

First and foremost, marketing managers should try to reduce the level of dissonance experienced by high involvement buyers. This can be done by presenting the consumer with facts about the product, clearly indicating the pros and cons and not engaging in exaggeration regarding the product's features or performance. The buyer should also not be rushed into a high-end purchase decision and should be encouraged to ask as many questions as possible. Even after the purchase, after sales service is integral. Since it is evident from this study that consumers do engage in post-purchase responses (attitude change, trivialization, selective exposure, and justification) it is imperative to:

- Maintain continuous interaction with the new product buyer after the purchase to reinforce the positive features of the product and its performance strengths. Doing this reinforces buyer confidence.

- Assign a product and service manager to each buyer so that any doubts or concerns can be cleared as soon as they arise. These individuals must be easily accessible and reached otherwise doubts may snowball and the converse may be achieved.
- Ensure that advertisements are widely spread through various channels so as to reinforce the correctness of the choice. Short message service (SMS), multimedia messaging service (MMS) and electronic-mail communications should be just enough to inform the new buyer without overloading his/her mail box.
- Make realistic and accurate comparisons with other products on the market if asked a direct question. Provide the facts without over-stating any product specifications.
- Note that the instant availability of online information and continuous exposure to information may simplify or reduce the role of selective exposure. This perhaps explains the lack of a relationship between reported dissonance and selective exposure in the SEM structure. It is important to ensure that websites are user-friendly and easy to navigate.
- Note that the inverse relationship between reported dissonance and post-purchase responses imply that beyond a certain level of dissonance, buyers will not be motivated to reduce their felt dissonance. This can result in private or public complaint behaviour, future brand switching or negative word-of-mouth communication. Dealerships must be trained to manage such scenarios because complaint behaviour and negative word-of-mouth communication can damage a brand if not effectively managed.

In today's economic climate, the importance of making the correct decision regarding a high involvement purchase becomes more pronounced and the potential for regret, stress and dissonance increases. The most obvious strategy to reduce dissonance and the need to engage in post-purchase responses (attitude change, trivialization, selection exposure, justification) is for the consumer to effectively search for and utilize the readily available information and make an informed decision and for marketers to be ethical in their interactions with prospective buyers and provide factual, complete and honest information.

Limitations of the study: This study focuses on the impact of reported dissonance on post-purchase responses (attitude change, trivialization, selective exposure, justification) after a high involvement purchase decision. It is suggested that the validated instrument be used to assess whether these post-purchase responses are adapted to a lesser or greater extent in habitual or limited consumer decision-making. It is anticipated that these post-purchase responses will be adapted to a lesser extent because an incorrect decision in habitual or limited decision-making can easily be rectified in the next purchase and the product purchase does not involve a large capital outlay. However, the product being purchased and one's involvement with the product also plays an important role in the level of reported dissonance and post-purchase responses.

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Journal of Economics and Behavioral Studies (JEBS)
Vol. 8, No. 6, December 2016 (ISSN 2220-6140)

International Trade, Foreign Direct Investment (FDI) and International Technology Transfer: A Comparative Study of Asian and African Economies

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Abstract: This paper investigates the long-run equilibrium relationships and short-term effect of international trade and Foreign Direct Investment (FDI) on international technology transfers in selected African and Asian countries from 1980 to 2013.The Johansen and Juselius multivariate co-integration technique and the granger causality test was used to test these relationships. The findings confirmed the presence of co-integrating vectors in the models of these countries. The outcome of the test posits short-run causal relationships, which run either bidirectionally or unidirectionally in all the variables for the selected countries. However, the most interesting lesson for many developing countries in Africa and Asia is that this study confirmed that international technology transfers supported domestic investment, economic growth, exports and imports of goods and services in some of these countries. Finally, all the variables in each model adjusted to equilibrium in the long-run, except for domestic investment in the Malaysian, Nigerian and Indian systems. The study thereby suggests an improved government policies and regulatory framework to improve international technology transfers, domestic investment, economic growth, and exports and imports of goods and services.

Keywords: *International Technology Transfer, Foreign Direct Investment, Trade, Vector Error Correction Modeling, Africa, Asia*

1. Introduction

There is increasing debate in both theoretical and empirical literature concerning the perceived benefits of a country's openness to trade (Fosfuri, Motta & Ronde, 2001; Meyer, 2004; Usman and Ibrahim, 2012; Anyanwu & Yameogo, 2015). The general feeling is that traditional analyses often minimize the cost of protectionism (Saggi, 2002). Underlying this assumption is the belief that international trade, foreign direct investment (FDI), and the interaction among countries in numerous other forms – all contribute to improvement in the global allocation of physical resources and transmitting technology worldwide (Dollar, 1992; Sachs &Andrew, 1995; Iršová & Havránek, 2013). It is also important to know that technology or knowledge is often transferred at a cost, and most empirical evidence observes the difficulties in transferring technology internationally (Sasidharan & Ramanathan, 2007; Lee & Tan, 2006; Havránek & Iršová, 2010). Consequently, spillovers in many developing countries of Asian and African economies (Anyanwu, 2012; Hailu, 2010; Lee & Tan, 2006). In addition, many studies in developing countries also justifies the imperative of technology as an important tool of economic growth, improved balance of trade and poverty reduction, in the present global economic environment (Anyanwu, 2012; Reece & Sam, 2012; Tian, 2007; Mohamed & Sidiropoulos, 2010). This is on the premise that the process of acquiring and increasing the number of technology transfers and people with the requisite knowledge, skills and experience invariably increases the level of economic growth in many developing countries (Saggi, 2002, Lim, 2001). Many developing nations are interested in technology transfers to local population to improve growth, productivity, and to reduce inequality and poverty (Hailu, 2010; Reece & Sam, 2012; Mohamed & Sidiropoulos, 2010). Specifically, Okejiri (2000) and Mohamed and Sidiropoulos (2010) studies on Nigeria and MENE countries observed that on average, nations that have sustained high levels of technology transfers are also those who have, higher levels of economic growth and development.

Consequently, it is imperative for Asian, African, and other developing economies to maintain a high level of technology transfers, trade and FDI mostly from developed economies (UNCTAD, 2009; Okejiri, 2000). This may also increase the level comparative advantages for these developing economies (Mohamed and Sidiropoulos, 2010; UNCTAD, 2015). Based on the above the importance of technology transfers, FDI, economic growth in many Asian and African economies cannot be overemphasized (Anyanwu, 2012; UNCTAD, 2015). This is based on the important contributions of Africa and Asian countries to world economic growth, as well as, reference model for other developing economies (Anyanwu, 2012; UNDP, 2007).

However, manytheoretical and empirical studies have also supported improved absorptive capacity in many developing countries, in order for the benefits from FDI and trade to be realized (Reece & Sam, 2012; Tian, 2007; Lim, 2001). It is also argued that while many scholars have succeeded in outlining the various potential channels for international technology transfers to many developing countries, little is known in practice and in theory about the importance of these channels and also how exactly this transmission occurs; hence this lack impact of FDI and international trade on technology transfers, an examination of the role of FDI and international trade as veritable channels of international technology transfer to many developing countries is imperative (Saggi, 2002; Tian, 2007; Mohamed & Sidiropoulos, 2010). The purpose of this study was thus to determine the effects of international trade and FDI on international technology transfers. Specific objectives are: (1) to investigate the long-run equilibrium relationships among international factors (FDI, international technology transfer, and international technology transfer to the selected countries. This paper is divided into five sections. Section one is the introduction which covers the general background of the study, objectives and gaps in the literature. In section 2 a review of related studies is undertaken. Section three focuses on the methodology. Section four presents the results and discusses the findings. Lastly, section five presents the conclusion, policy implications, and the limitations of the study.

2. Literature Review

The importance of FDI and trade in the present 'globalised' economies cannot be over emphasized. For instance, the global value of FDI was quoted at about US$650 billion between the 1970s and 1980s (UNCTAD, 2009). This, however, rose from US$710.8 billion in 2004 to US$1.7trillion in 2011 (UNCTAD, 2013: xxi). According to Aregbesola (2014), of these increases, Africa's stock grew from US$44 billion in2010 to US$50 billion in 2012(UNCTAD, 2013:3). In addition to the physical movement of capital, multinational corporations (MNCs) also assisted in shaping the landscape of the world economy (Anyanwu & Yameogo, 2015). Their exports accounted for about a third of the total world exports of goods and services between 2009 and 2012 (UNCTAD, 2013), while the number of people employed by these enterprises worldwide was more than 12% of the world population in 2008. These significant roles indicate why countries across the world initiate sustainable policy frameworks that will not only attract FDI from these MNCs, but also retain it (Mohamed & Sidiropoulos, 2010; Aregbesola, 2014).

Technological Diffusion through Inward FDI and International Trade: According to Markusen (1995), the Dunning Eclectic model is the dominant model in identifying the impact of ITT by foreign firms in the contemporary literature. Also known as the Ownership, Location and Internalization (OLI) model, this model posits that firm-specific assets (e.g. knowhow, processes and product patents) are usually used at no extra cost in more than one location (factory), in two or more countries(Markusen, 1995; Al Nasser, 2010).This model explains the penchant for(Lloyd, 1996).In all, the relationships between the diverse channels of international technology transfer are complex. According to Hoekman, Maskus and Saggi (2004), while FDI and international trade are often complements, Licensing and FDI may be either substitutes or complements.Thepositive spillover affects the impact of new technology in the host economy and management knowhow via manifestation to other stakeholders – and deliberate development of new technologies via research and development is also a veritable tool in technology transfers(Lloyd, 1996).

Resources could be in disembodied like licenses, patents, designs and brand names, embodied resources are usually in the form of competences like management skills. He therefore posited that technique, knowledge. Given the background of the Lloyd (1996) and Granstrand (1998) studies, much of the literature stresses the need to transfer technology – disembodied or embodied – from one country to another (Lee & Tan, 2006). According to Deme and Graddy (2006), while assuming that endogenously determined knowledge capital and knowledge spillovers contribute to growth, endogenous growth theories also suggest that knowledge accumulated through research and development often creates externalities. This could be by simultaneously increasing the productivity of firms conducting for example the R&D, and any other firms who choose to adopt the technology. In addition to Romer's (1986) argument that trade speeds up the diffusion of newly produced knowledge, Grossman and Helpman (1990) also affirm that as a firm trades products that use knowledge capital, others benefit from the direct use of the product in their production process, and through the imitated knowledge capabilities in the product. In summary, most of these theories emphasize that international trade and FDI significantly contribute to knowledge transfers, chiefly via the process of imitation (Usman & Ibrahim, 2012; Reece & Sam, 2012; Deme & Graddy, 2006).

Foreign Direct Investment and Trade in the Asia Pacific: In Asian countries, the mode and purpose of international technology transfer have witnessed dramatic changes over the years. The 'Asian Tigers' (South Korea, Taiwan, Singapore and Hong Kong), were the first set of countries to open up their economies through the introduction of market-driven policies, while other countries like Malaysia and China followed (Agarwal, Gupta & Gandhi, 2005). In support of the classical theory of trade, Malaysia is one of the recipients of the upsurge inflow of FDI into Asia since the mid-1980s – whether through investment or from the developed economies (Lloyd, 1996). Malaysia enjoyed these upsurges in both FDI and international trade due to its initial cheap labour and the provision of basic infrastructure in comparison with other developing countries (Agarwal et al., 2005). However, the movement of the Asian Tigers' capacity in the low-tech to foreign export policy, helped the emergence of both the second and third tier of the 'new aspiring industrialized' countries like Malaysia tremendously. However, the initial comparative advantages have been increasingly upgraded to industrial exports and capacities (Kojima, 2000; Lemoine & Ünal-Kesenci, 2004). With less than US$100million in 1970, Malaysia witnessed a dramatic increased in FDI inflows in the 1980s, due largely to its open economy and favourable investment climate. The FDI inflows peaked in the early 1990s, with an annual average of over US$5 billion from 1990 to 1996 – shortly before the Asian financial crises. Malaysia's comparative advantage started in early the 1980s until shortly after the financial crises, due to favourable policies – especially in the electronics sector (Leete, 2006; WTO, 2001). Despite the huge impact of the financial crises, Malaysia still benefit from favourable FDI locations among the Southeast Asian countries, while FDI policies have been translating into better GDP per capita for Malaysians. Over the last decade, most sectors in Malaysia have benefited from FDI and international trade via the strategy of foreign technical collaborations. Consequently, the international However, despite the shift from innovations in many developing countries of Asia, efforts are still being made towards improving the rate of technology transfer through import of relevant technology from developed countries (Agarwal et al., 2005).Malaysia has been enjoying comparative advantages in the importation of machinery and capital goods from developed countries – mostly the US and Japan. This to some extent facilitated the acquisition of approved strategic and relevant high technology by the Malaysian local firms compared to most developing economies (Mohamed & Sidiropoulos, 2010; Jiménez, 2011).

Growth over the past two decades– through an export-oriented industrialization strategy (Pupphavesa & Grewe, 1994; Lee & Tan, 2006). This was a counter-strategy to the failing international commercial policies of the 1980s (Craig, 2001; Lee & Tan, 2006). Consequently, incentives manufacturing. The economy experienced dramatic export growth, notwithstanding this inconsistent policy (Pupphavesa &Grewe, 1994; Lee & Tan, 2006). FDI into Thailand accelerated by the second half of the 1980s, from US$354 million in 1987 to a peak ofUS$2.5 billion in it has been increasing steadily to over US$8.6 billion in 2006 (WTO, 2007). Although FDI inflow into Malaysia and South Africa (and Nigeria, in the early 1970s) far outweighed that of Thailand, from the 1970s to late 1990s, this was probably due to Thailand being a less open economy and the imposition of various impediments to trade (Lee & Tan, 2006). Conversely, the situation has changed since 2000. Thailand experienced improved economic growth from 1980 until the recent financial crisis (Klenow & Rodriguez-Clare, 1997; Diao & Stokke, 2005). The broad empirical background for technology transfer in Thailand and most Asian countries can be drawn from Equipment, and hence spillovers are linked to international trade (Urata & Yokota, 1994). In addition, using the analysis of Collins and Bosworth (1996), Young (1994) estimated Total Factor Productivity (TFP) growth in Thailand to be approximately 2%. This TFP growth from 1981-1995 was traced to a policy of openness and the sectoral allocation of employment (Urata & Yokota, 1994; Diao & Stokke, 2005).

Foreign Direct Investment (FDI) and International Trade in Africa: The integration of many African countries with the global economy increased in the 1990s. This was facilitated by changes in economic policies and the reduction in trade barriers (Imoudu, 2012). This is on the premise that FDI benefits developing countries via supplementary domestic investment, as well as technology transfer, employment generation, improved local competition, and other positive externalities (Ayanwale, 2007; Ayanwale & Bamire, 2004). However, according to the Heckscher - Ohlin Theorem, countries will usually export goods whose production is highly intensive, and with abundant factors of production (Mahe, 2005).This is important because a few countries in Africa – especially Nigeria, South Africa, Morocco and Egypt – attract diversified FDI that is both service and resources-related (Aregbesola, 2014). Most African countries attract FDI in primary resources like crude oil, coal, platinum and gold, and strive to attract foreign FDI because of its perceived influence on economic growth and development. Notable initiatives like the New Partnership for Africa's Development (NEPAD) also enhance the attraction of FDI for many African countries. For example, the amount of FDI inflow into Nigeria increased from US$2.23 billion in 2003 to about to US$9.44 in 2006 (Imoudu, 2012; Anyanwu & Yameogo, 2015). The extent of FDI contributions to economic growth in Nigeria have been subjected to tremendous debate in the literature, especially as Nigeria is undoubtedly confronted with both economic and social problems of high poverty, a high level of unemployment, corruption, low capacity utilization, and income inequality (Ayanwale & Bamire, 2004; Akinlo, 2004; Jiménez, 2011). These results on the linkage between FDI and economic growth in Nigeria are however not unanimous (Oyejide, 2005; Akinlo, 2004). Another major hindrance to economic growth is the fact that FDI has traditionally been concentrated in the Nigerian extractive industries – which are usually non-growth generators (Kandil, 2011; Imoudu, 2012; Iršová & Havránek, 2013).

In frantic efforts to attract FDI, South Africa has implemented various policy initiatives in the last two decades. South Africa thus enjoys a comparative advantage in attracting capital-intensive FDI and the attendance technology transfers in Africa (Borensztein, Gregorio & Lee, 1998; Kandil, 2011), due to the implementation of both policy (product market regulation, openness to trade, labour-market arrangements, infrastructural development and corporate tax rates) and non-policy (factor proportion, market size, economic and political stability) factors (Fedderke & Romm, 2004). Confirming the positive spill-over from FDI and trade on output using aggregated time-series data in South Africa, Fedderke and Romm (2004) also confirmed the positive influence of FDI on growth from 1960 to 2002. In addition, their study also observed a crowd-out of domestic investment from FDI – although this impact is restricted in the short-run (Mazenda, 2014). In a similar study, Sridharan, Vijayakumar and Chandra (2009) also studied the causal relationship between FDI and growth in the BRICS countries, using quarterly data from 1999 to 2007 for China, from 1992 to 2007 for India, and from 1990 to 2007 for South Africa (Mazenda, 2014). The results showed bi-directional relationships between FDI and growth for South Africa, while only a unidirectional relationship was observed for China and India. However, unemployment, regardless of the various macroeconomic policies, is still the major hindrance in terms of the realization of the desired economic growth (Havránek & Iršová, 2010; Al Nasser, 2010; Mazenda, 2014).

3. Methodology

Selected countries in Africa and Asia, from 1980 to 2012, were utilized in this study. Craig (2001) and Lee and Tan (2006) suggested a comparative analysis of Asian and African economies – especially the two most populous countries, China and India (Chakraborty & Basu, 2002; Javorcik, 2004). The selected countries for this study are South Africa, Nigeria, Malaysia, Thailand, China and India. The relationships among FDI, international trade, domestic investment and output were analyzed via multivariate co-integration analysis. This involved the use of Granger-causality tests within a Vector Error-correction Modelling (VECM) framework to analyze the relationships (Johansen & Juselius, 1990). The secondary data sources were chiefly from: the World Trade Organization (WTO) database, database, International Monetary Fund (IMF), Nigeria National Bureau of Statistics, the Matrade database, the United Nations Statistics database (UNdata), and the World Development Indicators ONLINE.

Econometric Model: The model utilized in this study was exclusively adapted from past empirical and theoretical studies (Madsen, 2007; Lee & Tan, 2006).These are represented in the following equations:

$$IMPMACH_t = a_1 + a_2\, IFDI_t + a_3\, RGDP_t + a_4\, HDI_t + a_5\, HEXP_t + a_6\, HIMP_t + \varepsilon \text{.......equ. (1)}$$

$$IFDI_t = b_1 + b_2\, IMPMACH_t + b_3\, RGDP_t + b_4\, HDI_t + b_5\, HEXP_t + b_6\, HIMP_t + \varepsilon \text{ ... equ.(2)}$$

$$RGDP_t = c_1 + c_2\, IMPMACH_t + c_3\, IFDI_t + c_4\, HDI_t + c_5\, HEXP_t + c_6\, HIMP_t + \varepsilon \text{...equ.(3)}$$

$HDI_t = d_1 + d_2\, IMPMACH_t + d_3\, IFDI_t + d_4\, RGDP_t + d_5\, HEXP_t + d_6\, HIMP_t + \varepsilon$...equ. (4)

$HEXP_t = e_1 + e_2\, IMPMACH_t + e_3\, IFDI_t + e_4\, RGDP_t + e_5\, HDI_t + e_6\, HIMP_t + \varepsilon$ ... equ. (5)

$HIMP_t = f_1 + f_2\, IMPMACH_t + f_3\, IFDI_t + f_4\, RGDP_t + f_5\, HDI_t + f_6\, HEXP_t + \varepsilon$....Equ. (6)

In the above equations: IMPMACH represents imports of machinery (proxy for technology transfer), IFDI stands for inflow of FDI to host country, and RGDP is the host country's real GDP. HDI stands for host country's domestic investment, HEXP for host country's exports, and HIMP represents the host country's imports. The disturbance is represented by ε..., while the unknown population parameters are represented by a1...a7. From the models, equation (1), for example, has the dependent variable (IMPMACH), which depends on a big set of explanatory variables (IFDI; RGDP; HDI; HEXP; HIMP). A disturbance is inserted into the models because of the likely omission of explanatory variables, aggregation of variables, model specification, functional misspecification, and measurement errors. In addition, it is also important to note the following assumptions of the models above: all explanatory variables have values that are fixed in repeated samples, each (ε) disturbance is normally distributed, and there is nonexistence of linear relationships among the values of any two or more of the explanatory variables – i.e. absence of perfect multicollinearity (Asteriou & Hall, 2007). Consequently, the via equation (1). This is on the basis that the Akaike Information Criterion and Schwarz Bayesian Criterion are supported by Eviews in the form of standardized regression results (Asteriou & Hall, 2007;Lee & Tan, 2006; Akaike, 1974; Schwarz, 1978).

Unit Root Test: Given that shocks are temporary and effects are eliminated over time in a stationary time series; a formal test for identifying non-stationarity (presence of unit roots) using Eviews, was carried out (see Asteriou & Hall, 2007). Since the data used in this study – and most often with macroeconomic time series – are often trended and non-stationary (mean is continually rising), being a regression of one series on the other, it is most likely that a significant positive or negative relationship would result, even though they are unrelated. This is the concept of spurious regression, which is a violation of the Classical Linear Regression Model (CLRM) (Granger & Newbold, 1974; Asteriou & Hall, 2007).

Standard ADF Test: In order to eliminate autocorrelation, and because error terms are unlikely to be whiten noise, the standard augmented Dickey-Fuller test was performed (Asteriou & Hall, 2007). This is important because, according to the Solow Growth Model, there are significant structural breaks, which suggests that country-specific conditioning variables can be permanently altered by major shocks (Strazicich, Lee & Day, 2004). The tested hypothesis during the ADF test is given below:
Hypothesis 1: Null hypothesis (Ho :) = Model has a Unit Root
Alternative hypothesis (H_1 :) = Model has no Unit Root

The critical value was compared with the computed result to accept or reject the null hypothesis. If the former is greater (in absolute value) than the latter, the null hypothesis is rejected and no unit root is present.

Phillips-Perron (PP) Test: Given the imperative of uncorrelated error terms and a constant variance assumption of the ADF methodology, the Phillips-Perron test was performed (Asteriou & Hall, 2007). The tested hypothesis under the PP test is also the same as the one tested for in the ADF test:
Hypothesis 2: Null hypothesis (Ho :) = Model has a Unit Root
Alternative hypothesis (H_1 :) = Model has no Unit Root

The computed value of the test statistic was also compared to the critical value for the PP test in order to reject or accept the null hypothesis. The null hypothesis is rejected, if the former is greater (in absolute value) than the latter.

KPSS-Kwiatkowski-Phillips-Schmidt-Shin Test: Similar to Asteriou and Hall (2007), the tested hypothesis during the KPSS test is given below:
Hypothesis 3: Null hypothesis = Ho: Model is stationary

Alternative hypothesis= H_1: Model is not stationary

Multivariate Co-integration Analysis: Co-integration was tested using the Johansen approach under group statistics, bearing in mind the Johansen's reduced-rank regression methodology (Cuthbertson, Hall & Taylor, 1992). Step one was to determine the order of integration; consequently, unit-root was tested on all the variables of each selected countries to determine the level of co-integration, and appropriate models were selected using the Doldado, Jenkinson and Sosvill-Rivero (1990) criterion. The second step was to determine the optimal lag length. Unfortunately, EViews does not allow the automatic detection of the lag length, so this study decided to estimate the model for a few lags and then reduce down to check for the AIC and SBC optimal value (Asteriou & Hall, 2007). However, given that co-integration only indicates the presence or absence of Granger-causality, it often failed to show the route of causality – hence, this route was decided via VECM(Cuthbertson et al., 1992).This was applied in this research (Lee & Tan, 2006)

Vector Error Correction Model (VECM): Following the criticism by Sims (1980) of the identification of endogenous and exogenous variables in models of simultaneous equations, he advocated for equal treatment and no distinction between endogenous and exogenous variables. Once the distinction is ignored, all the variables are treated as endogenous. This will, however, lead to the development of the Vector Autoregressive (VAR) models, where all the equations have the same set of regressors (Asteriou & Hall, 2007). The VAR model is therefore important in testing for causality (Hasbrouk, 1996). This research, however, used the Granger causality test developed by Granger (1969), under VECM, to test for causality among Imports, FDI, technology transfer and international trade. In addition, VECM also facilitated the distinction between long-run and short-run Granger-causality (Masih & Masih, 1996).

4. Results and Discussion of Results

Unit Root Test: With the use of EViews 9.0, lagged dependent variables were automatically selected. This was an attempt to correct for serial correlation (Cuthbertson et al., 1992).

Table 1: ADF-Augmented Dickey Fuller Test Results

Variables	Level Constant without Trend	Constant with Trend	First Difference Constant without Trend	Constant with Trend
Malaysia(M)				
HDI	-1.128695	-2.245592	-5.190527*	-5.110880*
HEXP	3.834168	0.697322	-3.199933**	-4.325263*
IFDI	-1.440994	-2.572330	-7.200976*	-7.096229*
RGDP	2.932019	-0.662914	-4.238610*	-5.174591*
HIMP	1.843983	-0.778404	-4.414912*	-4.963164*
IMPMACH	1.492769	-1.215579	-4.902542*	-5.428332*
Thailand(T)				
HDI	-1.144648	-2.945136	-4.788712*	-4.709925*
HEXP	3.714916	0.791333	-1.521439	-5.965081*
IFDI	1.021374	1.505314	0.607969	-4.552479*
RGDP	2.720547	-1.191821	-3.302965**	-3.907973**
HIMP	1.908789	-0.216484	-3.788318*	-4.137955**
IMPMACH	0.645126	-2.572635	-4.555648*	-4.852589*
Nigeria(N)				
HDI	0.124335	-0.309808	-3.145541**	-3.361598***
HEXP	2.514984	1.442281	-3.301828**	-3.687529**
IFDI	0.993062	-0.704361	-5.639046*	-6.088482*
RGDP	0.172443	-3.352558	-6.807686*	-6.722904*
HIMP	-0.282022	-0.737150	-4.567816*	-4.563187*
IMPMACH	1.268557	-0.224709	-5.805208*	-6.405380*

South Africa(S)				
HDI	-1.176535	1.287363	-4.3838827*	-2.222880*
HEXP	3.275633	0.838877	-3.8376673**	-4.376747*
IFDI	-2.986794	-2.848493	-7.238377*	-4.383773*
RGDP	1.345519	-2.774647	-3.238610*	-3.1444441*
HIMP	1.324583	-1.884474	-3.414912*	-4.943334*
IMPMACH	1.238569	1.487436	-2.302542*	-3.467462*
China(C)				
HDI	1.8878748	1.9773736	3.3737412*	-3.456925*
HEXP	3.494894	0.8984783	-1.374649**	-5.687771*
IFDI	2.099894	1.2833838	0.333949*	-3.533459*
RGDP	2.298934	-1.239399	-3.302934**	-4.907333**
HIMP	1.988473	-0.393948	-3.788345*	-5.333955**
IMPMACH	1.998887	-2.388489	-4.522299**	-5.333589*
India(I)				
HDI	1.099895	-0.393838	-2.3736361**	-3.361598**
HEXP	2.399488	1.399393	-3.3837373**	-4.766547***
IFDI	0.337488	-1.394944	-5.3938838*	-5.456482*
RGDP	0.199884	-2.376373	-6.3837373**	-4.543904*
HIMP	0.998940	-1.393934	-4.2336736*	-3.345187*
IMPMACH	2.098484	-1.309948	-5.3939388**	-5.565380*

Note: *, ** and *** implies 1%, 5% and 10% levels of significance, respectively.

Table 2: Phillips-Perron (PP) Test Results

Variables	**Level** **Constant without Trend**	**Constant with Trend**	**First Difference** **Constant without Trend**	**Constant with Trend**
Malaysia (M)				
HDI	-1.201432	-2.245592	-5.144889*	-5.057306*
HEXP	3.924001	0.725865	-3.135526**	-4.07412**
IFDI	-1.275166	-2.664606	-7.202274*	-7.096805*
RGDP	2.822786	-0.738637	-4.232497*	-5.174591*
HIMP	1.976495	-0.852797	-4.400720*	-4.860987*
IMPMACH	1.571491	-1.210226	-4.900783*	-5.407357*
Thailand (T)				
HDI	-1.120844	-1.745726	-2.89435***	-2.801947
HEXP	3.588824	1.024137	-5.627780*	-6.489557*
IFDI	1.384242	-1.832620	-6.052339*	-7.737240*
RGDP	2.266872	-0.929186	-3.302965**	-3.89165**
HIMP	1.908789	-0.076366	-3.954526*	-4.380714*
IMPMACH	1.175334	-1.470557	-3.455271**	-4.975931*
Nigeria(N)				
HDI	0.439370	-0.148130	-2.65569***	-2.604309
HEXP	2.320468	0.972072	-3.30182**	-3.74274**
IFDI	1.763926	0.704361	-5.641124*	-6.086636*
RGDP	0.018424	-2.356968	-6.769487*	-6.689742*
HIMP	-0.809650	-1.275888	-4.613034*	-4.607808*
IMPMACH	1.599318	-0.295587	-5.888616*	-6.383675*

South Africa (S)				
HDI	-1.736632	1.245592	-4.345889**	-3.789306*
HEXP	2.787301	0.725865	-4.134526*	-4.789412**
IFDI	1.776866	2. 978606	-5.778274**	-5.45505*
RGDP	2.444486	-0.738637	-3.666497*	-5.986791*
HIMP	1.097695	-1.374797	-4.345720*	-4.845787*
IMPMACH	2.354671	-1.447226	-3.456783*	-4.448957*
China (C)				
HDI	1.475844	1.456726	-3.894354**	-3.801947
HEXP	2.846824	1.566137	-4.634559***	-6.489557*
IFDI	-1.384672	-1.433620	-6.056789*	-2.737240*
RGDP	2.264645	-0.929445	-4.302365*	-3.89165**
HIMP	2.908748	-0.878774	-2.444526*	-3.380714*
IMPMACH	1.364734	-1.577373	-2.345271**	-3.975931*
India(I)				
HDI	1.877370	-0.144746	-3.65569**	-3.604333*
HEXP	2.665468	0.445072	-3.398682**	-3.758579**
IFDI	2.665926	0.345361	-4.786124*	-4.086636*
RGDP	1.443424	-2.334968	-5.456487*	-6.684872*
HIMP	-0.449650	-1.275888	-4.556034*	-4.699588*
IMPMACH	1.444318	1.3455587	-3.345136*	-5.458475*

Note: *, ** and *** implies 1%, 5% and 10% levels of significance, respectively.

Table 3: Kwiatkowski-Phillips-Schmidt-Shin (KPSS) Test Results

Variables	Level Constant without Trend	Constant with Trend	First Difference Constant without Trend	Constant with Trend
Malaysia(M)				
HDI	0.61139**	0.070516	0.055752	0.055499
HEXP	0.68224**	0.220127*	0.235124	0.084125
IFDI	0.540016**	0.071602	0.068869	0.060269
RGDP	0.717740**	0.209631**	0.160438	0.053142
HIMP	0.691270**	0.193286**	0.113604	0.061408
IMPMACH	0.676906**	0.193454**	0.071836	0.057960
Thailand(T)				
HDI	0.569937**	0.075514	0.062453	0.060117
HEXP	0.690808**	0.213009**	0.192955	0.103680
IFDI	0.766940*	0.208883**	0.263632	0.169095**
RGDP	0.710045**	0.183612**	0.435652	0.063018
HIMP	0.699347**	0.165347**	0.119382	0.098581
IMPMACH	0.683356**	0.155069**	0.266995	0.091497
Nigeria(N)				
HDI	0.325089**	0.14051***	0.293300	0.158950**
HEXP	0.507892**	0.14550***	0.195006	0.178243**
IFDI	0.745004*	0.13006***	0.315861	0.117715
RGDP	0.736431**	0.072152	0.116336	0.105210
HIMP	0.414510**	0.112198	0.173065	0.133714
IMPMACH	0.648086**	0.14437***	0.321293	0.109837
South Africa (S)				
HDI	0.587939**	0.234516	0.127752	0.048479

HEXP	0.689880**	0.345127*	0.267364	0.048745
IFDI	0.540484**	0.374647*	0.064848	0.049589
RGDP	0.714983**	0.364731**	0.164947	0.054477
HIMP	0.8498370**	0.4784886**	0.113487	0.061457
IMPMACH	0.0984806**	0.1494944**	0.455836	0.057547
China(C)				
HDI	0.3454937**	0.485859	0.344453	0.160117
HEXP	0.5564808**	0.254858**	0.846955	0.149980
IFDI	0.3455440*	0.258595**	0.646532	0.169044
RGDP	0.7347665**	0.148585**	0.847452	0.063456
HIMP	0.6099585**	0.222284**	0.147482	0.094555
IMPMACH	0.6846747*	0.484949**	0.276487	0.093455
India(N)				
HDI	0.8747748**	0.140457***	0.294674	0.158954
HEXP	0.5489333*	0.1458595**	0.195006	0.178553**
IFDI	0.7454857*	0.135586***	0.347484	0.117456
RGDP	0.5958474**	0.075859*	0.348496	0.557810
HIMP	0.4147585**	0.154575	0.149847	0.157614
IMPMACH	0.6458990**	0.194859**	0.347567	0.475847

Note: *, ** and *** implies 1%, 5% and 10% levels of significance, respectively.

Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) Test Results: This test was conducted for unit roots in both first difference and levels significant. Similar to the ADF test, the PP test was conducted for unit roots in both first difference and levels for all the selected countries. The result of this analysis is reported in Table 2 (above). This result assumed stationarity of the series by the rejection of the null hypothesis, when the test statistic is less than the 1%, 5% and 10% levels of significance.

Table 4: Test results for Multiple Co-integrating Vectors

Co-integration Order		**Trace**		**Maximum Eigenvalue**	
Null	Alternative	Statistics	C. V. (0.05 level)	Statistics	C.V (0.05 level)
Malaysia Variables (IMPMACH, IFDI, RGDP, HDI, HEXP, HIMP) (*P*=2)					
r = 0.0	r ≥ 1.0	166.5710*	95.75366	65.30743*	40.07757
r ≤ 1.0	r ≥ 2.0	101.2635*	69.81889	49.73640*	33.87687
r ≤ 2.0	r ≥ 3.0	51.5271*	47.85613	30.32430*	27.58434
r ≤ 3.0	r ≥ 4.0	21.2028	29.79707	16.33669	21.13162
r ≤ 4.0	r ≥ 5.0	4.8661	15.49471	4.86385	14.26460
r ≤ 5.0	r = 6.0	0.0022	3.841466	0.0022	3.84146
Thailand Variables (IMPMACH, IFDI, RGDP, HDI, HEXP, HIMP) (*P*=2)					
r = 0.0	r ≥ 1.0	222.2631*	117.7082	84.79768*	44.49720
r ≤ 1.0	r ≥ 2.0	137.4654*	88.80380	49.46550*	38.33101
r ≤ 2.0	r ≥ 3.0	87.99988*	63.87610	45.30567*	32.11832
r ≤ 3.0	r ≥ 4.0	42.69420	42.91525	20.74261*	25.82321
r ≤ 4.0	r ≥ 5.0	21.95160	25.87211	14.83326	19.38704
r ≤ 5.0	r = 6.0	7.118341	12.51798	7.118341	12.51798
Nigeria Variables (IMPMACH, IFDI, RGDP, HDI, HEXP, HIMP) (*P*=2)					
r = 0.0	r ≥ 1.0	300.2901 *	107.7220	117.2672*	44.49720
r ≤ 1.0	r ≥ 2.0	183.0229 *	82.10380	70.35526*	38.33101
r ≤ 2.0	r ≥ 3.0	112.6676 *	73.71610	55.84345*	32.11832
r ≤ 3.0	r ≥ 4.0	56.8241 *	32.19525	35.06454*	25.82321
r ≤ 4.0	r ≥ 5.0	21.7596	27.71211	17.18951	19.38704
r ≤ 5.0	r = 6.0	4.57015	13.18798	4.57015	12.51798

South Africa Variables (IMPMACH, IFDI, RGDP, HDI, HEXP, HIMP) (*P*=2)					
r = 0.0	r ≥ 1.0	144.4510*91.34566		75.30734*	48.07757
r ≤ 1.0	r ≥ 2.0	122.4565*61.87589		59.73667*	34.87687
r ≤ 2.0	r ≥ 3.0	56.4571*44.45413		40.32445*	24.58434
r ≤ 3.0	r ≥ 4.0	34.5628	24.45507	19.34566	20.13162
r ≤ 4.0	r ≥ 5.0	6.5461	11.45571	6.86543	17.26460
r ≤ 5.0	r = 6.0	0.45266.56546		2.4522	6.84146
China Variables (IMPMACH, IFDI, RGDP, HDI, HEXP, HIMP) (*P*=2)					
r = 0.0	r ≥ 1.0	143.2456*	127.45682	76.73578*	47.98350
r ≤ 1.0	r ≥ 2.0	122.4453*	98.80789	44.46320*	35.35461
r ≤ 2.0	r ≥ 3.0	81.9994*	73.67610	40.38997*	36.56772
r ≤ 3.0	r ≥ 4.0	43.69456	49.34525	23.43261	20.48721
r ≤ 4.0	r ≥ 5.0	22.95450	29.55211	15.56326	12.36704
r ≤ 5.0	r = 6.0	9.345441	10.44798	6.668341	5.56798
India Variables (IMPMACH, IFDI, RGDP, HDI, HEXP, HIMP) (*P*=2)					
r = 0.0	r ≥ 1.0	230.45014 *	121.4572	127.8795*	54.34560
r ≤ 1.0	r ≥ 2.0	193.8974 *	84.34570	78.37895*	38.54561
r ≤ 2.0	r ≥ 3.0	142.6645 *	61.85677	55.84343*	29.14332
r ≤ 3.0	r ≥ 4.0	86.5671 *	47.93467	38.98754*	21.84561
r ≤ 4.0	r ≥ 5.0	29.57466	29.87243	19.23451	16.23704
r ≤ 5.0	r = 6.0	6.543152	11.33498	8.45715	9.45798

Note: r denotes no. of co-integrating vectors; and (*) denotes rejection @ 95% critical value (CV).

KPSS-Kwiatkowski-Phillips-Schmidt-Shin Test Results: The KPSS test for each of the selected countries was also conducted in the levels and first difference, to test for unit roots via the Newey-West bandwidth method (Hasbrouk, 1996; Stanley et al., 2013). Results for all the selected countries are shown in Table 3 (above). Unlike previous tests (ADF and PP tests), the null hypothesis was rejected only at levels, consequently, these further confirmed the level of integration for all variables (Masih & Masih, 1996; Rehman et al., 2011).

Results for Multiple Co-integrating Vectors: Long-run equilibrium relationships among ITT, FDI, trade and output, in all the selected countries, were tested using multivariate co-integration (Johansen &Juselius, 1990). This analysis is shown in Table 4.These figures were extracted using the likelihood ratio test, after a series of selection processes with a 1 through 4 lag length.

These results (Table 4) show the existence of co-integrating vectors in all the models. Specifically, there were 3 vectors in the Malaysia, South Africa and China systems (at a lag interval of 1 to 2), while four (4) co-integrating vectors were experienced in Thailand's, Nigeria 'sand India's models (lag length of 1 to 3) (Asteriou & Hall, 2007; Clark et al., 2011). This implied that while the variables in Malaysia, South Africa and China have long-run equilibrium relationships and were adjusting via three identified channels in the short-run, the Thailand, Nigeria and India variables did the same adjustment through 4 channels (Buchanan et al., 2012; Asteriou & Hall, 2007; Onafowora & Owoye, 2006).

Result of Vector Error Correction Modelling via Granger Causality: The Granger causality test was conducted to test the short-term effect of trade and FDI on ITT to the Asian and African countries. The test was done in an environment of VECM (Granger, 1969; Coe et al., 1995).However, for each system (country), the various null hypotheses (H_0: There is no impact of 'X' on 'Y') was tested at different constants and levels of significance (1%, 5%, and 10%) – for both the explanatory variables and the 'group' long-run error terms (ECT $_{t-1}$ terms).The results of this analysis are reported in Tables 5 to 10 (below).

Table 5: VECM results for Malaysia variables (p=2)

Variable-Dependent	Variables-Independent **[Wald Test Chi Square (Significance level)]** **ΔIMPMACH**	**ΔIFDI**	**ΔRGDP**	**ΔHDI**	**ΔHEXP**	**ΔHIMP**	**ECT $_{t-1}$**
ΔIMPMACH	------------	15.0223*	3.3040124	1.602915	4.367073	0.816671	16.0864*
		(0.0005)	(0.1917)	(0.4487)	(0.1126)	(0.6648)	(0.0011)
ΔIFDI	1.033549	------------	1.595627	16.0791*	13.2220*	1.931848	13.6919*
	(0.5964)		(0.4503)	(0.0003)	(0.0013)	(0.3806)	(0.0034)
ΔRGDP	6.9187**	22.4327*	------------	14.4409*	2.127338	7.9077**	25.1157*
	(0.0314)	(0.0001)		(0.0007)	(0.3452)	(0.0192)	(0.0001)
ΔHDI	5.5310***	0.881048	3.333519	-----------	5.4197***	2.126841	1.611708
	(0.0629)	(0.6437)	(0.1889)		(0.0665)	(0.3453)	(0.6567)
ΔHEXP	16.0908*	5.666654***	20.2809*	11.4211*	-----------	2.732798	8.26675**
	(0.0003)	(0.0588)	(0.0001)	(0.0033)		(0.2550)	(0.0408)
ΔHIMP	9.4670*	2.278973	4.359217	4.678***	5.907***	-----------	15.2218*
	(0.0088)	(0.3200)	(0.1131)	(0.0964)	(0.0521)		(0.0016)\

Note: *, ** and *** indicate statistical significance at 1%, 5% and 10%

The Malaysian, South African and Chinese systems consist of 3 (three) co-integrating vectors. Consequently, a Wald test (joint) was carried out on each of the three error correction terms.

Table 6: VECM results for Thailand variables (p=2)

Variable-Dependent	**Variables-Independent [Wald Test Chi Square (Significance level)] ΔIMPMACH**	**ΔIFDI**	**ΔRGDP**	**ΔHDI**	**ΔHEXP**	**ΔHIMP**	**ECT $_{t-1}$**
ΔIMPMACH	-----	8.207869**	1.961350	18.30197*	1.622662	5.350815	19.9355*
		0.0419	0.5805	0.0004	0.6543	0.1478	0.0002
ΔIFDI	6.860***	---------	1.510704	16.92722*	2.403152	5.888746	24.9819*
	0.0765		0.6798	0.0007	0.4930	0.1172	0.00001
ΔRGDP	1.543045	6.59030***	--------	3.373826	8.3045**	10.526**	10.526**
	0.6724	0.0862		0.3375	0.0401	0.0146	0.0146
ΔHDI	48.7271*	9.798834**	9.3608**	--------	24.7488*	8.5058**	13.8349*
	0.00001	0.0204	0.0249		0.00001	0.0366	0.4321
ΔHEXP	0.668981	8.644371**	4.853424	20.29062*	-------	9.9160**	37.0155*
	0.8805	0.0344	0.1829	0.0001		0.0193	0.0001
ΔHIMP	5.454319	9.565928**	3.713398	17.45746*	2.028492	-------	28.5783*
	0.1414	0.0226	0.2941	0.0006	0.5665		0.0001

Note: *, ** and *** indicate statistical significance at 1%, 5% and 10%

Table 7: VECM results for Nigeria variables (p=2)

Variable-Dependent	Variables-Independent [Wald Test Chi Square (Significance level)] ΔIMPMACH	ΔIFDI	ΔRGDP	ΔHDI	ΔHEXP	ΔHIMP	ECT_{t-1}
ΔIMPMACH	------	0.774603	13.2586*	6.84582***	9.0264**	3.618038	20.3855*
		0.8555	0.0041	0.0770	0.0289	0.3058	0.0004
ΔIFDI	4.581385	-------	13.27705*	13.39065*	16.9366*	10.123**	25.2264*
	0.2051		0.0041	0.0039	0.0007	0.0175	0.00001
ΔRGDP	2.813294	16.6522*	------	7.57411***	2.172380	7.059***	23.0014*
	0.4213	0.0008		0.0557	0.5374	0.0700	0.0001
ΔHDI	1.645923	0.036294	4.743651	------	5.298446	0.434144	4.623892
	0.6490	0.9982	0.1916		0.1512	0.9331	0.3281
ΔHEXP	6.668***	2.62633	21.9823*	17.17398*	--------	15.1570*	32.0661*
	0.0832	0.4529	0.0001	0.0007		0.0017	0.00001
ΔHIMP	8.8948**	9.6301**	2.902335	2.600274	6.994***	--------	17.3805*
	0.0307	0.0220	0.4069	0.4574	0.0721		0.0016

Note: *, ** and *** indicate statistical significance at 1%, 5% and 10%

Table 8: VECM results for South Africa variables (p=2)

Variable-Dependent	Variables-Independent [Wald Test Chi Square (Significance level)] ΔIMPMACH	ΔIFDI	ΔRGDP	ΔHDI	ΔHEXP	ΔHIMP	ECT_{t-1}
ΔIMPMACH	------------	18.5623**	2.234124	2.45665	3.457073	2.789671	21.564**
		(0.0345)	(0.2945)	(0.6687)	(0.1566)	(0.6234)	(0.03311)
ΔIFDI	1.234449	------------	1.67827	16.0744*	13.25660*	2.76848	13.8909*
	(0.54544)		(0.4785)	(0.0343)	(0.0015)	(0.4506)	(0.0067)
ΔRGDP	7.56687**	20.3478*	------------	14.4766*	2.567558	7.4567**	25.1157*
	(0.0345)	(0.00451)		(0.0099)	(0.35672)	(0.0166)	(0.01101)
ΔHDI	15.3410***	16.48554**	18.4456**	-----------	7.4197***	22.5674**	21.5679**
	(0.0559)	(0.0035)	(0.03489)		(0.0575)	(0.0333)	(0.01877)
ΔHEXP	14.0458*	9.63489**	21.3455*	21.47871*	-----------	2.75688	9.96675**
	(0.0093)	(0.0577)	(0.0034)	(0.0056)		(0.45600)	(0.0466)
ΔHIMP	8.34570*	2.456673	3.45617	5.678**	8.9807***	-----------	15.4568*
	(0.0458)	(0.3455)	(0.1341)	(0.0988)	(0.0556)		(0.0019)

Note: *, ** and *** indicate statistical significance at 1%, 5% and 10%

Table 9: VECM results for China variables (p=2)

Variable-Dependent	Variables-Independent [Wald Test Chi Square (Significance level)] ΔIMPMACH	ΔIFDI	ΔRGDP	ΔHDI	ΔHEXP	ΔHIMP	ECT_{t-1}
ΔIMPMACH	-----	9.34586**	2.22230	13.45197*	1.98733	5.543675	20.3455*
		0.0487	0.4564	0.0034	0.6653	0.1675	0.0032
ΔIFDI	9.2222**	---------	4.456704	15.722*	2.43332	5.565446	22.4419*
	0.0555		0.3566	0.0347	0.3478	0.1567	0.0011
ΔRGDP	1.678945	9.76530**	--------	3.567826	9.3045**	10.526**	11.236**
	0.7895	0.08062		0.3564	0.0444	0.0433	0.0246
ΔHDI	38.5671*	10.798876**	9.5558**	--------	24.7488*	8.5058**	51.335*
	0.00331	0.03456	0.0256		0.00331	0.0455	0.00221
ΔHEXP	0.54381	9.78971**	4.65544	21.3462**	-------	9.9160**	27.0995*
	0.6645	0.0454	0.1829	0.0331		0.0373	0.00101
ΔHIMP	2.48999	12.8765**	3.54398	19.4576**	2.78692	-------	22.3443*
	0.2544	0.0245	0.2561	0.0236	0.5555		0.00122

Note: *, ** and *** indicate statistical significance at 1%, 5% and 10%

Table 10: VECM results for India variables (p=2)

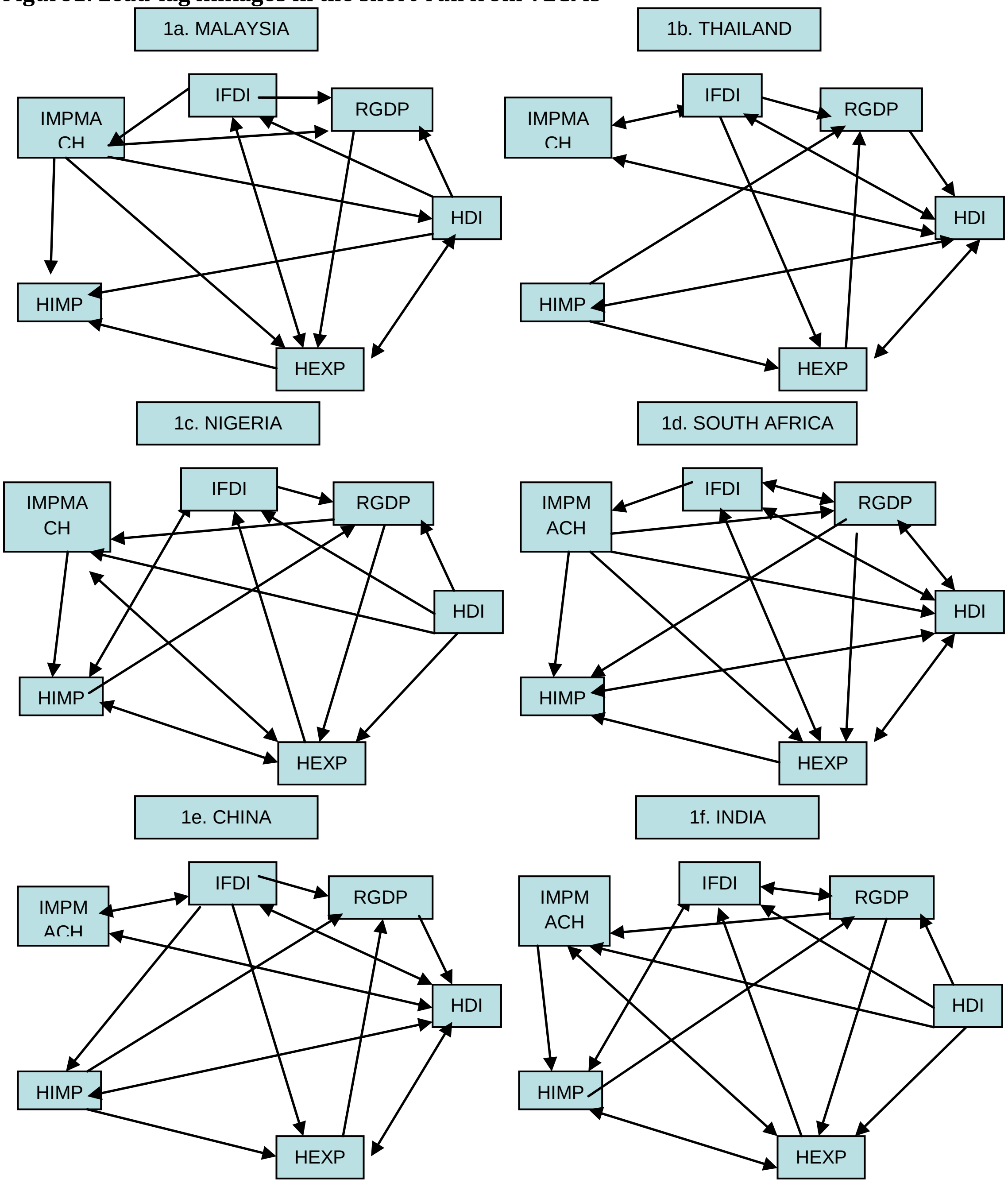
	Variables-Independent [Wald Test Chi Square (Significance level)]						
Variable-Dependent	**ΔIMPMACH**	**ΔIFDI**	**ΔRGDP**	**ΔHDI**	**ΔHEXP**	**ΔHIMP**	**ECT $_{t-1}$**
ΔIMPMACH	------	1.34503	11.2456*	8.45682**	11.6264**	2.34038	23.444*
		0.7775	0.00231	0.0734	0.0339	0.4448	0.0034
ΔIFDI	3.47675	-------	15.2405*	23.3435*	13.446*	11.443**	25.288*
	0.2347		0.00221	0.00491	0.00227	0.0476	0.00341
ΔRGDP	2.498794	19.4442*	------	17.34511***	2.13333	9.999***	20.9914*
	0.43877	0.0028		0.0567	0.4534	0.0766	0.00331
ΔHDI	2.99743	1.45294	4.34551	------	4.24226	1.56774	4.62592
	0.6490	0.45382	0.3456		0.2432	0.3431	0.4481
ΔHEXP	10.348**	2.45633	23.345*	11.5667*	--------	15.111*	22.961*
	0.0652	0.3429	0.00231	0.00347		0.00447	0.00341
ΔHIMP	11.3448**	12.3451**	2.34535	2.45674	8.554***	--------	15.665*
	0.0443	0.0420	0.4349	0.4564	0.0779		0.0036

Note: *, ** and *** indicate statistical significance at 1%, 5% and 10%

In addition, Tables 6, 7 and 10 also show the Granger-causality result for Thailand, Nigeria and India's models respectively. The model of these three countries exhibited 4 terms. The Wald test Chi Square result for all the countries, showed a causal effect in the short-run. These effects were both running bidirectionally and unidirectionally for all the countries. For clarity, the lead-lag linkages for each country's result in tables5, 6, 7, 8, 9 and 10, is shown in figure 1 (below). In figures 1a, 1b, 1d, and 1e – for the Malaysia, Thailand, South Africa and China models respectively – the role of international trade (HIMP and HEXP) channels in mediating technology transfers into these countries was insignificant. Only FDI was found to have contributed significantly to international technology transfers in all the countries, except in the Nigeria and India models. However, international technology transfers positively boosted economic growth in Malaysia, Nigeria, South Africa and India during the period under review.

On the contrary, trade terms seemed not to have impacted positively on the economic growth of Malaysia and South Africa, while both exports and FDI have strong linkages (bidirectional) in the two countries. Likewise, this study also observed a bidirectional linkage between international technology transfers and FDI in both the Thailand and China models. Similar linkages (bidirectional) were also observed between FDI and GDP in the models of Nigeria, South Africa and India. However, due to the strong bidirectional causal relationships between international technology transfers and FDI, it is interesting to know that FDI in China and Thailand could be said not to have altered the activities of domestic firms, this implied an active channel for international technology transfer's absorption and leading to improved export of goods and services. Consequently, international technology transfer into Thailand and China was an avenue for enhancing other channels like trade, output, and domestic capabilities (Keller, 2001, 2002). In support of similar research by Lee and Tan (2006) on selected ASEAN countries, this study observed that domestic activities actually influenced the level of technology transfers taking place in both Thailand and China – by encouraging absorption of technology from abroad.

Figure1: Lead-lag linkages in the short-run from VECMs



The most interesting lesson for many developing countries, both in Africa and Asia, is that this study confirmed that international technology transfers supported economic growth, export and import of goods and services and domestic investment – in both Malaysia and South Africa during the period reviewed. Hence, it could be concluded that, domestic firms' activities were not crowded out due to improvements in domestic efficiencies during the period under review (Lee & Tan, 2006). This finding is similar to previous studies (Lee & Tan, 2006; Johnson, 2006) in terms of economic growth and FDI linkages from developed countries. This study also revealed the significance of FDI in all the countries in terms of sustaining growth, but it failed to influence domestic investment, especially in Malaysia, Nigeria and India. In a deviation from the above analysis, this study was unable to predict a causal relationship, in the short run, between ITT and inward FDI in the case of India and Nigeria. Moreover, the study did not confirm the influence of international technology transfers on growth in Nigeria, Thailand and India – unlike the earlier case for Malaysia and South Africa. According to Heston, summers and Aten (2002), this may be chiefly because of a low level of development in human capital, as well as low absorptive capacities in these countries (UNDP, 2007). That notwithstanding, FDI had bidirectional relationships on RGDP and imports in Nigeria and India. This result was also similar Malaysia and South Africa (Akinlo, 2004; Anyanwu & Yameogo, 2015).

5. Conclusion

This paper investigated the long-run equilibrium relationships and short-term effect of international trade and FDI on international technology transfers in selected African and Asian countries – from 1970 to 2012. Johansen and Juselius multivariate co-integration was used to test these relationships. The findings confirmed the presence of co-integrating vectors in the models of all the selected countries in this study. While the variables in the models of Malaysia, South Africa and China exhibit equilibrium relationships in the long run with each other and did the adjustment in the short-run using three established channels, the variables in the models of Thailand, Nigeria and India also exhibit the same adjustment via four identified channels. The outcome of the causality test observed both bidirectionally and unidirectionally causal effects in the short-run for all the variables. Specifically, the role of international trade (IMP and EXP01) channels in mediating technology transfers into Malaysia, Thailand, South Africa and China, were insignificant, while only FDI was found to have contributed significantly to international technology transfers in all these countries (except in the models of Nigeria and India). In addition, due to the strong bidirectional causal relationships between international technology transfers and FDI, the presence of FDI in China and Thailand also do not crowd out domestic investment. The consequential benefits on export of goods and services also mediated aggregate improvements in other channels (output, trade and domestic capabilities). This finding is similar to previous studies (Lee & Tan, 2006; Johnson, 2006), as an improvement in inflows. Contrary to past studies (Agarwal et al., 2005; Aitken & Harrison, 1999; Masih & Masih, 1996; Lee & Tan, 2006), our study could not confirm the influence of FDI on international technology transfers in Nigeria and India. Likewise, the study failed to confirm any impact on growth in Nigeria, Thailand and India, unlike the earlier case for Malaysia and South Africa (Akinlo, 2004; UNDP, 2007). Finally, all the variables in each model adjusted to equilibrium in the long-run, except for domestic investment in the Malaysian, Nigerian and Indian systems.

Recommendations and Implication: Based on our findings, the most interesting lesson for many developing countries, both in Africa and Asia, is that international technology transfers often supports domestic investment, economic growth, and export and services. The findings therefore provide overall support for the four human capital dimensions, by confirming strong positive relationships between human capital development and economic growth. In addition, since FDI was found to have contributed significantly to international technology transfers in all the countries, except in the Nigeria and India models; our model is therefore recommended as an ideal empirically study for the validation of international technology transfer for many developing economies. Our findings are also expected to help developing economies and policy makers recognize the potential of FDI, trade and local investment in enhancing technology transfers and economic growth. This study also recommends the restructuring of FDI and trade policies, in our selected countries, to increase their capacities to sustainable economic growth.

Furthermore, to reap the full benefits of international technology transfer and FDI, government policies and institutions must be strategically positioned. Countries should also understand the magnitude, its determinants, and the modes of technology transfers – which must include the generation and diffusion of technology to local firms. It is also important for African countries and other developing economies, to understand that FDI and international trade might not necessarily result in economic growth and development; rather, it may even increase economic, market, political and financial risks. Consequently, provisions should be made for the above risks associated with international trade and FDI. This is on the premise that the increase in risk premium may discourage investment by both local and international investors. Due to the inactive domestic investment and insignificant influence of FDI on technology transfer, policy-makers in these countries should quickly diversify from resource-induced FDI and trade to technologically-propelled international trade and FDI. Adequate attention must also be paid to process technology improvements, through modernization of processes and facilities. According to Solow (1956) and other studies like that of Agarwal et al. (2005) and Aitken and Harrison (1999), government policies must be aimed at improvement in economic growth via technological change and knowledge diffusion from developed countries(Lemoine & Ünal-Kesenci, 2004; UNCTAD, 1999; UNCTAD, 2002).

However, care must be taken in using the output of this study, due to some inherent limitations. Similar to most empirical literature on the FDI-growth-technology transfer relationships using cross-country evidences, the first weakness relates with the likely presence of periods and country-specific omitted variables, due to the problems associated with data from most developing countries. Due to the level of poverty, corruption, illiteracy and inability of the relevant government agencies to collect and update data, most data are often not available, and even when available, they are often distorted. In addition, one of the main "inevitable" weaknesses in regression results in this study was the specifications used to examine the role of trade, FDI and growth on technology transfers, which do not include a number of other relevant variables. Further studies might consider the inclusion of these variables; chiefly among the variable are patents and research and development (R&D) investment. Also, there is need to distinguish clearly between technologies of domestic as opposed to international origin (Mowery & Oxley, 1995). The second limitation relate to the indicators used to measure the main variables, which might not be correctly reflecting the reality. In addition, the fact that international technology transfer occurs through a multitude of channels, makes it especially difficult to arrive at an aggregate measure of the activity – and hence to assess the contributions of the explanatory variables (Madsen, 2007). However, given the availability of multiple options in theory, the dominance of any one channel in the data would itself require explanation in future studies.

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Journal of Economics and Behavioral Studies (JEBS)
Vol. 8, No. 6, December 2016 (ISSN 2220-6140)

Influence of electronic commerce on business performance: Evidence from e-commerce organisations in Harare, Zimbabwe

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Abstract: The purpose of the study was to explore the impact of electronic commerce on business performance with specific focus on business organisations in Harare, Zimbabwe. This was achieved through investigating the relationship between e-commerce investment and indicators of business performance such as cost operations, service operations and profit levels. A structured questionnaire was developed and administered to 40 respondents from 10 e-commerce organisations. The study revealed that there was a positive relationship between e-commerce investment and business performance. It was revealed that an investment in e-commerce by organisations in Zimbabwe would increase profit levels, improve service operations and reduce transaction costs. The researchers recommended that organisations that have already adopted e-commerce should raise customer awareness and interest in e-commerce and promote the usage of the technology. They also recommended that policy makers such as the Government must take a leading role in the funding of education and the development of infrastructure in order to encourage more organizations and consumers to participate in e-commerce.

Keywords: *E-commerce, Business performance, Business organisations, Service operations, Cost operations*

1. Introduction

The introduction of Information and communication technologies (ICTs) has changed the way business is done. Electronic commerce is one such technology that enables organisations to create business relationships, share business information and do business via telecommunications networks (Zwass, 2003). E-commerce is changing how organisations are competing and interacting on the marketplace. It has also changed how payments for goods and services are made. Most businesses today are not just taking e-commerce as buying and selling products online but as a technology that also includes other online processes like marketing, transferring money and delivering products and services to customers from business organisations.

Business to consumer (B2C) e-commerce is a type of e-commerce which is defined as "business operations where telecommunication networks are deployed for communication and product or service delivery between business and individual customers" (Tangpong, Islam & Lertpittayapoom, 2009, p 3). In B2C e-commerce the business transactions are between businesses and consumers where a business entity like Amazon.com supplies goods or services directly to individual consumers online. Organisations are adopting B2C e-commerce as a means of increasing sales, reducing costs, having a competitive advantage over competitors in the industry and expanding markets. These findings are supported by a research that was done by Mashanda, Cloete & Tanner (2012) where both prospective and current adopters perceived cost reduction and access to new markets as a benefit of B2C e-commerce adoption. Access to global markets was considered an important benefit of e-commerce since it enables businesses to expand their reach. Organisations also welcome e-commerce as a means of promoting customer service and boosting production (Wenninger, 1999). The world economy and commerce is most affected by the significant increase in globalisation through the use of information and communication technology (ICTs).

Organisations in Zimbabwe must embrace e-commerce in order to enjoy the benefits associated with e-commerce. If Zimbabwean organisations want to be competitive on the local and global market and improve their productivity, they must adopt the technology. Zimbabwe as a developing country is facing challenges in adopting and using Information and communication technologies (ICTs) and e-commerce is not an exception. Currently very few organisations have adopted B2C e-commerce and some of these companies are still in the initial stages of adopting the technology and the majority are yet to adopt the technology (Mashanda, Cloete & Tanner, 2012). Their findings are similar to the findings of Zanamwe et al. (2012) who indicated low usage levels of e-commerce in the Zimbabwean pharmaceutical sector. Despite the benefits of e-commerce, it is not clear whether organisations in Zimbabwe have benefitted from the adoption and use of electronic commerce. The impact of e-commerce and ICTs on business performance and economic growth has been comprehensively discussed in industrialised countries and to a limited extent, in less industrialised countries. According to Dewan and Kraemer (2000) research findings from developed countries cannot be directly transferred to developing countries. The differences in the research settings and conditions have prompted the researchers to carry out this research in Zimbabwe. The researchers therefore intend to examine the impact of B2C e-commerce on performance of organisations that have adopted the technology in a developing country like Zimbabwe. It is against this background that the following objectives were formulated: a) to assess the impact of B2C e-commerce on cost efficiency, b) to investigate the influence of B2C e-commerce on business profit levels, c) to explore the influence of B2C e-commerce on service operations.

2. Literature Review

Development of E-commerce: Chong (2008) defines e-commerce as a process that integrates all company processes like money transfers, the transaction of goods, services and the exchange of business documents between business partners and individual customers through electronic technologies. From this definition of e-commerce, electronic data interchange (EDI) can be considered as the beginning of e-commerce since EDI is where business information is exchanged electronically between organisations (Noor, 2003). With EDI business organisations needed to create private networks in order to exchange business data and the business data needed to be in a common agreed format. However, EDI never gained reasonable acceptance levels because of the high cost and complexity of developing the EDI applications (Magutu, Lelei and Nanjira, 2010).

With the introduction of the Internet, e-commerce became popular because organisations and customers connected through the much cheaper medium than the previous medium of EDI. In 1994, there was a major expansion and use of e-commerce and this was as a result of the rapid dispersal of the Internet and World Wide Web which made doing business on the Internet cheaper and easier (Baourakis & Daian, 2002). The Internet has provided an opportunity for businesses to interact inexpensively, create markets and serve customers globally. E-commerce has been very popular with large organisations in developed countries because of the benefits associated with the technology although small and medium-sized organisations have experienced sluggish development (MacGregor & VraZalic, 2005).

Types of E-commerce: According to Turban, King, Lee, & Viehland, (2004) electronic commerce is classified according to the following categories:

Table 1: Types of E-commerce

Type of e-commerce	Description
Business-to-Business (B2B)	This is a form of e-commerce in which both the buyer and seller are business entities. There are no e-commerce transactions between a business entity and individual customers. An example of B2B e-commerce would be a manufacturer supplying goods to a wholesaler.
Business-to-Consumers (B2C)	This is the commonest type of e-commerce in which a business entity supplies goods or services to individual customers online. B2C e-commence is also known as e-tailing since retail transactions of customers are also included.
Consumer-to-Business (C2B)	In this form of e-commerce, individuals are the sellers and provide goods or services to organisations online. Individuals can also auction off goods to interested business entities online.
Consumer-to-consumer (C2C)	This is a type of e-commerce where an individual sells goods or services to another individual online. E-bay is one such auction site that provides a platform where consumer to consumer transactions are done. Individual consumers can bid for products sold by other individuals over a limited time period.
Mobile Commerce (M-commerce)	These are e-commerce transactions completed partially or

	entirely in a wireless environment. These transactions can be targeted to consumers in certain locations at certain times in which case it will be referred to as location based commerce (l-commerce).
Intra-business e-commerce	Involves e-commerce activities that are internal to an organisation. It involves business transactions among individuals or business units of the same organisation.
Business-to-Employees (B2E)	This is a type of e-commerce where there is a provision of goods, services or information by a business entity to its own employees.

Adopted from Turban et al. (2004)

Benefits for business organisations from B2C E-commerce adoption: Organisations that have embraced e-commerce have enjoyed enormous benefits. Turban et al. (2004) cited a number of e-commerce benefits to business organisations and the benefits included efficient procurement, extended business hours, improved customer service and relations and reduction in costs. Cost savings are achieved through improved customer service, less personnel and decreased material expenses. Business transactions also become cheaper due to the elimination of intermediaries. Inventory costs are also reduced due to e-commerce (Duan, 2012; Sajuyigbe, 2012). Xu & Quaddus (2009) also indicate that the use of e-commerce will result in improved operational efficiency. Molla & Heeks (2007) also cited reduction in transaction costs and more efficient business processes as benefits of e-commerce. E-commerce enables companies to have access to global markets. The markets of the organisations are as big as the online community. This enables a company to have new markets, customers and services (Sajuyibge, 2012). Electronic commerce gives an opportunity for developing countries to trade at the same level as developed countries since geographical barriers are eliminated. Organisations in developing countries can also have access to global markets. The elimination of boundaries expands an organisation's reach. In addition to the elimination of boundaries, e-commerce also allows both the customer and organisation to have access to remote markets easily and this results in increased business transactions and profit (Golubova, 2012).

Another advantage of e-commerce is reduced marketing costs and reduced costs of carrying out a market research (Golubova, 2012). E-commerce makes it easy for managers to use tools to gather information about their customers from their websites. Managers are able to store huge amounts of data that can be used to analyse customer buying patterns. E-commerce sites will use this information about customer buying patterns to target product advertisements or offer customised services. Relevant advertisements are therefore sent to customers depending on the products and services that customers are interested in. Advertising costs are reduced because adverts are not sent to customers who are not interested in them. The ability for e-commerce organisations to accurately target adverts will result in cutting the advertising budget and the organisation will be at a competitive advantage as compared to its competitors. The cost of carrying out a market research will therefore be minimised since managers will know their customers' spending patterns through the collection of customer data.

Ishaque & Javaid (2014) in their research indicated the benefits of adopting e-commerce as increased customer satisfaction, improved turnaround time, and more efficient business processes. They also indicated that tasks are performed more quickly and that the organization becomes more marketable and effective. This is because the purchasing of a product can be done anywhere, any time by clicking a button. This will result in the customer saving time and the process of buying and selling is speeded up. This enables e-commerce to minimise the total time between the submission of a request and fulfilment of the request thus improving customer satisfaction.

The influence of E-commerce on business performance: In developed countries the use of e-commerce has been very popular with large organisations, and the organisations have benefited from the use of the technology. However, the development of e-commerce in small and medium-sized firms has been slow (MacGregor et al., 2005). Chen-Chao Chen (2008) carried out a study to determine if the use of e-commerce had an influence on the performance of Taiwanese professional sports events organisations. They found out that there was a significant relationship between the two. They found out that e-commerce reduced the cost of operation and also improved the competitive position of the industry.

Azeem et al. (2015) did a study to measure the influence of e-commerce (e-banking) on business performance from the Pakistan banking sector. Their findings revealed that there is a positive relationship between the use of e-commerce and organisation performance. They found out that performance is improved through business operations, job performance and customer satisfaction. This is supported by the findings of Jahanshahi et al. (2012) who purport that the use of e-commerce technologies has a significant and positive impact on operational performance and organisational performance in small and medium enterprises. Profit levels, operation reductions and service operations are greatly influenced by e-commerce adoption. This observation was made by Kareem, Owomoyela & Oyebamiji (2014) who performed a research on the impact of e-commerce on business performance in Nigeria. The research targeted selected supermarkets in Ibadan metropolis. From this research, it was noted that if Nigerian supermarkets undertook e-commerce it would increase the number of customers, cut on operational costs, reduce time to transact, improve service operations and that the supermarkets would better understand the needs of their customers.

According to a research done by Al-Smadi & Al-Wabel (2011), their findings signified that electronic banking had a negative impact on bank performance. In their study they used Jordanian banks as their case study in order to understand the relationship between using electronic banking and the performance of banks. The performance of these banks was not enhanced by electronic banking because customers still preferred the traditional banking methods. They asserted that the revenues generated from the provision of electronic services were still lower than the costs that were related to adopting electronic banking. There is evidence of wide growth in Internet use among retailers in Zimbabwe and findings revealed that some retailers have adopted B2C e-commerce. However, some of those retailers are still in the early stages of using e-commerce. Dube, Chitura, & Runyowa, (2010) in their research on SMEs in Gweru indicated that the SMEs have adopted e-commerce related technologies although the levels of using these applications are still low. Mupemhi, Mupemhi & Duve (2011) found out that although the agro-food firms in Zimbabwe are adopting e-commerce, the level of e-commerce growth is still at the embryonic stages. Although there is evidence that firms in Zimbabwe have adopted and started using e-commerce, the major question remains unanswered: Is e-commerce improving business performance or not?

3. Methodology

A structured questionnaire was used in this study as the main instrument for collecting data. The questionnaire was validated by pre-testing it with a sample of three e-commerce organisations. After the pre-testing, the questionnaire was modified in order to increase its clarity. The research was conducted with 10 e-commerce organisations that were selected from Harare. A total of 40 questionnaires were distributed to the 10 e-commerce organisations. The respondents were made up of one manager or owner along with 3 other employees from each of the 10 organisations. The respondents were people who are familiar with the functionality of the e-commerce technology and those who work in the accounting department. The researchers used the purposive sampling technique to select the 10 organisations that were used in this study. Although the sampling method can be subjective, it enabled the researchers to come up with a sample which they considered suitable for the research and representative of all organisations that have adopted e-commerce technologies in Zimbabwe. The objective of the study was to find out whether investing in e-commerce will improve service operations, cost efficiency and the profit margin. Therefore, the dependent variable was e-commerce investment while the independent variables were service operations, cost efficiency and profit level. In order to understand the relationship between the dependent variable and the independent variables, the researchers used simple regression analysis using SPSS.

Model specification used for the simple regression analysis

$Y = \beta 0 + \beta 1X + \epsilon$
Where:-
Y is the dependent variable
$\beta 0$ is the intercept
$\beta 1$ is the regression coefficient
X is the independent variable
ϵ is the error term

Regression equations used for the estimation
ECOINV = β0 + β1PROMARG + Є................1
ECOINV = β0 + β1COSOP + Є........................2
ECOINV = β0 + β1SEROP + Є........................3
Where:-
ECOINV is E-commerce investment
PROMARG is Profit margin
COSOP is Cost reduction
SEROP is Service operations

4. Analysis and Findings

Table 2: Regression Analysis

variable	**coefficient**	**t-value**
Intercept	34.6	2.3
PROMARG	0.545	4.388
COSOP	0.368	2.463
SEROP	0.764	8.101

R^2 = 0.75 Level of significance (LOS) = 0.05
Source: Own calculations from the research

In Table 2 above, the regression results show that there is a positive significant relationship between e-commerce investment (ECOINV) and the independent variables, profit margin (PROMARG), cost reduction (COSOP), and service operations (SEROP). SEROP is more influential with a coefficient of 0.764 while COSOP is the least influential with a coefficient of 0.368. The adjusted R^2 0f 0.75 indicates that the variation ECOINV is well explained by the identified variables. The positive significant relationship between e-commerce investment and profit margin is supported by Kareem et al. (2014) who showed that the adoption and use of e-commerce has a significant impact on profit levels. Golubova (2012) also purports that e-commerce enables both customers and e-commerce organisations to have access to remote markets easily and this results in an increased customer base, which in turn increases profit levels. This is made possible since e-commerce eliminates geographical boundaries and the number of customers is as big as the online community. This overall increases competition and innovation, which will likely boost profit levels of e-commerce organisations.

Chien-Chao (2008) investigated the possible relationship between e-commerce adoption and organisational performance and the findings indicate that the use of e-commerce reduces the cost of operation and improves the competitive advantage of organisations. These findings support our finding that there is a positive significant relationship between e-commerce investment and cost reduction as indicated by Table 2 above. This shows that if an organisation invests in e-commerce this will result in a reduction in cost operations. This is also supported by Molla & Heeks (2007) who cited reduction in transaction costs and increased access to new global markets as benefits of e-commerce. (Golubova, 2012) also indicated that the implementation of e-commerce reduces overall advertising costs since e-commerce allows managers to collect and analyse data about customer spending patterns. This will in turn allow managers to send targeted advertisements.

Results from Table 2 above, also revealed that e-commerce investment by organisations in Zimbabwe has a significant impact on service operations. This tallies with what theory suggests on the relationship between e-commerce adoption and service operations. Alrawi (2007) claims that e-commerce enables consumers to have more choices and are able to transact from any location for 24 hours a day. He also indicated that e-commerce has changed the way products are delivered to consumers. The findings are also supported by the findings made by (Ishaque & Javaid, 2014) in a research conducted in South Africa where they perceived the benefits of ICT and e-commerce adoption as; increased customer satisfaction, improved turnaround times, more efficient business processes and speedy performance of tasks. They also indicated that the adoption of ICTs and e-commerce has resulted in organisations being more marketable and effective.

5. Conclusion and Recommendations

Our study sought to investigate the relationship between the implementation of e-commerce and organisational performance. The organisational performance was measured through service operations, cost operations and profit levels. It was established that there was a significant positive relationship between e-commerce application/investment and organisational performance. The researchers can therefore conclude that if organisations in Zimbabwe adopt and apply e-commerce then service operations will be improved, operational costs will be reduced and profit levels will be improved.
In order for organisations in Zimbabwe to effectively utilise e-commerce to gain competitive advantages and improve their organisational performance further, the following recommendations were made:-

- Organizations that are already using e-commerce need to increase their marketing efforts by raising customer awareness and interest in e-commerce at the same time providing adequate online security for them.
- Management or owners of e-commerce organizations must acquire all the necessary technology required for e-commerce in order to enhance efficiency and retain or attract more customers.
- Managers or owners and employees must be trained on the proper use of e-commerce applications so that they can improve efficiency, their customer base and performance.
- The government must take a lead in the funding of education and the development of e-commerce infrastructure to enable more organizations and consumers to adopt e-commerce. The government must also adopt and use e-commerce in its operations in order to encourage both customers and organisations to embrace the technology.
- The government must implement policies and procedures that will create conducive environment for e-commerce. The created policy environment must protect both the customers and businesses.

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Journal of Economics and Behavioral Studies (JEBS)
Vol. 8, No. 6, December 2016 (ISSN 2220-6140)

Modelling Volatility Persistence and Asymmetry with Structural Break: Evidence from the Nigerian Stock Market

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Abstract: This study contributes to existing literature on the Nigerian stock market by modelling the persistence and asymmetry of stock market volatility taking into account structural break. It utilises returns generated from data on monthly all-share index from January 1985 to December 2014. After identifying structural break in the return series, the study splits the sample period into pre-break period (January 1985 – November 2008) and post-break period (January 2009 – December 2014). Using the symmetric GARCH model, the study shows that the sum of ARCH and GARCH coefficients is higher in the pre-break period compared to the post-break period, thus indicating that persistence of shock to volatility is higher before structural break in the market. The asymmetric GARCH model provides no evidence of asymmetry as well as leverage effect with or without accounting for structural break in the Nigerian stock market. This study concludes that the Nigerian stock market is characterised by inefficiency, high degree of uncertainty and non-asymmetric volatility.

Keywords: *Persistence, asymmetry, stock market volatility, structural break*

1. Introduction

The Nigerian stock market started trading on 15th August, 1961. It ranks among the top African stock markets in terms of liquidity, market capitalisation and volume of transactions. The market is also a leading financial market for portfolio investment in Africa (Oloko, 2016). The International Finance Corporation (IFC) classifies the Nigerian stock market as an emerging stock market. Harvey (1995) argued that emerging stock markets are characterised by high volatility. Investors in the stock market are interested in the volatility of the stock market because of its implication on their investment. Stock market volatility is the uncertainty associated with returns on assets in the stock market. It is also an index for measuring the risky nature of the stock market. High volatility in the stock market impedes investment in stock assets. Shittu, Yaya and Oguntade (2009) suggested that high level of volatility could mean huge losses or gain, hence greater uncertainty. Persistence and asymmetry are two main phenomena associated with stock volatility. Investors' understanding of these phenomena is important in guiding them in portfolio management.

As observed from prior studies such as Atoi (2014), Adesina (2013), Emenike (2010), high volatility persistence is exhibited in the Nigerian stock market. However, evidence on the asymmetry of volatility in the Nigerian stock market is few and mixed. Also, modelling volatility with structural break has been largely ignored in the Nigerian stock market. According to Kumar and Maheswaran (2012), volatility of returns of financial assets tends to be highly affected by infrequent structural breaks as a result of domestic and global macroeconomic and political occurrences. Lamoureux and Lastrapes (1990) argued that volatility persistence is exaggerated if structural breaks are not considered. Investors tend to behave differently after structural break in the stock market because its occurrence may affect the persistence and asymmetry of stock market volatility. Failure to account for structural break in the stock market may lead to wrong inferences and portfolio decisions (Turtle & Zhang, 2014). Therefore, this study models the persistence and asymmetry of the Nigerian stock market volatility with structural break. The rest of the paper follows the following order: Section 2 provides the literature review, Section 3 presents the data issues and preliminary analyses, Section 4 discusses the models and estimation and lastly, Section 5 concludes the study.

2. Literature Review

Theoretical Literature: The asset pricing theory assumes that investors are risk averse and risk-return relationship is positive and linear. This implies that if investors are risk averse, there is a positive correlation between volatility and returns in the stock market. In other words, risk-averse investors expect more returns on assets as volatility increases. As stock market volatility rises, investors demand higher compensation in form of higher risk premium. In contrast to the asset pricing theory, Li, Yang, Hsiao and Chang (2005) provided evidence of negative correlation between expected returns and stock market volatility. The asset pricing theory suggests that investors holding a well-diversified portfolio should consider systematic volatility (un-diversifiable risk) and completely ignore idiosyncratic volatility (diversifiable risk). Increased stock market volatility would lead to loss of consumer confidence and this would indirectly influence real consumption and investment decisions (Kupiec, 1991). Guo (2002) argued that increase in stock market volatility would increase the cost of equity capital (minimum rate of return desired by shareholders). N'dri (2007) discovered that volatility tends to be higher during market boom. However, Mele (2008) recognised that stock market volatility is higher during the recession period than the period of expansion. In periods of high stock market volatility, the difference between beta coefficients (systematic risk) of small and large companies becomes wider (Bundo, 2011).

The theory of excess stock market volatility presented by Gabaix, Gopikrishnan, Plerou and Stanley (2006) stated that volatility is as a result of trading by very large institutional investors in relatively illiquid markets. The excess volatility phenomenon in the stock market was first identified by Shiller (1981) and LeRoy and Porter (1981). Shiller (1981) described excess volatility as stock market volatility that cannot be explained by subsequent changes in dividends. According to Karolyi (2001), the presence of excess volatility in the stock market limits the ability to use stock prices as an indicator of the fundamental value of a firm. The asset pricing theory fails to explain excess volatility in the stock market. Also, the efficient market theory does not explain excess stock market volatility (Shiller 2003). It is believed that a stock market experiencing excess volatility is inefficient. Wang and Ma (2014) observed a positive association between stock returns and excess volatility.

Empirical Review: The empirical review focuses only on the Nigerian stock market and other African stock markets. Ndwiga and Muriu (2016) showed no evidence of leverage effect and high volatility persistence but found significant positive relationship between risk and return in the Kenyan stock market. Owidi and Mugo-Waweru (2016) showed that volatility is more persistent during the bullish period than bearish period in the Kenyan stock market. It also revealed that good news impact more on volatility during the bullish period while the impact of bad news on volatility is greater when the market is in a bearish phase. Coffie (2015) found that stock market volatility in Ghana and Nigeria is non-asymmetric, with leverage effect present only in the Ghanaian stock market. However, Boako, Agyemang-Badu and Frimpong (2015) observed that the Ghanaian stock market is characterised by volatility clustering, high volatility persistence and leverage effect. Atoi (2014) equally observed that volatility clustering, high volatility persistence and leverage effect do exist in the Nigerian stock market. Namugaya, Weke and Charles (2014) discovered that returns increase as volatility increases and bad news affect volatility more than good news in the Ugandan stock market. Osazevbaru (2014) found evidence of volatility clustering and high volatility persistence in the Nigerian stock market.

In addition, Niyitegeka and Tewari (2013) found that the South African stock market exhibits volatility clustering, high volatility persistence and non-asymmetric volatility. Adesina (2013) revealed that stock market volatility in Nigeria is highly persistent and non-asymmetric. Emenike and Aleke (2012) found mixed evidence of asymmetric volatility in the Nigerian stock market using two asymmetric volatility models. Furthermore, Abdalla and Winker (2012) showed that volatility is in excess in the Sudanese stock market but quite persistent in Egyptian stock market. The study also indicated that significant positive relationship between return and risk as well as leverage effect exist in both markets. Emenike (2010) showed that volatility is highly persistent and leverage effect is present in the Nigerian stock market. N'dri (2007) found volatility clustering, high volatility persistence and absence of leverage effect in the regional stock market of the West African Economic and Monetary Union (WAEMU). It also showed that the impact of good news on volatility is more than bad news and investors are not rewarded for assuming risk.

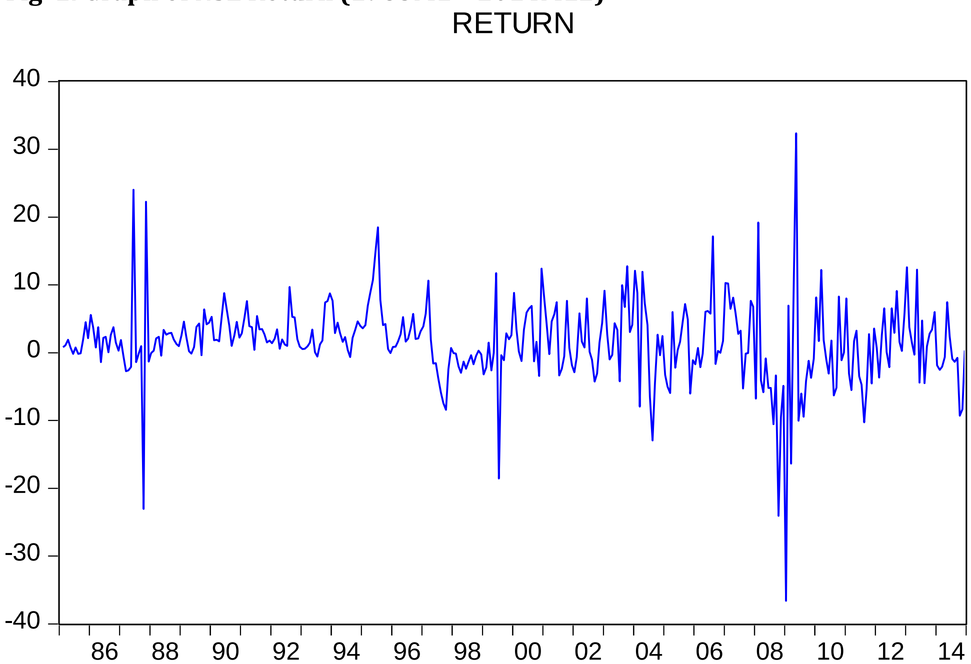
3. Methodology

Data Issues and Preliminary Analyses: Data on monthly all-share index of the Nigerian Stock Exchange (NSE) from January 1985 to December 2014 was gathered from the Central Bank of Nigeria (CBN) 2014 annual edition of the *Statistical Bulletin*. The monthly all-share index represents stock price (p). However, this study would be utilising returns as proxy for the stock market. Plethora of studies has used stock market return in modelling stock market volatility (i.e. Banumathy and Azhagaiah, 2015, Atoi, 2014, Ahmed and Suliman, 2011 and Goudarzi and Ramanarayanan, 2010). A plausible reason for this is that market investors are more concerned about return than price. Return (r) is calculated as:

$$r_t = ln(\Delta p_t) * 100 \qquad \dots \dots (1)$$

Where r_t is the return at time t or present return, $ln$is natural logarithm and Δ is the first difference operator.

Fig. 1: Graph of NSE Return (1985M1 – 2014M12)



The Perron (2006) unit root test with structural break is used to endogenously determine the structural break period/point in an innovative outlier model. The test was performed using the t-statistic for the null hypothesis that δ = 1 in *Equation 2*:

$$y_t = \mu + \rho DU_t + \beta t + \partial DT_t^* + \gamma D(T_b)_t + \delta y_{t-1} + \sum_{i=1}^{k} c_i \, \Delta y_{t-1} + \varepsilon_t \quad \dots (2)$$

With $DT_t^* = 1(t > T_b)_t$. This study accounts for only one break point in the return series which is the most significant structural break in the market. Table 1 presents the result of the test for structural break.

Table 1: Structural Break Test Result

Coefficient	*t*-statistic	Break Period
-0.878141	-17.465641*	2008M12

Note: * denotes rejection of null hypothesis at 1% critical value. Also, critical value for the test was obtained from Table 1(e) in Perron (1997).
Source: Authors' computation

4. Results

From Table 1, it is indicated that the break date in the return series is December 2008. This period corresponds with the highest spike period in *Fig. 1*. This structural break of this period is as a result of the global financial crisis. The crisis caused a structural break in the returns three months after it peaked in September 2008. On the basis of this break period, the study further splits the full sample period into two sub-sample periods namely pre-break period and post-break period. The pre-break period is January 1985 to November 2008 (1985M1–2008M11) and the post-break period is January 2009 to December 2014

(2009M1–2014M12). Table 2 reports the descriptive and residual diagnostic statistics on the return series in the pre-break, post-break and full sample periods.

Table 2: Descriptive and Residual Diagnostic Statistics

Statistic	Pre-break	Post-break	Full
Mean	1.990494	0.134834	1.599173
Median	1.842266	0.058867	1.633574
Maximum	24.03743	32.35158	32.35158
Minimum	-24.07990	-36.58828	-36.58828
Standard Deviation	5.379950	8.082176	6.055396
Skewness	-0.266738	-0.448002	-0.499685
Kurtosis	8.296936	10.45728	10.93041
Jarque-Bera	337.7437*	169.2415*	955.6904*
DF-GLS	-7.918908‡^{p}	-8.316432‡^{n}	-6.084345‡^{n}
ARCH LM(2)	18.34782*	6.238325**	16.12161*
ARCH LM(4)	28.62677*	37.17726*	54.30781*
Q-statistic(2)	22.937*	0.1020	20.993*
Q-statistic(4)	27.620*	5.7441	32.405*
Q^2-statistic(2)	19.338*	2.7028	17.984*
Q^2-statistic(4)	26.254*	19.307*	74.051*
Observations	286	72	359

Note: * and ** indicate null hypothesis rejected at 1% and 5% respectively, ‡ denotes 1% critical value and ^{p} and ^{n} denote constant only and constant and trend in unit root test equation respectively. Also, observed R^2 reported for ARCH LM test.
Source: Authors' computation

From Table 2, it can be observed that the highest (peak) and lowest (bottom) return value was recorded in the post-break period. Despite the post-break period having a considerably lower number of observations than the pre-break period, the standard deviation statistic indicates that returns appear to be more volatile in the post-break period. The skewness statistic indicates that returns has a negatively skewed distribution in the sub-sample and full sample periods, thus indicating that there is higher tendency to obtain negative extreme values in returns than positive extreme values. The Kurtosis coefficient indicates returns have a fat-tailed and highly peaked distribution in the three periods. The Jarque-Bera statistic indicates that the return series is not normally distributed in the pre-break, post-break and full sample periods, hence the Gaussian normal error distribution cannot be assumed for the series in all the periods. The DF-GLS unit root test shows that the return series is a stationary series in all periods. The ARCH LM test rejects the null hypothesis of no ARCH effects in the return series for all periods, thus confirming the presence of return volatility clustering in all the sample periods. The Q-statistic rejects the null hypothesis of no autocorrelation of residuals in the return series of all periods at lag (k) of 2 and 4 except the post-break period. The Q^2-statistic indicates that the null hypothesis of no autocorrelation of squared residuals in the return series is rejected for the pre-break and full periods at k = 2 and 4 while it is only rejected for the post-break period at k = 4.

Models and Estimation: To determine the persistence and asymmetry of Nigerian stock market volatility, the symmetric (non-asymmetric) and asymmetric volatility model were used. The symmetric volatility model utilised is the symmetric Generalised Autoregressive Conditional Heteroskedasticity (GARCH) model developed by Bollerslev (1986) while the asymmetric volatility model used is the Exponential GARCH (EGARCH) model developed by Nelson (1991).The study built the GARCH (p,q) models in first order because first-order GARCH models are often adequate and widely used in studies on volatility. The models were estimated with the maximum likelihood estimation method. Since the Gaussian error distribution cannot be assumed for return series in all the sample periods due to non-normal distribution, two error distribution alternatives for non-normally distributed series namely Student's t-distribution with fixed degree of freedom and Generalised Error Distribution (GED) with fixed parameter were assumed. Using these alternatives, the model that provides the lowest information based on the Schwarz Information Criterion (SC) is considered as the best fit model. From the conducted analyses, the Student's t-distribution with fixed degree of freedom produced the symmetric and asymmetric models that best fit for the sub-sample and full sample periods. The mean equation for the GARCH (1,1) model in AR(1) form is expressed as:

$$r_t = \varphi + \sum_{n=1}^{k} \rho \, r_{t-1} + \varepsilon_t \qquad \ldots (3)$$

Where φ is the constant term, ρ is the coefficient of one-period lagged return or immediate past return and ε_t is the residual term.

Symmetric GARCH Model: This study built the symmetric GARCH model to capture the persistence of volatility. The conditional variance equation for the symmetric GARCH (1,1) model is stated as:

$$\sigma_t^2 = \omega + \sum_{n=1}^{p} \alpha \, \varepsilon_{t-1}^2 + \sum_{n=1}^{q} \beta \, \sigma_{t-1}^2 \qquad \ldots\ldots (4)$$

Where σ_t^2 is conditional variance or market volatility at time t, ω is the constant parameter, α is the ARCH coefficient indicating short-term volatility persistence and β is the GARCH coefficient indicating long-term volatility persistence. The sum of α and β measures the persistence of shocks to volatility. The closer the sum to unity, the higher the persistence of shocks to volatility and the longer it would take for conditional variance to converge to its steady state. The summation of α and β must not be equal to or exceed unity so that GARCH process does not violate the stationary or mean-reverting condition. Table 3 presents the estimation results of the symmetric GARCH models.

Table 3: Symmetric GARCH Model Estimation Results

	Pre-break	**Post-break**	**Full**
Mean Equation			
φ	1.303730*	0.211256	1.429015
ρ	0.400565*	0.060987*	0.342820
Variance Equation			
ω	1.820018*	2.422676***	1.762415*
α	0.501049*	-0.215121**	0.440878*
β	0.513960*	1.103657*	0.569439*
$\alpha + \beta$	1.015009	0.888536	1.010317
Model Diagnostics			
ARCH LM(2)	0.561327	0.290727	1.123134
ARCH LM(4)	2.605425	1.145421	3.340878
Q-statistic(2)	0.8262	0.3082	1.0268
Q-statistic(4)	2.9152	1.3860	3.8511
Q^2-statistic(2)	0.5419	0.2388	1.1335
Q^2-statistic(4)	2.6335	1.1911	3.4885

Note: *, ** and *** imply statistically significant at 1%, 5% and 10% significance level. Also, observed R^2 is reported for ARCH LM test.
Source: Authors' computation

From *Table 3*, it can be seen that immediate past return has a highly significant positive impact on present return. The ARCH term is statistically significant in all sub-sample and full sample periods, thus indicating volatility clustering in the market in the pre-break, post-break and full sample periods. Also, the GARCH term in the all the periods is statistically significant and this implies that there is long-term persistence of volatility persist in the pre-break, post-break and full sample periods. The post-break period has the highest GARCH coefficient, thus indicating that it takes longer period of time for volatility to die out compared to the pre-break period. The sum of the ARCH and GARCH coefficients in the pre-break and full sample periods is not different from 1 while the sum is close to 1 in the post-break period. The substantial higher number of observations for the pre-break period compared to the post-break period makes it difficult to make a meaningful comparison on the persistence of shocks to volatility in both periods. However, despite the lower number of observations in the post-break period, the sum of ARCH and GARCH coefficients tends very close to unity which is evident that the persistence of shocks to volatility is very high. It also shows that returns revert back to the average market returns during this period, thus indicating that the market satisfies the mean reverting condition in the post-break period. The sum of the ARCH and GARCH coefficients in the full sample period is approximately equal to 1, thus implying that shocks to volatility are extremely persistent and the market follows an integrated GARCH (IGARCH) or non-stationary process. When a market follows an IGARCH process, it means unconditional variance becomes infinite and this implies that positive shocks (good news) or negative shocks (bad news) would have permanent effect on future volatility.

EGARCH Model: The EGARCH model ensures that conditional variance is non-negative even when the model parameters are negative. This is because the model measures conditional variance in logarithm form. Though the model has the power to measure volatility persistence, this study built uses the EGARCH model to only capture response of volatility to asymmetry. The EGARCH (1,1) model is expressed as:

$$ln(\sigma_t^2) = \omega + \sum_{n=1}^{p} \propto \left|\frac{\varepsilon_{t-1}}{\sqrt{\sigma_{t-1}^2}}\right| + \sum_{n=1}^{r} \gamma \frac{\varepsilon_{t-1}}{\sqrt{\sigma_{t-1}^2}} + \sum_{n=1}^{q} \beta ln(\sigma_{t-1}^2) \qquad \ldots\ldots (5)$$

In this model, $\gamma$is the asymmetry term coefficient and there is asymmetry when$\gamma \neq 0$.Leverage effect can be tested with the hypothesis that $\gamma<0$. To accept this hypothesis, γmust be negative and statistically significant. Leverage effect implies that bad news such as fall in return makes stock riskier, thus leading to increase in volatility. The evidence of leverage effect means that bad news increases volatility than good news of the same size. On the other hand, if $\gamma> 0$, it implies good news increases volatility than bad news of equal magnitude. The total impact of good news and bad news are $\propto +\gamma$ and $\propto -\gamma$ respectively. The model is covariance stationary when the coefficient of $ln(\sigma_{t-1}^2)< 1$. *Table 4* presents the estimation results of the EGARCH models.

Table 4: EGARCH Model Estimation Results

	Pre-break	**Post-break**	**Full**
Mean Equation			
φ	1.228902*	0.213599	1.327072*
ρ	0.399684*	0.029468	0.350789*
Variance Equation			
ω	-0.071013	0.519118*	-0.091968
α	0.668967*	-0.366942***	0.621075*
γ	-0.049343	-0.003836	-0.058665
β	0.846980*	0.923189*	0.873861*
$\propto +\gamma$	0.619624	-0.370778	0.56241
$\propto -\gamma$	0.718310	0.363106	0.67974
Model Diagnostics			
ARCH LM(2)	0.710195	0.627750	1.413335
ARCH LM(4)	5.043130	2.135012	5.621939
Q-statistic(2)	1.0712	0.5851	1.6347
Q-statistic(4)	2.9512	1.2422	5.1361
Q^2-statistic(2)	0.6555	0.6712	1.4343
Q^2-statistic(4)	4.8672	2.2856	5.9650

Note: *, ** and *** imply statistically significant at 1%, 5% and 10% significance level. Also, observed R^2 reported for ARCH LM test.
Source: Authors' computation

From Table 4, it can be seen that the coefficient of the asymmetry term is negatively signed but not statistically significant in the pre-break, post-break and full sample periods, thus indicating that there is absence of asymmetric volatility in the market. It also reveals that there is absence of leverage effect in the market in all the periods. It is evident that returns volatility in the Nigerian stock market is non-asymmetric with or without structural break.

5. Conclusion

This study examined the persistence and asymmetry of Nigerian stock market volatility with structural break using symmetric and asymmetric GARCH models. The test for structural break indicated that break occurred in the market in December 2008. With the aid of symmetric GARCH model, the GARCH coefficient in the post-break period is higher compared to the pre-break period, thus indicating that volatility takes a longer period to decay in the post-break period. However, the sum of the ARCH and GARCH coefficients indicates that persistence of shocks to volatility is higher in the pre-break period. This may be due to the larger number of observations in the pre-break period. The EGARCH model which is an asymmetric variant of GARCH model revealed that returns volatility is non-asymmetric in the pre-break, post-break and full periods. This implies that there is absence of leverage effect with or without accounting for structural break in the Nigerian stock market. On a whole, the study showed that returns volatility in the Nigerian stock market is explosive and affected by good and bad news symmetrically, and the market follows an IGARCH process which indicates that good or bad news have permanent effect on volatility in future periods. This study concludes that the Nigerian stock market is characterised by inefficiency, high degree of uncertainty and non-asymmetric volatility. The high volatile nature of the Nigerian stock market poses great threat to domestic and foreign portfolio investment; hence government should consistently implement policy reforms that boost investors' market confidence.

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Journal of Economics and Behavioral Studies (JEBS)
Vol. 8, No. 6, December 2016 (ISSN 2220-6140)

Black Economic Empowerment in South Africa: Challenges and Prospects

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Abstract: The purpose of this paper is to assess if the Black Economic Empowerment act has brought new economic horizons for the historically disadvantaged South Africans, or it has contributed to further impoverishmentof the lower classes in communities. The paper based its argument on an extensive literature review which envisaged that, despite many years of its implementation, BEE has caused the emergence of classes resulting fromfraud and corruption, fronting, difficulties in registering status, political interference, and poor accountability strategies. The paper interrogates the implementation strategies of BEE in the local government context to assess whether historical imbalances have been addressed or not. The paper concludes that the government needs to revisit BEE as an economic empowerment policy to see whether it has benefited the black majority or not. The paper reiterates further that, BEE as a black economic emancipation blueprint requires proper implementation and alignment with other economic policies such as the National Development Plan to accelerate economic opportunities for the black majority. The paper recommends the government of South Africa through local municipalities to exercise monitoring and evaluation in the BEE procurement systems are prerequisites in safeguarding the manipulation and corrupt tendencies arising from the awarding of tenders in the local government.

Key words: *Black Economic Empowerment, South Africa, Challenges, Prospects*

1. Introduction

In South Africa, the Black Economic Empowerment policy (BEE) has been implemented as an entrepreneurial way of redressing the socio-economic ills perpetrated by the former apartheid government. According to Barlett (2010) BEE is aimed at empowering the majority of South African black people who were previously suppressed by the apartheid government in participating in the economic affairs of the state. BEE seeks to reallocate wealth across a broader continuum of society in South Africa to influence change in all sectors of life. Burger (2010) reiterates that BEE is aimed at transforming the economy to be fully representative of the demographic make-up of the country. To this end therefore; BEE provides a meaningful contribution to the economic lives of black people, in the process ensuring economic growth and transformation races. Based on the above assertions, BEE initiatives aim to reinvigorate South African economic landscape through equitable share of wealth and ensuring public participation of South African citizens (Kalula and M'Paradzi, 2008). The *Constitution of South Africa* (1996) condemns all acts of gross economic disempowerment of non-white individuals during apartheid era, and gave a leeway to the implementation of BEE in local government which is a fundamental and entrepreneurial strategy towards controlling and redistributing the resources of the country equitably across all races (Kalula and M'Paradzi, 2008).

Current debate on BEE in South African local government is centred on the manipulation and abuse of the procurements systems by powerful officials who inhibit theblack majority to benefit. Papenfus (2015) acknowledges the past injustices perpetrated by apartheid regime in South Africa; however, the question still remains on the way forward in equitably restoring wealth to previously marginalised black people. Jeffery (2016) reiterates that, BEE in South Africa has failed to ignite the much needed black economic transformation which made the public to lose confidence in the African National Congress (ANC) economic policy. Jeffery (2016) argues that, in the local context BEE has been flawed as a result of scarce capital, lack of skills, high level bureaucracy and inexperienced entrepreneurial minds. Pravid Gordhan the finance minister in 2010 endorses that "BEE policies have not worked and have not made South Africa a fairer or more prosperous country."Lawrence Mavundla as cited in Jefferey (2016), who was the president of the National African Federated Chamber of Commerce and Industry, lambasted BEE and its procurement systems as it had impoverished emerging entrepreneurs and small businesses instead of assisting them Moletsi Mbeki (2016) condemned BEE as it has promoted 'tenderpreneurs' or thieves who acquire tender through politically motivated influence. Based on these assertions the paper seeks to question the effectiveness of BEE in redressing the imbalances of the past. The paper examines the policy of BEE to see if it has led to the transfer of wealth tomajority of black South Africans. The paper interrogates the prevalence of corruption and fraud in the BEE procurement systems and assesses how it can be curbed to enhance community empowerment.

2. Literature Review

Broad Based Black Economic Empowerment B-BBEE in the South African Context: BEE in South was the brainchild of the B.BBEE which has since been amended to BEE in 2014 to serve a more integrated purpose as a government strategy of redressing the imbalances of the past. Davies (2014) termed "BEE an economic imperative' in the Government Gazette of 27Jan 2014 leading to the signing of the act by the President to be used in the public sector. Various groups are recognised under the Act such as workers, women, youth people with disabilities and rural residents. These groups which encompass, Africans, Coloureds and Indians are empowered in an integral and diverse manner which targets their socio-economic well-being. The purpose is to empower several blackpeople sothat they own and management of own businesses, facilitate ownership and management of business and productive assets of community members. The policy aims to promotecooperative development human resource and skills development, provide equal opportunity to blacks to be employed in jobs and practising preferential procurement of black owned enterprises (DTI, 2014).

Positioning Black Economic Empowerment (BEE) in South African local government: There is no universally accepted meaning of BEE in South Africa, since it depends on which context the scholar wants to use it and for what purpose. The emergence of Local Economic Development confuses scholars who often equate it to BEE although the two aim to economically empower local people they differ in principle and practice (Boshoff, 2012). According to Brown and Gqubule (2001:1) BEE has been narrowly equated to the development of a capitalist class focusing on enriching black landlords in the business world. Maphanga (2005:5-6) asserts that BEE is an integrated and coherent socio-economic approach that is geared towards redressing the imbalances of the past. Kalula and M'Paradzi (2008) therefore; regard BEE as an initiative designed to empower the historically disadvantaged individuals to improve their living standards. Barlett (2010) reiterates that in South Africa, BEE should be regarded as an economic empowerment programme implemented in response to debates or criticism concerning the narrow based empowerment implemented in 2003/4. The authors' argument is premised on the idea that, the narrow based empowerment measures only equity ownership and management representation. In South Africa, as Burger (2010) observes BEE has been used as an economic empowerment policy meant to economically empower black people (workers, women, men, disabled persons and rural citizens). The policy is meant to increase control ownership and management of properties by black people in an equitable and sustainable manner in all sectors of employment and governments. This was enabled through preferential procurement policies. DTI (2004:4-5) contends further that, in South African municipalities, BEE should be treated as a legislative created to economically empower black South Africans through local economic development initiatives to improve on their standards of living,

Theoretical perspectives on Black Economic Empowerment

Organisational Theory: Andrews(2008) observes that, BEE in South Africa should be implemented based on the organisational theory which entails various intra and inter-firm relational structures which established networks that influence citizens to participate in the economic well-being activities. Based on this argument BEE in South Africa should restructure socio-economic statuses of the previously disadvantaged people despite their racial backgrounds. The organisational theory assumes relevant structures which can be used by municipalities to create opportunities not only in the procurement systems but in local economic development initiatives which can uplift the lives of poor black people. Lindsay (2015) argues that, in South Africa, BEE can be used as a catalyst in accelerating economic growth among poor communities. Critical scholarship argues that organisational structural arrangements can constrain the economic actors since they determine which should be involved and when in the main stream economy. Such a condition can exclude the previously marginalised groups since municipalities due to corruption and nepotism can fail to empower such groups to improve their living standards in the process defeating government efforts to restore wealth to historically marginalised black population.

Theory of Social Justice: To position BEE as an economic mechanism for correcting past social-economic injustices, the theory of social justice contains provisions which draw points of analysis on how the government can implement the framework to empower its previously disadvantaged population (Poe, 2013). The theory social and distributive justice has its own merits though it creates some controversies. Various black marginased groups believe the economic landscape should be shifted in their favour hence vast mobilisations and advocacy has been seen in South African communities among blacks versus blacks or white against blacks. Such tensions have resulted in critics questioning BEE whether is it indeed meant for economic empowerment or conflict breeding mechanism (Stewart, 2001; Easterly, 2002). Social justice in South Africa has been enshrined in the Constitution where social justice and improved quality of life are key priorities (RSA, 2001). Black Economic Empowerment is therefore; meant to restore past injustices by rewarding black entrepreneurs with equal opportunity to obtain big business and government contracts to improve their living standards. Fair equality as Bringhouse (2002:183) observes provides opportunities and equal working conditions to exercise social justice. Gerwitz & Gribb (2002:499) reiterate that, social justice in BEE means equal opportunities for the marginalised groups and redistributing of economic means to those groups as way of improving their livelihoods both socially and economically. Steger (2009:113) remarks that, the state should play a pivotal role in addressing social injustices which is the sole mandate of BEE especially in municipal procurement systems. As Rawls (2007:571) puts it, social justice spells a situation where there is social and economic equality among all races despite race or religious and cultural background.

Features of Black Economic Empowerment and the Generic Scorecard: The implementation of BEE in South African organisations is grounded in several evaluation principles embedded in their BEE compliance. These have been discussed below:

Ownership: DTI (2006:8) the right of ownership is contained in the Code of Good Practice enterprise BEE compliance measured through the generic scorecard. Under this assumption, broad-based ownership is imaginative and pension funds and investments schemes are excluded on the equity system (DTI, 2006).

Control: In terms of BEE, the code gives an element of managerial oversight and assesses managerial efficiency of black leaders in enterprises (DTI, 2006:9).

Employment equity: BEE policy in South is geared towards employment equity where previously marginalised groups can obtain an equal chance to get jobs. The codes stipulate equity and measurements on how BEE firms should employ people (DTI, 2006:9). BEE companies are required to be non-sexist and non-racial and provide good working environments to enhance sustainability and diversity of cultures (Mathura, 2009:47).

Employment equity Act: DTI (2014:30) explains that, this entails a set of rules and regulations that need to be taken into consideration by companies, and it is essential for developing public participation by all races in participating companies

Procurement: DTI (2006:10) affirms that, the codes stress out the elements of Preferential Procurement that shows the manner in which a business closely trade with other BEE firms complying with BEE suppliers and owner of black businesses. Mathura (2009:46) endorses that compliance on the side of suppliers is conducted by reviewing the terms of sectorial charter of the code as well as generic scorecard. Certain amount of points is awarded to a company to evaluate its B-BBEE status based on Weighting Recognition of an enterprise.

Skills development: According to (DTI 2006:9) black people need to be trained on how they can improve on their skills both to be employable in public and private sector. The abundance of low skilled personnel and high skilled labour force does not match the investment of skills in the laborers. To solve such crisis, BEE demands evaluated companies to instil mentorship programmes within their companies. Mathura (2009:47) states that companies need to provide proof of the submission and implementation of these programmes in their companies and this must be portrayed in their annual BBBEE reports. Failure to comply in this category renders a zero score.

Enterprise development: Mathura (2009:48) states that the collaboration and joint venture of emerging entrepreneurs and small businesses is encouraged for enterprise development. Fostering partnership is important for reallocating wealth to black communities through sharing skills and investment techniques. Black owned firms and established firms can enter into mutually beneficial partnerships which may require outsourcing of labour to execute huge programmes (DTI, 2014:31)

Human resource development: The effective implementation of BEE depends on the availability of competent skills and equity employment which have roots in human resource development. These contain 30 points which contribute equally (Burger & Jafta, 2010:10).In line with skills development, expenditure is measured as a percentage of the total payroll. Expenditure should be aligned with Skills Development Act 97 of 1998 and Skills Development Levies Act 9 of 1999.

Direct empowerment: Mason and Watkins (2005:2) state that management control and ownership determines direct empowerment and amounts to 30 points on the scorecard. The process of BEE stipulates that; ownership should be transferred to black people as way of increasing control on the mainstream economy. This can only happen in event black people acquire properties and businesses in the economy of the country. Usually the transfer of wealth is associated with risks and actual participation in making decisions at operational and managerial level. The DTI (2014:30) reasons that, the management regulates votes, appointments and removal of management shareholders and directors.

Indirect empowerment: Burger & Jafta (2010:10) explain that in procurement systems, indirect empowerment account for 20 points, corporate social investment 5 points, enterprise development 15 points equalling 40 points. New comers can be helped by preferential procurement to increase their opportunity and output. The extent at which the principles of BEE have been achieved remains debatable in local government in South Africa. Analysts (Mbeki, 2009; Kovacevic, 2007) argue that, BEE has led to 'tenderpreneurship' where individual black people have amassed enormous wealth at the expense of the poor through corruption tendencies particularly in various municipal procurement systems. Several black communities in South Africa still suffer economically and are living on government grants although BEE was meant to restore black identity in terms of economic well-being. Beyers & Koorbanally (2010:3) & Centre for Development & Enterprise (2010:44) mourn the abuse of BEE in their argument, they assert that 'tenderpreneurs' have accumulated huge amounts of wealth through unethical and unjustifiable methods under the mask of affirmative action. Bezuidenhout et al. (2009:212) reiterates that, the rampant corruption in local government in South Africa has enriched unscrupulous businessmen, politicians and extended families to benefit from their corruption, nepotism and favouritism. In the light of these arguments, BEE in South African local government could have done much to equitably re-allocate resources among black communities however various corrupt activities ruined the government efforts.

3. Methodology

The paper adopts a qualitative research approach based on an extensive literature study to interrogate the implementation of Black Economic Empowerment Policy in South African municipalities. According to Creswell (2003) qualitative studies are subjective hence they include methods of inquiry such as case study, observations and ethnography. Kumar (2011) holds that, qualitative research is grounded with deductive reasoning which embraces that when the assumptions and theories perfectly fit in study the conclusions and findings will be reliable. As this study relies on secondary analysis of data, various peer reviewed journal articles, policy documentsin BEE, past researches, internet and legislation were used as data collection techniques. The methodology interrogates the effectiveness of BEE as economic empowerment tool to redress socio-economic imbalances of the best. It seeks to questions the restoration of wealth to back South Africans. The data from documentary sources was analysed qualitatively using content analysis where emerging themes and sub-themes were arranged chronologically following the objectives of this paper.

4. Results

The paper has identified various challenges and prospects associated with BEE as an economic empowermentpolicy aimed at redistributing wealth to previously marginalised people in South Africa. These have been discussed below:

The need to curb persistent fraud in BEE systems: BEE procurement systems in South African municipalities have been marred by persistent corruption and fraud. The paper establishes that, corruption in BEE, should be regarded as a moral deterioration which is evidenced by the use of corrupt practices such as bribery or fraud or dishonesty (Craythorne, 2003:328). Most public authorities encourage contractors and consultants to exercise to be ethical when selecting and executing contracts. Mlinga (2005:8) defines corrupt practises as processes of soliciting anything of value, receiving and offering gifts to officials in return for favours. Based on the above assertions, it can be argued that, corruption and fraud are two attributes hindering government plans to redress social-economic inequalities and empower citizens.

The need to curb corruption in BEE tendering systems: The paper acknowledges that, the advent of government tenders has caused what most South Africans call "tenderpreneurship" or acts of gross nepotism, fraud and mismanagement that have crippled the intended purpose of the BEE as an employment creation mechanism in South Africa. The paper recognises that, in the tendering or procurement system, senior or awarding public officials are not paying attention to detail. The BEE system which stipulates the awarding of tenders to deserving black South Africans in diverse economic activities breeds more harm than good to most the citizens. This has been championed by Basheka (2008:380) who observes that, corruption ruined decision making and service delivery in government entities. Although corruption has been rampant in local government procurement systems (Thai, 2008; Tabish et al., 2011:261) claim that, proper exercise of accountability and transparency can enhance municipal activities in the public procurement systems. The paper recognises that, during any phase (planning, financing, tender execution, operation maintenance) in the procurement systems corruption occur (Wensink & Ecorys, 2013). Public officials often use BEE for personal gain which is a hindrance to black empowerment (Tabish & Neeraj, 2011:261). The persistent corruption in local government requires officials to increase on public accountability which is a key factor in enhancing good governance in public sector organization. Studies by (Cavil & Sohail, 2007; Tabish & Neeraj, 2011: 262; Mpabanga & Lekorwe, 2007:6) assert that, BEE can be improved in South African local government in event public officials account for their actions which can reduce corruption and mismanagement in public organizations.

The need to improve on accountability and transparency: The paper observes that, after so many years of BEE implementation, local government in South Africa is still grappling with lack of accountability of public officials. The paper recognises that, municipalities do not comply with principles good governance principles inter-arlia transparency, information dissemination, and social accountability as well as monitoring and evaluation of BEE procurement structures. The dearth in accountability culture in local government has led to unending corruption and maladministration which kills the spirit of entrepreneurship and innovation among the historically marginalised groups. The paper acknowledges the view that, if municipalities do exercise social accountability to the public and their peers, black economic empowerment can be a reality in impoverished communities (Swift, 2001:17). In Dowdle (1996:52), public accountability in the implementation of BEE provides a requirement for municipal officials to responsibly account for their actions to the relevant stakeholders. Swift, (2001) argues that, accountability entails the provision of information between two parties where one can justify own actions to the other Ambe & Badernhorst-Weiss (2012:11004) however, lament the incapability of public officials to effectively account for their actions in BEE which has exacerbated poverty and inequalities in various black marginalised communities nationwide.

The need to improve on registration practises: Many emerging organisations are being constrained by the complexities in the registering of their organisations which is a hindrance to black economic empowerment. Research acknowledges that, BEE is indeed an economic empowerment imperative meant to redress past imbalances, however emerging entrepreneurs due to limited education levels and poor information dissemination find the registration process very infuriating. The Department of Trade & Industry (2014) attests to the viewpoint that, severalblack companies struggle to comply with the B-BBEE policy, companies have employed the services of Verification Agencies (VAs). The prevalence of high level bureaucracy in the verification process, stirs confusion among emerging BEE companies. This calls for alternative strategies to address the issue (DTI, 2014). The paper reasons further that, to cope with the issue of registering companies in line with the BEE requirements, the DTI (2014) observes that the South African National Accreditation System (SANAS) undertaken an initiative to assist in the accreditation and verifications practices. This counter-initiative goes a long way in phasing out certificates issued by non-accredited VAs. All these efforts by this organization were meant to improve efficiency in the BEE systems at the same time promoting local companies to improve on their mandate to create employment (DTI, 2014).

The need to remove excessive decentralization in the procurement system: The procurement system which underpins the BEE systems is marred by excessive decentralization in the governance structures of the country in a way that it spreads to departments, provinces and local municipalities in South Africa. The increased cases of tender fraud and poor service delivery by government at all spheres of government led to critics to interrogate the success of BEE. The lack of proper accountability structures makes one question if public officialsacknowledge the value of taxpayer'smoney (Fawacett, Ellram & Ogden, 2007:310). The paper argues that centralization of procurement as triggers improved accountability and reduction in costs in local government initiatives (Handfield et al., 2011:162) Centralization in the words of Handfield et al. (2011) offers sound decision making and coordination and it minimises resource wastage. Although centralisation may have its own merits in BEE procurement systems, Handfield et al. (2011:162) argues that decentralisation leads to good responsiveness to local needs, suppliers and decisions based on the available budget.

Improvements in monitoring and evaluation (M&E) of BEE systems: The paper observes that, the lack of monitoring and evaluation mechanisms in many municipalities in the country has compromised the effective implementation on BEE as a tool for creating employment and redressing socio-economic imbalances. Acevedo et al. (2010) contends that governments need to assess their policy making structures to ensure if they are meeting their objectives or not. The authors maintain that to realise effective governance monitoring and evaluation mechanisms need to be in place to facilitate accountability in public policy formulation. Bogopane (2013) concurs that, poor quality control mechanisms by government departments has resulted in escalating corruption due to poor M & E structures. The paper affirms further that, lack of compliance by officials promote the culture of corruption in the tendering systems. The laws and regulations as Business Day Report (2011) holds have been by-passed in the procurement systems, leading to the country losing millions of South African rands. Stemele (2009) echoes the same sentiments when he states that mismanagement of funds and corruption is rampant in the upper echelons of government since no-one seems to hold officials accountable. This has harmed BEE to the extent of effectively failing to redistribute resources and wealth the marginalised groups in communities.

BEE and the Emergence of Black Entrepreneurship: The implementation of BEE in South African municipalities as an economic imperative to address the socio-economic inequalities attracted fervent criticism from Moeletsi Mbeki who in 1998-2008 boldly spoke on the need to "formalize BEE through legislation". In his opinion, BEE creates a form of "black entrepreneurship" where small "classes of unproductive but wealthy black crony capitalists" consisting of African National Congress politicians become rich and strong allies of the economic oligarchy (Mbeki, 2009:61). The analyst criticises what he calls "BEE and its subsidiaries-affirmative action and affirmative procurement-have metamorphosed ... they have become both the core black ideology of the black political elite and, simultaneously, the driving material and enrichment agenda which is to be achieved by maximising the process of reparations that accrue to the political elite" (Mbeki, 2009: 61). The criticism levelled against BEE stems from minimal improvement in correcting the injustices of the apartheid as ten years later many of the challenges remain or have become even more acute in terms of poverty, unemployment, housing and basic services, and HIV/AIDS (Hamann, Khagram &Rohan, 2009: 25). The BEE program in Kovacevic (2007:6) failed to alleviate poverty, regenerate employment and improves the economy of the country. Based on these arguments, this paper questions the ability of BEE to transform the lives of million citizens as enshrined in the policy documents. Evidence on the ground proves otherwise as BEE instead on regenerating employment in local municipalities, it contributes to development of classes where rich black entrepreneurs emerged thereby widening the poverty gap between the rich and poor in communities.

Curbing Fronting in BEE procurement systems: Evidence from literature study reflected that, fronting is a growing phenomenon which has been embedded in the procurement systems where gross nepotism and fraud are rampant in South African local government. Fronting as Kalula and M'Paradzi (2008) observe entails the deliberate violation, of B-BEE Act and the codes (guidelines on complex structures). Such a gross manipulation of the tendering systems hampers the ability of Small Businesses and other ordinary company owners to benefit from the BEE system. Fronting which has popularly became a fraud mechanism in regarded by the Business Unity South Africaas "an entity, mechanism or structure established to circumvent BEE". The paper observes that fronting is conducted "when black people signed up as fictitious shareholders in essentially white companies and/or inaccurate dis-closure in the submission of tenders" (Barlett, 2010). The empirical literature stresses out that in procurement systems, fronting has been manipulated to side-step BEE (Burger, 2010). As a counter measure to curb fronting, the draft codes issues as per B-BBEE Act in December 1995, were meant to regulate chances of fronting (the SIU Training Manual on Procurement Fraud, 2010:135). The codes give several definitions and formulas that attempt to calculate and reduce the risks of fronting. Although the government of South Africa undertook sound decision to combat fronting in the procurement systems Kalula and M'Paradzi (2008) reason that, fronting in BEE procurement systems has since worked against the government goal of alleviating poverty in communities through local economic development initiatives. Perhaps one might argue that, an organisation or individual that indulges in fronting related activity "stands to be prosecuted, since fronting amounts to fraud and as such it is a criminal offence" Kalula and M'Paradzi (2008). Critics tend to oppose as the unethical acts of fronting and corruption have been rampant in South African municipalities with no or little prosecution enacted on them. Drawing from these assertions therefore; local authorities need to reform on the approach to BEEso that the policy benefits most black people. Rumney (2008) validates the above statements when he declares thatfronting is disguised fraud in accordance with National Prosecuting Authority. The misrepresentation of data, facts by parties claiming compliance by another person amounts to fronting which is an unethical conduct disrupting the success of BEE.

The need to reduce fronting in construction industries and companies: The paper establishes that, fronting is a growing cancer which is ripping the BEE procurement systems apart in local municipalities. The impact of fronting created doubts, lack of trust among citizens on whether public officials can effectively execute their mandate of restoring the black identify by rectifying the socio-economic injustices. Heated debates and questions often arise on whether BEE is indeed a measure for uplifting the living standards of the previously disadvantaged individuals or it a new dimension for enriching the already rich black minority. BEE in South African municipalities has failed to rise to the expected standard due to effects of fronting in the procurement systems. This resulted in many potential small/emerging black company firms encountering relegation out of the system because of corruption (Kalula & M'Paradzi, 2008). In the Construction industry, fronting and corrupt tendencies have been rife as the procurement systems falls victim to fronting whereby huge contracts are given to BEE companies who later sub-contract them to white owned firms.

Based on the arguments it can be arguedthat BEE targets the previously underprivileged black people, but evidence points to lack of capacity among such groups to embark on the contracts hence they may need their white counterparts to assist for common development. This idea however may attract its own criticism which is a future gap further to be interrogated to see whether the historically marginalised groups in South Africa have the capacity to execute huge contracts without external help. Can the previously marginalised black organisations able regenerate employment without the much-needed skills and expertise? All these questions stand to challenge the implementers of BEE to consider such factors to effectively empower local black owned companies and individuals as part of government plan to reduce poverty inequalities. Critically analysing from a socio-economic standpoint; BEE is facing a host of challenges which inhibit the policy to benefit Historically Disadvantaged (HDIs) Individuals and other marginalised black groupsdue to corruption and inefficiencies in the procurement systems. Probing questions from critics often remain unanswered as to who is to blame for the failure of BEE, government or corrupt individuals? According to the Center for Development and Enterprise (2007:3) BEE was narrowly implemented as it reignites the racially historical divisions and it excludes some segments of the targeted black population. BEE seems to have failed to rise to expectations as poverty and inequalities in communities are escalating despite the government obligation to empower small businesses and emerging black companies. This calls for good ethical conduct of municipal officials to exercise good governance as a way of redressing past imbalances and stimulate community livelihoods.

The need to improve on planning, demand &budget management in BEE procurement system: The success of BEE in redressing the socio-economic imbalances of the past in is hinged on effective municipal coordination and good demand management practises. The paper found out that, demand managementis lacking in local government although, Ambe & Badenhorst-Weiss (2011) remark that it underpins supply chain management procedures. It enables public officials to undertake efficient and effective procurement decisions. However, the paper observes that, challenges of proper planning and linking demand to the available budget illuminate in South African local government owing to scarcity in skills, and institutional constraints. Evidence of such incapacities in municipalities manifested itself in the cost-effective procurement in the tendering systems where skilled workers are scarce to determine the buying requirements. Lindsay (2015) concurs that, in the implementation of BEE various municipalities lack accurate and realistic strategic plans to direct the path for public officials. The poor planning in government departments sawother departments failing to quantify properly exercise expenditure accountability on the services rendered to the intended beneficiaries. Such capacity constraints in local government can be perceived as a threat to redressing economic injustices by empowering local people in the country. Despite the institutional constraints, there is hope for BEE in South Africa, if municipalities indulge in close monitoring and evaluation of BEE procurement system gaps and weaknesses are located to curb fronting, fraud and corruption associated with the awarding of tenders. As Lyt (2008) observes, this strategy is fundamental in equitably distributing resources effectively and efficiently to improve service delivery in communities.

5. Conclusion and Recommendations

The review of secondary evidence reveals that Black Economic Empowerment in South Africa is being constrained by corruption, fraud, mismanagement, poor accountability, lack of monitoring and evaluation, difficulties in registering companies under BEE, lack of demand management and gross incompetence of public officials across municipalities. These obstacles have hindered the capacity of BEE to become an economic imperative aimed at redressing past imbalances. The paper observes that, BEE has led to the emergence of powerful black individuals that manipulate the procurement systems at local government level thereby giving tenders to their friends, peers and relatives. Fraud and fronting have beenconstrainingattributes to have compromised the BEE procurement systems hence increasing the poverty gap in severalmarginalized groups in South African communities. The paper depicts further that; BEE has done little to assist black South Africans since the tendering systems seems to benefit the few minority organizations that have enoughhuman and financial resources to exploit big contracts. Skills deficit coupled with limited funding and poor monitoring of procurement systems cause corruption to persist undetected which cause the rise of unemployment and poverty among the economically active groups in the country.

Despite the many challenges facing local government in South Africa, BEE if well implementedcan still resuscitate the economy of the country by empowering emerging blackentrepreneursand small businesses withfunding and equal opportunity to attain huge tenders that can uplift their standards of living. Based on the above conclusions the study, recommends the government of SouthAfrica, to encourage entrepreneurship andinnovation among black South Africans instead of pinning hopes on BEE initiatives. The government including stakeholders should implement measures that combat corruption and fraud in the procurement systems. Skills development and training programmes need to be strategically implemented to various black communities and emerging entrepreneurs since they are fundamental in generating employment and uplifting standards of living. The BEE policy needs to aligned or implemented together with government's National Development Plan (2011-2030) to empower local communities and redressing previous socio-economic ills.

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Journal of Economics and Behavioral Studies (JEBS)
Vol. 8, No. 6, December 2016 (ISSN 2220-6140)

Analysis of Trade in Goods between Indonesia and South Korea on Cooperation Forum IKCEPA

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Abstract: Indonesia Korea Comprehensive Economic Cooperation Partnership (IKCEPA) arises from the desire of both countries to boost trade performance and make the free trade agreement more comprehensive. CEPA agreement with South Korea has targeted the reduction and elimination of tariffs that cover more products and services. This study analyzed the relationship between Indonesia merchandise trade cooperation with South Korea. Besides, look at the potential of the Korean market for goods exports from Indonesia featured. To deepen the study simple equilibrium analysis is used to analyze the potential of the South Korean market for goods exports Indonesia. The analysis showed that after the implementation of AKFTA in 2007, Indonesia merchandise trade performance by sector turned out to have an average growth of imports by 21.36 percent, higher than the average export growth of 8.19 percent. There are some items which have the potential to become a mainstay of exports to Korea that includes textiles, wood processing, manufacturing goods such as spare parts of household appliances, bicycles and others. Likewise, there are some agricultural products such as pineapple, guava, and animals such as freshwater fish, crabs, cuttlefish and others. However, the export of these items to South Korea is still hampered by their tariff barriers. Forum IKCEPA cooperation can be a bridge to fill the gap between the two countries for tariff reduction, market acces and an increase in exports of both countries.

Keywords: *IKCEPA, negotiation, export*

1. Introduction

Open economy is an economy that involves international trade (exports and imports) in goods and services and capital with other countries. The era of free trade is currently growing with the number of bilateral agreements, regional and multilateral. Disclosure can not be separated from the high dependence on import tariffs as a source of government revenue that would impede the process of trade openness in the economy. But slowly began to diminish with the existence of free trade agreements among trading partner countries. Tariffs and other non-tariff barriers is the main policy instrument that was originally used to protect the industry which is the domestic import substitution. With the liberalization of trade, the economy is expected to further improve. Relations with the national economy through international trade is now unavoidable. It shows a strong relationship to economic conditions in trading partner countries. Their relevance between economic openness with domestic prices, which causes the price of domestic goods would be affected the structure of trading partner economies. Many things that drive a country to international trade adheres to an open economy, such as differences in available resources to expand the market share of national production with a relationship of international trade policy and many other things that affect (Boediono, 1981).

Cooperation Indonesia Korea Comprehensive Economic Partnership Agreement (IKCEPA) is one of the cooperative relationship that arises from the desire of both countries to increase trade and investment performance. Indonesia-Korea CEPA aims to make a free trade agreement that is more comprehensive than the ASEAN Free Trade Agreement with South Korea (AKFTA) beforehand. In the CEPA agreement with South Korea have targeted the reduction and elimination of tariffs that cover more products, liberalization of the services sector is more ambitious, as well as elements of a more solid investment protection. Indonesia and Korea agree that the cooperation forum IKCEPA formed based on three main pillars, namely market access of trade in goods and services, trade facilitation and investment, as well as cooperation and capacity building. In the future, the challenges faced in this IKCEPA cooperation is their market access to Indonesia in South Korea is still open, improvements in the quality and diversification of products. It is expected also to an increase in economic partnership is strategic, comprehensive and innovative. Besides, in the negotiation of this cooperation will get the same understanding related to quarantine regulations, packaging and delivery time for both countries. Short-term targets are the IKCEPA cooperation facilitates the achievement of trade between the two countries amounted to US $ 100 billion by the year 2020, while the long term targets is the continuity of trade economic cooperation to stimulate the economy of both countries. For Indonesia, this cooperation is expected to expand market access in South Korea. In addition, as an effort to increase the promotion of Indonesian products to Korea. While Korea advantage with this agreement is the fulfillment of a number of commodities that are needed in the country of Indonesia to support its economy.

2. Literature Review

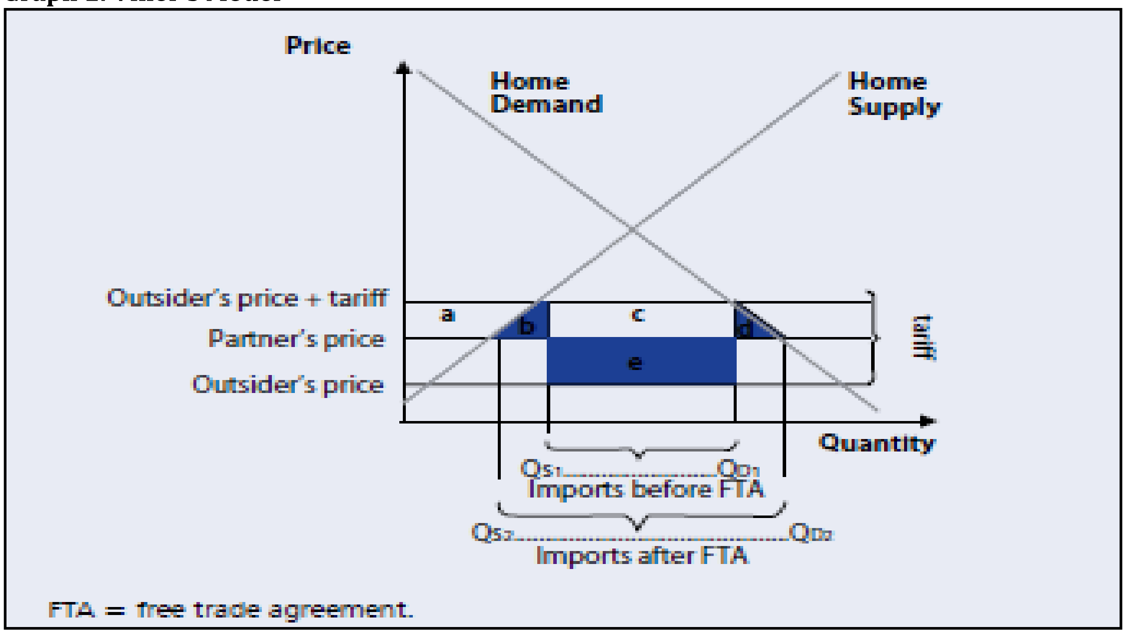
Indonesia as a country that adheres to an open economy, then to push the national economy but to rely on the domestic economy is also developing various forms of international cooperation multilateral, regional and bilateral. Indonesia Korea Comprehensive Economic Partnership Agreement (IKCEPA) is one of the bilateral economic agreements between Indonesia and South Korea. IKCEPA also a strategic step for both countries to improve economic relations, trade and investment. It is hoped that this cooperation can be achieved benefit for both parties in order to improve the welfare of the people of both countries through trade activities. Foreign trade allows a country to learn more efficient of production techniques and ways for more modern management including the transfer of technology, that is often referred to as the commercialization of the technology. It is intended as the process of transfer of skills, knowledge, technology, manufacturing method, a sample of the manufacturing and government facilities, universities and other institutions that guarantee the development of science and technology can be accessed by multiple users. It becomes important for the further development and use becomes a process, application, materials and products as well as products of other new services. Transfer of technology is divided into two, namely the transfer of both horizontally and vertically transfer. Horizontally is the transfer of technology from one field to another. While the vertical transfer is the transfer of technology from research to implementation (Grosse, 1996).

To realize this IKCEPA cooperation, a study group has been assessing the feasibility of CEPA that startedduring the visit of Coordinating Minister for Economic Affairs of the Republic of Indonesia to Seoul in February 2011. After some time the study group doing the assessment, then endorsed the final report on the first meeting of Working level Task Force Meeting (WLTFM) in Seoul in October 2011. Several seminars have also been implemented in each country to disseminate study results to the national stakeholders. The study of the Joint Study Group for a Comprehensive Economic Partnership Agreement Between Indonesia and Korea (JSC IKCEPA) concluded that further liberalization of the tariff on the product categories Sensitive Track (ST) are not ready for liberalization. This Sensitive Track consists of two products, namely the Sensitive List (SL) and Highly Sensitive List (HSL). This provision according to the agreement Asean Korea Free Trade Agreement (AKFTA) which will increase prosperity for both countries is estimated to be worth US $ 7.97 million or 0.03 percent increase in GDP for Indonesia and $ 1.5 billion, equivalent to an increase in GDP of Korea South by 0.13 percent. With the existence of this bilateral cooperation, Indonesia will gain enormous benefits through economic cooperation, which amounted to USD 10.6 billion, which is equivalent to a 4.37 percent increase in GDP of Indonesia. This benefit is an increase of ± 1:36 times of the benefits derived from trade in goods which only amounted to USD 7.79 million (De Silva, 2012).

However, the report did not report on the benefits South Korea through the economic cooperation. For the record, within the framework of AKFTA, about 90 percent of tariffs Indonesia and 92.1 percent of South Korea's tariffs included in the category of Normal Track (NT), which currently has import duty rates of 0 percent, and the rest is a product in a category Sensitive Track (ST), which consists of a Sensitive List (SL) and Highly Sensitive List (HSL). In March 2012, the two leaders held bilateral talks and agreed to start negotiations on IKCEPA. The talks first held on July 12, 2012 in Jakarta, discusses the Term of Reference (TOR) negotiations of IKCEPA also the scope IKCEPA, namely: Trade in Goods, Rules of Origin, Customs, Trade Facilitation, Investment, Intellectual Property Rights, Sustainable Development and Competition. (WTO, 2012). Currently IKCEPA is at the final stage of negotiations. Points to be a major obstacle in the negotiation of Indonesia-Korea CEPA are: (i) Indonesia wants investment commitments from Korea to be included in legal documents CEPA, while for Korea is very difficult to fulfill that; (Ii) Indonesia still could not accept the proposal of Korea related reduction in tariffs for sensitive products and compete directly with Korea, such as Iron and Steel; and (iii) Indonesia is still considering to liberalize the telecommunications sector according Korean proposal (PKRB, 2013).

In essence FTA is a commitment for members of treaty signatories to reduce or eliminate tariffs on imported goods originating FTA partner countries while maintaining import tariffs Most Favoured Nation (MFN) from countries outside the FTA partners. In fact, every member of FTA maintains its tariff regime. This will bring three things, namely (i) the FTA should be based on the rules of origin (ROO), the absence of ROO will lead to abuse facility for non member countriesof the FTA with the conduct transhipment in member states FTA with low rates and then goods horse re-exported to countries members of the FTA, (ii) expected to occur varying prices in the member states of the FTA because member states will choose varying rates, (iii) although they still maintain tariff regime of its (MFN) for countries not members of the FTA, but such autonomy can make any particular government more susceptible to a particular group at the national level. Basically a preferential trade agreement (preferential trade agreement) such as the Free Trade Agreement (FTA) has positive and negative sides. And to provide alternatives to policy in the field of trade, we can observe in the following Viner's model (TMUG, 2014).

Graph 1: Viner's Model



(Source) Methodology for Impact Assessment of Free Trade Agreement, OECD

Viner (1950) concluded that to measure the impact of trade liberalization on a cooperation agreement between countries to compare the effects of positive and negative effects of liberalization: First, the positive effects: trade creation, where a shift of consumption of domestic products that are high-cost to imported products that are low-cost (produced by partner countries). Second, negative effects: trade diversion, ie intermediate consumption of imported products that are low-cost (which is produced by non-members) to the import of products that are highcost (generated by the cooperation partner countries in the FTA).

3. Methodology

This study aimed to analyze the relationship of cooperation trade in goods and the market potential of South Korea for the main export goods from Indonesia. To deepen the study, simple equilibrium analysis is used to analyze the potential of the South Korean market for goods exports Indonesia. Indicative Potential Trade is also used as an approach. Indicative Potential Trade is a methodology introduced by Christian Helmers and Jean Michel Pasteels (ITC Working Paper, 2006), which can make an assessment of the export potential based on the level of its products. This methodology uses an approach that combines macro and micro indicators. The initial step of this methodology is to establish a certain level of disaggregation trade.

This methodology is illustrated using examples of real world trade, which was originally used in a study conducted by the German Development Cooperation CTZ investigating the potential of bilateral trade in some commodities between Mongolia with partner countries. Simply put products imported into a country or destination is an indication of the existing demand (existing demand), and products dieksor by a country to the world is an indication of the existing offer (existing supply). Indicative Trade Potential (ITP) can be calculated by, first, forming wedges of performance Demand, supply, and existing trade transactions. Second, calculate ITP is based on the equation below:

$$ITP = X_{iw} - X_{ik}, If\ I_{kw} > X_{iw}$$
$$ITP = I_{kw} - X_{ik}, If\ I_{kw} < X_{iw}$$

Where:
X_{iw} is Indonesia's exports to the world (supply)
X_{ik} is Indonesia's exports to Korea (existing)
I_{kw} is Korean imports to the world (demand)

Generally to analyze IPT results can be explained as follows:

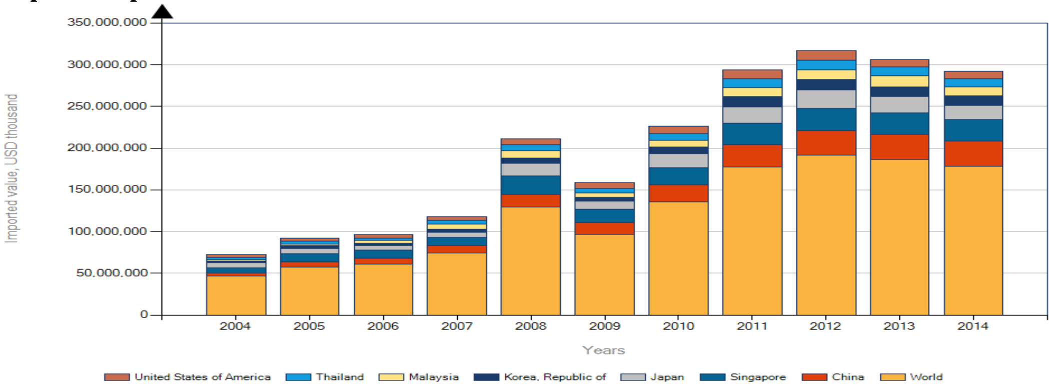
- See the difference (gap) between the proportion of Indicative Potential Trade (IPT) with Ratio (Existing / Demand), so that this difference can be seen from the performance of Indonesia's trade with South Korea and viewable potential export goods go to South Korea. For example, for the goods "Cedar" HS 440710100 numbers obtained ratio of 0 per cent and 0.14 per cent of the value of IPT, the next should be seen Indonesia's export performance.
- When looking Indonesia in the world trade performance. For goods "Cedar" Indonesia has been supplying to the world amounted to USD 701 000 excluding South Korea country.
- World trade performance for the goods to South Korea "Cedar" amounted to USD 513.574 million, meaning that demand for goods Cedar in South Korea is quite large.
- Meanwhile, Indonesia's trade performance of South Korea showed that the value of the goods "Cedar" turned out to 0. This means that there is potential for these goods can be negotiated to the South Korean government. Furthermore, to be seen how tariffs applied in AKFTA forum and how rates MFNnya Korea.
- AKFTA rates (rates Asean agreement South Korea), it turns out fare "Cedar" is still 5 per cent, in other words, there are still tariff barriers in order to go to South Korea to ASEAN countries, including Indonesia.
- South Korea MFN rates, it turns out one obstacle is fare "Cedar" to South Korea. These countries still impose tariffs of 5 percent. This is what must be explored and as a reference to be negotiated with the South Korean government.

Data: The data used is secondary data import export South Korea and Indonesia as well as the world, while the source data comes from Statistics Indonesia, UN Comtrade, the Organisation for Economic Cooperation and Development (OECD) as well as data from the International Trade Centre (ITC).

4. Results and Discussion

Indonesia Import Export Performance: For more than a decade from 2004 through 2014, the performance of export-import of Indonesia has been ups and downs. Indonesian imports increased and peaked in 2012, and after that it fell back. Indonesia's main import partner countries has been changing time to time. In 2004, Indonesia main import partners are Singapore, Japan, China, the United States (US), Australia and South Korea. However, the data in 2014, Indonesia's main import partners are China, Singapore, Japan, South Korea, Malaysia and the United States. Imports from Indonesia, has tripled portion of the middle class population, boosting from the demand for fuel oil and consumer goods that becomes higher. Indonesia's major imports are oil and gas (about 24 percent of total imports), machinery (19 per cent), electrical appliances (13 percent), iron and steel (7 percent), vehicles (6 percent) and plastics (5.5 percent). Over the last ten years the development of Indonesian imports, as shown by the graph below.

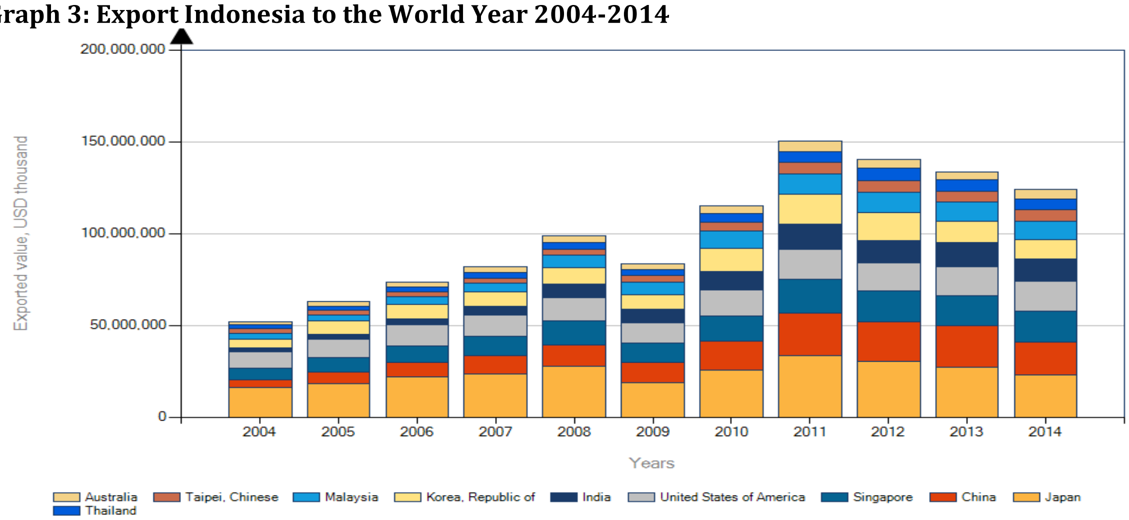
Graph 2: Import Indonesia of the World Year Period 2004-2014



(Source) ITC, 2014

One mainstay of Indonesia's economic growth is the contribution of the growth of exports from Indonesia to the world. Export is heavily influenced by internal factors such as increasing competitiveness and external factors such as global economic conditions. Some of the main Indonesian export products include oil and gas (18 percent of total exports), mineral fuels and oils (14 percent), animal and vegetable fats and oils (11 percent), electrical equipment and machinery (6 percent). Other exports include: rubber and rubber processing, ores, slag and ash, nuclear reactors and boilers and vehicles (Juan, 2014). During the 10 years of Indonesian exports can be seen in Figure 3 as follows:

Graph 3: Export Indonesia to the World Year 2004-2014

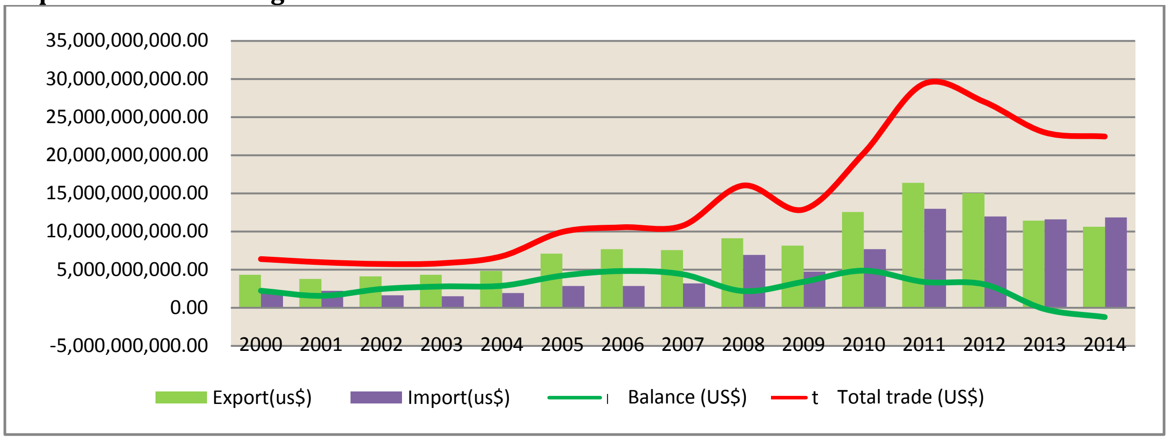


(Source) ITC, 2014

Indonesia's export to main destination countries in 2014 amounted to $ 23,127,089, namely Japan, followed by China amounted to $ 17,605,944, Singapore amounted to $ 16,752,340, and South Korea amounted to $ 10,606,000. Although the general trend of the ten-year average Indonesian exports have increased, but in fact there has been a trend in the last five years of stagnation and even a declining trend in the past year, as pictured on the graph 3 above.

Developments Trade Relations Indonesia South Korea: In particular, when viewed from the flow of trade between Indonesia and South Korea,the trend for has been turning up and down for both exports and imports between the two countries. However, in 2014 Indonesia experienced a trade deficit.

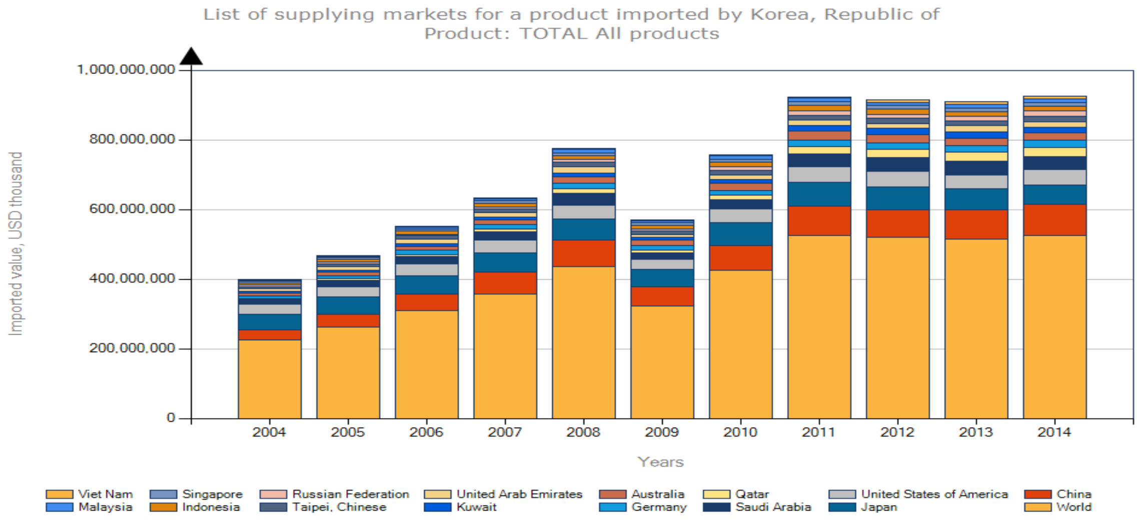
Graph 4: Trend Trading Indonesia-Korea 2000-2014



(Source) UN Comtrade, processed

In almost all the period, Indonesian exports dominate the trade balance with South Korea, but the last two years the value of imports from South Korea continue to increase and become involved in the trade balance deficit. The proportion of export products from Indonesia to South Korea market is not yet significant, which is ranked at 12th position in 2014, which amounted to USD 12,271,095,000. During this time the main partner for South Korea is China with imports amounted to USD 90,072,159,000, and then Japan amounted to USD 53,775,979,000, United States amounting to USD 45,532,370,000, and Saudi Arabia amounted to USD 36,724,136,000. Indonesia is ASEAN countries which have the highest proportion in South Korean imports, followed by Singapore and Malaysia, which amounted to USD 11,306,787,000 and $ 11,100,597,000. As seen in Figure 5.

Graph 5: South Korean imports of the world



(Source) ITC, 2015

South Korea's main import products in 2014 are products that are used to support the industry, such as petroleum oil (18.07 percent), liquefied natural gas (5.84 percent), light petroleum oil (4.17 percent), processors (3.12 percent), bituminous coal (2.04 percent), iron ores (1.51 percent), electronic integrated circuit (1.42 percent), as well as parts of telephone (1.12 percent). As Table 1 below.

Table 1: Main Import Products South Korea Year of 2014

NO.	HS Code	Product Label	Imported Value (USD)	%
1	'270900	Petroleum oils and oils obtained from bituminous minerals, crude	94.971.596,00	18,07
2	'271111	Natural gas, liquefied	31.423.901,00	5,98
3	'271012	Light petroleum oils and preparations	21.897.149,00	4,17
4	'854231	Electronic integrated circuits as processors and controllers, whether	16.416.096,00	3,12
5	'270112	Bituminous coal, whether or not pulverised but not agglomerated	10.723.078,00	2,04
6	'260111	Iron ores&concentrates,oth than roasted iron pyrites,non-agglomerated	7.959.540,00	1,51
7	'271019	Other petroleum oils and preparations	7.760.657,00	1,48
8	'854239	Electronic integrated circuits (excl. such as processors, controllers,	7.439.705,00	1,42
9	'854232	Electronic integrated circuits as memories	5.908.469,00	1,12
10	'851770	Parts of telephone sets, telephones for cellular networks or for other	5.860.128,00	1,12
11	'848620	Machines and apparatus for the manufacture of semiconductor devices or	5.197.125,00	0,99
12	'260300	Copper ores and concentrates	3.635.810,00	0,69
13	'870332	Automobiles with diesel engine displacing more than 1500 cc to 2500 cc	3.056.597,00	0,58
14	'854140	Photosensitive semiconduct device,photovoltaic cells&light emit diodes	2.891.787,00	0,55
15	'720449	Ferrous waste and scrap, iron or steel, nes	2.828.226,00	0,54
16	'847989	Machines & mechanical appliances nes having individual functions	2.784.714,00	0,53
17	'100590	Maize (corn) nes	2.629.308,00	0,50
18	'271113	Butanes, liquefied	2.592.471,00	0,49
19	'901380	Optical devices, appliances and instruments, nes, of this Chapter	2.585.091,00	0,49
20	'853400	Printed circuits	2.583.840,00	0,49

(Source) ITC, processed

In 2004-2008, there was no major change in trade policy formulation in South Korea. Regulatory reform continue to be made in South Korea with an emphasis on reducing the number of quantitative regulatory policies in order to improve the quality of regulation. After that, South Korea trade policy has also not changed much. Things that encourage trade and investment policies of South Korea is in order to achieve greater liberalization. This is done by increasing productivity and deployment of resource allocation more efficiently. However some protectionist measures to protect domestic producers continue in South Korea, especially farmers, from foreign competition is maintained (TPR, 2004)

Discussion: To see a potential indicator of trade especially export potential of Indonesia to South Korea based on the level of product in IKACEPA forum, can be described in Matrix Calculation Indicative Potential Trade between Indonesia and South Korea. From the analysis of the market potential of Indonesia's exports to South Korea can be used as a basis for policy making the Government of Indonesia to negotiate rates trade in goods with South Korean government. Here are the results of analysis using approach of Indicative Potential Trade. The data used is data of 2014 as many as 12 232 items of goods HS Indonesia's main export.

Of these, taken 30 HS items that potentially could be negotiated with the South Korean government that can be summarized as follows (Appendix 1):

- 6-digit HS 040221, in the form of milk powder Whole milk powder HS 0402211000. This has the proportion of IPT 100 percent. Export or supply of merchandise from Indonesia to the world is very big which is USD 36.681 million while the South Korean demand for USD 10.145 million and Indonesia's exports to South Korea amounted to zero. When looking at constraints which include tariffs remain high at 17 percent good or MFN tariff rates AKFTA South Korea.
- 6-digit HS 252310, goods Cement Clinkers 2523100000. Merchandise HS also has the potential can go to South Korea. IPT its proportion of 100 percent. Cement exports from Indonesia to the world worth USD 12.597 million while South Korea demand of the world worth USD 1.449 million while the supply from Indonesia yet so these items can be negotiated with South Korea. Tariff barriers to AKFTA by 5 percent and tariffs on entry to South Korea or South Korea MFN also by 5 percent.
- 6-digit HS 010620, in the form of goods Fresh Water Tortoises HS 010620200. This item is in the form of a turtle or turtle lives in freshwater. South Korea is quite highly demand, and supply Indonesia to the world is also quite high. However, supply to Korea from Indonesia only 10 percent of South Korea's needs. Barriers to entry to South Korea turned out to be the rate charged 8 percent. Likewise AKFTA forum also still apply the rate of 8 percent.
- 6-digit HS 310221, in the form Of Red Ginseng HS 3301904520. This item has ITP proportion of 100 percent. Indonesia supplies to the world market worth USD 88.535 million while world supplies to South Korea worth USD 21.45 million. However, Indonesia's exports to South Korea are still zero. When viewed barrier AKFTA rate was 7 percent and 7 percent of South Korea MFN rates.
- 6-digit HS 291611, in the form of Acrylic acid chemistry Goods 2916111000. HS also has a great opportunity to enter the South Korean market. From the IPT simulation results, turns out that this chemical stuff has value IPT proportion of 100 percent. South Korea demand of USD 49.065 million supplied from the world, while supply from Indonesia for USD 31,000 while Indonesia could supply the world worth USD 55.2267.000. To rate this chemical goods in AKFTA was still by 7 percent and in South Korea MFN rates are also still at 7 percent.
- 6-digit HS 210310, Soy Sauce or Soya Sauce HS 2103100000. Goods processed form of soy has the potential to be able to sign South Korean market because it has a 98.29 percent proportion IPT. Indonesia to the world supply of USD 14.202 million and South Korea demand in 2014 of USD 6.768 million while the supply Indonesia to South Korea only worth $ 116,000. It means that the goods in form of soya sauce still have the opportunity to go to South Korea. However, barriers still AKFTA rates by 8 percent and South Korea MFN tariff of 8 percent as well.
- 6-digit HS 441299, such as Whole Of a thickness not less than 6 mm HS 4412991011. processed wood products has a great potential entry into South Korea with a proportion of 98.08 percent IPT. These goods are exported to the world worth USD 713.983 million and South Korea supplied from the world worth USD 85.273 million, but the supply Indonesia to South Korea are still slightly only worth $ 1.633 million. AKFTA tariff barriers for MFN tariffs by 13 and South Korea at 10 percent.
- 6 digit, HS 290516, 2-ethylhexyl alcohol goods with HS Goods 2905161000. This chemical has the potential to enter the South Korean market. A proportion of IPT of these goods has a proportion of total 98.06 percent. Indonesian exports of these goods to the world all have considerable value of USD 174 689 000 while South Korea imported from the world amounted to USD 166.773 million and imports from Indonesia amounted to only USD 3.229 million. It is still hampered partly because of tariff barriers. For AKFTA rate of 6 percent and South Korea MFN tariff is still at 6 percent.
- 6-digit HS 290711, in the form of chemical goods Phenol 2907111000. HS also has great potential to get into the South Korean market because the IPT proportion of 94.77 percent. Indonesia's exports to the world market of goods worth USD 64.704 million while South Korea to the world's supply higher at USD 68.263 million and Indonesia only supply to South Korea worth USD 9,000 only. When looking at the goods tariff turns AKFTA rate remained at 6 percent and South Korea MFN tariff is still 6 percent.
- 6-digit HS 850610, in the form of Manganese batteries with a HS 850610100. This item has IPT proportion of 95 percent. Indonesia's export products have been supplied to the worldwide market valued at USD 178.414 million while the world supplying to South Korea worth USD 57.378.00. The

new Indonesian exporting to South Korea worth USD 2.868 million. Hamabatan rate this product for AKFTA and South Korea MFN tariff of 13 percent.

- 6-digit HS 390210, in the form of plastic ore Polypropylene (PP) with HS 3902100000. This PP has IPT proportion of 84.83 percent. Indonesia PP export to the world amounted to USD 26.328 million, while world supplies to South Korea worth USD 31.036 million, but Indonesia will be supplying to South Korea amounted to USD 1,000. Tariff barriers on AKFTA by 7 percent and Korea also MFN tariff of 7 percent.
- 6-digit HS 441011, in the form of Floor board HS 441011142010. Goods processed wood products have IPT has a proportion of 91.73 percent. Exports of goods from Indonesia into the world market worth USD 30.635 million and South Korea in the supply of the world worth USD 4.572 million while Indonesia supplying to South Korea recently valued at USD 378,000. Sealatan Korea MFN tariff barriers still amounted to 8 percent. Likewise AKFTA rate is still 8 percent.
- 6-digit HS 540233, in the form Of poly trimethyler with HS 5402331000. textile export item featured IPT has a proportion of 82.34 percent. These products are widely supplied to the world worth USD 176.291 million while South Korea supplied the world amounted to USD 211 683 000 means more demand than ekpsor Indonesia South Korea to the world, while the supply of Indonesia to South Korea are still relatively few, or USD1.995 million. AKFTA turns tariff barriers and Korea still apply MFN tariff rate of 8 percent.
- 6-digit HS 010620, in the form of goods Fresh Water Tortoises HS 010620200. This item is tortoise or freshwater turtle alive. South Korea demand quite a lot and Indonesia to the world supply is quite high while the supply to Korea from Indonesia amounted to 10 percent of South Korea's request. Barriers to entry to South Korea in the form of tariffs by 8 percent and AKFTA also still apply the rate of 8 percent.
- 6-digit HS 030749, in the form of Cuttle Fish HS 0307491010. This item is in the form of cuttlefish or squid either dried or salted. IPTnya fairly large proportion of 83 percent. Exports of goods to the world from Indonesia is very big which is USD 93 510 and South Korea demand is also very large, while the supply of Indonesia to Korea is still relatively small. Cuttlefish tariff barriers to entry into South Korea by 10 percent while tariffs are applied AKFTA very high at 27 percent.
- 6-digit HS 390410, in the form of Poly vinyl chloride (PVC) not mixed with any other substances 3904300000. HS has a PVC Goods IPT proportion of 77.83 percent. These goods are exported to the world worth USD 96.61 million and South Korea imported from the world worth USD 124.125 million while Indonesia supplies to the country of South Korea 0, which means there are still opportunities to enter into South Korea. Tariff barriers for MFN AKFTA 7 percent and Korea also 7 percent.
- 6-digit HS 030624, in the form of goods Blue Crab HS 0306241010. This item is the crab and the like. The proportion of potential indicators tradenya quite large at 65 percent. Export crab Indonesia to the world today is very large, while imports to South Korea in addition to Indonesia (the world) is also quite large, while South Korean imports from Indonesia are very small. It is this which is the potential of this crab stuff can get into South Korea. When viewed from the non-tariff barriers on the forum AKFTA and South Korea MFN tariff is still high at 20 percent.
- 6-digit HS 382311, in the form of acid oil from refining HS 3823192000. This item has IPT proportion of 78 percent. Indonesia to supply goods to the world is very large USD 1.431011 billion. Likewise, South Korea needs for goods is also quite large but the supply Indonesia to South Korea are still relatively few. AKFTA tariff barriers for MFN subject to 8 per cent and South Korea are also 8 percent.
- 6-digit HS 170290, in the form of HS 1702901000. IPT Artificial Honey Honey Artificial proportion is large enough that 54.09 percent of the potential acquisition is also very large which is USD 83.813 million. When viewed Artificial Honey exports to the world amounted to USD 34.743 million, while demand for South Korea and Indonesia worth USD 63.765 million Artificial Honey supplies to South Korea is still relatively small in the amount of USD 252,000. When viewed AKFTA tariff barriers turns exports still amounted to 24 percent, as well as South Korea MFN rate is still high at 24 percent.
- 6-digit HS 291612, in the form of Ethyl Acrylate Chemical Goods HS 2916121000. IPT has a proportion of 50.13 percent. Exports of goods to the world this chemical is relatively large in value and South Korea imports of the world is also very large, 2-fold Indonesia's exports to the world. But

South Korean imports from Indonesia is still very little. The problem is that barriers to AKFTA rates of 7 percent and South Korea MFN rates by 7 percent as well.

- 6-digit HS 220290, goods Based on Ginseng Beverage HS 220290100. Goods processed products has the potential to be able to enter more into South Korea. IPTnya proportion of 50.37 percent and South Korea demand is higher than supply Indonesia to the world. Barriers to AKFTA rate was 8 percent while tariff barriers to entry to South Korea is 8 percent as well.
- 6-digit HS 200820, in the form of HS 2008200000. Pineapples Pineapples can potentially get into South Korea. This stuff has a proportion IPT 97.42 percent, Indonesia supplying very large world that is worth USD 165.69 million. South Korea needs or supply the world to South Korea worth USD 16.696 million and supply Indonesia to South Korea are still relatively small in the amount of USD 431,000. When viewed barrier to entry to South Korea turns AKFTA rates by 30 percent and South Korea MFN tariff is also 30 percent.
- 6-digit HS 390110, in the form of linear low density polyethylene with HS 3901101000. This chemical goods IPT has the proportion of 39.04 percent. This chemical goods entry into the world market of Indonesia valued at USD 87.722 million and imports to South Korea the world market valued at USD 224.496 million but supply Indonesia to South Korea only worth $ 71,000. AKFTA both tariff barriers and Korea MFN rates by 7 percent.
- 6-digit HS 871200 form of racing bicycles with HS 8712001000. This product has a proportion of 20 percent and Indonesia ITP has supplied to the worldwide market worth USD 41.203 million and the needs of South Korea which has been supplied from the world market valued at USD 207.169 million. whereas the new Indonesia supplying to South Korea worth USD 7,000. Tariff barriers by 8 percent better turns AKFTA and South Korea MFN rates.
- 6-digit HS 080 450, in the form of Guava (Guavas) HS 0804501000. type of fruit has the potential to export to South Korea. Indication of the potential of trade is 18 percent. Indonesia can export to the world Guava enough value amounted to USD 8.45 million and goods coming into South Korea amounted to USD 46.142 million, Indonesia's exports to South Korea only worth USD 1,000. Export restrictions turned out to be a good high tariffs still MFN tariff rates AKFTA and South Korea is at 30 percent.
- 6-digit HS 030 199, in the form of goods Yellow Tail HS 0301992000. Indonesia's export of fish to the world market is quite high and South Korea demand is also high, while Indonesia's exports to Korea is still 0. This could be due to tariff barriers because South Korea is still imposing tariffs 10 percent and rates AKFTA forum also impose 10 percent.
- 6-digit HS 060314, in the form of chrysanthemum flowers (Chrysanthemums) HS 0603140000. This flower type has the proportion of IPT for export to South Korea 100 percent. Indonesia's exports to the world are relatively high and South Korea demand for these products is greater than the entire Indonesian exports to the world while Indonesia's exports to South Korea still 0. When viewed tariff barriers to exports of chrysanthemums in the forum AKFTA charged 25 percent and Korean MFN tariffs also 25 percent.
- 6-digit HS 271019 in the form of jet fuel (jet fuel) HS 2710191010. This fuel value is very high, although the proportion of IPT was not too big that only 7.16 percent. For jet fuel, Indonesia could supply the world market amounted to USD 772.863 million and South Korea to the world supply is very large USD 7.760657 billion, while Indonesia to supply Korea's only worth USD 216.939 million, which means they have the potential to enter the South Korean market , When seen his AKFTA rate of 5 percent, as well as MFN South Korea by 5 percent.
- 6-digit HS 130219, in the form of White ginseng extract ginseng extract HS 1302191110. Goods IPT has a proportion of 2.31 percent. These goods demand is very high in South Korea reached $ 123.799.00 which has been supplied from the world market. Indonesia only supplies around USD 2,910 to supply the world market while Indonesia to South Korea only USD 45,000. Tariff barriers for entry into South Korea, for AKFTA rates by 20 percent and South Korea MFN tariff of 20 percent.
- 6-digit HS 100590, in the form of Popcorn HS 1005902000. potential export item Indonesia has only IPT proportion of 0.42 percent. But the South Korean demand for goods is so large that a USD 2.629.308 while the value of trade Indonesia to South Korea amounted to only USD 12,000. One obstacle is the high tariff AKFTA and South Korea MFN rates by 63 percent.

5. Conclusion and Recommendation

The results of the IPT analysis showed that some items may be proposed in cooperation IKCEPA forum are prime export goods Indonesia HS 6 digit that have the potential as export goods to South Korea one of which has a high proportion of IPT and South Korea demand is very large. In addition, it can also be established in IKCEPA forum about both tariff barriers and MFN tariff rates AKFTA South Korea. This is one factor that dominates the difficulty of potential Indonesian export goods enter the South Korean market.To increase the value of Indonesia's exports to South Korea, dialogue and bilateral cooperation should be supported especially that benefits both parties related tariffs on South Korean government. Besides, it needs to be discussed and negotiated as well as for the South Korean government to provide access to the market leading products in Indonesia. As seen from the structure of the tariffs applied South Korea, South Korean government has tended to protect the products of the farm. This is a concern also for the Indonesian government to be able to apply the same policy to protect agricultural products.

As the material IKCEPA discussion forum of cooperation, there are several items featured Indonesian exports of HS 6 digit that has the potential to enter the market of South Korea. The export items include chemicals, ores plastics such as PE and PP, fuel oil, liquefied natural gas. Likewise, exports of goods such as textiles, wood and some manufactured goods such as bicycle components, household appliances, ginseng extract, soy sauce. Likewise, live animals such as fish, freshwater turtles, crabs, cuttlefish or squid. Including agricultural products such as ginseng, honey, flowers, fruits such as guava, pineapple and mangosteen are still wide open to be discussed in the forum IKCEPA. In the future, should delegate IKCEPA forum can better focus on discussing featured Indonesian goods to enter Korea.

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Appendix

Appendix 1: Thirty-type Potential Export Products Indonesia Negotiated

No	HSK 2012 6 digit	HSK 2012 10 digit	Description	AKFTA Tariff Rate 2012	Korea MFN Tariff 2012	INA to KOR Existing in 2014	KOR from world Demand in 2014	INA to world Supply in 2014	Indicative Potential Trade Value 2014	IPT Proportion (IPT / Demand)	Ratio (Existing /Demand)	ıp IPT and Ratio (IPT-Ratio)
1	040221	0402211000	Whole milk powder	17	17	0,00	10.145,00	36.681,00	10.145	100,00%	0,00%	100,00%
2	252310	2523100000	Cement clinkers	5	5	0,00	1.449,00	12.597,00	1.449	100,00%	0,00%	100,00%
3	290315	2903150000	Ethylene dichloride (ISO) (1,2-dichloroethane)	5	5	0,00	109.671,00	146.872,00	109.671	100,00%	0,00%	100,00%
4	310221	3301904520	Of red ginseng	7	7	0,00	21.450,00	88.535,00	21.450	100,00%	0,00%	100,00%
5	291611	2916111000	Acrylic acid	7	7	31,00	49.065,00	55.267,00	49.034	99,94%	0,06%	99,87%
6	210310	2103100000	Soya sauce	8	8	116,00	6.768,00	14.202,00	6.652	98,29%	1,71%	96,57%
7	441299	4412991011	Of a whole thickness not less than 6 mm	13	10	1.633,00	85.273,00	713.983,00	83.640	98,08%	1,92%	96,17%
8	290516	2905161000	2-ethylhexyl alcohol	6	6	3.229,00	166.773,00	174.689,00	163.544	98,06%	1,94%	96,13%
9	290711	2907111000	Phenol	6	6	9,00	68.263,00	64.704,00	64.695	94,77%	0,01%	94,76%
10	850610	8506101000	Manganese batteries	13	13	2.868,00	57.378,00	178.414,00	54.510	95,00%	5,00%	90,00%
11	390210	3902100000	Polypropylene	7	7	1,00	31.036,00	26.328,00	26.327	84,83%	0,00%	84,82%
12	441011	4411142010	Floor board	8	8	378,00	4.572,00	30.635,00	4.194	91,73%	8,27%	83,46%
13	540233	5402331000	Of poly trimethylene terephthalate	8	8	1.995,00	211.683,00	176.291,00	174.296	82,34%	0,94%	81,40%
14	020620	0106202000	Fresh-water tortoises	8	8	251,00	2.641,00	2.699,00	2.390	90,50%	9,50%	80,99%
15	030749	0307491010	Cuttle fish	27	10	2.981,00	109.786,00	93.510,00	90.529	82,46%	2,72%	79,74%
16	390410	3904100000	Poly (vinyl chloride)	7	7	0,00	124.125,00	96.610,00	96.610	77,83%	0,00%	77,83%
17	030624	0306241010	Blue crab	20	20	2,00	167.646,00	108.445,00	108.443	64,69%	0,00%	64,68%
18	382311	3823192000	Acid oils from refining	8	8	39.754,00	177.725,00	1.431.011,00	137.971	77,63%	22,37%	55,26%
19	170290	1702901000	Artificial honey	24	24	252,00	63.765,00	34.743,00	34.491	54,09%	0,40%	53,70%
20	291612	2916121000	Ethyl acrylate	7	7	159,00	133.646,00	67.155,00	66.996	50,13%	0,12%	50,01%
21	220290	2202901000	Beverage based on ginseng	8	8	186,00	37.744,00	19.199,00	19.013	50,37%	0,49%	49,88%
22	200280	2006002000	Pineapples	30	30	0,00	1.041,00	485,00	485	46,59%	0,00%	46,59%
23	390110	3901101000	Linear low density polyethylene	7	7	71,00	224.496,00	87.722,00	87.651	39,04%	0,03%	39,01%
24	871200	8712001000	Racing bicycles	8	8	7,00	207.169,00	41.203,00	41.196	19,89%	0,00%	19,88%
25	080450	0804501000	Guavas	30	30	1,00	46.142,00	8.450,00	8.449	18,31%	0,00%	18,31%
26	030199	0301992000	Yellow tail	10	10	0,00	162.137,00	29.587,00	29.587	18,25%	0,00%	18,25%
27	060314	0603140000	Chrysanthemums	25	25	0,00	8.077,00	832,00	832	10,30%	0,00%	10,30%
28	271019	2710192020	Jet fuel	5	3	216.939,00	7.760.657,00	772.863,00	555.924	7,16%	2,80%	4,37%
29	130219	1302191110	White ginseng extract	20	20	45,00	123.799,00	2.910,00	2.865	2,31%	0,04%	2,28%
30	100590	1005902000	Popcorn	63	63	12,00	2.629.308,00	11.039,00	11.027	0,42%	0,00%	0,42%

(Source) Author's ITP equation results, ITC, Korea Customs

Journal of Economics and Behavioral Studies (JEBS)
Vol. 8, No. 6, December 2016 (ISSN 2220-6140)

Challenges of Mentoring in South African Construction Industry

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Abstract: One of the major requirements in the development and growth of an industry or organisation is the incubation of new workforce through appropriate recruitment processes, proper training and effective mentoring by experienced members. However, the process is not expected to be smooth owing to individual dispositions and attitudes, organisation interest, and avenues and opportunities for mentoring, amongst others. In this study, various challenges of mentoring encountered by mentees and mentors were examined with a view to promoting effective mentoring among professionals in the construction industry in the quest to improve their productivity and thereby enhance better performance in construction projects. Data on professionals in the built environment were collected through the administration of questionnaires using a convenient sampling technique. Personality issues that are concerned with differences in behaviours and dispositions to matters are the major challenges of mentoring in the construction industry. More so, attitudes of the mentees dictate and affect behaviours of mentors, and vice-versa. In view of this, professionals involved in mentoring should be concerned about their attitudes to each other and personal beliefs should not be a basis for judgment. Mutual respect and concern for growth and development should form the basis of mentoring relationships.

Keywords: *Knowledge, Mentee, Mentor, Skill, Training*

1. Introduction

In relation to an increase in the demand for complex and innovative developments, Nkomo and Thwala (2014) noted that the construction industry has become highly competitive and the need for training and development of workmen and professionals cannot be over-emphasised. There are several ways of achieving this and one of them is through mentoring. According to Hoffmeister et al. (2011), the concept of mentoring is related to overseeing someone's career and personal development. Therefore, the purpose and objective of mentoring is to groom potential construction leaders for the purpose of their gaining the necessary experience, skills and emotional balance for better performance. This does not only empower the personnel but also promotes improved productivity of the organisation or industry. For this process to be effective and successful, the two parties involved, namely, mentor and mentee, must possess certain characteristics, attributes and understanding of mentoring and its techniques (Yokwana, 2015). However, Wong and Premkumar (2007) noted that mentoring has become ineffective owing to various challenges, and rarely practised as expected. The challenges faced in mentoring relationships, according to Nkomo and Thwala (2014) can become dysfunctional and eventually lead to overdependence, deception, resentment, or harassment. The mentoring relationship can also impact negatively in terms of fairness as the challenged may see it as a strategy to get ahead. Pinho et al. (2005) noted that this is mostly common with cross-gender and cross-race relationships.

Mentoring is supposed to be done with the intention of empowering young inexperienced employees who could possibly rise through the ranks to become future leaders in the construction industry. Even though mentors are supposed to be senior employees with years of experience, Nichols (2016) noted that years of experience and practice do not necessarily guarantee that any senior employee can automatically become a leader or mentor. Mentors should be individuals who have showed excellent leadership qualities in the company as they are supposed to inspire young inexperienced employees (Dionisio, 1994). Scandura et al. (1992) pointed out that the world of a mentor is completely unique and different in its own way, encompassing personal and professional motives that can only be known by the mentor. It was further noted that a mentor's intentions are never constant; they are subject to changes through time as a result of several factors. Effective mentoring has the potential to ensure continuity and enhance better development and overall growth of individuals and the organisation in general. In the construction industry, the process is vital for career development and growth of construction professionals and workforce engaged in delivering infrastructures. Yokwana (2015) noted that the ultimate goal of any mentoring relationship is to empower each other so it is important to maintain constant engagement, be aware of the purpose and be guided by essential principles. In this study, various challenges to effective mentoring are examined and the findings will be of importance to employees and employers in the built environment in the quest to ensure effective mentoring. This will lead to better productivity and thereby improved performance of construction projects.

2. Literature Review

Mentoring in the construction industry: According to Nkomo and Thwala (2014), the construction industry is extremely busy and its scope of work is usually complicated. It involves the use of heavy equipment and machinery as well as trained and experienced professionals with diverse skills and abilities. Thus, it is very different from typical everyday office jobs. Owing to its being a complex and highly competitive industry, it is important for effective mentoring to take place in order to develop, train and mould future leaders who could run and lead the industry. Mentoring was described by Amelink (2010) as being known to assist in career development. However, mentoring relationships sometimes fail to produce the desired results. Through the process of mentoring, Yokwana (2015) concluded that experienced and knowledgeable individuals referred to as mentors assist mentees, that is new or fresh professionals, in order to discover their potential and improve their productivity concerning their contribution to the engineering and built environment. Furthermore, , Russel (2006) observed that mentees are also shown how to use the theoretical knowledge they acquired at tertiary level and furthermore, are properly guided in defining, pursuing and achieving their career goals.

Hamlin and Sage (2011) suggested that the effectiveness of any mentoring relationship depends largely on the characteristics possessed by parties involved, that is, mentor and mentee, as well as on whether both parties know how to take advantage of the opportunities presented by the other party. The quality of the relationship between a mentor and a mentee is a key factor to ensuring successful mentoring. For effective mentoring relationships, mentors and leaders need to adopt both pulling and pushing mentoring styles (Nichols, 2016). This, according to Hamlin and Sage (2011), was described as presenting a safe avenue where the mentees feel able to share and express their agendas, interests and goals; a place where support is offered by listening; an opportunity to ask the right relevant questions, stimulating the mentee's thinking in such a way that they arrive at answers to their problems; as well as offering needed ideas, knowledge, tools and techniques that could enhance productive thinking and better performance.

According to Wong and Premkumar (2007), mentors can help to develop effective mentoring relationships by creating a safe environment; taking time to listen attentively without bias or passing unfair judgment; agreeing on objectives and goals rather than approaches; and acknowledging, accepting and appreciating differences when noticed. Stone (2007) highlighted the following characteristics of an excellent mentor in order for a mentoring relationship to be effective, namely strong interpersonal attributes; recognising the accomplishment of each other; being an excellent supervisor; accepting risks and uncertainties that are associated with mentoring; and willingness to be available to help in the advancement of individuals in an organisation. Hamlin and Sage (2011) included the following essential characteristics: active listening and asking questions; setting clear goals; flexibility; as well as building and maintaining close and harmonious relationships with management through trust, empowerment, focus and empathy.

The responsibility for effective mentoring relationships does not only lie with the mentor in providing the needed guidance and direction: the role of the mentee is also as important. Stone (2007) highlighted basic characteristics that an excellent mentee should possess in order to secure an effective mentoring relationship, and overcome basic challenges that may arrive. These include demonstrating intelligence, showing initiative and taking responsibility for own development. In addition, , Hamlin and Sage (2011) noted the following attributes: expressing needs clearly and helping to identify development goals; seeking input from the mentor; demonstrating commitment by following up on points set in meetings; making time to attend meetings punctually; maintaining confidentiality; and seeking to understand roles, responsibilities and boundaries. It is evident from previous studies that effective mentoring in any organisation or industry, including the construction industry, has many benefits if fully and effectively harnessed. Amelink (2010) noted that effective mentoring assists in developing mentees' careers as they are exposed to the practical aspect of their career by their mentor. While being close to a mentor, a mentee is able to associate with organisations that could possibly assist in career growth and future employment or partnerships. Positive career developments have been associated with mentoring as people who had been mentored effectively reported on how they had received career guidance and support, leading later to increased salaries and job satisfaction (Nkomo & Thwala, 2014). This indicates that mentoring has a positive impact on an individual's growth and development.

3. Methdology

Owing to the nature of the variables to be examined, category of data to be collected and character of respondents involved, a survey design was adopted for this study. Using existing literature as the basis for obtaining information relating to general challenges to effective and efficient mentoring in industries and organisations, a quantitative research approach was adopted for data collection. Close-ended questionnaires with multiple-choice answers were adopted as research instruments and they were administered on construction professionals practising in the Gauteng region of South Africa using convenience sampling. These professionals are architects, quantity surveyors, engineers, construction managers and construction project managers. In designing the instrument, it was ensured that negative, irrelevant, biased and long questions were avoided. The first section of the instrument was used to collect the biographical information of the respondents while the second part was framed to relate directly with the objective of the study. The five--point Likert scale was employed where 1= Strongly disagree (SD); 2= Disagree (D); 3= Neutral (N); 4= Agree (A); and 5= Strongly agree (SA). Mean item scores (MIS) and standard deviations (SD) were computed from the scale using the Statistical Package for Social Science (SPSS) and the results were used to assess the order of importance of the identified factors. Using Cronbach's alpha value, reliability tests were conducted on the two sections in the second part of the instrument, which are challenges from the perspectives of mentees and problems caused by mentors in a mentoring relationship. The analysis revealed values of 0.773 and 0.716 respectively. These are greater than the acceptable reliability coefficient of 0.70 (Santos, 1999), therefore it could be concluded that the instrument adopted for the study is reliable.

4. Findings and Discussion

Forty-five questionnaires were distributed, thirty-eight were retrieved while thirty-four were adequately completed and found suitable for further analysis. There were 55.9 per cent and 44 per cent of male and female respondents respectively, indicating gender balance and adequate representation. The age groups of these professionals indicated that 64.7 per cent are between 20 and 25years, 29.4 per cent are between 26 and 30 years while 5.9 per cent are 31 years and older. Considering respondents' years of experience and practice in the construction industry, both groups of mentees and mentors were captured. About 55.3 per cent, 23.7 per cent, 13.3 per cent and 7.8 per cent have 1 to 10, 11 to 20, 21 to 30 and above 30 years of experience respectively. Respondents are also spread across various professions in the industry. These include architecture, engineering, construction management, and quantity surveying and construction project management. Of these, 62.1 per cent are junior employees while 35.9 per cent are senior employees and they have been involved in about 11 projects on the average.

The basic challenges affecting mentoring relationships in the construction industry were examined in this study. Table 1 displays the challenges of mentoring from the perspective of mentees. Judging by the five-point Likert scale, the highest MIS value of the identified challenges is 2.42 which is less than the average of the scale. However, the results were ranked as follows: 'My mentor and I had different personalities' was ranked first and had a mean score of 2.42 and SD=1.640; 'My mentor and I' argued was ranked second with a mean score of 1.73 and SD=0.977; 'My mentor's personal problems affected work' was ranked third with a mean score of 1.70 and SD=1.104; 'My mentor had multiple personalities which made it difficult to work together' was ranked fourth with a mean score of 1.55 and SD= 1.063; and 'My mentor was self-absorbed' was ranked fifth with a mean score of 1.48 and SD=0.755. In addition, 'My mentor was distant towards me' was also ranked fifth with a mean score of 1.48 and SD=0.939; 'My mentor delegated duties inappropriately' was ranked sixth with a mean score of 1.36 and SD= 0.549; 'My mentor took credit for the work that was not his/her own' was ranked seventh and had a mean score of 1.33 and SD=0.777; 'My mentor's attitude was bad and negative' was ranked eighth with a mean score of 1.30 and SD= 0.684; 'My mentor excluded me from projects intentionally' was ranked ninth with a mean score of 1.27 and SD=0.517; and 'My efforts were sabotaged' was ranked tenth with a mean score of 1.21 and SD= 0.650. Aligned to these findings, Nkomo and Thwala (2014) stated that the construction industry has tight deadlines that can cause tension and anxiety, making it difficult to work together with mentees. Furthermore, Rogers (2008) noted that personality conflicts can pose as the most difficult challenge to deal with, followed by constant arguing and personal problems affecting work. However, Starr-Glass (2014) believed that the main challenge would be when a mentor starts talking to the mentee as if the later works for the former, which in turn brings about a bad attitude from the mentees side.

Table 1: Mentee challenges

	MIS	SD	Rank
My mentor and I had different personalities	2.42	1.64	1
My mentor and I argued	1.73	0.98	2
My mentor's personal problems affected work	1.70	1.10	3
My mentor had multiple personalities which made it difficult to work together	1.55	1.06	4
My mentor was self-absorbed	1.48	0.76	5
My mentor was distant towards me	1.48	0.94	5
My mentor delegated duties inappropriately	1.36	0.55	6
My mentor took credit for work that was not his/her own	1.33	0.78	7
My mentor's attitude was bad and negative	1.30	0.68	8
My mentor excluded me from projects intentionally	1.27	0.52	9
My efforts were sabotaged	1.21	0.65	10

Table 2 highlights the results of the challenges mentors experienced with mentees during their mentoring relationships. The results indicate that the major challenge is related to the fact that mentees always want to prove themselves which may not go down well with their mentors. This is ranked first with a mean score of 4.03 and SD=1.314. Other factors were ranked as follows: 'I took more work than I could handle' was ranked second with a mean score of 2.65 and SD=1.412; and 'My ambition got in the way' was ranked third with a mean score of 2.38 and SD= 1.280. Furthermore, 'My mentor gave me tight deadlines I could not meet' was ranked fourth with a mean score of 2.29 and SD=1.338 and 'I became over-dependent on my mentor' was ranked fifth with a mean score of 1.71 and SD=1.088. In support of the findings, Pinho et al. (2005) stated that mentees may overwork themselves just to prove themselves. Yet another challenge occurs when mentors take control and mentees end up being dependent on the mentor. It was further pointed that a mentoring relationship may lead to over-dependence, resentment, deception or harassment. Starr-Glass (2014) also advised that mentees should not change the focus of their role in the course of trying to prove themselves to their mentor or leader. However, Rogers (2008) concluded that regardless of the mentoring relationships nature, becoming over-dependent on a mentor is a major trap that should be avoided.

Table 2: Mentor challenges

	MIS	SD	Rank
I wanted to prove myself	4.03	1.31	1
I took more work than I could handle	2.65	1.41	2
My ambition got in the way	2.38	1.28	3
My mentor gave me tight deadlines I could not meet	2.29	1.34	4
I became over dependent on my mentor	1.71	1.09	5

5. Conclusion and Recommendation

The challenges associated with mentoring are enormous but surmountable. Aside from the individual differences of the two major parties, namely, mentee and their mentor, there are external factors that impact mentoring both positively and negatively. The external factor can be a third party intervention whereby someone who is not a major party to the relationship influences either or both parties and thereby affects the relationship. There can also be environmental factors such as economic issues, and the organisation's beliefs and practices, among others. The major challenges of mentoring are related to time management, a lack of or ineffectual meetings, a lack of expressed interest by top management, mentee and mentors' clash of personalities, mentees' trying to prove themselves, mentees' taking more work than they can handle and mentees' ambition getting in the way. However, a good mentor should be willing to sacrifice time for the mentee but care should be taken so that the mentee does not become too dependent on the mentor. Mentors and mentees should never be forced into mentoring relationships: they should be allowed to develop over time. It also necessary for mentors and mentees to communicate and highlight their basic objectives and work towards the same goal. When the mentor is at fault, it is important to revisit the positive intentions for mentoring. Sometimes mentors may become discouraged because of a lack of visible results, simply because they are not aware of how the mentees are benefitting from their partnership. This is because much of the value added to a mentee, in terms of self-confidence, self-esteem and trust, are not visible or tangible. Furthermore, , when the mentee is at fault, discussion with the mentor should take place to resolve issues and strengthen the relationship so as to refocus on unified agenda and goals. It is also necessary for managers and directors of construction and consulting firms in the construction industry to establish a framework and conducive environment for effective mentoring. This will not only benefit the firms but the general performance of the industry.

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Journal of Economics and Behavioral Studies (JEBS)
Vol. 8, No. 6, December 2016 (ISSN 2220-6140)

Frugality, Family-Cohesiveness and Firm Growth; A Case of Small Firms around Oil & Gas Fields in Uganda

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Abstract: A common impression is that most small firms largely face resource scarcity challenges that inhibit firm growth. This study concentrates on the elements of frugality, operationalized as spending discipline and delaying gratification as well as family cohesiveness, operationalized as family member supportiveness and usefulness in firms. This study is focused around Uganda's oil and gas fields and these natural resources are expected to influence to small firms growth. In the current study, firm growth is measured in terms of asset value accumulation over time. Empirical findings on frugality, family cohesiveness and growth aim essentially to answer the overarching dilemma of small firm recurrent failures in Uganda. Results in study show that there is a mild relationship between frugality and family cohesiveness thus augmenting the existing perspectives of the resource based view theory. However, the random effect logistic regression results show contrasting results on the predictor effects of; family financing support, oil and gas operations, frugality, and family cohesiveness on the outcome variable - small firm asset growth.

Keywords: *Frugality, family-cohesiveness and small firm growth*

1. Introduction

Firm growth in small enterprise especially in developing economies appears more troubled, yet more firm growth literature largely focuses on large entities in developed economies. The few studies on SMEs often incline manufacturing firms (e.g. Chaston and Mangles, 1997). Generally, small firms have largely been highlighted to face more resource challenges not only in the developed economies (Welsh and White, 1981), but also more prominently in the developing economies, more especially in the sub-Saharan African region (Fjose et al., 2010; Charles, 2014). Besides firm growth, world over, firms tend to gravitate towards natural resource endowments, irrespective of size and age. Thus, direct and indirect oil and gas reserve opportunities may attract a diversity of firms. Norway, a country well known for her oil and gas resources revealed higher firm growth around the oil and gas fields (Nordbø and Stensland, 2015), but in such advanced countries most of the economic activities and firms are robustly formalized, unlike the developing economies (Webb et al., 2015).

East Africa has become the latest spot in oil and gas discovery, Uganda, Tanzania and Kenya have recently been recognized to be endowed with huge oil and gas natural resources. In Uganda, the oil and gas endowments are confirmed in the Lake Albertine Basin. Largely, the oil basin region is in Hoima district (Olingo, 2016). Subsequently, Hoima has recently been tagged as 'oil city' given the mushrooming economic activities related to oil reserves in the district. The Principal Economist also indicates that Hoima as district used to be a 'closed economy' only focused on fishing and some agricultural outputs especially in the pre-oil discovery and exploration period, now it is an 'open economy' and even the landing sites such as Kaiso, Kyeholo, Sebigolo and Buhuka have grown. With major oil camps within Kaiso region, Kaiso landing site remains busiest with many SMEs cropping up. Historically, petroleum exploration activities in Uganda are reported to have started through geological mappings in 1925 (Wamono et al., 2012). Between 1983 and 1992 five sedimentary basins were identified and the Albertine Graben was identified as most prospective (Ministry of Energy and Mineral Development, 2010). Uganda's oil reserves in the Graben region were estimated at 2 billion barrels of oil equivalent (National Planning Authority, 2010). However, According to the Hoima DPP (2015), Uganda's reserves are at 6.5 billion barrels in the Albertine Rift valley (Taitai, Runga, Kibiro, Toonya, Kaiso, Nkondo, Buhuuka and Nzizi).

The Principal Economist of Hoima indicated that, three major international companies will extract oil in Uganda, 1) Tullow from UK in the Kaiso region, Hoima2) CNOOC from China in Buhuka, Hoima and 3) Total from France in Bullisa District. Each of these will have a central processing facility (a mini-refinery). All will feed into the oil refinery earmarked at Kabaale in Hoima. It is estimated that the building of the refinery will take a minimum of 150,000 workers; the refinery is estimated to refine 60,000 barrels per day while the 200,000 barrels will be exported in crude form. The oil pipeline is proposed to be built from Hoima via Masaka District to Tanzania. In addition, a thermo plant to use crude oil and gas is gazzeted around the Kaiso – Kabaale region. The Hoima District Economist envisages that all these developments have positive effects on SMEs. Uganda's formal sector is largely (up to 80 percent) small and medium enterprises oriented (UBOS, 2010). Studies in Uganda have highlighted SMEs as the backbone of economic development (Ariyo, 1999; Ihua, 2005). At an estimate of 800,000 firms in urban and rural areas, SMEs play a vital role in the Ugandan economy. For instance, a study in 2007 in Uganda revealed that MSMEs[2] accounted for 90 percent of the private sector and employed over 1.5 million people (Common Wealth Secretariat, 2007). One of Uganda's NDPII strategies aims at increasing employment and employability through supporting private sector investment along the value chains especially through the boosting the small and medium scale firms (NPA, 2015).

In particular, a small enterprise is defined as an enterprise employing maximum 49 people (Bid 2008). UBOS (2010) reported that 30 percent of 458,106 enterprises in Uganda were small and medium enterprises. Small firms tend have unique agility characteristics in tapping available opportunities (Schumpeter, 1934), is it the same case in developing countries? In Uganda's oil and gas sector, the small firms' participation has remained low (Wamono et al., 2012), despite the sector's potentiality to influence small firm growth. These oil economics are essential for Uganda which was ranked the 21st poorest country in the World (Aneki, 2010) and 91 of the 135 countries in respect to human poverty (United Nations Development Program, 2009). Uganda's oil resources have been deemed significantly sufficient to elevate her amongst the top 50 producers of oil in the world (Wamono et al., 2012). The ongoing petroleum operations expected to expand business opportunities in the region. The huge business potential in the sector has consequently begun attracting substantial Foreign Direct Investments. For instance, FDIs to Uganda were in a range of US $ 46 million in 2006 to US $ 436 million in 2009. More so, in 2011 investments in seismic and drilling subsectors alone attracted $ 900 million (Mwakali and Byaruhanga, 2011). Again, are the small firms anywhere close to such financial attractions?

SMEs in Uganda in the past have provided support services to other large commercial and primary sectors (Wamono et al., 2012). Like in other avenues in the past, opportunities that the SMEs could tap around the oil and gas regions include supply of products and services to support big oil entities. Moreover, evidence from the older oil producing economies including Niger, Nigeria, and Sudan indicate outstanding opportunities from "primary activities" such as inbound logistics: exploration activities, initial civil and well constructions, test production, research and development (Wamono et al., 2012). Additionally, investments in support activities especially administration, infrastructure management, human resource management, and procurement (Mwakali and Byaruhanga, 2011), provide more business opportunities to small entities. However, it was noted that majority of Uganda`s SMEs are unable to meet quality standards, are inconsistent with volumes of goods supplied, pricing and breach business contracts (Wamono et al., 2012).Meanwhile, views of the Hoima District principal economic planner, Mr. Byakagaba J. W obtained during the current study in Hoima, indicated that the major reason SMEs are not growing in the oil and gas territory is that SMEs do not have capacity, they are not fitting in that the oil firms' supplies require high level of quality standard accreditation. Byakagaba further indicates that the oil firms use relatively big entities that have international links that will be able to provide logistical support, food supplies as well as hospitality services, these firms tend to contract the service providers at national level which leaves out the small firms. Local content is left out given these multinational firms taking up the jobs otherwise would have been captured by the small firms. On the other hand, hotel industry and clubs particularly in Hoima have sprung up and many more are coming up. SMEs internal weaknesses especially in record keeping, credit utilization and repayment, additionally may encumber the possibilities of acquiring business contracts and sub contracts with Trans-national oil corporations and large domestic companies respectively (Wamono et al., 2012).

Although the over dominance of the big oil firms have increased advocacy that a big portion of oil income should accrue to the respective producer countries (World Bank, 2007). In many African oil producing states a few local firms have fully competitive capacity to dominate the oil and gas value chain (Wamono et al.,

[2] MSME micro small medium enterprises.[Micro enterprises < 5 workers, small 5-49, medium 50 -100] UBOS 2010

2012). For instance, in Nigeria it was revealed that although the oil and gas industry has been functional for over 50 years, very minute proportion of the accruable profit is available to indigenous firms, especially SMEs (Ugwushi, 2010). It has been argued that the indigenous firms failure to accrue the profits emanates from internal constraints especially lack of requisite skills, technical expertise and high value investment capacity (Aneke, 2002; Ariweriokuma, 2009). In particular to SMEs, Heum et al. (2003) summarized the constraints of local SMEs to competitively participate in the oil and gas operations as low technological capacity, lack of funding from financial institutions, inadequate and incoherent policies/legislation; inadequate infrastructure; unfavorable business climate; and lack of partnerships between indigenous contractors and technically competent foreign. Moreover, studies have largely highlighted that small firms tend to fail due to more of the external factors such as the limited financial access from financiers (Eyakuze et al., 2013; Namatovu et al., 2010) and inadequate institutional support, that has recently been referred to as the institutional voids, that have been highlighted to be dominant in the sub Saharan African settings (Webb et al., 2015).

Growth difficulties are reported in several studies. It is noted that more than 40 percent failure rates have existed among some SMEs sectors in Uganda (Bakunda, 2008). Similarly, five out of every ten firms in Uganda are reported to only have one year of existence (UBOS, 2011), and that most firms in Uganda remain small in nature (Bakunda et al., 2013). The small business interventions especially on firm growth as well as business development services seem not to yield firm growth remedies. Therefore the current study aims at filling this gap through investigate the extent of frugality and family cohesiveness in relation to the small firm's growth. Precisely, this paper aims at investigating the effect of small business operator's level of spending discipline and delaying gratification as enshrined in the frugality literature that pivots on thoughtful use of business resources (e.g. Lastovicka et al., 1999; Tatzel, 2014). In addition, the level of family member's supportiveness and usefulness in bolstering small enterprises growth as highlighted in family closeness in business literature (Van Wyk, 2012). Findings on these variables in relation to small firm growth may extend the perspectives of the resource based view theory.

2. Literature Review

There are contrasting views regarding firm operators on matters regarding firm resources. The current study is mainly built on the resources based view (RBV) tenets. Barney (1991) following Penrose (1959) reasoning of firm resource use other than mere possession, popularized the wider spectrum of the firm resources, though more of the perspectives not only concentrated on the big firms but scarcely mentioned the dimensions of frugality and family cohesion. RBV's theoretical framework, Penrose (1959) for instance was one of the first scholars to recognize the importance of resources to a firm's competitive position. Penrose underscored that: *'a firm consists of a collection of productive resources' (Penrose, 1959: 24).* That a firm's growth (both internally and then externally) is due to the manner in which its resources are employed and suggested that firm resources may only contribute to a firm's competitive position to the extent that they are exploited in such a manner that their potentially valuable services are made available to the firm (Penrose, 1959). The RBV perspectives to the present date have largely linked the diverse line up of the suggested resources reserves towards the overall performance of the firms. However, the theory is silent on matters regarding the level of frugality, family cohesiveness in small businesses. Small firms examined taking a keen look at these variables creates new paradigms that will extend the perspectives in which resources are appreciated in firms, more so the effect of such variables on the small firm growth. The prior empirical works on the frugality, family cohesiveness, and firm growth as well as the respective author positions are presented in table 1 below:

Table 1: Study Variable Prior Works

Variable	Position/finding	Author(s) and year
Frugality	Validated spending discipline, delaying gratification and resource reuse to measure individual frugality in the spectrum of consumer behavior.	Lastovicka et al. (1999)
	Using Lastovicka et al. (1999), frugality dimensions tested the variable in corporate entities, inclining to frugality as a corporate culture investigated in USA	Anderson & Lallis (2010)
	Spending lifestyles under frugality focused on adult learners	Tatzel (2014)

	in USA	
	Frugality as a cultural value under the competing values framework comparable to organizational values	Quinn, & Rohrbaugh (1981)
	SME Business owners reported to involve family members in business affairs	Eyakuze et al. (2013)

Abundant investigations of frugality facets in the spectrum of customers amidst continued contradictions on taking frugality as a cultural value yet business owners are seen to involve family members on small business affairs necessitated the current study.

Family cohesiveness	family closeness highlighted as source of human resource based family capital, suggested need for inquiries on family capital in terms of finance	Van Wyk (2012)
	Idiosyncratic capacity, advantages and disadvantages for family businesses emanating from family closeness.	Harbashon et al. (2003); Eddleston, & Kellermanns, (2007).
	Validation of scale on family cohesion with 16 item instrument in a family and marriage study. Supportiveness and usefulness emphasized as facets of cohesion.	Olson et al. (1982)
	Family closeness as a family business foundation in firms based Italy	Schillaci et al. (2013)
	Compared Competiveness in family and non-family SMEs in Tanzania	Charles (2011)
	Family resource and patient capital linked to family business in Tanzania	Charles (2014)

The disharmony on the positive and negative attributes of family cohesion in family and marriage spheres yet existing family business studies that largely pivot the family element on the business competitiveness of enterprises necessitated current research on family cohesiveness as a unique resource in small businesses.

Firm growth	Asset value, number of employees and sales as measures of firm growth	Lokhande (2011), Rahman (2001)
	The gender of founder, amount of capital required at start of firm, and growth strategies are important factors explaining firm growth.	Korunka et al. (2011).
	Core capabilities as predictors of growth potential in small manufacturing firms.	Chaston, & Mangles (1997).
	In a survey on SMEs in East Africa, SMEs highlighted to suffer from financial inadequacies and infrastructural disadvantages, Ugandans highlighted top spenders on phone airtime, and attribute to affect firm performance	Eyakuze et al. (2013)
	more than 40% mortality rates exist among some SMEs in Uganda	Bakunda (2008)
	most firms in Uganda are not only small but are often new due to the high mortality rates experienced among SMEs	Bakunda et al. (2013).
	Micro and small firms' underprivileged to financing unlike medium and large firms in developing economies.	Fjose et al. (2010)
	Highlighted finance and other factors affecting SME prosperity under the GEM study	Namatovu et al. (2010)
	Institutional voids highlighted to affect SME growth in sub Saharan Africa	Webb et al. (2015)

With extant studies that present diverse predictors to firm growth, more so pegged on firm size and the unique spending behavior of adults in Uganda amidst East Africa, the current study seeks to investigate the role of family cohesion and frugality attributes on small business growth in Uganda.

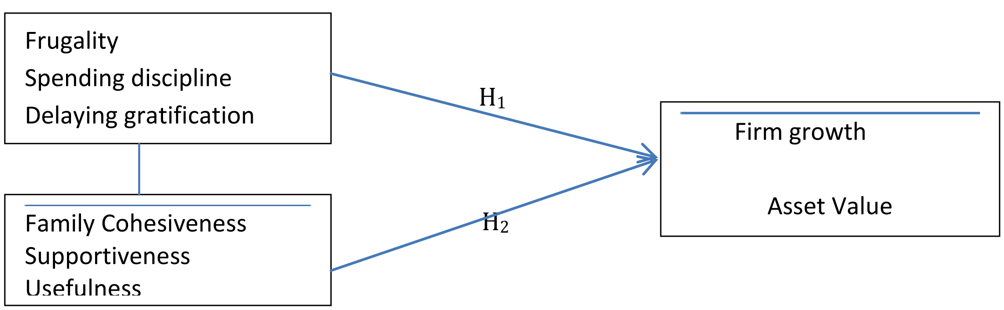
Hypotheses Preposition: In building the first hypothesis, it is worth noting that resource vitality in firms has been largely emphasized (e.g. Barney, 1991; Penrose, 1959).More so, the link between family resource and SMEs competiveness exists (Charles, 2011;0Charles, 2014; Schillaci et al., 2013). There is limited literature on the correlation of thoughtful-use of resources (i.e. frugality) and family cohesiveness with its embedded

facets of supportiveness and usefulness of family members. Existing evidence on Ugandans being top on the overspending habits compared to other Africans especially in East Africa(Eyakuze et al., 2013) gives impetus in testing the following prepositioned hypothesis:
***H_1*:** there is a correlation between family cohesion and frugality in small firms

Secondly, although extant firm growth literature has dwelt on investigating the determinants of firm growth (e.g. Chaston, & Mangles, 1997; Korunka et al., 2011; Lokhande, 2011, Rahman, 2001), more so based in developed economies' contexts, there is implicit recognition of the influence of firm internal resources optimization for firm growth (e.g. Chaston, & Mangles, 1997; Rahman, 2001), more especially on the founder's knowledge and financial resources (Korunka et al., 2011). Given that individual firm operators blend self-control that could drive spending discipline and firm resource use applying the tenets of delaying gratification (e.g. Hoerger et al., 2011), that fall under individual frugality (Lastovicka et al., 1999), yet family cohesion is esteemed in yielding more resource advantages through family member usefulness and supportiveness (Olson and Gorall, 2003), then frugality and family cohesiveness effects on firm growth are necessary. Moreover in the Ugandan context, the SMEs are reported to continuously derail on firm growth despite the firm failure interventions (e.g. Bakunda, 2008; Bakunda et al., 2013; UBOS, 2010). Therefore there is an urgent need to test the following prepositioned hypothesis:
***H_2*:** there is an effect of frugality and family cohesion on firm growth

Conceptual framework: The outcome variable in the current research is firm growth, operationalized by the three often applied dimensions of firm growth (i.e. Asset value, number of employees and profits) as noted in firm growth literature(e.g. Chaston, & Mangles, 1997; Korunka et al., 2011; Rahman, 2001). The predictor variables include frugality and family cohesion. Frugality is operational used as spending discipline and delaying gratification often applied in frugality studies (e.g. Anderson and Lallis, 2010; Tatzel, 2014). Family cohesiveness is operationalized based on the family cohesion scale by Oslon (1982) as widely applied in family firm oriented studies (Lim, 2011;Olson and Gorall, 2003). Figure 1 shows the conceptual framework.

Fig. 2: Effect of Frugality and Family cohesion on firm growth conceptual framework



H_1 andH_2 denote the prepositioned hypotheses in the current research.

3. Methodology

This research is under the positivism paradigm and a cross section of heterogeneous small enterprises around the Albertine region (i.e. oil and gas fields) in Uganda is units of analysis. Please see the map of Uganda in figure 2. The owners and or business managers constitute the units of inquiry. Although largely, a positivist paradigm was followed, and data was collected using a structured questionnaire, qualitative data from selected respondents was captured in order to obtain deeper insights on the study variables.

Figure 2: Map of Uganda

Study variable operationalization is based on the existing empirical works, in which tested scales on the variables. Frugality in measured using spending discipline and delaying gratification as validated by Lastovicka et al. (1999), and applied in business firms (Anderson and Lallis, 2010). Family cohesiveness was validated by Lim 2010 in business firms from the widely applied family cohesion scale (Olson et al., 1982), that highlights usefulness and supportiveness of family members in the 16 items scale. Firm growth was measured by value of assets, at both establishment year and current year (2016) and the element of time was taken into consideration. The respective items per variable were adopted with amendments to fit the current paper's scope, and the data collected using administered questionnaire. Besides the data analysis on socio-demographic factors of the respondents, Chi-Square test was applied in testing the relationship of the frugality and family cohesiveness. Since panel data was captured in this study, random effects logistic regression was executed. In statistics panel data refers to multi-dimensional data frequently involving measurements over time (Frees, 2004). Panel data contains observations of multiple phenomena obtained over multiple time periods for the same firms or individuals. In statistics random effects models are used in the analysis of panel data (Frees, 2004; Hsiao, 2003). Random effects logistic regression model is utilized in the current study.

Random effects logistic regression is part of the generalized linear mixed models (GLMM).Generalized linear mixed models are widely used in social sciences and several other fields (Agresti, 2002; McCulloch and Searle, 2001). Random effects logistic regression models the individual (subject-specific) probabilities(Agresti, 2002). There are two common assumptions made about the individual specific effect, the random effects assumption and the fixed effects assumption (Wooldridge, 2013). The random effects assumption (made in a random effects model) is that the individual specific effects are uncorrelated with the independent variables. The fixed effect assumption is that the individual specific effect is correlated with the independent variables. Random effects method of logistic regression was preferred given that the asset value was captured at the business establishment year and at the current year of business operation.

4. Findings

From a cross section of 147 small business owners in Hoima region, responses on the study variables were collected, supplemented by key stakeholder informants especially from the Hoima district officials and selected small business owners in the Albertine region.

Socio-demographic profiles and business profiles: Respondent's data on age, sex category, education level, were obtained; the results are shown in Table 2. Similarly, data on the business profile was collected, particularly, the year of establishment, nature of legal form, and main business activity were collected.

Table 2: Socio-Demographic profiles

Respondents Education	Freq.	Percent
Primary education	35	23.29
O level	39	26.71
A level	15	10.27
Post-secondary	9	6.16
Advanced dip/university degree	35	23.97
Post graduate	1	0.68
No formal education	13	8.9
Total	147	100
Sex Category	Freq.	Percent
Male	98	66.67
Female	49	33.33
Total	141	100
Respondents Age	Freq.	Percent
20-29	1	0.68
30-39	28	19.05
40-49	56	38.10
50-59	37	25.17
60-69	21	14.29
70 & above	4	2.72
Total	145	100

Regarding education level, it was reported that majority of respondents had O-level education followed by those with university degree/ advanced diploma and primary level education. However, some respondents, close to 9 percent of the total respondents didn't have formal education. Regarding the sex category, it was found out that majority of small business operators were male at a percentage of 66.7 percent and remaining were female respondents. These results are in line with recent study by Hoima District that shows that the males supersede female in being economically active; male are at 66% while female are at 54% in economic activity (DPP, 2015). The Hoima DPP (2015) also highlights that Women own about 55 per cent of private enterprises in the district, mostly at small and micro enterprise, informal sector. In terms of the respondent's age, the age bracket with highest frequency of respondents was 40-49 years followed by the 50 -59 age bracket and the 30- 39 age bracket, respectively. Only one respondent fell in the age bracket of 20 -29 years. Generally, the respondents with advanced age (60-69) were 21; only four respondents fell in the range of 70 or more years. These results show that majority of business operators are relatively young. Table 3shows the business profile characteristics.

Regarding firm age, most of the small firms were in the age bracket of 3-9 years, followed by the firm's age bracket of 10-19 years and 20 -29 years, respectively. Minute numbers if firms fall in the firm age bracket of 30-60 years. Thus small firms are relatively young but many firms have more than three years, which dispels the usual perspective by some studies(e.g. UBOS, 2010; Bakunda et al., 2013), that most small firms do not go beyond their first three or five years of existence. Regarding firm location, most respondents were located in Hoima town and the rest in Kaiso region. The results are largely in line with findings from the Hoima DPP 2015 which highlighted that individuals involved in business enterprises are higher in urban areas than in rural areas at 29 percent and 5 percent respectively. The main business activity that most firms are engaged in include: trade, agriculture, accommodation and food services. The distribution of the key business activities is not far from the UBOS 2010 study that indicates that most small firms engage in trade. In addition the Hoima DPP 2015 highlights that Hoima district is richly endowed with natural water resources and this has made fishing a major economic activity, in this study fishing was captured under the agricultural activities. More so, the DPP (2015) indicates that 11 percent of households in urban areas live on subsistence farming compared to 74 percent in the rural areas. Other sources of livelihood per residence in Hoima are shown in Table 4 below.

Table 3: Business Profile characteristics

Firm Age	**Freq.**	**Percent**
1- 2	4	2.81
3 – 9	81	57.04
10 – 19	38	26.76
20 – 29	13	9.15
30 – 39	2	1.40
40 – 49	2	1.40
50 - 60+	2	1.40
Total	142	100
Firm Location	Freq.	Percent
Urban(Hoima town)	94	63.95
Rural(Kaiso)	53	36.05
Total	147	100
Main activity of firms	Freq.	Percent
Recreation and personal service	9	6.16
Accommodation and food	16	10.96
Other manufacturing	2	1.37
Trade	67	45.89
Transport	2	1.37
Real estate	4	2.74
Other services to business	9	6.16
Agriculture and forestry	25	17.12
Education, health & social services	12	8.22
Total	146	100
Legal form of business	Freq.	Percent
Sole proprietorship	110	74.83
Partnership	20	13.61
Private ltd	17	11.56
Total	147	100
Position in FIRM	Freq.	Percent
Manager	24	16.33
Owner	121	82.31
Others	2	1.36
Total	147	100

Table 4: Major Economic Activities by Residence in Hoima

Source of Livelihood	**Rural**	**Urban**	**Total**
Subsistence farming	74.3	11.5	67.1
Employment income	11.0	42.7	14.7
Business enterprise	5.3	28.6	8.0
Cottage industry	0.3	0.5	0.3
Property income	1.0	1.1	1.0
Family support	5.5	14.1	6.5
Organizational support	0.0	0.2	0.1
Other	2.5	1.3	2.3
Total	100.0	100.0	100.0

Source: 2002 Population and Housing Census Analytical Report, Hoima

According to the Hoima DDP (2015), trade activities in Hoima revolve around mainly trading in agricultural crops and produce as well as retail trade in various merchandize; the potential for trade in the district is big with the expected oil and gas industry taking off soon. The current study indicated that 60.54 percent (89) of the small firm operators reported that oil and gas related activities so far have not enhanced their firm performance, while only 58 firm operators reported that the ongoing oil and gas activities have enhanced firm performance. The current study reports that the legal form of most the small firms interviewed was sole proprietorship and most of the respondents were owners and managers. Similarly, the DDP (2015) indicated that the private sector activities are not yet fully developed in the district. It is quickly picking up and most of its activities revolve around small-scale enterprise. The DDP (2015) suggests a need for the district through the Trade and Industry department to make deliberate efforts to organize and promote the private sector.

Study variables field results: Together with the socio-demographic and business profile characteristics, family cohesiveness, frugality and firm growth were substantive variables in the current study. In addition, the influence of family on farm financing, and impact of oil and gas activities on firm growth were investigated. The section below shows the field results on the variables, starting with family cohesiveness.

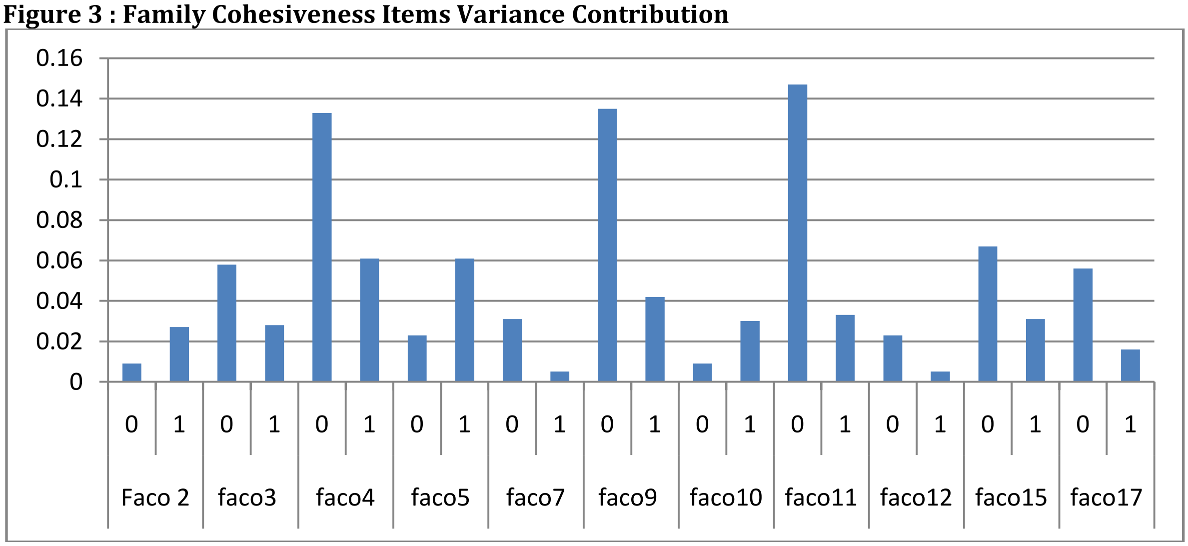
Family Cohesiveness Results: Using 18 items of family cohesion used to capture the attitudes on family cohesion in this study. The multiple correspondence analyses were applied to extract the dimension to be used in further analysis and Table 5 shows the MCA results.

Table 5: Family cohesiveness MCA results

Dimension	Principal Inertia	Percent
Dim 1	0.920	96.25
Total	0.956311	100
MCA Method	Joint Correspondence Analysis	
Number of observations	147	
Number of axes	1	

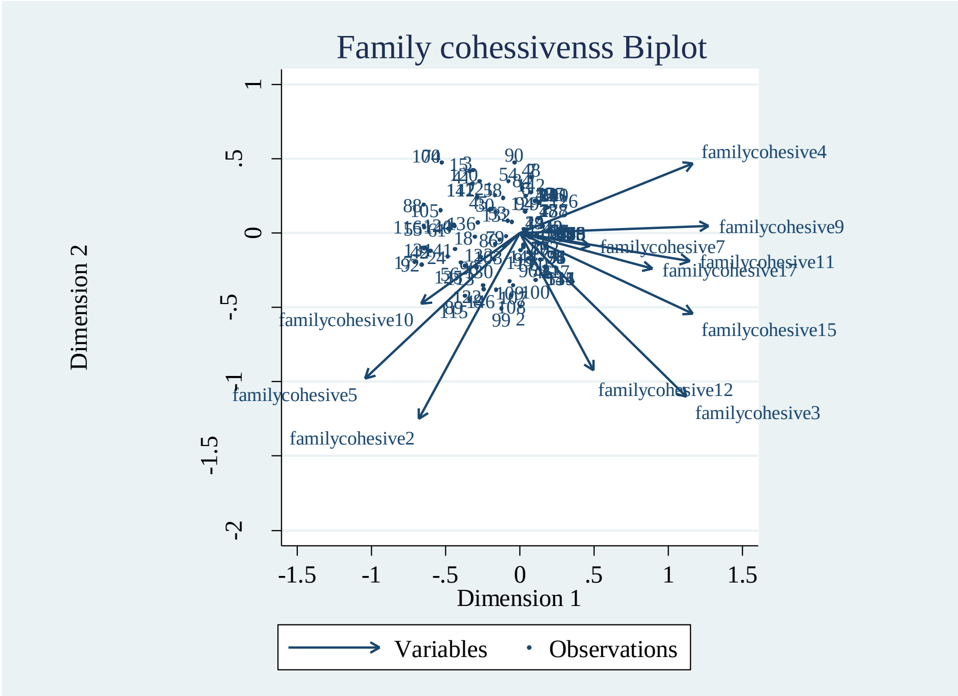
From the study one dimenion that exlained 96 perecent varaibnace infamily cohesion was obtained and figure 3 shows the manin iuirtems that had great contribution of the variance in family cohesion.

Figure 3 : Family Cohesiveness Items Variance Contribution



Amongst the family cohesiveness items, those that greatly indicated high level of contribution to the family cohesiveness variance in this study included: faco4(my family and I do business activities together), faco5 (me and my family go separate ways in business), faco9(my family and I feel very close to each other in business), faco11(my family and I go along what we decide to do in business). The clustering of the items with similar variance in Figure 4 below.

Figure 4: Family Cohesiveness Items Biplot



From the biplot, above it can be seen that items that have similar dispersion include facob 10(my family feel closer to outsiders than our family members), facob 5 (my family and I go our own separate ways in business) and facob 2(it is easier to discuss business problems with outsiders than my family members) - these took the negative quadrant. The rest of the items are presented in the positive quadrants and are not far from each other in dispersion.

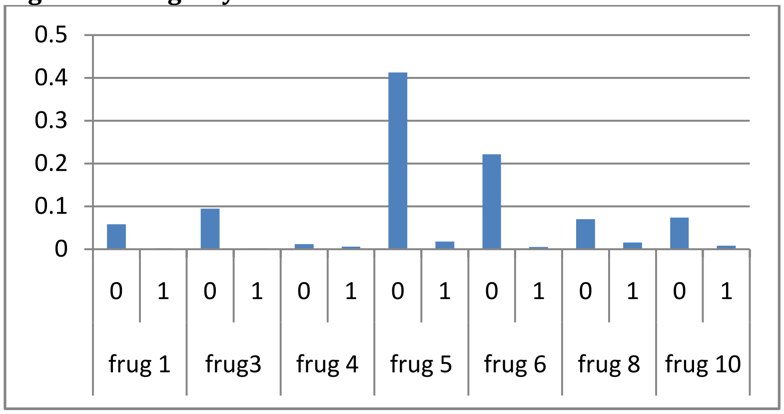
Frugality Results: From the 10 items used to capture the attitudes on frugality in this study, multiple correspondence analyses was applied to extract frugality dimension to be used in further analysis and Table 6 shows frugality MCA results.

Table 6: Frugality in Business MCA results

Dimension	Principal Inertia	Percent
Dim 1	0.0361756	75.04
Total	0.482054	100
MCA Method	Joint Correspondence Analysis	
Number of observations	147	
Number of axes	1	

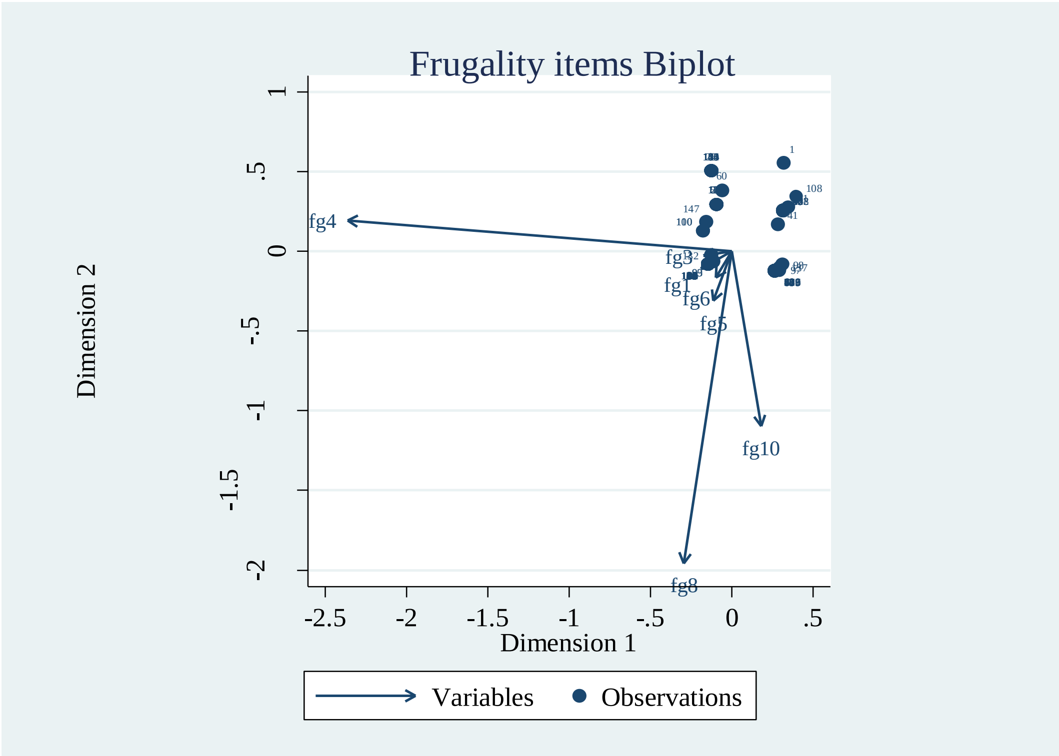
From the study one dimenion that exlained 75% perecent variance in frugality was obtained and figure 4 shows the main items that had great contribution of the variance in family cohesion.

Figure 4 : Frugality Items Variance Contribution



Amongst the frugality items that greatly indicated high level of contribution to the frugality variance in this study included: frug5(I beleve in being careful ho I spend my business money), frug6 (I discipline my self to get the most out of my business money), frug3(making better use of business money makes me feel better), frug10(I enjoy bargain hunting for this business firms resources).

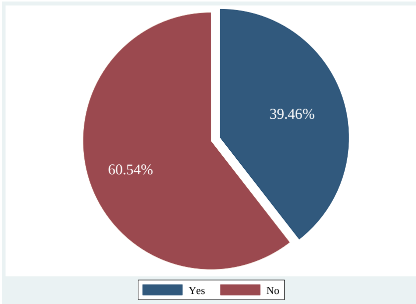
Figure 5: Frugality Items Biplot



From the biplot above it is seen that frg 4(reuse of resources no need to buy something new) is an isolated frugality item. However, many frugality items i.e.: frg3 (making better use of my business resources makes me feel good), frg 1(taking good care of business resources makes one save business money), frg 6(I discipline myself to get the most from my business money), frg5(I believe in being careful how I spend my business money), frg8 (there are business things I resists buying today so that I can save for tomorrow). On the other hand, frg 10 (I enjoy bargain hunting), was also an isolated item. In this study it is seen than more of the items that explain the frugality variance fall under spending discipline unlike resource reuse or delaying gratification.

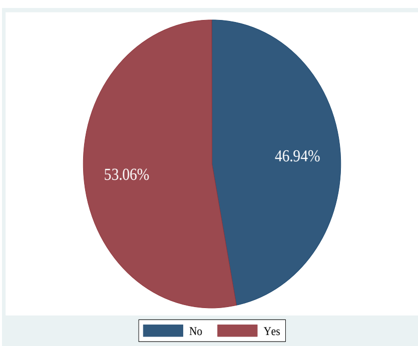
Additional Inquiries: Two additional Standalone questions were included in the questionnaire i.e. has oil and gas influenced your firm performance? And does your family influence your firm financing? The results for these questions are indicated in Figure 6 and figure 7.

Figure 6: Responses on oil and gas influence firm growth



Out of the total of 147 respondents, 58 respondents indicated that oil and gas has influenced their firm growth, while majority (89 business operators) indicated that oil and gas has not influenced the firm's growth.

Figure 7: Responses on family influence firm financing



Out of the total of 147 respondents, 78 respondents indicated that family has influenced their firm financing, while 69 business operators indicated that family has not influenced their respective firm financing.

Firm Growth: To measure firm growth asset value was used. Two levels of assets were collected per firm; the assets at the year of establishment (Year 0) and the current year of business operation (Year 1 (i.e. 2016). In this case two panels of data were taken into consideration. Field results of the two sets of assets values are presented in Table 7.

Table 7: Asset Values at year of establishment and current year

N	Asset Year 0 147	Asset Year 1 147
Mean (UGX)	12,095,403	29,241,837
Median (UGX)	2,000,000	4,500,000
Mode (UGX)	12,100,000	29,200,000
Minimum (UGX)	30,000	50,000
Maximum (UGX)	500,000,000	930,000,000

From the table above it is noticed that the median asset value in year 0 was UGX 2,000,000 while in year one the median asset value was UGX 4,500,000 this shows that there was generally an increase in asset values in this sample of Hoima based small firms.

The relationship between Frugality and family cohesiveness in business: The first objective of the study was to determine whether there exists a correlation between frugality and family cohesiveness in business in firms operating around oil and gas fields. Using the Chi-square technique, the relationship between frugality and family cohesiveness was executed as shown in table 8 below.

Table 8: One Panel Chi-Square of family cohesiveness in business and frugality in business

Family cohesiveness (row score(dim=1; Standard norm.))	**Frugality in business (row score (dim=1;standard norm.))**		
	Disagree	**Agree**	**total**
Disagree	18	33	51
	35.29	64.71	100
Agree	20	76	96
	20.83	79.17	100
Total	38	109	147

From the Pearson Chi – square results (1) = 3.6336 and Pr = 0.057, it observed that there is an association of the two variables.

The Effect of frugality, family cohesiveness oil and gas, on firm growth: In order to determine effect of the predictor variables on the asset values over the period, the median for the base year (the year of establishment) was pivotal in regression analysis. The panel data was segregated using this median (UGX 2,000,000) and random effects logistic regression was executed.

Table 9: Regression Analysis

Fitting comparison model:
Iteration 0: log likelihood = -203.34968
Iteration 1: log likelihood = -194.90026
Iteration 2: log likelihood = -194.88419
Iteration 3: log likelihood = -194.88419
Fitting full model:
tau = 0.0 log likelihood = -194.88419
tau = 0.1 log likelihood = -192.27024
tau = 0.2 log likelihood = -192.46017
Iteration 0: log likelihood = -192.2496
Iteration 1: log likelihood = -192.23621
Iteration 2: log likelihood = -192.23621

Random-effects logistic regression	Number of observation	294
Group variable: panel	Number of groups	2
Random effects u_i ~ Gaussian	Observations per group: min	147
	average	147
	max	147
Integration method: mvaghermite	Integration points	12
	Wald chi2(4)	16.28
Log likelihood = -192.23621	Prob > chi2	0.0027

Asset1	Odds Ratio	P>z	[95%	Conf.Interval]
FamFinancing	2.108907	0.003	1.297907	3.426661
Family cohesiveness	1.201035	0.484	0.718932	2.006427
Oilgasimpact	1.98907	0.007	1.206123	3.280262
Frugality	1.083287	0.779	0.619344	1.894764
/lnsig2u	-2.053094		-4.47635	0.37016
sigma_u	0.3582419		0.106653	1.203315
rho	0.0375452		0.003446	0.305618

Likelihood-ratio test of rho=0: chibar2(01) = 5.30 Prob >= chibar2 = 0.011

Family influence on financing and oil and gas had significant effects on firm assets unlike other variables. Using the odds ratio, it is seen that, small business holders who received family support in terms of financing had 2.1 times likelihood of increasing their asset value as compared to those who never received family financing support, family support in form of financing had significant effect on small firm asset growth(p.value = 0.003). Similarly, odds of increasing asset value were 1.9 among small firms whose discovery of oil and gas had impact on firm performance, oil and gas impact had significant on small firm asset growth (p.value = 0.007). Time effect is explained by rho, in this case from the year of establishment to the present date, the asset value was increased by 3.8% (i.e. rho = 0.0375).

Qualitative Insights from respondents: Some lengthy details regarding oil and gas activities and influences and business in the region were obtained and the following section highlights three reports on the developments and insights on Hoima vs. Kampala Based supplies. "In the last five years, Kaiso has been fast tracked in the years before there was no rapid growth for this town like it is today. The new road often referred to as the Kaiso -Tonya road explains such advancements. Besides this tarmac road, the whites related to the oil businesses have established social support services in the region. These include schools, markets, and hospitals among others. The white factor explains the high fuelling of development in the region. On the side of business, fish-mongers, self-retail goods, traders take goods to Congo, others take silver fish to Kampala more shops are prevalent in the area. However the oil resource has affected the cultural sides the strength of cultural goodwill is being affected. In the family households, there are reduced cultural assets. In the past, fish used to be harvested in huge quantities unlike now. In the past more fishing business was engaged in the big fish, now most people are engaged in silver (*Mukene*) fish. The whites of oil firms have affected the resource avenues especially fish and some people in Kaiso are likely to shift from this area in the near future. The intermediaries do not help the locals and the oil may not help since the needy men that link the locals and the top most authorities do not appropriately take the interests of the locals." Male Respondent, 53, Resident of Kaiso

"The people who are engaged in oil and gas are not buying from the locals they instead source their products from Kampala, the capital city, since they believe the products in Hoima do not fit their standards" Female Business owner, 48 years, Hoima Town. "Our children are not getting money, our people are losing land, since they, the outsiders have come and bought our land, we have no more of our land. Even hotels there is a unique problem, the outsiders have built these hotels and therefore they are the ones benefitting. Item are being bought from supermarkets based in Kampala. We have not benefited from this oil and gas project, 'outsiders are stealing us Female Restaurant owner, 59, Hoima Town

Discussion of findings: Majority small business operators engage in trade and most operators are in the age bracket of 30 - 60 years. However, it is noted from both district officials and other respondents that quality standards are a major challenge for small firms in Hoima. Similarly, Sandra Uwera, the Chief Executive of COMESA business council indicated that quality standards are widespread challenge which impacts small firms in the COMESA region (Barigaba, 2016). Whereas, the standards issue is presented as a huge challenge, some respondents indicated that large entities are operating in a predatory approach that does not enhance small firms to attain the required quality standards. It is observed that majority of business operators are male, thus, the gender related challenges on business assets growth may not be ruled out. Although family support features in the livelihoods of the adults in Hoima the imbalance amongst the male and female business ownership may affect the family cohesiveness in business.

The relationship between frugality and family cohesiveness in small business: The results indicated that a marginal significant relationship between family cohesiveness and frugality existed amongst small enterprises. Thus, the elements of family supportiveness and usefulness embedded in family cohesiveness and spending discipline and delayed gratification seem to move in minute similar pattern in small business operator's behavior in Hoima. However, family support in livelihoods amongst the residents in Hoima was reported; the urban dwellers appear to have more family support than the rural dwellers in Hoima DDP (2015). This finding corroborates an empirical study by Hoerger et al. (2011) that indicated that there is a correlation between frugality especially delaying gratification and social wellbeing of individuals. Building on exiting perspectives of the resource based view of the firm, the elements of frugality and family cohesiveness can augment the firm resources. Moreover the link between family resource and SMEs performance has been documented. In studies based in Tanzania (Charles, 2011; Charles, 2014) reported that the small firms derived competitive support from family involvement. Similarly, in a study based in Italy, Schillaci et al. (2013) indicated a strong correlation between family closeness and firm strategic orientations, the growth of a firm can thus be enhanced as one of the strategic orientations.

The effect of frugality and family cohesiveness and other factors on firm growth: It was reported that family influences financing, one strong element in firm growth. The oil and gas operations factor also had significant effects on firm assets in the small firms in this study. Given that, family closeness is widely highlighted as source of human resource based family capital (Van Wyk, 2012), this finding extends the family significance into family capital in terms of finance. With asset values positively linked to family financial support as revealed in this study. So the role of family cannot be under estimated in small firms. However, with a significant correlation of family cohesiveness and frugality there is a likelihood that the family support in firm financing could have some indirect relationship with frugality. This is envisaged especially given that most firm operators indicated strong agreements in matters regarding spending discipline. More so, family support in livelihoods was as also highlighted the District Development plan (DDP, 2015). The findings of frugality and family cohesion insignificant effect on asset growth draws one to ponder on whether family cohesion and frugality in Hoima are utilized in firm asset buildup, or mainly limited to the livelihoods of the individual owners of the business.

Building from Eyakuze et al. (2013) findings that indicated that Ugandans were among the top most spenders in East Africa, then one can largely justify the current frugality and family cohesiveness inability to influence asset values of the small firms in Hoima region. On the other hand, other studies have documented that frugality influences firm growth and performance (Anderson and Lallis, 2010) and family cohesiveness or closeness in business also influences firm growth (Harbashon et al., 2003; Schillaci et al., 2013; Charles, 2011; Charles, 2014), Other studies (e.g. Hoerger et al., 2011) also indicate that the merger of components embedded in frugality (i.e. delaying gratification) and social cohesiveness further expand individual wellbeing. Therefore, if frugality and family cohesiveness are well natured may enhance small firms' asset growth. In all, this paper reveals that the time effect empirically causes some increase in asset value. In this case from the year of establishment (year 0) to the present date (year1), the asset value in small firms was increased by 3.8%. So, with exiting reports that have shown that most firms do not live beyond their first birthday in Uganda (Bakunda et al., 2013), since more than 40% mortality rates exist among some SMEs in Uganda (Bakunda, 2008; UBOS, 2010), the current findings contribute in building confidence of firm operators and stakeholders that the time factor exclusively can influence asset growth. Therefore, the elements of frugality that involve delaying gratification or endurance if natured may abate the reported failure rates of small firms.

Implications: Given the country wide strategy embedded in supporting the small enterprises as noted in the NPD 11 (2015), small firms need to be protected from the suffocation of the large firms which have capacity to fulfill the quality standards requirements. However, the existing institutional voids highlighted to affect SME growth in sub Saharan Africa (Fjose et al., 2010; Webb et al., 2015), should be handled in a stakeholder approach. The central government together with the Hoima district local government the private sector firms can be streamlined and boosted to acquire the necessary capacity to fulfill the quality standards that the oil and gas operators demand. On the issues of frugality and family cohesiveness, the existing empirical evidence of frugality and family cohesiveness to bolster firms need not to be downplayed. Even if the current findings show that the two variables do not influence asset growth, at least the family support on financing is shown to influence asset growth in firms. So small firms operators should embrace the family cohesion tenets as well as frugality facets.

5. Conclusion

Frugality and family cohesiveness have slight association. Family support on firm financing and oil and gas effects on asset growth are significant in Hoima District. The existing empirical evidence from previous studies supports the argument that frugality and family cohesiveness can bolster firm's growth. Even if the current findings show that the two variables do not influence asset growth, at least the family support on financing is shown to influence asset growth in firms. So small firms operators should embrace the family cohesion tenets as well as frugality facets.

Limitations and Future Research: This study was focused on the small firms around the Albertine region in Uganda, so the generalization on small firms examined may be limited to this region. So, there is need for more studies in regions around the oil and gas fields especially in Kenya and Tanzania. Apart from the oil exploration activities, the mainstream drilling of crude oil has not yet started and so the effects of oil and gas activities are limited in the Albertine region. Therefore additional studies in relation to small businesses will be required in future when mainstream oil and gas extraction process is ongoing. In addition, the gender of founder was noted as one of the core factors explaining firm growth(Korunka et al., (2011), the current study found that most of the small businesses were owned by male, a finding that corroborates the results in the DDP (2015). Therefore, there is need for more studies to investigate the role of gender on growth more especially in rural based small firms.

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Journal of Economics and Behavioral Studies (JEBS)
Vol. 8, No. 6, December 2016 (ISSN 2220-6140)

The Trade-Offs Between Pro-Poor and Cost-Reflective Tariffs in South Africa: A Regulatory Perspective

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Abstract: This paper presents arguments for and against cost reflectivity and pro-poor tariff policy in South African electricity supply from a regulatory perspective. This debate has been ongoing for decades in developing countries; however, there is still no clear direction on how countries should approach these two important competing policy positions. There are those that argue that achieving cost-reflective tariffs will attract private sector investment into the electricity supply industry (ESI) that will lead to much needed competition and reduced electricity tariffs. However, there are also those who argue that cost-reflective tariffs will make it difficult to achieve government social objectives of universal access through pro-poor tariffs, as cost-reflective tariffs will be unaffordable to the majority of the population. The fundamental question is what should come first, between cost-reflective tariffs and pro-poor tariffs in a developing country context, specifically in South Africa. This paper therefore attempts to examine the real trade-offs between pro-poor tariff policies and cost-reflective tariffs. The study attempts to answer one critical question: How can the electricity sector attract local and foreign investors, without necessarily affecting government social objectives such as universal access to electricity? The study finds that electricity consumers, and in particular poor households, have historically benefited from relatively cheap electricity and that tariffs have not been cost reflective. In other words, there is a mismatch between tariffs and the underlying costs of supplying electricity in South Africa. It also finds competing expectations between poor consumers and utilities. Consumers expect to receive electricity at an affordable price, while utilities argue that a good, reliable electricity supply's tariffs must be matched with costs. Lastly, the study finds that it is difficult to achieve cost reflective tariffs in the short run, in an environment characterised by a high number of consumers dependent on government social grants and cross-subsidies. The study therefore recommends a gradual movement towards cost-reflective tariffs, together with the introduction of competition and energy efficiency and demand side management (EEDSM), in order to minimise the impact on the poor.

Keywords: *Tariffs, pro-poor, cost reflectivity, electricity, consumers*

1. Introduction

The trade-offs between cost-reflective and pro-poor tariff policy has received emphasis from a number of policy makers and regulatory authorities around the world. The debate over the past three decades in developing countries has been on what comes first, between cost-reflective tariffs and pro-poor tariff policies. In other words, how can policy makers balance cost-reflective tariffs and pro-poor tariff policies, without affecting the sustainability of the Electricity Supply Industry (ESI)? Furthermore, how can government balance pro-poor tariffs, to achieve government social programmes of universal access to safe affordable electricity, and cost-reflective tariffs, to attract private sector investment into the ESI? The balancing act has left many policy makers and regulatory authorities confused. To date, there is still no clear direction on how developing countries should approach these two important competing policy positions.

Those in support of cost-reflective tariffs argue that implementing cost-reflective tariffs in the electricity supply industry (ESI) will assist government achieve universal access through increased generation capacity, which will result in lower costs in the long run. Therefore, in the long run, government programmes of universal access to affordable electricity will become a possibility. On the other hand, pro-poor tariff policy advocates assert that achieving cost-reflective tariffs first may delay the achievement of universal access to affordable electricity, especially in a developing country context characterised by high unemployment, low growth and high dependence on government social grants. They further argue that cost-reflective tariffs will be beyond the reach of poor households, and this will hinder or delay the achievement of universal access, as struggling consumers may switch to unsafe and inefficient sources of energy. There are currently strong signs that South African electricity utilities are facing serious challenges, as falling energy consumption has resulted in declining revenues, and this hinders the achievement of pro-poor tariffs/universal access, as utilities have to increase tariffs and introduce innovative tariff structures that will align tariffs with the actual costs of rendering electricity to end-users, in order to match the increasing production costs. Literature suggests that the priority between cost-reflective tariffs and pro-poor tariff policies differs from one country to another. For a country with a large social welfare base, like South Africa, the priorities between pro-poor and cost-reflective tariffs are different from that of a developed country.

There has been an accelerated increase in the number of people dependent on government social grants and other relief packages. In 2015, approximately 16.9million (30 percent of the total population) received government social grants (South African Social Services Agency, 2015). It is clear that, for these consumers to have access to electricity, they will need to be assisted by government one way or the other or through cross-subsidisation by other electricity consumers. According to the South African Department of Energy, 2025 has been set as a target for achieving universal access to electricity, while 2013 was previously set as a target for cost-reflective tariffs. However, this target was not achieved, and tariffs are still not cost reflective. This shows how difficult it is to achieve cost-reflective tariffs in a developing country context. The paper therefore discusses the trade-offs between cost-reflective tariffs vs pro-poor tariffs, with the aim of making implementable recommendations. The remainder of the paper is organised as follows: Section 2 looks at the South African Electricity Supply Industry; Section 3 presents the arguments for and against pro-poor and cost-reflective tariffs; while section 4 looks at the role of the regulator in relation to tariffs; Section 5 discusses the possible ways of protecting low-income households; and Sections 6 and 7 provide the recommendations and conclusions respectively.

2. The South African Electricity Supply Industry

Unlike developed economies, South Africa does not have a market for wholesale or retail electricity trading; instead the ESI is predominantly owned by the state-owned utility Eskom, which generates approximately 94 percent of all electricity consumed. Eskom also wholly owns the power transmission network through the national transmission company. The National Energy Regulator (NERSA), established through an act of parliament, regulates the electricity industry, rather than the market, covering licensing of new plants and electricity tariffs. The main objectives of the electricity sector, as set out in the energy White Paper of 1998 and the Electricity Pricing Policy of 2008 (EPP), are to:

a) improve social equity by addressing the requirements of the low-income households;
b) enhance efficiency and competitiveness to provide low-cost and high-quality inputs to all sectors;
c) provide competition, especially in the generation sector; and
d) increase private sector participation in the industry.

Furthermore, specific objectives addressed in the abovementioned policies refer to ensuring that electrification targets are met; the provision of low-cost electricity; better price equality; financial viability; improved quality of service and supply (including security of supply); proper co-ordination of operation and investments; and the attraction and the retention of a competent work force. During the past two decades, the government has developed energy policies that support universal access to energy sources. Policies such as rural electrification aim to electrify poor households around rural and peri-urban areas (Gaunt, 2005). The design of energy strategies that contribute to reducing poverty has been a topic of great importance within the South African political discourse (Howells et al., 2006). In 2008, government had set a target of achieving cost-reflective tariffs by 2013 in order to reform tariffs to reflect their underlying costs, and attract and retain public and private sector investment. However, to achieve cost-reflective tariffs meant that tariffs had to increase significantly over a short period. A steep increase in tariffs to achieve cost reflectivity could potentially cause low-income consumers to 'either increase their expenditure to maintain consumption; change their behaviour through energy savings; or compromise their health and safety by switching back to unsafe and inefficient fuels such as paraffin or wood' (Franks, 2014:16).

Historically, South Africa's electricity pricing regime has been pro-poor in nature. These pro-poor tariffs are concerned with relieving some of the burden on the poor by introducing tariff structures that benefit the poor more than the rich. More specifically, pro-poor electricity tariffs were designed to provide discounted electricity to those most vulnerable to falling into, or already in, energy poverty. For example, pro-poor tariffs make electricity affordable to the poor via a zero charge for the first block of the Inclining Block Tariff (IBT), usually 50kWh a month. This also promotes energy conservation by applying high tariffs in the upper consumption brackets. Eskom, through the Energy Regulator, is allowed to protect the poor, through a tariff structure with transparent cross-subsidies and a single digit, or lower than average, tariff (rural and residential) increase at a time (Eskom, 2012). The principal challenge currently dominating the ESI is the issue of pro-poor tariffs (including subsidies) and cost-reflectivity of tariffs. However, there is a commonly accepted notion among industry participants that electricity tariffs need to be cost-reflective to ensure financial stability of the power system and the sustainable provision of electricity services. In the case of South Africa, these prices are often beyond the reach of low-income households. Compounding the problem is that for low-income consumers pay less than the cost-reflective tariff, then they will need to be subsidised, either by other electricity consumers or from other financial sources such as government grants. Therefore, questions have emerged regarding whether these pro-poor tariffs consider other benefits, such as social grants provided by government to low-income households. If not, are these pro-poor tariffs set at the right level? Are poor households over-subsidised?

Pro-Poor vs Cost-Reflective Tariffs in South Africa: Electricity consumers and utilities are very important stakeholders in the ESI; however, they have competing and different expectations, which at times regulatory authorities find difficult to balance. Pro-poor policies strive to ensure that all consumers have access to affordable electricity services. On the other hand, achieving 100% access to electricity comes at a price, especially for the poor, mainly in rural areas. Rural connections are costly compared to connecting a poor household in an urban area, and this makes the average cost of providing the services to these areas high, which goes against pro-poor policy's objective of providing affordable services to all. There seems to be an inverse relationship between providing services to all, and affordability, at least in the short term. One way of providing affordable services to the poor is through subsidies. This means that high-income households pay more than the cost of providing the service they consume, while the poor pay less than what the actual cost of providing the service is. Although subsidies are an acceptable solution to dealing with affordability issues, it has its own challenges, especially when the segment of the population to be subsidised is larger than the subsidising population. This overburdens the subsidising population, which may lead to questions as to why they have to carry the burden alone. Currently, subsidising electricity customers are questioning the appropriateness of this subsidy amount paid to poor customers. The argument is that these subsidies encourage inefficiency in the use of this limited resource. Are the poor households not over-subsidised, if one takes into account all other government subsidies/benefits that the poor get, such as social grants and other social relief aids? Over-subsidisation of the poor could potentially lead to inefficient use of electricity.

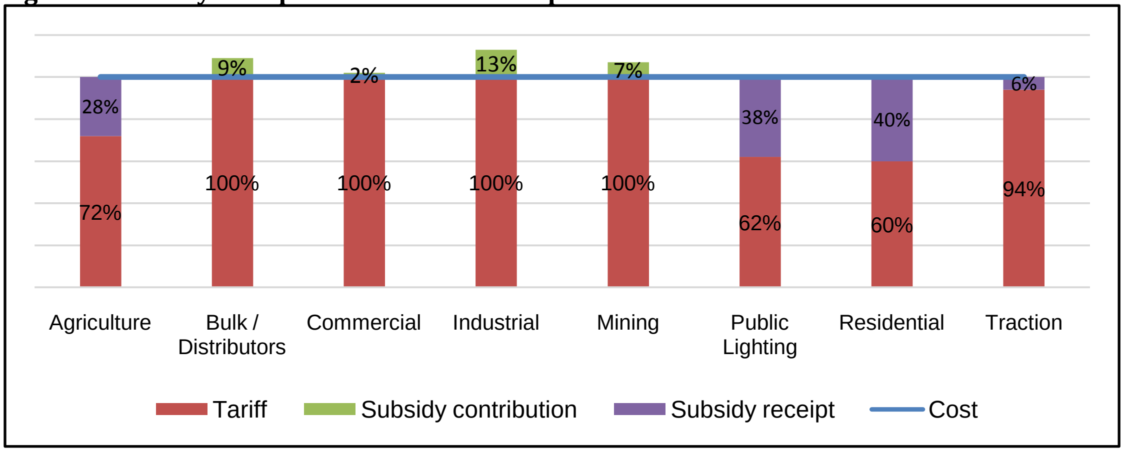
This leads to the next questions that regulators and policy makers need to answer: What is the appropriate grade of service that a subsidy to the poor seeks to achieve? Is it permissible to allow utilities to offer a lower-grade service at a lower price, so that the poor can receive at least some service, thus giving the poor options that make services more affordable, while at the same time reducing the subsidy burden to the subsidising group? Some countries reject the idea of allowing the poor to be provided with lower-grade service, as they see this as discrimination. If the acceptable grade of service that the poor should receive is unaffordable at a particular point in time, does it mean that the poor should not be allowed access to at least some form of service until the acceptable service grade becomes affordable? Is this not justifiable discrimination? Regulators and policy makers are still grappling with these issues. Those who support providing a lower grade level of service to the poor argue that providing a high-grade level of service is not what the poor need – what they need is a level of service that they can afford and that meets their needs. Providing the poor with more than what they need may result in inefficient use of resources.

The Low Income Pro-Poor Tariffs for Electricity in South Africa: As discussed above, the ESI has a host of cross-subsidies, where certain customer tariff categories subsidise other customers connected to the network. These subsidies include the following:

a) Electrification and rural subsidies meant to cover the cost of connecting a house to a 20A (low consumption) electricity supply.
b) Affordability subsidies to residential customers i.e. Inclining Block Tariffs (IBTs) and Free Basic Electricity (FBE). IBTs, together with lower-than-average tariff increases, have resulted in subsidies of up to 42% of the total residential customers. The FBE programme, on the other hand, provides 50kWh (more in some local authorities) of free electricity per month to identified indigent customers.
c) Subsidies to low-voltage customers (large power users and commercial customers).

The subsidies are currently borne by industrial and commercial customers.

Figure 1: Subsidy receipts and contributions per sector



Source: Eskom cost allocation based on MYPD3 2014/15 tariff application

Table 1: Subsidy receipts and contributions per sector

Subsidised Customers	Subsidised Customers %	Subsidising Customers	Subsidising %
Agriculture	28	Bulk/ Distributors	9
Public Lighting	38	Commercial	2
Residential	40	Industrial	13
Traction	6	Mining	7

Source: Eskom (2012)

Table 1 and Figure1 above show the extent of cross-subsidisation in the ESI. The biggest beneficiary of subsidies is residential customers (40%), and the biggest contributor is industrial customers (13%). These customers contribute more subsidies than other customers supplied by Eskom and the municipalities. However, these subsidies sometimes result in large annual unaffordable tariff increases and negatively affect the sustainability of these customers' businesses. A breakdown of residential customer subsidies shows a worrying trend. Residential customers on 20A and 60A connections are the highest recipients of subsidies in the country. Furthermore, the majority of these customers receive free basic electricity of 50kWh per month. Table 2 below gives a breakdown of residential subsidies.

Table 2: Subsidies 2012/2013 FY (billion)

	Allocated allowed costs	Current tariffs	Current subsidy	Current subsidy (% of revenues)
Total	R12.2	R7.6	-R4.5	-59%
Homepower	R 2.4	R 2.1	-R 0.3	-15%
Homelight 20A	R 5.3	R 2.6	-R 2.7	-107%
Homelight 60A	R 4.5	R 2.9	-R 1.5	-49%

Source: Eskom (2012)

Cross-subsidies represent an important principle for electricity pricing and a critical element of the effective functioning of the electricity pricing system. The cross-subsidisation principle as reflected in the EPP is meant to promote equality in electricity pricing and contributes to the advancement of government's electrification programme. According to Eskom (2012), cross-subsidies increased from R9 billion in 2012/13, to 11.3 billion in 2013/14. However, with the rate of electricity hikes over the past 8 years, the issue of pro-poor tariffs and the accompanying subsidies have received great attention among utilities, end-users and the regulator. Subsidising customers are questioning the fairness and equitability of these subsidies, and why they should be the ones carrying the burden of advancing the government programme of universal access and affordable electricity.

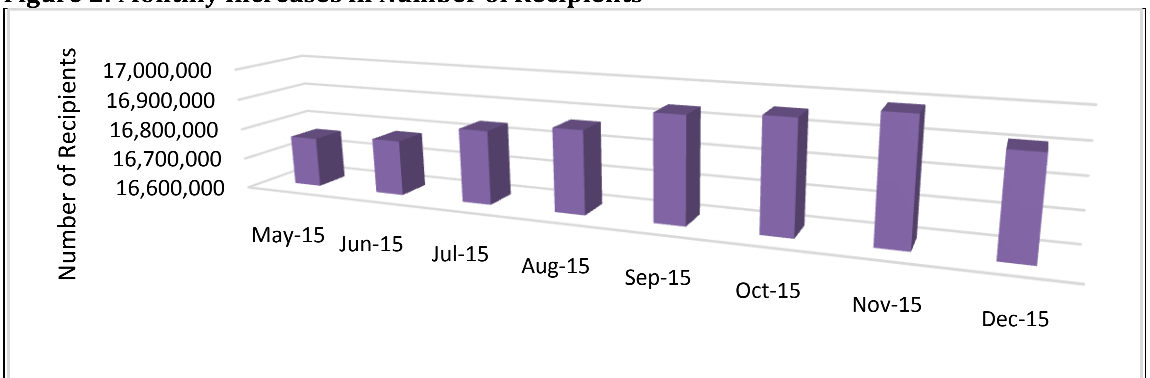
In section 3 above, the question was raised regarding whether poor households are over-subsidised or not, when taking into account all other benefits that they currently received from the South African Social Services Agency (SASSA). Statistics suggest a growing number of SASSA beneficiaries between 2014 and 2015. Table 3 below shows the distribution of government grants between different population groups. It also shows that South Africa has a social welfare base of 19.9 million people (SASSA, 2015), which translates to approximately R122.6 billion and R127 billion in 2014/15 and 2015/16 respectively (South African Social Services Agency, 2015). Social welfare expenditure has increased from R122.6 billion in 2014/15 to R127 billion in 2015/16. This represents a 3.5% increase in social welfare expenditure.

Table 3: Current Structure of Social Grants in South Africa

Grant Name/Type	Number of recipients	Total Expenditure by Government 2015/16	2014/15
Grant for Old Persons	1580892	R 26748692640	R 25610450400
	1580892	R 27128106720	R 27128106720
Disability Grant	1099867	R 18609749640	R 17817845400
War Veteran's Grant	261	R 4478760	R 4290840
Foster Child Grant	427928	R 4416216960	R 4262162880
Care Dependency Grant	131296	R 2221528320	R 2126995200
Child Support Grant	11956549	R 47347934040	R 45195755220
Grant-in-Aid	132620	R 525175200	R 501303600
TOTALS	16 910 305	R127 001 882 280	R122 646 910 260

Source: South African Social Services Agency (2015) and Authors' calculations.

Figure 2: Monthly Increases in Number of Recipients



	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15
Totals	16,762,822	16,780,488	16,839,478	16,867,894	16,938,608	16,954,459	16,988,598	16,910,305

Source: South African Social Services Agency (SASSA), 2015.

3. Rationale for Cost-Reflective Tariffs and the Implications

The ambition of moving to cost reflectivity goes as far back as 2004. It is a goal that is seen by government as a critical tool to improve the sustainability of utilities, reducing costly subsidies and a prerequisite for attracting private capital. Achieving this goal would show a high impact on increasing electrification and improving reliability in the ESI. According to the PwC (no date) study, the inability to recover the cost of new generation via current electricity tariffs is a major barrier to investing in new large-scale generation and transmission projects. This is a recurrent theme in surveys and heads the list of energy policy measures needed to address the key challenges of expanding power provision and making existing assets more reliable (PwC, no date). The fundamental issue regarding the move to cost-reflective tariffs is a complicated one, but utilities and the regulator have a duty to consult constantly with consumers and consumer groups in order to reflect their interest and concerns. Understanding the psychology of consumers, and the effects such tariffs have on different consumer groups, is crucial to getting the best from electricity tariffs (CUAC, 2015).

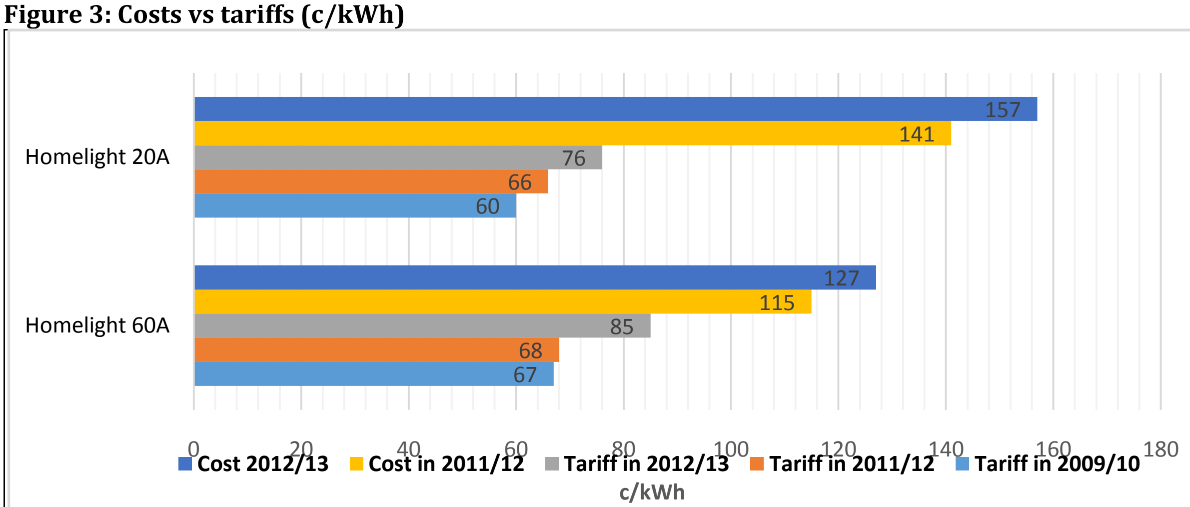
A substantial body of literature on electricity pricing highlights three important issues as to why linking tariffs to actual cost drivers is important. Firstly, it promotes efficient use of electricity infrastructure by ensuring that only those consumers that most value the service during high cost time use the system, while encouraging use of the network during low cost periods. Secondly, it promotes efficient investment in electricity infrastructure and innovative technology, as usage corresponds to the willingness of consumers to pay the true costs of providing services when required. Thirdly, it is viewed as a fair pricing system, as consumers directly contribute to the costs that they impose on the system because of their usage (Gerlach and Franceys, 2010; Tait, 2011; Franks, 2014; Schreiber et al., 2015). Cost-reflective tariffs typically recover the following key costs:

- Time and seasonal variance of the cost of energy (Generation).
- The price paid will depend on the usage pattern of customers represented by the load profile. It will include environmental levy costs.
- It could include signals to incentivise behaviour.
- Network costs (distribution and transmission wires) based on the voltage of supply, the density of the network to which customers are connected, geographic location (transmission), electrical (technical) losses for both distribution and transmission, and the reactive energy support.
- Retail costs that typically cover customer services, based on the size of the supply and usage. This reflects the type of the service provided to the customer.

The overarching argument of cost reflectivity is that where end consumers are faced with the actual costs of their consumption and decide to change their behaviour, network investment can be avoided and costs substantially reduced. Over time, this should result in lower network costs for all consumers, than when continuing with non-cost-reflective tariffs (CUAC, 2015). Furthermore, industry participants highlight that matching tariffs with actual costs will potentially eliminate problems of capacity shortages, investment, and maintenance backlogs, which lead to high interruption costs and inequitable treatment of consumers.

The biggest factor driving electricity infrastructure investment is peak demand. These levels are only reached for short periods each day in South Africa. However, network costs are recovered from most end users, particularly domestic consumers, through charges on their consumption over the course of the day, rather than on their peak demand. Current ESI prices do not reflect the true underlying costs of using electricity during demand peaks, nor are the costs distributed fairly among end users. Low-income domestic consumers with high demand and low consumption receive implicit subsidies from households with low demand and high consumption (see Figure 3 below).

Figure 3: Costs vs tariffs (c/kWh)



Source: Eskom, 2012

Good ESI tariffs must be efficient, equitable, provide stable billing for end users and revenue for utilities, and be acceptable to consumers. However, as it stands, the current electricity structure appears inequitable, as most costs incurred by the majority of residential and agricultural users are borne by commercial and industrial consumers, as shown in Figures 1 and 3 above. Therefore, it is obvious that without cost-reflective tariffs, private and public utilities would find it difficult to raise capital to expand their generation, transmission and distribution infrastructure networks. Furthermore, it would be nearly impossible to attract new private sector investment, to increase competition and lower costs in the electricity industry. Infrastructure expansion in the ESI is critical for economic growth, as utilities struggle to meet electricity demand, and as the country is short of generating capacity. Although cost-reflective tariffs are imperative for the ESI, achieving cost-reflective tariffs in a heavily subsidised environment may negatively affect government's effort towards universal access. The transition towards cost reflectivity must be gradual and accompanied by greater emphasis on stakeholder participation. A quick move to cost reflectivity may affect the proper functioning of the sector as well as the economy in general.

4. The Role of the Regulator

The National Energy Regulator is putting more emphasis on moving towards self-sustainability for the electricity sector, while addressing the issue of affordability. Appropriate low-cost options that give poor households access to formal services have been matched with appropriate tariff structures, which allow both public and private utilities to recover their prudently incurred costs of operations and ongoing maintenance, as well as ideally generating revenues that enable debt servicing of capital investments.

In terms of tariff decisions, the Energy Regulator always tries to strike a balance between affordability and sustainability of the electricity industry. The Energy Regulator takes into account tariff principles such as cost recovery, signals for investors, efficient use of the network, simplicity and cost-effectiveness, transparency, and social and political objectives, among others. For example, in balancing between cost recovery and social and political objectives, the Energy Regulator only approved an average Multi-Year Price Determination (MYPD) tariff increase of 8%, instead of the 16% applied for by Eskom. In arriving at its decision, the Energy Regulator endeavours to set tariff levels not only to ensure that licensees collect enough revenue to recover full costs, but also to allow them to obtain reasonable funding in the future. Various ratios, such as earnings before interest, taxes, depreciation and amortisation (EBITDA), interest cover, and debt service cover, are used to test for reasonableness and the financial impact of every decision made. However, the utility has raised concerns regarding its sustainability and the impact the current five-year determination will have on its infrastructure expansion programme. On the other hand, consumers have argued that the 8% increase over the five-year period was exorbitant. They list affordability and timing as their biggest concerns. It is clear that the expectations of consumers and utilities are always at variance. On one hand, consumers expect to receive services at an affordable price and of high quality, while utilities argue that to provide a good quality service means increasing tariffs. The pursuit of higher tariffs is in conflict with consumer expectations and pro-poor policies. Table 4 below lists some of the different and conflicting expectations that the two parties may have.

Table 4: Competing expectations: utilities vs poor customers

Utilities	Poor customers
Risk mitigation	Availability of affordable supply of electricity
All costs recovery	Reliable and safe supply of electricity
Reasonable return on investment	Protection from exploitation by operators
Financial balance: Costs and Tariffs	Participation, consultation, and transparent decisions of the regulator and utilities.
Bankable contracts	Prompt response to customer complaints and disputes
Regulatory certainty	Value for money
Customer buy-in	Simplicity, convenience of payment and understand ability

Source: Authors

Table 4, above, highlights that affordable and reliable electricity is the main concern for poor households, while utilities put more emphasis on mitigating all risk and earning a reasonable return on investment. From a regulatory point of view, reasonable return and affordability are two of the most difficult issues to balance in the ESI without one necessarily compromising the other.

Possible Ways of Protecting Low-Income Households: Costs vary between customer categories. These customer categories impose different costs on the power system. There are higher costs associated with supplying low-voltage, low usage consumers in remote rural areas in South Africa than high voltage and high usage customers close to generation stations, especially around Mpumalanga and Gauteng provinces. In order to develop an effective cross-subsidy framework, one needs to understand the main cost drivers of supplying electricity to different consumers. These costs consist of the energy costs (cost of generating electricity); the transmission and distribution network costs (cost of moving electricity from where it is generated to where it is supplied); and the customer service costs (providing necessary and optional support services to consumers).

Possible approaches: Local and international literature lists various ways of promoting affordability of electricity usage by low-income households (see Dubach, 2003; Lago, 2010; ACOSS, 2013; Banerjee et al., 2014; Maxwell, 2015). These studies highlight the importance of committing to universal access to electricity without affecting the sustainability of the electricity sector. For example, Banerjee et al. (2014) found that the overarching goal of access in India has overshadowed the need to provide safe, reliable electricity. Below is a list of possible approaches to cushion poor households from high electricity costs in South Africa.

- Providing a partial or full subsidy for the connection fee. This once-off capital subsidy promotes access to the grid. In other words, affordability is not a constraint for connecting to the electricity grid (where a grid is available to be connected to).
- Reducing or eliminating the fixed charge component of the tariff. This has the effect of eliminating any 'lump sum' payments required on the part of the poor household. That means, for example, the poor household does not need to find R300 per month (or whatever the monthly fixed charge may be) to maintain a connection to the electricity grid. Access to electricity by the poor households can be promoted through subsidising fixed charges (including the connection charge).
- Eliminating the energy charge for a defined maximum consumption per month. Currently electricity distributors give between 50-100KWh of FBE per month.
- Reducing the energy charge for a defined maximum consumption per month; that is, a partial energy charge subsidy with a limit.

Recommendations: The study makes the following recommendations:

a. There should be a gradual movement towards cost-reflective tariffs in order to minimise the short term impact of price increases on poor households which must be accompanied by the following key strategies:
    - Customer education programmes focusing on the importance of gradually moving towards cost-reflective tariffs for the sustainability of the ESI in South Africa. These gradual price increases over a longer period will provide certainty and give households time to adjust and acquire energy-efficient appliances.
    - Robust energy efficiency and demand side management (EEDSM) programmes aimed at reducing energy costs and demand. Energy efficiency and EEDSM programme will help reduce the need for new generation capacity and still be able to meet existing demand (the costs of new generation capacity outweigh the cost of energy efficiency and EEDSM).

b. There should be an understanding of other subsidies that accrue to the poor, regarding whether the subsidies given are enough to achieve government social objectives or not. Over-subsidisation of the poor can delay the achievement of cost-reflective tariffs. Furthermore, targeted subsidies should be introduced that are efficient, sound, transparent, practical, and limited in time. Subsidies must be for a limited time only. Utilities' consumption data should be used to determine whether households still qualify for electricity subsidies. For example, once a poor household has achieved a set minimum annual income, they should gradually move towards paying a full, cost-reflective tariff for their consumption. This should be done to eliminate high-income household access to subsidised electricity.

c. A national study on the minimum level of service grade required by poor households, based on their economic circumstances, is required.
   - This study will help determine the minimum electricity service required by households and avoid over-supply of services, which could lead to inefficient use of service.
   - Those who need to consume more than the minimum services should pay for the extra consumption. Inclining block tariffs must be introduced to avoid electricity wastages where higher consumption will attract a higher tariff that mirrors the actual costs of electricity supply.

d. Introduce legislation or policies that promote competition in the electricity industry. Introduction of renewable energy-independent power producers will promote efficiency and reduce costs. Available literature shows that competition in the ESI improves efficiency (Goldstein, 2009) and service delivery.

e. The regulator must be involved in the procurement of all regulatory assets to be included in the regulatory asset base. The efficient and timely procurement of assets will limit the costs to consumers. The regulator should supervise and enforce the time utilities take to complete the construction of generation assets.

5. Conclusion

This study sought to assess the trade-offs between pro-poor and cost-reflective tariffs in the context of South Africa. This study further highlighted the need to adequately attract and reward local and foreign investors without necessarily affecting government's social objective of universal access to electricity. The study also highlighted that the structure of the electricity supply industry in South Africa focuses more on electricity and its impact on poor households and investment. The study further stated that the existing tariffs for residential users do not reflect the underlying costs of supplying electricity to them. From a regulatory perspective, it can be argued that there is evidence that low-income households will not be reached if utilities were to decide whom to supply without tariff subsidies. Poor households in low-income areas would be excluded permanently from the network. Furthermore, the regulator at all times should consider the socio-economic implications of costs-reflective tariffs within the broader context. It is also equally most important to shield the most vulnerable customers in South Africa. Furthermore, the point is made that the protection of poor households and low-income areas goes beyond issues of affordability of services. Moving them from informal to formal services is a fundamental starting point, even without necessarily establishing pro-poor tariffs. In conclusion, it is important that electricity tariffs be balanced, to enable private and public investors to recover efficiently incurred costs plus a reasonable profit, while also attempting to supply poor households and low-income areas with affordable electricity.

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Journal of Economics and Behavioral Studies (JEBS)
Vol. 8, No. 6, December 2016 (ISSN 2220-6140)

The Impact of Emerging Market Trends on the Development and Marketing of Financial Service Products in Zimbabwe Post Dollarization

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Abstract: The research sought to analyse the impact of emerging market trends as measured by competition, technology and consumer demographics on the development and marketing of financial service products in Zimbabwe post dollarization. The Zimbabwean financial service sector has been largely characterised by new and changing market trends since dollarization. These trends have largely manifested in the form of entrance of new players in the market, a growing informal sector at the expense of the formal financial sector and the emergence of new technology paving way for the need to develop and market new financial service products. There is therefore need for financial service providers in Zimbabwe to continually embrace innovative product development and marketing strategies so as to shape banking products to fit consumers' evolving financial needs much of which are well beyond the realm of traditional banking products. An explanatory research design was adopted in conjunction with a descriptive research design. Results from the study indicate that the entry of new financial institutions, removal of barriers between institutions, emergence of non-regulated financial institutions, increased consumer access to financial information owing to increased adoption of technology, market fragmentation and increased formal unemployment have a significant impact on the way financial service products are structured, provisioned. In light of that, it is recommended that financial service providers should design and tailor new business models to suit the emerging market environment.

Keywords: *Emerging market trends, development, financial services, Zimbabwe, post-dollarization*

1. Introduction

According to Gundani (2015) the financial services sector remains the bedrock for economic development by virtue of it being a conduit for economic transactions. This sector has seen significant structural transformation over the years, which has forced change in the marketing, design and delivery of financial service products. Globally, the financial services industry has been subjected to new and changing market trends which have forced significant and revolutionary changes to the shape of the financial landscape. The liberalization of the Zimbabwean financial sector through the Economic Structural Adjustment Program (ESAP) in 1990 saw a shift from a state interventionist to a more market driven financial system. This created new opportunities for entrance of new players into the financial services sector and gave rise to the emergence of new business classes notably microfinance institutions which came as a response to the need for provision of micro credit by Small to Medium Enterprises and the informal sector which had been largely ignored by the formal financial sector. More recently, an additional banking class of deposit taking microfinance institutions (Microfinance Banks) has since been issued with licences by the central bank (Mangudya, 2015a). Prior to liberalisation, the Zimbabwe financial sector followed a largely oligopolistic banking structure marred by a few expatriate banks such as Barclays and Standard Bank which continue to dominate the market until today. This was a heavily segmented structure which confined categories of financial institutions to specific types of business (Moyo, 2008). Building societies were only limited to real estate and mortgage financing, commercial banks were limited to the provision of short term working capital finance and merchant banks were responsible for wholesale and long term financing.

According to Nhavira, Mudzonga and Mugocha (2014), the deregulation of the financial services sector and emergence of new financial instruments and service offerings has blurred the boundaries between different types of financial institutions such as banking, insurance and securities and previous delineations which prohibited banks to underwrite insurance policies (banc assurance) or engage in other forms of non-banking activities have since been lifted. Also, various acts of legislation have been modified to allow for the convergence of previously separated segments of the financial services sector. The Banking Act was amended in 2000, allowing financial institutions to transform into commercial banks by acquiring additional functions on their licences (Nhavira, Mudzonga and Mugocha, 2014). There has been a notable increase in microfinance activities by conventional banks as they are permitted under the Microfinance Act (Chapter 24:29) to engage in microfinance business and lending activities (Mangudya, 2015b). Mobile Network Operators such as Econet (EcoCash), NetCash, Telecel (TeleCash) and Net One (One wallet) have ventured into the provision of financial service products and in the process have changed the nature of competition in Zimbabwe. Banks and other non-banking financial institutions are regulated by the Reserve Bank of Zimbabwe while these telecommunication companies are regulated by the Post and Telecommunication Regulatory Authority of Zimbabwe (POTRAZ). They are thus able to successfully compete on the same products in the same market with banks and other financial institutions taking advantage of regulation differences while at the same time circumventing RBZ regulations on financial service provision.

In addition, the emergence of mobile money and more recently mobile banking following the advent of increased use of information and communication technology for providing and availing financial services has changed the face of financial service provision in Zimbabwe. After dollarization in 2009, there was increased adoption and acceptance of technology by financial institutions and the general public. This has led to the crafting of alternatives to traditional banking models and the elimination of branch banking through telebanking (call centres'), internet banking, ATMs and mobile banking to avail financial services, provide investment advice as well as financial information. According to Mangudya (2015a), there has been a significant increase in the use of electronic payment methods as well as growth in the number of electronic access points and devices by financial institutions in Zimbabwe particularly the mobile money payment platforms. This has encouraged both product and geographical diversification and enabled financial institutions to provide new service offerings as well as standardise and harmonise the internal processes for new service delivery mechanisms.

Furthermore, demographic developments have been largely responsible for the gradual change in the desired asset liability structure of household portfolios (Freedman and Goodlet, 1998). These developments include a growing informal sector in Zimbabwe with an increasing fraction of the active labour force being absorbed into the informal sector leading to low levels of income and wealth. Henceforth, financial service providers are forced to shift from offering credit products such as personal loans to providing wealth management products such as mutual funds and mortgage financing which has been a noticeable trend in the Zimbabwe financial services industry. According to the Zimbabwe Economic Policy Analysis and Research Unit (ZEPARU) and the Bankers Association of Zimbabwe (BAZ) (2014), the Zimbabwean economy is undergoing significant structural transformation with the formal sector being progressively replaced by a growing informal sector which implies that traditional business models cannot continue to be applied hence the need to proffer new business models to serve the new emerging class of business clientele. In light of such a background, this research seeks to assess the impact of these emerging market trends on the development and marketing of financial services in Zimbabwe.

Problem Statement: The Zimbabwean financial service sector has been largely characterised by new and changing market trends since dollarization. These include the entrance of new players in the market, growing informal sector at the expense of the formal financial sector and the emergence of new technology paving way for the need to develop and market new financial service products. Therefore, there is need for financial service providers in Zimbabwe to continually embrace innovative product development and marketing strategies so as to shape banking products to fit consumers evolving financial needs (much of which are well beyond the realm of traditional banking products). It is therefore the purpose of this study to assess the impact of these emerging trends on the development and marketing of financial services in Zimbabwe and how financial institutions are adapting to these changes in financial service delivery.

Objectives of the Study: The study primarily seeks to assess the impact of emerging market trends on the development and marketing of financial services in Zimbabwe post dollarization. The sub-objectives of the study are:

- To identify the emerging market trends affecting financial service development and marketing in Zimbabwe.
- To investigate these individual trends are affecting financial product development and marketing in Zimbabwe.

- To analyse the impact of these trends on the way financial services are structured, provisioned and delivered.
- To assess how these changes have affected the uptake of financial services in Zimbabwe.

2. Literature Review

According to Gundani (2015), the financial services sector remains the bedrock for economic development in Zimbabwe. The financial services sector plays a predominant role in stimulating and sustaining economic growth (Anand and Murugaiah, 2004 and Sutton and Jenkins, 2007). This shows the virtual importance of the increasing need to develop and market financial products and services by financial service providers in Zimbabwe. The focus of any marketing activity should be on the consumer and customer satisfaction is central to successful marketing. According to Farquhar and Meidan (2010) the argument for customer centric marketing is irrefutable due to emerging market trends notably increasing market diversity, intensifying competition, accelerating advances in technology as well as demanding and well informed customers. These trends reinforce the need for financial service providers to transform from product-customer centricity to customer centric marketing of financial services. According to Harrison and Estelami (2014), financial institutions and academics alike are increasingly acknowledging the need for new perspectives and paradigms in financial services marketing. According to Alao et al. (2014) banks and financial institutions now compete on a new competitive platform where marketing philosophy and practice have become a strong means of staying ahead of the game. According to Harrison and Estelami (2014), the public's limited ability to fully comprehend financial offers, complexity of financial decisions, unobservable product features and the extent of limited consumer education on financial decision making have presented a challenge for financial service marketers in the marketing of financial offers. In turn, this has further intensified the need for effective financial service marketing in the financial services sector.

Also, according to Farquhar and Meidan (2010) the array of financial products has noticeably expanded with increased provision of some highly unconventional financial services such as life settlement contracts which have further intensified competition and the need for optimisation of marketing capabilities in financial service organisations. Conversely, Harrison and Estelami (2014) assert that the need for a paradigm shift in financial services marketing is enhanced by the low levels of public confidence in both the financial institutions and the financial system as a whole. This has also been supported by Estelami (2012) who asserted that lack of consumer trust and confidence in the financial service providers is an inherent characteristic of many financial service transactions and securing a sense of mutual trust between financial institutions and consumers presents a challenge for financial services marketers. Alao, Diyaolu and Afuape (2014) also concur that the issue of public trust and confidence in the financial system calls for possible changes to the marketing paradigm in the financial services sector.

Unique Aspects of Financial Services Marketing: According to Estelami (2012), financial services marketing is a unique and highly specialised branch of marketing which makes selling, advertising, pricing and distribution of financial service products far more complex than that of consumer goods. It should be of note that before financial service providers can successfully device strategies for effective marketing of financial services, there is need to appreciate the distinctions between marketing of financial services and marketing of consumer or industrial goods. Jan (2012) also concurs that services are different from tangible consumer goods and hence require different marketing frameworks and identified Heterogeneity, Inseparability, Intangibility and Perish- ability as the specific characteristics which make services marketing a unique specialisation. Swankie and Watson (2006) also identified four fundamental differences between marketing of financial services and marketing of consumer goods that is Fiduciary Responsibility, Intangibility, Inseparability and Lack of Standardisation (Heterogeneity).

Developments in the Financial Services Sector: According to Freedman and Goodlet (1998), the rapid pace of these changes has left financial service providers struggling to determine the appropriate strategic direction for future development and marketing of financial services. According to La Croix et al (2002), in considering the current and future trends that are likely to have a significant bearing on the shape of the financial services industry, two (2) criteria are important:

- **Relevance** that is identification of trends that actually have a bearing on the revolution of the financial landscape.
- **Predictability and permanence** that is identification of trends which have a high probability to continue having significant bearing on the financial services sector.

This entails that financial service providers in Zimbabwe have to be in a position to identify the key predictable market trends relevant to the Zimbabwean financial sector and its operating environment.
In a slightly different analogy, Grais and Kantur (2003) proposed that there are three (3) driving forces to change that is financial liberalisation, technological developments and market innovation in response to demand for financial services. In addition however, these driving forces induce four major trends in the financial landscape that is disintermediation, institutionalisation, modernisation and globalisation. According to Grais and Kantur (2003), the driving forces have led to profound changes in the financial services sector and contributed to its ability to offer more diverse products. In turn these trends have affected the driving forces influencing liberalisation and institutional reforms as well as the adaptation of new technologies thereby inducing further creativity on the part of financial institutions. This notion has also been supported by La Croix et al. (2002) suggesting that there exists a relationship between emerging trends and the three major forces.

Emerging Market Trends: Owing to liberalization and deregulation reforms in the financial services sector, the previous boundaries between different types of financial institutions are being blurred (Freedman and Goodlet, 1998; Ekerete, 2005; Joseph, 1997). According to Joseph (1997), liberalisation facilitated by technological innovation has led to increased competition in the financial services sector spawning new financial instruments, new financial institutions and the blurring of barriers between different classes of financial institutions. Highlighting the distinguishing features between financial institutions, Ekerete (2005) argued that all financial institutions offer complementary rather than competing products but however the distinctions are more theoretical rather than practical and there seems to be a narrowing down or removal of the line of demarcation between them. Estelami (2012) adds that the financial landscape is becoming highly competitive making the marketing of financial services a highly unique discipline. Deregulatory measures have allowed financial service providers to cross product market boundaries which had partitioned the market for decades. This has contributed to the increased industry concentration, consolidation and mergers between and among financial service providers and market power is being concentrated in many financial service categories hence the need for focused and well calculated marketing strategies to ensure long term success and optimisation of marketing capabilities (Estelami, 2012).

The financial services sector has in recent years been challenged by the emergence of new competitors from both within and outside of the financial services sector. Estelami (2012) asserts that there has been a significant shift in the type of competitors that traditional financial service providers have to compete with today as insurance companies, telecommunication companies through mobile money which were primarily providers of predefined financial products are now encroaching the boundaries and can provide products related to investment, time deposits, retirement planning and other services traditionally provided by banking and investment institutions. In concurrence, Joseph (1997) asserts that increased competition has been spread fairly rapidly within the banking sector and between banks and non-bank financial institutions. Consequently, due to this intensified competition, financial institutions have been subjected under increasing pressure to embrace financial innovation especially in terms of new business models, a new range of products and institutions resulting from the merging of business among various financial institutions (most notably banking and insurance) to offer a new range of financial services (banc assurance).

Technology: The process and technologies for providing financial services is undergoing revolutionary change Estelami (2012). This recent technology boom has created a digital age which has had a significant impact on the ways in which financial services are structured, provisioned and delivered to the customer (Kotler and Armstrong, 2012). According to Freedman and Goodlet (1998), the most important factor propelling change in the financial services sector has been technological developments especially those in information processing, management and financial services delivery. In addition, increased adoption of Information and Communication Technology in the financial sector has dramatically increased access to the service offerings and financial information and this has had a profound impact on the financial services sector and the old adage of traditional branch banking has been slowly replaced by the extended or 24 hour availability of financial services (La Croix et al., 2002). According to Farquhar and Meidan (2010), the growing use of technology in the delivery of financial services has led to growing customer confidence in the consumption of technology based financial service products and has promoted the globalisation of financial services. This has in turn led to a shift in the balance of power between financial service providers and consumers as customers gain confidence both in understanding financial offers and realising that the competitive environment provides extensive choice.

Consumer Demographics: According to Once (2000), changes in the population structure and composition affect the quality and attributes of consumers as the beneficiaries of banking services and products. In a different light, Freedman and Goodlet (1998) argue that changing consumer demands have not been an important factor in driving changes in the financial services sector but rather consumers have adjusted their behaviour in response to innovations in financial services and instruments initiated by financial service providers. Also, according to Alao, Diyaolu and Afuope (2014), the issue of market fragmentation has greatly influenced the dynamism of the competitive landscape and customer base of individual banks. Estelami (2012) adds that there is mounting evidence that financial service markets are challenged by a highly fragmented consumer base characterised by high consumer debt, rising bankruptcy rates, demographic shifts and diverse income owing to increased formal unemployment hence financial services designed to serve these consumers may need to become more diverse in order to keep up with the market's increased fragmentation. Henceforth, banks and other financial institutions have to grapple with different issues of market fragmentation which include demographic shift, social status shift, population shift, loyalty shift among others, to design more tailor made financial services that keep up with increasing degree of market fragmentation and consumer sophistication.

3. Methodology

The study primarily adopted a descriptive research design as this research seeks to draw new insights on the impact of emerging market trends, determined by the changing nature of competition, technological advancements and changing customer demographics, on financial service marketing in Zimbabwe. The research focused on four (4) main categories of financial institutions in Zimbabwe that is banking institutions, insurance companies, asset management firms and microfinance institutions. The focus was on eighteen (18) operational banking institutions and one hundred and forty seven (147) microfinance institutions in Zimbabwe. The population also comprised (15) asset management firms, twenty seven (27) registered short term insurance companies in Zimbabwe.

Sampling Design: The research sample comprised of managers of financial institutions and marketing personnel. Stratified random sampling was adopted for the research in order to cover the scope of financial service provision in Zimbabwe and ensure better representation of the whole population. In that regard, the target population was divided into four (4) strata as follows:

Table 1: Total Sample Size

Financial Institutions Category	Number of Respondents
Banking Institutions	10
Insurance Companies	10
Microfinance Institutions	10
Asset Management firms	5
Total	35

Source: Raw Data

Data Types and Sources: Self-administered questionnaires and personal interviews were used to collect primary data from the management and marketing personnel of financial institutions. Primary data enabled the collection of up to date data directly from the experts in the field which was relevant to the specific requirements of the research thereby enhancing the objectivity of the research. However, primary data collection demanded a lot of input from the researcher in terms of questionnaire distribution, conducting interviews as well as obtaining feedback from the respondents. Secondary data was obtained largely through desk research and the researcher consulted a diverse range of data sources which included online publications, journals as well as Reserve Bank of Zimbabwe (RBZ) reports and publications. These sources provided a detailed insight into the subject matter under study and aided in providing vital information for designing the questionnaires for the research. The use of secondary data enabled comparisons and analysis of past trends which aided the researcher in the interpretation of collected data. However, it was a daunting task to filter relevant information from the large volumes of data as some of the detail failed to meet the exact requirements of the research. Also, there was no control over the procedure for collecting, analysing and interpreting the data which compromised the objectivity and accuracy of the data.

Model Specification: The research adopted the Spearman Rank Correlation Coefficient to analyse the impact of emerging market trends as measured by Competition, Technology and Consumer Demographics on the marketing of financial services as measured by the key marketing mix elements (Product, Price, Promotion and Place). The model was selected on the basis of its ability to measure the degree of association (correlation) between two sets of variables that is competition, technology and consumer demographics on one hand and product, price, promotion and place on the other. In addition, the Spearman Rank Correlation Coefficient uses ranked data to determine the degree of association or correlation between two sets of variables hence an appropriate choice for the study considering the nature and type of data required for the research. The model made use of primary data collected through the self-administered questionnaires. In line with previous studies carried out by Ekerete (2005) and more recently by Alao, Diyaolu and Afuope (2014), the model adopted by the researcher is represented by the following formula:

$$\boldsymbol{r = 1 - \frac{6\sum d^2}{n(n^2 - 1)}}$$

Where r = Correlation Coefficient (Spearman rho)
d = Difference between ranked values
d^2= Square of the difference
$\sum d^2$= Total of squared differences
n= Number of paired variables or observations

The critical value (t) (representing r at 0.05 confidence level) is used to test the significance of the r value.
The researcher used Stata 12 to estimate the parameters of the model in respect to reliability and multi-collenearity. Necessary measures were taken to address irregularities in the model variables. Error tests involved the elimination of outliers and omitted variables (resulting from data entry errors by the researcher) which could have caused misleading inferences and distorted the findings of the research.

4. Results and Discussion

The research started by looking at Emerging Market Trends and their Impact on the Uptake of Financial Services in Zimbabwe and the following is the discussion of each.
Changing Nature of Competition: Respondents were requested to highlight the extent to which the changing nature of competition has affected the uptake of financial service products in Zimbabwe in relation to increased competition between financial institutions, removal of barriers to entry in the industry, entry of non-regulated financial institutions, increased consolidation between financial institutions as well as the blurring of boundaries or demarcations between financial institutions. Arguments by Freedman and Goodlet (1998) where they stated that the rapid pace of changes in the market was creating a situation where financial service providers were struggling to determine the appropriate strategic direction for future development and marketing of financial services have proven to be an interesting precursor in light of the current study's findings. The findings of the study show how in varying degrees such factors as the changing nature of competition, increased competition between financial institutions, removal of barriers to entry in the industry, entry of non-regulated financial institutions, increased consolidation between financial institutions as well as the blurring of boundaries or demarcations between financial institutions have reconfigured the way financial service products are developed and marketed.

The findings of the research indicate that the removal of boundaries between financial institutions has affected to a great extent affected the uptake of financial services in Zimbabwe as indicated by a high mean of 4.59 and a low standard deviation of 0.74 which is indicative of the high significance of the impact as banks can now offer insurance, microfinance and investment products while microfinance banks can now offer microfinance services and accept deposits from customers. These results concur with Estelami (2012) who asserted that there has been a significant shift in the type of competitors that traditional financial service providers have to compete with today as insurance companies, telecommunication companies through mobile money which were primarily providers of predefined financial products are now encroaching the boundaries and can provide products related to investment, time deposits, retirement planning and other services traditionally provided by banking and investment institutions. The majority of the respondents also concur that increased competition between financial institutions, the entry of new financial institutions and increased consolidation between financial institutions particularly banks and insurance companies to provide an integrated service have affected to a considerable extent the uptake of financial service products in Zimbabwe. This is supported in literature by La Croix et al. (2002) who highlighted that the opportunity for choice delivered by new entrants has generally increased the power of the consumers evidenced by growing resistance to the product and service fee structures, decreasing loyalty to primary providers as well as acceptance of new traditional brands and propositions.

In addition, the entry of non-regulated financial institutions such as Ecocash, Telecash and One Wallet have also had a significant impact on the uptake of financial services in Zimbabwe. However, the significance of the impact is relatively lower than the other factors relating to the changing competitive landscape as indicated by a higher standard deviation of 0.9885 and a lower mean of 3.85 as shown in table 4.10 below. These results are in line with Levin (2013) who postulated that non-regulated financial institutions in particular mobile money service providers have been able to alter the financial landscape and have become a dominant payment system in Zimbabwe by moving beyond offering peer to peer money transfer services to become a multifunctional payment platform which has been able to compete effectively with banks and other financial institutions in the financial sector. Also, according to Mbiti and Weil (2011) the explosive growth in mobile money mirrored by the number of agents and service locations has changed the competitive landscape in the financial services sector and has enabled it to compete with and replace modalities such as cheques and other traditional payment systems. This highlights the significance of the impact of non-regulated financial service providers on the financial landscape and how they have altered the extent of service provision as well as the nature of competition in the financial services sector.

Table 2: Impact of Competition on the Uptake of Financial Service Products

Variable	Obs	Mean	Std. Dev.	Min	Max
Increased competition	27	4.222222	.8006408	2	5
New FIs	27	4.074074	.8738036	2	5
Non-regulated FIs	27	3.851852	.9885383	2	5
Industry consolidation	27	4.074074	.957799	2	5
Boundaries	27	4.592593	.7472647	2	5

Source: Stata 12

Technological Innovations: The study also sought to establish the extent to which technology has affected the uptake of financial service products in Zimbabwe in relation to increased consumer access to information on services provided by competitors as well as how technological innovations such as internet banking, mobile banking and elimination of branch banking through the use of ATMs have affected the uptake of financial service products by consumers. Table 3 below summarises the findings

Table 3: Impact of Technological Innovations on the Uptake of Financial Service Products

Variable	Obs	Mean	Std. Dev.	Min	Max
Innovations	27	4.592593	.5723944	3	5
Information access	27	4.37037	.564879	3	5

Source: Stata 12

Table 3 above shows that technological innovations and increased access to information on financial services provided by customers have to a great extent affected the uptake of financial service products in Zimbabwe. In the same vein, Ekerete (2005) who suggested that the influence of modern technology on marketing of

financial services has revolutionised bank services delivery and that there is a significant positive relationship between modern information technology adoption and effective marketing strategy.
Also, the increased adoption of technology by financial institutions has increased consumer access to financial service products as well as to information on financial services provided by other financial institutions in the industry. Farquhar and Meidan (2010) also share the same view that there is a shift in the balance of power between financial institutions and consumers as customers gain confidence in the adoption of technology based financial services as well as understanding financial services and realising that the competitive environment provides extensive choice. In concurrence, Harrison and Estelami (2014) propounded that the ease of access helps enhance the ability of the consumers to tap into critical information for efficient financial decision making thereby increasing the power of the consumers to choose between service offerings and the financial service providers.

Changing Consumer Demographics: The study also set to investigate how changing consumer demographics in relation to increasing unemployment (growing informal sector), market fragmentation (increasing gap between the rich and the poor) as well as consumer trust and confidence in the financial institutions have affected the uptake of financial service products in Zimbabwe.

Table 4: Impact of Changing Consumer Demographics on the Uptake of Financial Service Products

Variable	Obs	Mean	Std. Dev.	Min	Max
Unemployment	27	4.407407	1.118352	1	5
Market fragmentation	27	3.962963	1.159625	2	5
Trust and Confidence	27	4.814815	.4833407	3	5

Source: Stata 12

Research findings indicate that consumer trust and confidence in the financial institution has a significant impact on customer perception about the services provided by the institution as signified by a low standard deviation of 0.483 and hence significantly affects the uptake of financial service products. These results are in line with Estelami (2012) who stated that securing a sense of mutual trust between financial institutions and consumers remains a continuing challenge to the practice of financial services marketing as lack of consumer trust and confidence is an inherent characteristic of many financial service transactions. In addition, market fragmentation has to a considerable extent affected financial services marketing and the uptake of financial services in Zimbabwe as signified by a lower mean of 3.96 and a higher standard deviation of 1.16. However, the significance of this impact cannot be undermined as this has had a profound influence on the way financial service product are structured and provided. This coincides with Alao, Diyaolu and Afuope (2014) who highlighted that the issue of market fragmentation has greatly influenced the dynamism of the competitive landscape and customer base of individual banks. Estelami (2012) also adds that financial services designed to serve these consumers may need to become more diverse in order to keep up with the market's increased fragmentation.

Also, the majority of respondents agreed that increased unemployment and growth of the informal sector has to a great extent affected the structure and nature of financial service products provided by financial institutions and has significantly affected the uptake of financial services in Zimbabwe. According to ZEPARU and BAZ (2014), the Zimbabwean economy has undergone significant structural transformation in the past decade that has inevitably propelled the growth of informal sector with an increasing number of the active labour force being absorbed in the informal sector. Hence, the growing trend in formal unemployment calls for financial service providers to develop new financial services and proffer new marketing mechanisms that are best able to serve this emerging class of business clientele. These findings are line to those of once (2000) that highlighted that changes in the population structure and composition affect the quality and attributes of consumers as the beneficiaries of banking services and products.

Impact of Emerging Market Trends on the Marketing of Financial Services: The research adopted the Spearman Rank Correlation Coefficient to determine the relationship between emerging market trends and marketing of financial services in line with previous studies by Ekerete (2005) and Alao, Diyaolu and Afuope (2014). This two variable regression model used the rankings of the explanatory variables that is product, price, promotion and place (MFS) on one arm and competition, technology and consumer demographics (EMT) on the other as determined by twenty seven (27) financial institutions in Zimbabwe (see Appendix).

Testing of the Hypothesis
H0 = There is no significant correlation between emerging market trends and marketing of financial services.
H1 = There is a significant relationship between emerging market trends and marketing of financial services.

Decision Rule: The spearman rho (r) assumes value from -1 indicating negative correlation to +1 indicating positive correlation between the explanatory variables. If the spearman rho is greater or equal to r at n=27 (0.05 confidence level) reject the null hypothesis and accept the alternative hypothesis. On the other hand, if the r value is less than the critical value (t), accept the null hypothesis (Alao, Diyaolu and Afuape, 2014).
Computation of the Spearman Rank Correlation Coefficient

Figure 1: Spearman Rank Correlation Coefficient

```
spearman rankmfs rankemt, stats(rho obs p) star(0.05)

 Number of obs =      27

Spearman's rho =       0.1109



Test of Ho: rankmfs and rankemt are independent

    Prob > |t| =       0.5819
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Source: Stata 12

Figure 4.2 above shows the computation of the Spearman Rank Correlation Coefficient in Stata 12. The r value of 0.1109 implies a weak positive correlation between emerging market trends as measured by competition, technology as well as consumer demographics and marketing of financial services measures in terms of the extent to which financial institutions in Zimbabwe apply the marketing mix variables in their marketing effort. However, since the r value of 0.1109 is less than the critical (t) value of 0.5819 the null hypothesis is accepted that is there is no significant correlation between marketing of financial services and emerging market trends. Although a weak correlation exists between these explanatory variables, the significant impact of competition, technology and consumer demographics on financial services marketing cannot be undermined.

5. Conclusion and Recommendations

In light of the above, the following conclusions can be drawn from the study:

- The research concludes that new service development is important for the success of the organisation. However, it should be centred on the needs of the customers as financial institutions in Zimbabwe serve a diverse range of customers which include civil servants, corporate, SMEs and the largely increasing informal sector. Hence financial products aimed at serving this diverse clientele may need to be customised or tailor made to suit the needs of each individual customer for successful marketing of financial services.
- The research also concludes that the era of armchair banking in the Zimbabwe financial services sector is over. Increased competition and increased consumer access to financial information on products provided by competitors have led to shifting demand for services and financial products on the part of retail customers. There is constant need for financial institutions to promote financial service offerings through sales promotions, personal selling and direct marketing as well as to promote consumer awareness of products provided by the financial institutions through providing organisational material such as pamphlets and brochures.

- There has been dramatically increased access to offerings of the industry and information about these offerings through technological innovation particularly internet banking, mobile banking, mobile money and increased adoption of technology based financial service products by consumers. This has led to a balance of power between financial service providers and consumers as consumers have greater autonomy to choose between financial service offerings and financial service providers. This has been enhanced by consumers growing resistance to traditional brands and decreasing loyalty to primary service providers as well as acceptance of new financial propositions (mobile money).
- Also, the study concludes that non-regulated financial institutions such as EcoCash, One Wallet, NetCash and TeleCash have made inroads into the Zimbabwe financial services sector and have reduced the market share that traditional banks hold.
- Though conjecture and varying literature imply that there is a significant relationship between marketing of financial services and emerging marketing trends in terms of competition, technology and consumer demographics results from the study indicate that a weak relationship or correlation exists. Research results indicate that there are other factors which affect development and marketing of financial service products in Zimbabwe such as availability of funds, cost of operations, types of customers served by the institution, profitability of the organisation, types of services provided and size of the institution. Therefore, this entails that marketing of financial services may not be necessarily a function of competition, technology and consumer demographics as other factors may have a direct impact on the extent to which financial services are developed and marketed which may not necessarily be related to these emerging market trends.

Recommendations: In light of the above conclusions, the following recommends were put forward;

- Financial service providers should design and tailor new business models to suit the emerging market environment and emerging class of business clientele.
- The entrance of new players in the market, the growing informal sector at the expense of the formal financial sector and the emergence of new technology have paved way for the need to develop and market new financial service products. Therefore, financial service providers should continually embrace innovative strategies so as to shape banking products to fit consumers changing financial needs.
- Consolidation and merging of financial institutions to provide complementary service products for example microfinance and insurance companies can consolidate to sell short term insurance to the informal sector, individuals, SMEs which remain locked out of the formal financial system. This can also be adopted as an effective measure to tap into the resources circulating outside the financial system and bring the informal sector under the ambit of the formal financial system.

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Journal of Economics and Behavioral Studies (JEBS)
Vol. 8, No. 6, December 2016 (ISSN 2220-6140)

The Impact of the "Buy Zimbabwe" Campaign on Performance of Zimbabwean Companies in the Retail Sector

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Abstract*:* The majority of the Zimbabwean retail companies were in the collapsing mode over the past ten years. This miserable predicament necessitated the government to craft locally-driven remedies, and one of them was the "Buy Zimbabwe" campaign. This prompted the researcher to assess the impact of the "Buy Zimbabwe" campaign on the performance of the Zimbabwean firms. The study objectives were to establish the impact of "buy Zimbabwe" campaign on demand for local products and factors affecting demand for local products. Furthermore to establish if a company participating in the "buy Zimbabwe" campaign performs better than non-participating firms, earnings per Share was used in the inter-firm performance comparison. The descriptive research design was employed, although the research was both quantitative and qualitative in nature. The classical linear multiple regression analysis was used to establish and explain the relationship between company performances. The results indicated a positive linear relationship between "buy Zimbabwe" campaign and company performance in case of those that adopted Buy Zimbabwe, whereas in case of those that did not adopt Buy Zimbabwe there was a negative linear relationship. The results also discloses that quality and affordability of the product are the most influential factors affect demand for local products and buy Zimbabwe campaign was regarded as the least factor to be considered by consumers. Results from this study point towards the need to put in place supportive policies for the "buy Zimbabwe" campaign to be effective.

Keywords: *Buy Zimbabwe, retail sector, local products, competitiveness, customer loyalty*

1. Introduction

Zimbabwe is a developing country which is on its path to economic recovery and this has been noticed by hardworking towards its goal of becoming a middle income country by 2025 (Ibrahim forum facts & figures report, 2012). Some of the observable efforts done by the Zimbabwean government towards achieving this goal are crafting and amending policies that can prove to be investor-friendly and also promote the consumption and production of local products. For instance, the "buy Zimbabwe" campaign is one of the economic policies that were launched by the Zimbabwean government in 2011 in a bid to resuscitate the performances of the Zimbabwean companies through promoting the consumption and spearheading production of locally produced products (Newsday Zimbabwe, 2015). It is noted in the extant literature that 'buy local' campaign, stimulates entrepreneurship knowledge and enhance the utilization of country's resources efficiently to its fullest and also encourage economic growth, employment creation and necessitates local brand to stand against competition (Davila, 2003).

Nevertheless, the materialization of the Zimbabwean goal of becoming a middle class nation by 2025 is sceptical because of the influx of foreign products to sustain the local market at the expense of local products. 20 out of 53 African countries have already achieved the "middle-income" goal. The major reason for them to attain this goal is largely attributed to their ability to foster the dependency on local production through national campaigns in promoting the consumption of locally produced goods and supporting domestic firms to produce competitive products, such as the South African "Proudly South African" campaign. In that same vein, Zimbabwean government has also initiated the concept of country orientation in a belief that locals may have a first preference for local products which has an ultimate effect in the company performance. Such orientation is based on the belief that the local customer's choice will be skewed towards the consumption of local products rather than cheap imports. Among the few suggested concepts, the first and dominant one is called the "Buy Zimbabwe" campaign. This initiative act as an inducement in the necessitating of Zimbabweans to be proud of their country's heritage including the consumption of local products that are produced in Zimbabwe in order to revive Zimbabwean companies. Demand for the local products is vital in every sector of the Zimbabwean economy for both profit making and non-profit making organization. Overlooking of the essence of demand for local products in any organization can lead the firm to survive by fits-and-starts or even to shut down its operations, since demand for the product determines the viability of any firm.

Statement of the problem: The dampened domestic demand has continuously contributed to suffocation of local retail firms. Firms in the retail industry, like any other companies in other sectors their mission is to gain a huge market share through producing superior products which meet the customer demand, unfortunately they are failing to stand against stiff competition that is emanating from both high and low quality imports. In the absence of local demand, the sector is prone to be outsold by foreign firms leading it to suffocate up to a state of closure; therefore this has prompted the researcher to carry out an investigation on the impact of the "buy Zimbabwe" campaign on performance of Zimbabwean companies in retail industry.
Research objectives:

- To determine whether the companies participating in the "buy Zimbabwe" campaign are performing better than non-participating firms.
- To establish the effect of the "Buy Zimbabwe" campaign on the demand of locally produced goods in retail sector.
- To establish the factors that affect the demand of locally produced goods in retail sector.

Research questions:

- Do the companies participating in the "buy Zimbabwe" campaign performing better than the non-participating firms?
- What are the effects of the "buy Zimbabwe" campaign on demand of locally produced goods in retail sector?
- What factors affect the demand of locally produced goods in retail sector?

Statement of hypothesis:
H_0: There is no relationship between the "buy Zimbabwe" campaign and company performance.
H_1: There is a relationship between the "buy Zimbabwe" campaign and company performance.

2. Literature Review

By engaging in 'buy national campaigns,' companies are encouraged to improve production process, efficiency distribution of labour to increase output in response to consumer market. Breyfogle et al. (2001) supports that, through 'buy local' campaigns, companies create demand for their products and enhance business growth by improving productivity to meet the ever-growing customer needs and wants, at the same help to fight reducing the underutilization of resources such as labour, thus enhancing labour productivity. Allak & Svadasan (2009) argues that market reforms such as 'buy local' campaign have positive influence on companies' productivity. "Buy local" campaign calls for government to craft and implement policies that encourages local companies to participate in the campaign to produce goods and services that meets international quality standards. This enables the firms who participate in the local campaigns to greatly minimize the production of defective products, thus ascertain efficiency and productivity (Sheth and Sisodia, 2002). In support, Neven et al. (1991) indicate that, the primary objectives of the "buy local" campaign is to enact laws that will enhance the production of local goods and services without negatively affecting the consumer choice. This means that the companies involved in 'buy local' campaign can be able to produce high quality products efficiently without exploiting consumers, consequently productivity is inevitable to firms participating in local campaigns rather than as non-participating firms which may operate outside of the defined quality standard of production.

Cost competiveness: Allak & Svadasan (2009) states that, any local campaign that is designed to boost demand of locally produced goods contribute to the reduction in the production cost per unit for firms involved in the 'buy local' campaign, through grabbing the chance to exploit the economic efficiency advantages resulting from economies of scale. As a result, companies that do not participate in local campaigns have very slim chances of expanding due to the stagnant market share; this implies that it takes longer for firm to start enjoying economies of scale in order to be cost productive. An Neven et al. (1991) point out that, any entity which enjoys economies of scale is characterized by engaging in the predatory pricing system. The predatory pricing system is whereby a firm can simply under-price its products to safeguard itself from rivals ultimately enhancing quantity demand which in turn necessitates the firm to increase output. Jaffe & Eugene & Martinez (1995) assessed the environmental effects and costs of the transporting products in the United Kingdom, found out that companies that are engaged in the 'buy local' campaign enjoys large number of customers who prefers to purchase products from the home-grown firms and as a result they incurred less transport costs as compared to non-participating firms which sourced raw materials from countries like New Zealand.

Sales Revenues: The 'buy local' campaign creates a patriotic bias that stimulates customers to purchase locally produced products, necessitating an increase in sales revenue of the companies engaged in such a campaign (Graham & Cameroon, 2000). Wang & Lamb (1983) advocates that promotions such as 'buy local' campaign results in company product differentiation, generation of brand loyalty, and therefore permitting the firm to attach high prices and the result is increased sales revenues. This means that by engaging in the 'buy local' campaign necessitates the businesses to build customer loyalty within a short period of time which have a positive correlation with sales revenue, hence it is difficult for a firm to build customer loyalty within a short period in order to boost sales revenues without a massive campaign. However, Neven et al. (1991) claim that the 'buy national' campaigns have an adverse impact on sales demand for the companies engaged in the local campaigns since they increase prices of domestic products consequently leading to reduction in sales revenues. Research carried out in Portland, Oregon, USA by Neumark & Wascher (2007) found out that after the 'buy local' campaign was launched there was a significant increase in sales revenue of those firms who participated in the 'buy local' campaign only. The 'buy local' campaign initiative triggered the consumers to purchase the products that were produced and promoted in Portland by so doing the firms increased their sales revenues.

Demand: According to Davila (2003), countries are engaged in the 'buy local' campaign mainly with the reason of boosting and promoting demand of locally produced goods. At the same time, they would be creating consumer awareness of the quality of various types of products that are produced in the local economy in particular. Wang and Lamb, (1983); Jaffe and Martinez, (1995) opine that citizens prefer products from their own origins. According to Posnikoff (1999), 77% of the South African consumers were actively searching for the products that are manufactured in South Africa after the 'proudly South African' campaign was launched.

Factors Affect Demand for Local Products:

Corporate Focus: Basavaiah & Velayudhan (2009) argue that the more the entity moves away from its main objective of serving the customer and produce products that are tailored to meet customer's preferences the harder it is for a firm to secure the local demand of its product. The capability of the firm to give full concentration on its core competencies necessitates a powerful relation between the retailer and customers thus enhance demand for the product as well as customer loyalty. Kent, Grazin & Painter (2001) highlights that the firm should concentrate on commodities that gives competitiveness and comparative advantages in order to be efficient and competitive in the market, and as a result the demand for locally produced products will be inevitable.

Customer alignments: According to Basavaiah & Velayudhan (2009), a systematic way of positioning company products with the available markets enables the firm to secure a large volume of clients and also to determine the right mix of the channels of distribution in order to improve customer relationships. Furthermore, Malik (2011) states that due to the availability of technological information and the ease accessibility of modern computers enables the entity to determine reliable customers' profiles and as a result build demand for local products.

Personality: Personal characteristics attributes such as life cycle, job conditions and age have an impact on the customers' purchasing behaviour towards local products. As individuals are getting older their tastes and preferences varies alongside. Buyers within the same category of age have a tendency to have common similarities in their purchasing behaviour (Solomon et al., 2002).According to Kotler (2002) difference in behaviour among the age groups impacts the attitudes or behaviours towards certain category or group of products or even the status of the brand with a change. Also occupation is another personal attribute that affects the consumption patterns of individuals (Kotler, 2002).

Disposable income: Disposable income according to Richard and Media (2014) is the relationship between earnings and the expenditure in the scheduled consumption. The increase in individuals disposable income leads to an increase in quantity demanded since it may stimulate impulse buying. The author points out that, low income earners marginal propensity to buy is likely to fall because a fall in disposable income also leads to fall in consumption of local products.

Customer loyalty: Basavaiah and Velayudhan (2009) define customer loyalty as the continuous commitment of the customers to the company's products as shown by the repetition in the purchasing and positive referral through the word of mouth. McBrearty (2011) states that, it is difficult to secure customer loyalty in a competitive environment where there is much needs to be done rather than offering discounts that is the retail loyalty of every competitor rather should offer more personalized shopping experience more and above rewards.

Product: Product is another crucial element of marketing mix and must be a central focus for every retailer. Ennew and Binks (1999) define product as any item that is delivered to the market for the purpose of acquisition, use or purchase to meet a need and a want. The way the marketing strategy is implemented may influence the consumers to buy the local products. Adjustment concerning the brand, packaging and also quality must be made by the marketer (Kotler, 2002). Therefore, packaging and also product quality must exclusively be suitable to meet the needs and wants of the targeted market.

Relationship between buy local campaign and company performance: According to Wilmshurst and Frost (2000) "buy local" campaigns enhance the company to be cautious to guarantee operations and performance acceptable to the society provided a growth in community awareness. The authors continue to argue that buy local campaign necessitate the company to devise strategies to improve companies financial performances that are prone to public domain such as earnings per share, hence suggest that there is an indirect relationship between company performance and "buy local" campaigns. In support, Haniffa and Cooke (2005) state that "buy local" campaign is like corporate social that can be employed to appease relevant public concern and also proactively legitimating strategies to gain continued cash inflows and to please investors through high earning per share. The authors articulate that there is a relationship between "buy local" campaign and company financial performance although, the relation can be weak. Narver (1971) done first study, empirically investigated the relationship between "buy local" campaign and financial performance and discovered that there was a relationship between "buy local" campaign and company's earnings per share. Nevertheless, Richard &Media (2014) discovered no relationship between buy local campaign and financial performance. Empirical results of impact of buy local campaign on financial performance such as earnings per share value in the short run, the findings have been mixed. Wright and Ferris (1997) found negative correlation between "buy local" campaign and earnings per share. However, Posnikoff (1997) found a positive correlation.

Knowledge Gap: Clear gaps in this research is the divided opinions on the contribution of "buy local" campaign on company performance as well as on demand for local products as some authors argue for it whereas others against it. This calls for clarity to shed off confusion. Majority of empirical evidence was mainly conducted in developed countries, therefore calls for researcher to see if similar results can be obtained from developing countries like Zimbabwe. Moreover, many authors highlighted the contribution of "buy local" campaigns in context of manufacturing sectors; this also needs clarity if it has same effect in the retail sector.

3. Methodology

In order to gather reliable data and to enhance effective analyses of data, researchers employed a descriptive research. Descriptive research design was employed so as to get reliable information for a large population. A combination of qualitative and quantitative approach was employed to gather information from the field involved factual elements that were established through descriptive and also inferential statistics. As Johnson and Onwuegbuzie (2004) state that, the main goal of the researcher to employ a mixed method approach (quantitative and qualitative) is to answer objectives and research questions that are qualitative and quantitative in nature. The descriptive research design used in this study was conducted in the form of a survey which was aiming to establish the impact of 'buy local' campaign on performance of Zimbabwean companies. This could make it simple to determine whether companies that adopted the 'buy local' campaign perform better than non-participating firms.

Zimbabwe as a country has countless companies grouped into heavy industry, medium industry as well as light industry. As a result, the sampling techniques were developed based on these stratifications. Out of these stratified industries in Zimbabwe, Graniteside light industry-Harare was randomly chosen for this study. The stratified sampling was employed to ascertain equal representation of several firms participating or non-participating firms in local campaigns across Zimbabwe. Gupta (2008) supports that stratified random sampling is the only sampling technique that enhances high level of accuracy from the representative of the business functions. The purposive sampling technique was then used to exclusively choose the company participating in the 'buy Zimbabwe' campaign and the non-participating from a pool of companies in Graniteside industry, in consonance to the intended group by the study. Based on this purposive sampling technique Ok Zimbabwe (Head Office) was chosen as typical company participating in the 'buy Zimbabwe' campaign, while Power Speed Electrical (Head Office) as non-participating company. The companies were also selected on the bases that they have been in existence for more than 4 years. The study population consisted of management and customers. The target population comprised 3 managers and 500 customers of company participating in the campaign (OK Zimbabwe), and also 3 managers of non-participating firms (Power Speed Electrical). The sampling fraction is found by dividing 50 (actual sample size) by 500 (total population size) to get a fraction of 1/10. Based on this fraction, the researcher picked 1 in every set of 10 customers that stepped into the shop until desired 50 numbers of respondents is obtained, this formula was applied to customers of Ok Zimbabwe only. According to Roscoe (1975) expresses that the sampling size more than 30, but less than 530 is regarded as enough to yield valid results. Gupta (2008) also states that sample size supposed to be at least 10%to minimize sampling errors. Below there is breakdown of target population employed on each company selected. The researcher employed closed-ended questions because of its inclusiveness in nature since they were premeditated to produce easily quantifiable data.

Company performance measurement variables definitions: This investigation used EPS as a proxy for comparing the performance of OK Zimbabwe (firm that is participating in the "Buy Zimbabwe" campaign) and Power Speed Electrical (firm that is not participating in the "Buy Zimbabwe" campaign).Earnings per share (EPS) is regarded as the best inter-firm performance comparison measure especially when comparing the firms that are listed on stock exchange and also not in the same line of business, that is, Power Speed Electricals' ordinary activities are inclined to trading of some electrical products and OK Zimbabwe is a departmental supermarket store. Taylor (2007) state that Earnings per share (ESP) is the ideal measure of company performances for listed companies even though they are not in the same line of business. ESP is the most preferred measure of inter-company performance especially that not in same line of production. In addition, Roscore (1975) also supports that ESP is the best indicator of business performance in the short run or long run.

Reliability of the study: The researcher formulated 53 questionnaires to assess the effect of "buy Zimbabwe" campaign on demand for local products. Each question was a five point likert items ranging from "strongly disagree" to "strongly agree". In order to ascertain the reliability of all questions in the questionnaire, Cronbach alpha was run on 15 questions.

Model for data analysis: In order to reduce the danger of understating the standard error and overstating the significance of regression parameters, the OLS multiple regressions was employed as suggested by (Greene, 2008).The dependent variable earnings per share (EPS) was regressed against four independent variables. All of the explanatory variables were measured simultaneously against the two EPSs. The following two equations, one for Power Speed Electrical and the other for OK Zimbabwe, were used to estimate EPS;

$$\boldsymbol{EPSPS = \beta_0 + \beta_1 PBZ + \beta_2 SR + \beta_3 EBITA + \beta_4 \mathrm{SP} + \beta_5 PR + \varepsilon_i}$$

$$\boldsymbol{EPSOK = \beta_0 + \beta_1 PBZ + \beta_2 SR + \beta_3 EBITA + \beta_4 \mathrm{SP} + \beta_5 PR + \varepsilon_i}$$

The following table is the interpretation of the notations used in the equations:

Table 1: the interpretation of the notations used in the equations

Variable	Interpretation
EPSPS	Earnings per Share for Power Speed Electricals
EPSOK	Earnings per Share for OK Zimbabwe
PBZ	Dummy variable (1) represents participation company OK Zimbabwe
	Dummy variable (O) represents non-participating Power Speed Electrical
SR	Sales Revenues
EBITA	Earnings Before Interest and Tax
SP	Stock Price
PR	Efficiency ratio
ε_i	Error term
β_0	Constant
β_1 - β_5	Coefficients

4. Findings

Effect of "buy Zimbabwe" on demand for local products: The research showed that the consumers are willing to buy local products if the "buy Zimbabwe" campaign effectively addresses their concern. 23 out of 43 consumers are willing to buy local products if "buy Zimbabwe" initiative considers their needs, therefore its crystal clear that the campaign can effectively influence their purchasing decisions. Similarly, Otto and Varner (2005**)** found that in Lowa, consumers were willing to purchase from firms they were already aware of via the 'buy local' campaign. The results were in line with Colorado survey which showed that the "buy local" campaign enhanced consumption of locally produced goods, for companies involved in the campaign (Neven et al., 1991).

Performance comparison Power Speed versus OK Zimbabwe: No significant difference was found between companies participating in "buy Zimbabwe" campaign and non-participating firm in terms of company financial performances since earnings per share of both companies are increasing although the increasing rate is different. As indicated by the results that OK Zimbabwe's earnings per share increased with a value of 0.26 from 2011to 2012, whereas Power Speed Electrical's earnings per share increased with an insignificant value of 0.2 from 2011 to 2012. Similarly, the findings of Graham & Cameroon (2000) who carried out a research in more than four industries, five years later after the campaign was launched in New Zealand, they reported that there was no significant difference between the firms adopted 'Buy New Zealand Made' Campaign in terms of performance in relation to other non-participating firms.

Table 2: Earnings per share as a performance measurement

Years	Earnings per share	
	OK Zimbabwe	**Power Speed Electrical**
2009	0.15	(0.24)
2010	0.17	0.08
2011	0.43	0.09
2012	1.00	0.14
2013	1.19	0.12
2014	1.76	0.17

Primary data

The study suggested that the significant differences between the adopter (OK Zimbabwe) and the non-adopter (Power Speed electrical) of "buy Zimbabwe" campaign, is that adopters tend to be more proactive, innovative and creative since they are much aware of the opportunities that are brought about by changing market environment. The 'buy national' campaign enhance the companies to come up with innovate ways in response to the market demand. However, non-participating firms harbour adverse attitudes towards "buy local" campaigns, and think there are still more barriers blocking them to engage in local campaigns such as high costs. Non-participating firms are slow in detecting the changes in consumers' tastes and also competitive environment that affect their business activities.

Factors affecting demand for local retail products: Key findings indicated that among several factors that affect demand for local products, quality was rated as the most important factor that triggers the consumers to purchase local retail products since 37 out of 43 respondents rated quality as "very important" or "important". Similarly, Davila (2003) a survey on consumers' tastes and preferences and found that quality was the most valuable product attribute by local households in Western countries. Price was also regarded as the second important factor that influences demand for local products since 32 out of 43 respondents rated price as important factor. Similarly, carried out on the educational institution; students in Bahrain showed that young consumers put emphasis more on factors such as product quality and price in order to buy local products (Almossawi, 2001). Therefore, the results of this study were congruent with that of (Almossawi, 2001).

Table 3: Regression results
OK Zimbabwe Model

Number of observations	48
F(5, 42)	6.04
Prob > F	0.0003
R squared	0.4181
Adj R squared	0.3488

EPS	Coef.	Std. Err.	t	P>t	95% conf. interval	
sr	-.0160314	.013586	-1.18	0.245	-.0434491	.0113862
ebita	.1094366	.0340048	3.22	0.002	.0408122	.1780611
pr	-.0977846	.0294934	-3.32	0.002	-.1573047	-.0382646
pbz	.5013889	.153058	3.28	0.002	.1925053	.8102725
sp	-.0494419	.0154519	-3.2	0.003	-.0806251	-.0182587
cons	1.178566	.9426652	1.25	0.218	-.7238096	3.080941

Source: Secondary data

From Ok Zimbabwe table above the coefficient of determination R^2 adjusted for degrees of freedom, of 0.4181. According to Gujarati (2004)R^2 ranges from 0. 2 to 0.6 for regression with dummy variables are considered goodness of fit. Basing on Gugarati's view the R^2 of this study is perfect since is within the acceptable range .Therefore, due to inclusion of dummy variables we are not much worried by low value of R^2 and the results from this regression are regarded as reliable.

$$EPS = 1.178566 + 0.5013889PBZ - 0.160314SR + 0.1094366EBITA - 0.0494419SP - 0.0977846PR$$

As the model above indicates that the coefficient of "buy Zimbabwe" campaign is 0.5013889 indicating a strong positive relationship between the buy Zimbabwe campaign and earnings per share(proxy for company performance) with a significant impact on company performance shown by t-value of 3.28.This implies that participating in the campaign can fully influence the performance of the OK Zimbabwe, although the performance of OK Zimbabwe can be affected by other factors such earnings before interest and tax shown by the coefficient of EBITA which is 0.1094366.The coefficient of earnings before interest and tax (EBITA) is 0.1094366 indicating a positive relationship, therefore it contributes towards the performance of OK Zimbabwe . This literally means that the participation of OK Zimbabwe in the "Buy Zimbabwe" campaign has a strong impact on the overall performance of OK Zimbabwe. This means OK Zimbabwe should constantly participate in the "buy Zimbabwe" campaign in order to boost its performance. As a result, we cannot completely dismiss the benefits of participating in the "Buy Zimbabwe" campaign by OK Zimbabwe, since the coefficient of variable "buy Zimbabwe" campaign (PBZ) is 0.5013889, which is greater than the coefficients of all variables such as sales revenues (SR), share price (SP) and productivity (PR) which are -0.160314, -

0.0494419 and -0.0977846, respectively. This might be as a result of the customers fantasizing the idea of purchasing locally produced goods from OK Zimbabwe since it has adopted the "Buy Zimbabwe" campaign.

Table 4: Regression results
Power Speed Electrical Model

Number of observations	48
F(5, 42)	3.87
Prob > F	0.0056
R squared	0.3154
Adj R squared	0.2339

EPS	Coef.	Std. Err.	t	P>t	95% conf. interval	
sr	-.0032993	.0150676	-0.22	0.828	-.0337069	.0271084
ebita	.0869333	.0363216	2.39	0.021	.0136334	.1602331
pr	-.0669282	.0310274	-2.16	0.037	-.1129544	-.0043123
pbz	-.3257877	.1861867	-1.75	0.087	-.7015277	.0499522
sp	-.0518753	.0181986	-2.85	0.007	-.0886015	-.0151491
cons	.8336077	1.011642	0.82	0.415	-1.207969	2.875184

Source: Secondary data

From Power Speed table above the coefficient of determination R^2 adjusted for degrees of freedom, of 0.3154. According to Gujarati (2004)R^2ranges from 0. 2 to 0.6 for regression with dummy variables is considered goodness of fit. Basing on Gujarati's view the $R^2$of this study is perfect since is within the range .Therefore, due to inclusion of dummy variables we are not much worried by low value of R^2 and the results from this regression are regarded as reliable.

$$EPS = 0.8336077 - 0.3257877PBZ - 0.0032993SR + 0.0869333EBITA - 0.0518753SP - 0.0669282PR$$

The model above shows that there is a negative relationship between the "Buy Zimbabwe" campaign and its overall performance as measured by the EPS, since the coefficient of PBZ (-0.3257877) with an insignificant impact on Power Speed Electrical's performance shown by value of 1.75. More so, sad noticing that it has a lower numerical value than sales earnings before interest and tax of (0.0869333). This shows that performance of Power Speed Electrical, as non-participating firm cannot be hinged on the "Buy Zimbabwe" campaign, hence allowing the researcher to conclude that Power Speed Electrical benefit insignificantly from the "Buy Zimbabwe" campaign. The above mentioned conclusion is reinforced by the fact that there are no local producers for electrical products.

The "buy Zimbabwe" campaign has significant impact on OK Zimbabwe's performance as shown by the regression results, which indicated by t-value of 3.28.Similarly, Enne & Binks (1999) produced same results in most developing countries when found that competitive policy such as "buy local" campaign had very significant impact on the performance of companies adopted the campaign. Therefore, : is accepted for the adopter of "buy Zimbabwe" campaign (OK Zimbabwe), since the results showed that there is a positive relationship "buy Zimbabwe" campaign and company performance indicated by large coefficient value 0.5013889. Nevertheless, the relationship between the non-adopter of "Buy Zimbabwe" campaign - Power Speed Electrical and "buy Zimbabwe" campaign, results produced indicated that there is negative relationship therefore, is rejected and the firm does not necessarily need to adopt the campaign. The coefficient of not participating in the campaign was -0.3257877.This reinforced by the fact that there are no local producers for electrical products in Zimbabwe.

5. Conclusion

The results shows that there is no much difference in terms of performance between participating and non-participating firm in buy local campaign and also found that adopting the campaign is a sacrifice since it comes at a cost; high cost of producing local versus low costs of importing. The results also indicated that "buy Zimbabwe" campaign contributes more to Zimbabwean company's performances, as the regression results indicated that there is a positive relationship between buy Zimbabwe campaign and performance (OK Zimbabwe) the adopter of "buy Zimbabwe" campaign . For electrical companies like Power Speed Electrical the results showed that there is a negative relationship between its performance and participating in "buy Zimbabwe" campaign, therefore there is no point for the company to engage in the campaign. The "buy Zimbabwe" campaign has the ability of increasing consumers' willingness to spend their monies on locally produced goods from firms engaged in local campaigns than before. From analysis point of view affordability and quality of the product are factors that influence consumers to buy local products. Therefore, the researcher suggested that affordability and quality of the product are the major drivers of consumers to buy local products thereby contribute to performance of Zimbabwean companies.

Recommendations: Recommendations to follow were amass after a painstaking understanding of the problem and assessing the data obtained from consultations with officials from OK Zimbabwe and Power Speed Electrical. The recommendations proposed are employable by retail firms, manufacturing firms, government, consumers and all interested industrialists for the fruitful reviving of Zimbabwean industries chocked by minimum levels of capital utilization. Obviously the recommendations are not adequate on their own but need commitment from the implementers and back-up from all stakeholders for them to be fruitful.

Creation of conducive business operating environment: The government should enact rules and regulations that represent progressive vision and insert effective trade measures such as customs duty of certain products that protect and promote local firms. The government should also enter into strategic alliances with other countries to provide opportunities for Zimbabwean companies to enlarge their market share by entering into foreign markets. The research would also suggest that the Zimbabwean government should put in place effective support and back-up programs in order to bear more fruits of "buy Zimbabwe" campaign like in other countries where the initiatives made remarkable contributions.

Areas for further research: In actual sense, there is no purpose to duplicate the study in other retail sector of Zimbabwe to establish if the outcomes of this study can be generalized across the whole nation. Even though, this research plays a role to better understanding in regard to the impact of buy Zimbabwe campaign on performances of Zimbabwean companies, further research is necessary in the following ways;
Firstly, since the literature has been inadequate in empirically explaining the effect of "buy local" campaigns on company performances in developing countries such as Zimbabwe, therefore further research is necessary. This consists: replication in other parts of Africa; manufacturing industries and other stakeholders; examination of evidence of causality using longitudinal studies; and studies of large and many representative samples.

Secondly, a large part of the sample in this research (50%) comprised of customers of generation Y (those born between 1982 and 1999), therefore the results may predominantly be relevant to this generation. As a result, it is more sensible to further research in generational differences' attitudes towards "buy Zimbabwe" campaign by making a comparison of generation X (born between 1965 and 1982) and Y.

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Journal of Economics and Behavioral Studies (JEBS)
Vol. 8, No. 6, December 2016 (ISSN 2220-6140)

Stock Market Volatility Using GARCH Models: Evidence from South Africa and China Stock Markets

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Abstract: This study looks into the relationship between stock returns and volatility in South Africa and China stock markets. A Generalized Autoregressive Conditional Heteroscedasticity (GARCH) model is used to estimate volatility of the stock returns, namely, the Johannesburg Stock Exchange FTSE/JSE Albi index and the Shanghai Stock Exchange Composite Index. The sample period is from January 1998 to October 2014. Empirical results show evidence of high volatility in both the JSE market, and the Shanghai Stock Exchange. Furthermore, the analysis reveals that volatility is persistent in both exchange markets and resembles the same movement in returns. Consistent with most stock return studies, we find that movements of both markets seem to take a similar trajectory.

Keywords: *GARCH, ARCH effect, JSE index, Shanghai Stock Exchange Composite Index*

1. Introduction

In financial markets, volatility forecasting is important in gauging the riskiness of an investment. Most options for pricing in stock markets rely on a volatility parameter. Furthermore, volatility is further used in portfolio management. Option traders, portfolio managers and other traders are more concerned with forecasting, and having accurate forecast can help them produce higher earnings or reduce risk in their investments. Usually in financial time series, there are periods where volatility is higher than in other periods. Nevertheless, a movement that has been observed is that volatility tends to increase during economic disturbances such as recessions, financial crises, and oil crises. Volatility is defined as the degree at which stock values or share price changes in the stock market. Poon & Granger (2005) refers to volatility as the spread of likely outcomes of an uncertain variable. Basically, volatility is linked to risk, although the two are different. The former indicates insecurity, and the later represents an unwanted outcome. Thus, volatility estimation has been at the cutting edge in a number of economic systems as a growth rate estimator. Levine (1991) stated that stock markets through the removal of impulsive liquidation of capital invested by firms accelerate economic development, which in turn raises firm liquidity and productivity. Over the decades, stock markets have been increasingly linked to national economies through capital flows, international trade, foreign direct investments, and advancement in technology (Chan et al., 1997).

Theoretical grounding of stock return volatility dates back to Black (1976) theory, which states that stock return volatility, is mainly caused by leverage effects. In other words, a decline in a firm's equity holding other things constant increases the debt/equity ratio of the firm, thus, inherently increasing its riskiness. Lack of conclusiveness in stock market returns has led to the founding of a number of models measuring leverage effects such as the GARCH. In general, volatility is important in the forecast of financial market volatility. Secondly, stock market volatility is a cause of interest to policy makers because the uncertainty in the stock market affects growth prospects, and creates insecurity, and in extreme cases, it acts as a barrier to investing (Raju & Ghosh, 2004). For example, the stock market collapse that took place in 1997 led to a decline in consumer spending in the United States. Thus, volatility can be regarded as a constraining factor through its effects on consumer expenditure and business expenditure. Therefore, consistent volatility can be a reflection of underlying economic problems. The more stable the prices are, the better and more efficient would be the pricing of securities, leading to an efficient allocation of resources.

The introduction of Autoregressive Conditional Heteroscedasticity model (ARCH) by Engle (1982) and Generalized ARCH model later called GARCH by Bollerslev (1986) contributed to advances in financial econometric modelling. These exemplars have been popular because of their capability to capture financial time series volatility clustering. Franses and Van Dijk (1996) noted that GARCH models could take care of time varying volatility over long periods, hence, providing a very good sample estimate. A number of studies have attempted to explain the occurrence or foresee the movements within the stock market in order to test if the efficient market hypothesis holds. This means a number of studies have been devoted to examining if whether stock prices fluctuates excessively due to changes in fundamentals or some factors such as bubbles, incomplete information to name a few. One study to note was done by Chen, Roll, and Ross (1986) when they tried to explain the stock price volatility using changes in fundamentals. One of the findings of the study was that, although stock market index explained a large portion of the stock returns variability, its effect or influence was weak in comparison to changes in economic variables. Hence, the conclusion was that stock returns are determined by economic factors.

In Africa, stock markets are mostly affected by inefficiency, lack of liquidity, capital constraint, small size, and protectionism. As a consequence, most studies investigating volatility in Africa focus on the biggest and most sophisticated stock markets, notable in countries like South Africa and Egypt. Nevertheless, subjects that have focused on the South African stock market are inconclusive on the persistence of volatility, or if whether the stock market reacts more to good or bad news. A study conducted by Hassan, Maroney, El Sady and Telfah (2003) found that ARCH and GARCH effects exist in African stock markets, with Nigeria and South Africa stock markets showing that politics has a significant impact on those markets. On the hand, Haque et al. (2004) found that there is no persistence of volatility in the South African stock market. However, Hassan et al. (2003) points that African stock market volatility increases with the good news because once good news appears, investors may flood in, thus, increasing volatility. On the contrary, Ogum (2002) claimed that negative shocks increase volatility in Africa major stock markets.

According to DSFin (2016), volatility signal opportunities for investors. For instance, in 2009, phases of high volatility were trailed by periods of excellent returns. Notwithstanding, in 2007, volatility indicators such as the volatility index (VIX) were all time low, not an indication of low risk, but calm before the storm. During volatility times in the market, there is a lot of negative news flow. As a consequence, most investors are prone to making emotional decisions regarding their investment. For example, during the first quarter of 2016 in South Africa (SA), Investec Asset Management saw 60 percent of domestic flows shift into offshore funds compared to the 40 percent in the prior quarter. On the other hand, Bloomberg (2016) reported that foreign investors began to turn back to the SA markets. This ensured an increase of stock of about US$136 million in the same quarter. Given the recent developments in the Chinese stock markets, excessive financial market volatility can stem from macro financial development in China (De Bock & de Carvalho, 2015). China is the biggest trading partner for South Africa with trade amounting to over US$60 billion (DTI, 2016). Previous studies have compared the Johannesburg Stock Exchange (JSE) to other stock markets, for instance, Samouilha (2006) found a positive relationship between the domestic returns and international market equity volatility using the JSE and the London Stock Exchange indices. Similarly, De Camara (2011) found spill over volatility between the JSE and the New York Exchange (NYSE), although there was a unidirectional link between those markets volatility shocks. On the other hand, Duncan and Kabundi (2011) indicate that equity is the most significant source of volatility spill over. De Camara (2011) explored the volatility transmission between the JSE and the FTSE All Share Index in Asia, and finds a contagion between these marketplaces. In support, Chinzara and Aziakpono (2008) find volatility linkages between South Africa and major world stock markets in the period 1995-2007.

While volatility in developed stock markets has been comprehensively researched, little has been done in terms of volatility in developing stock markets. Bekaert and Wu (2000) presuppose that developing markets are marked by higher sample average returns, returns that are more predictable, higher volatility and low correlations with developed market returns. These differences may have implications for a number of interested parties such as investors, policy makers to name a few. This study takes a different approach by comparing the volatility in South Africa and the Chinese stock market, such a route has not been taken in literature. Thus, it attempts to close the literature gap by forecasting market volatility in one of the biggest economy in the world and comparing it to the largest economy in Africa in an effort to identify any similarities or differences, which may aid in the allocation of investment resources. At the same time identifying the likely implications of volatility in both stock returns in the aforementioned countries. This is a huge contribution to the body of knowledge and financial fields. In addition, considering that China is one of the world largest economies in the world, any slowdown or changes in its stock markets are expected to bring about spillover effects to other systematic economies, trading partners especially in the emerging economies. Hence, it would add more value to literature to interpret how the Chinese stock markets perform when compared to a small economy like South Africa, which is one of the biggest in Africa. Previous studies (Bali, 2000; Shin, 2005; Floros, 2007; Samouilhan and Shannon, 2008; Olowe, 2009; Mishra, 2010) used augmented GARCH models to estimate volatility in stock markets. This study employs a basic GARCH model to estimate volatility clustering in both aforementioned markets. There is limited modification to the model used because the intention is to make a comparison of volatility clustering, as opposed to finding causality between the stock markets, a complex thing to do considering that China and South Africa are subject to different market forces. So, the primary purpose of this paper is estimate stock market volatility in South Africa and China stock markets.

The paper is organized as follows: Section 2 describes the data and methodology used, Section 3 discusses the empirical findings and interpretation of results, and Section 4 concludes the paper.

2. Data and Methodology

This study examines Africa's largest stock market along with the Chinese stock market. The sample used in this study consists of weekly national indexes representing market weighed price averages retrieved from the Johannesburg Stock Exchange and the Shanghai stock exchange. The national indices are built based on the same pattern and adjusted by the same formulae, making them comparable to one another. Each of the country indexes broadly represents stock composition in different countries. The study uses the Shanghai Stock Exchange Composite Index from the Shanghai Stock exchange; the second largest in Asia by market capitalization (Shanghai Stock Exchange, 2016). The Shanghai index is the most used weighed composite index that reflects the performance of the Shanghai Stock exchange. In South Africa, we use the FTSE/JSE Albi index a market capitalization weighted index composed of 99 percent of the total free float market capitalization of all listed companies on the Johannesburg Stock Exchange (Bloomberg, 2016). According to Chen et al. (1986) researchers are cautioned against using national stock indexes as exchange rate variations may heavily bias these indexes. However, considering that this study does not attempt any cross-country comparison in the analysis, the influence of these indexes makes them valuable for comparison or representative of national stock markets. The data we analyze in this paper are monthly-observed indexes for the stock markets in South Africa (JSE) and China. The data span is about 16 years, with the first observation being the month of January in 1998 and the last observation being October 2014. Data cleaning was done on the dataset by removing zero values for the South Africa public holidays, as well as in China.

The model: The ARCH and GARCH models are the most popular instruments for measuring volatility dynamics in financial time series. The GARCH model makes a current conditional variance dependent on lags of its previous variance. Nevertheless, one of the limitations is that it enforces symmetric responses of volatility to both negative and positive volatility market shocks (Bollerslev et al., 1994).

GARCH (1.1) model

$\sigma_t^2 = w + \alpha_1 \varepsilon_{t-1}^2 + \beta_2 {\sigma^2}_{t-1}$ ………………………………………….. (1)

Equation 1 is a function of variables with an error term. σ_t^2(Conditional variance) is one period ahead of forecast variance based on past information. $w$is a constant term; ε_{t-1}^2(ARCH term) is news about volatility from the previous period measured as a lag of squared residual from the mean equation.${\sigma^2}_{t-1}$ (GARCH term) is the last period forecast variance. The (1,1 in the GARCH refers to the presence of first order autoregressive GARCH term and the first order moving average ARCH term. An ARCH model is a special case of GARCH specification in form of GARCH (0,1). Additionally, by adding the lagged ε_t^2 terms to both sides of the above equation and moving σ_t^2 to the right-hand side, the GARCH(1,1) model can be rewritten as an ARMA(1,1) process for the squared errors:

$\varepsilon_t^2 = \alpha_0 + (\alpha_1 + \beta_1) \cdot \varepsilon_{t-1}^2 + v_t - \beta_1 \cdot v_{t-1}$ …………………………………(2)

where $v_t = \varepsilon_t^2 - \sigma_t^2$.

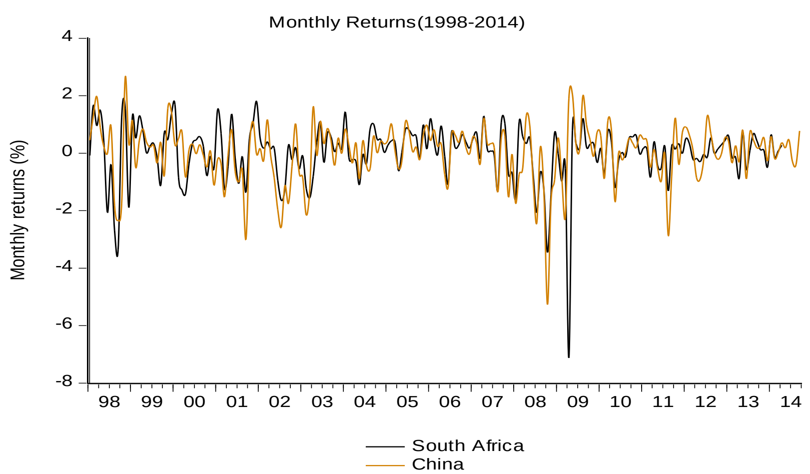
GARCH(1,1) is termed stationary in variance if $\alpha_1 + \beta_1 < 1$. This is the case were the unconditional variance of ε_t is constant and given by the following equation:

$var(\varepsilon_t) = \frac{\alpha_0}{1-(\alpha_1+\beta_1)}$……………………………………………………………(3)

The non-stationarity in variance is the case where $\alpha_1 + \beta_1 \geq 1$ and the unconditional variance of ε_t is not defined. Moreover, $\alpha_1 + \beta_1 = 1$ is known as a unit root in variance, termed as IGARCH. In this paper, two 2historic time series data sets were analysed to investigate the existence of volatility clustering between the JSE/ALBI Index and the Shanghai Stock Exchange Composite Index. Normality in the data was evaluated by the Jaque Bera, and stationarity with the Augmented Dickey Fuller (ADF) test.

Diagnostic Tests: We start with an inspection of the daily returns. The results in Figure 1 show that the movement of stock returns is both positive and negative. It can be noted that the returns fluctuate around the mean value, but close to zero. Larger fluctuations tend to cluster together followed by periods of calmness. This is the general norm with stock returns. Fama (1990) noted that stock returns tend to fluctuate thereby exhibiting volatility clustering, where large returns are usually complimented by small returns. To illustrate, Figure 1 plots the monthly stock returns of the JSE All index and Shanghai Stock Exchange Composite Index from 1998 -2014. The returns are articulated in percentage and are constantly compounded. Figure 1 illustrates that the returns do not exhibit independent and identically distributed (*i.i.d*). Volatility clusteringwas higher in the period of 2008-2009 when there was a global financial crisis. Cheteni (2014) noted that the JSE index was not *i.i.d* during the 2008-2009 period, and the returns were non linear and dependent. Similarly, Bollerslev, Engle and Nelson (1994) found that stock returns usually reflect a tendency of not being i.i.d.More often than not, it can be summed up that when stock volatility changes, stock returns tend to move the same way as well. In addition, returns tend to be leptokurtic as shown in Figure 1 kernel density graphs, were both returns show a distribution of having high peaks and having fat tails.

Figure 1: Stock returns from 1998-2014



Source: Researcher own data

Normality Tests: Figure 2 and 3 show the descriptive statistics for the stock returns for the countries under study. The data from all countries shows that skewness statistics are negative, indicating that the returns are not asymmetric and the distribution has a long left tail. In addition, the kurtosis is way over 3 suggesting that the underlying time series data is heavily tailed and sharply peaked when compared to a normal distribution. In Figure 2 the descriptive statistics show that the South African market observed mean monthly return of -0.078 %, way higher than the Chinese market which had -0.147%. The volatility measured by the standard deviation shows that the South African market had a deviation of 1 % and the Chinese market had 0.99% which was almost similar. This implies that both markets are almost similar in volatility. The more the market is volatility, the higher the chances of getting high rates of returns but with more risk. The Jarque -Bera statistics rejects the normality assumption. Hence, confirming the general norm that stock returns are not normally distributed and skewed.

Figure 2: Normality Test FTSE/JSE Index

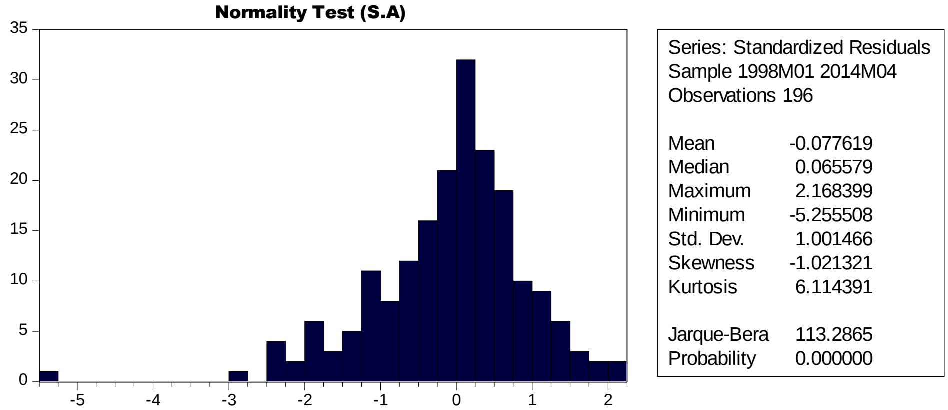
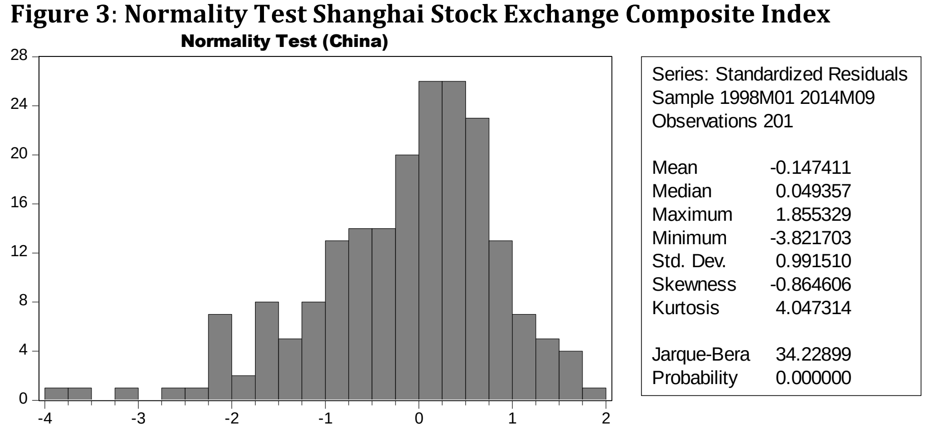


Figure 3: Normality Test Shanghai Stock Exchange Composite Index



Source: Researcher own data

Unit root test: We conduct an Augmented Dickey Fuller (ADF) test in order to test for stationarity. The results from the test show that the time series data is stationary. The ADF test statistics reject the null hyphotheis that there is an existence of a unit root in the return data series. The ADF statisticis less than the critical values.The null hypothesis is rejected against the one sided alternative ifthe test statistics are less than the critical. In this case, the test rejects the null hypothesis of a unit root in time series in all three levels of significance.Consequently, we reject that the time series is non stationary.

Table 3: ADF results

	South Africa JSE index	Chinese Shanghai Stock Exchange Composite Index
ADF statistics	-11.52722	-10.67004
	0.0000*	0.0000*
Critical values:		
1% level	-3.463924	-3.463067
5% level	-2.876200	-2.875825
10% percent	-2.574663	-2.574462
*MacKinnon (1996) one-sided p-values.		

Source: Researcher own data

Arch test: Both the *F* version and *LM*-Statistic are statistically significant, suggesting the presence of ARCH in the data series and stock returns. Both the FTSE/JSE index and the Shanghai Stock Exchange Composite Index produced similar results. The test was carried using the lag order of q=5. Table 2 presents the results of these tests.

Table 4: ARCH Test results

	South Africa (JSE index)	Chinese (Shanghai Stock Exchange Composite Index)
ARCH-LM Test	1.268447	4.626889
Prob. Chi-square	0.00381	0.00631
F-Statistics	0.247329	0.918703
Prob (F-statistic)	0.09407	0.04700

Source: Researcher own data

3. Empirical Results

In this section, we report the results of the GARCH model. The coefficients on both the lagged squared residual and lagged conditional variance in the Variance Equation are highly statistically significant. Furthermore, the sum of the ARCH and GARCH ($\alpha+\beta$) coefficients of both the JSE and Shanghai Stock Exchange Composite Index is very close to one. This shows that volatility shocks are quite relentless in both stock markets. This is normally the case in high frequency financial data. See Table 3 for a summary of the results. Large sums of coefficients imply that large positive and negative return will lead to future forecast of the variance to be a high for a prolonged period. The variance intercept 'c' is larger than the ARCH parameter for the JSE index. However, for the Shanghai Stock Exchange Composite Index the intercept term 'c' is over 2 which are way higher than expected and the ARCH term is 0.52, which is also more eminent than the GARCH term which is 0.46.Therefore, the GARCH model implies that conditional volatility is persistent in both stock markets.

Table 5: GARCH (1.1) Results

	South Africa (JSE index)			Chinese (Shanghai Stock Exchange Composite Index)		
Mean Equation						
Variable	Coefficient	z-Statistic	Prob.	Coefficient	z-Statistic	Prob.
C	1.386713	4.335621	0.0000***	0.942534	3.534023	0.0004***
Variance Equation						
C	0.477422	1.007453	0.3137	3.063705	1.984380	0.0472**
RESID (-1) ^2 (α)	0.220842	3.238921	0.0012***	0.520904	3.383880	0.0007***
GARCH(-1) (β)	0.794372	15.47958	0.0000***	0.469882	3.590656	0.0003***
$\boldsymbol{\alpha_1 + \beta_1}$	1.015214			0.990786		
R-squared	-0.009678				-0.024072	
Sum squared resid	6397.844				5171.333	
Log likelihood	-593.3016				-589.1704	
Durbin-Watson stat	1.615454				1.425581	

Note. ***Significant at 1% level; **Significant at 5% level;

Source: researcher own data

A larger value of β suggests that the shocks of conditional variance takes long time to die out, hence, volatility is persistent. A mere presentation of such an event was recorded in the South Africa JSE stock market during the 2007-10 global financial crises, where volatility was high during the crisis. Pretorius and de Beer (2014) claim that during the same period, volatility transfer from China was at its lowest. However, the impact of the crisis took time to normalize in the stock market. As shown in Table 3, the JSE index had β=0. 7943 compared to the Shanghai index were β=0. 4698, meaning that the JSE is highly volatile than the Shanghai stock market because of persistent volatility. Yet, a low value error coefficient (α) suggests that large market surprises induce relatively small volatility. As illustrated in Table 3, the JSE had (α) =0. 2208 compared to the Shanghai with (α) =0. 5209. However, it shows that recent news (α) has more impact in the Chinese stock market than the South Africa market. This is in support to Pretorius and de Beer (2014) who pointed that volatility co-movement between the South and China is not high. However, South Africa is more prone to high volatility emanating from states such as Germany, the US, Brazil and the UK.

Alternatively, the coefficient (β) represents past news and it is higher in the South African market than the Chinese market, suggesting that old news has an influence in both markets. Although much impact is felt in the South African market, compared to the Chinese stock market. As mentioned by the European Economic Forecast (2016), financial volatility rose across emerging markets throughout the past three years. This has prompted investors to withdraw from equity and bond markets in the process depressing exchange rates. This has been evident in South Africa, as noted by Investec Asset Management (2016) were 60 percent of domestic flows were shifted to offshore funds leading to the subverting of the South African currency. Unpredictability in the Chinese stock market has an implication for commodity prices, world trade and spill over to other areas, which constitutes downside risks (European Economic Forecast, 2016). Shanghai Composite index wiped about US$ 3 trillion in market capitalization leading to a fall in investments. Nevertheless, the South African economy is expected to feel this effect in the coming two years as China transitions its economy from investment spending to consumer expenditure. The implications of stock volatility in the Chinese market are yet to be felt in the South African economy, as the South African currency continues to fluctuate when good or bad news is reported.

Standard deviations of return: Standard deviation is a commonly used measure for stock market volatility. The standard deviation measures dispersion of the returns, therefore, the larger the standard, the higher the chance of negative or positive returns. Figure 4 and 5 plots show the standard deviations of the monthly returns of the JSE and Shanghai stocks from 1998-2014. The 12 monthly returns are used to calculate the standard deviation. From the plots it can be determined that stock return standard deviations are around 4 percent per month. This implies that most returns were between 8 and – 8 percent per month. During the global financial crisis in 2008-2010, the standard deviation was over 16 percent per month, indicating that most returns were around 32 percent and – 32 percent per month. Essentially, it can be noted that years with extreme returns have high standard deviations. Since 2012 it can be seen that returns have not shown unusually high volatility, suggesting that there is stability in the stock markets. Historical series of standard deviations points that stock returns have been less volatile recently. This can be assigned to two scenarios. To begin with, traders who do not have correct information about the value of the securities trade in the future markets. This creates temporary prices, which are amplified. Instead, new information may be affecting future contract costs; therefore, contracts may be having lower transaction costs leading to pricing of funds simultaneously. However, a number of factors may be affecting volatility; these factors include economy condition, recessions, financial leverage, personal leverage and operating leverage to name a few.

Figure 4: **JSE index standard deviation**

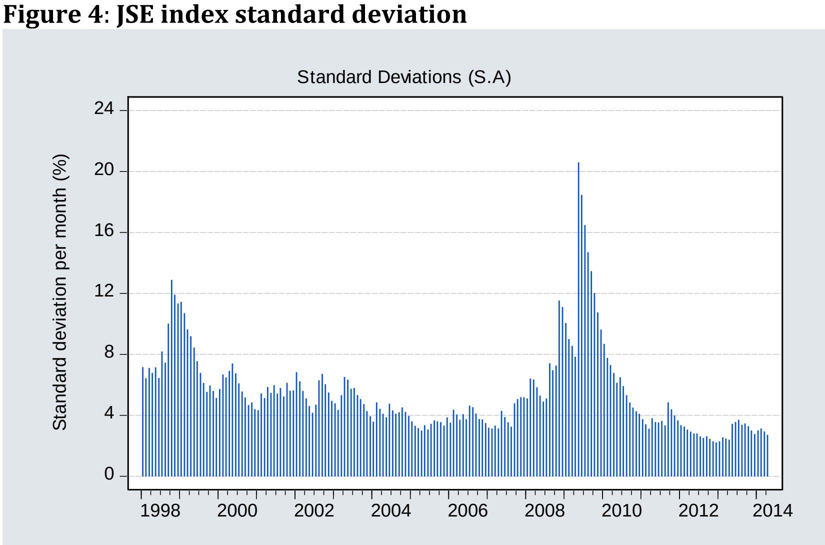
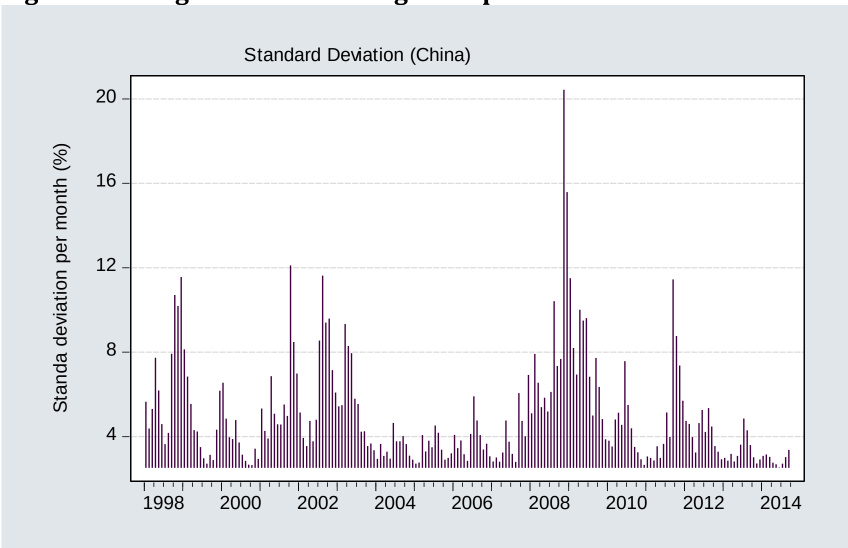


Figure 5: **Shanghai Stock Exchange Composite Index standard deviation**



Source: Researcher own data

In both markets, there are periods of time where returns hardly change (market tranquility) and where changes in returns are followed by large changes (market turbulence). In South Africa, stock returns usually respond to the volatility of the South Africa Rand because of its sensitivity to bad or good news.

4. Conclusion and Recommendations

This paper focused on similarities and differences in volatility clustering in South Africa and the Chinese stock markets. It also presented some valuable empirical results that partly identified the causes of stock return volatility. It did not try to measure volatility with other methods such as EGARCH, IGARCH, but it was mainly grounded on the GARCH and ARCH models. The paper utilized the GARCH (1, 1) model since the objective was to estimate the volatility of financial time series and to test the existence of dependence in stock returns. The model is sufficient to capture the dynamics of the stock returns, particularly the volatility clustering and leptokurtic features. We found that the South African market and the Chinese market exhibiting the same features in terms of volatility clustering. The most plausible cause for such a similarity may be that there is more trading between these two economic systems. The paper did not try to identify all the possible causes of this phenomenon between the two stock exchanges because the model used cannot fully capture the aspect of leverage and asymmetry in the stock returns. Thus, a model measuring those two aspects may contribute a better understanding between the two stock markets. Future research can focus on identifying the underlying linkages between the two stock markets. This signifies that further research can specialize on other methods such as multivariate approaches in identifying the linkages between the two stock markets. On the other hand, researchers can use data from other countries trading extensively with South Africa, such as India, and Russia to study the performance of stock markets in those countries in comparison to the South African stock market.

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