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Editorial

Journal of Economics 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 conceptualization of economics and behavioral developments but comprise interdisciplinary and multi-facet approaches to economics and behavioral theories and practices as well as general transformations in the fields. 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, Ethiopia, Nigeria and Indonesia. Efficiency and profitability analysis of agricultural cooperatives, the rural immigration effects on urban service delivery, relationships and causality between consumer price index, the producer price index and purchasing manager's index, small-scale agriculture as a panacea in enhancing rural economies, financial sector liberalization and financial instability, factors to measure the performance of private business schools, determinants of informal land renting decisions, benefits of an irrigation scheme and its determinants, China's progress in poverty reduction, analysis of nation brand attractiveness, success factors for creating spin-out companies, cash flow volatility and firm investment behaviour, use of social media in public relations, contrasting contemporary advertising media strategies, uptake of efficient marketing strategies, service quality of public technical, vocational, education colleges, promotional tools employed by medical insurance companies, treasury single account, political institutions and macroeconomic factors, positive and negative antecedents of consumer attitude, financing smallholder rice farmers, characteristics of credit instruments, the nexus between narcissist followers and leaders, trade performance under alternative exchange rate regimes, dual process difference in families and subjective risk tolerance of south african investors 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

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Journal of Economics and Behavioral Studies (JEBS)
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Efficiency and Profitability Analysis of Agricultural Cooperatives in Mpumalanga, South Africa

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Abstract: Agricultural cooperatives are expected to generate sustainable profit as they are established as a vehicle of economic development. Efficiency and profitability analysis measures the performance of a firm, and assists management in decision-making through benchmarking with other firms (Marwa & Aziakpono, 2014). To understand the performance of agricultural cooperatives, our study analysed efficiency and profitability using an efficiency-profitability matrix to provide for multi-dimensional analysis. The study used secondary data from annual financial statements for the financial years 2015/16 collected from 19 agricultural cooperatives. Technical efficiency was estimated using Data Envelopment Analysis (DEA) and profitability was estimated using Returns on Assets (ROA). The median scores were 68% for technical efficiency and 10% for profitability. Using the 68% efficiency and 10% profitability benchmark, the matrix separated best performers from low performers. The matrix indicated that 26% of the cooperatives had high-efficiency levels with high profitability (stars), however there was an even distribution between the stars and sleepers: 5 out of 19 cooperatives were sleepers and 5 out of 19 were stars. The majority of the decision-making units (DMUs) at 42% (8 out of 19) are in quadrant 3, categorised as 'question mark'. These DMUs had low-efficiency scores and low profitability ratios. Only 1 out of 19 cooperatives had high-efficiency levels and low profitability scores. The results demonstrate that technically efficient firms do not always translate to profitable firms: in this regard, management needs to investigate how best to allocate resources in order to remain relevant within the business context and competition. Policy makers need to investigate other drivers of efficiency and profitability when measuring the performance of a firm to influence future policy directives.

Keywords: *Agricultural cooperatives, profitability, efficiency, Mpumalanga, South Africa*

1. Introduction

Cooperatives are formed as a vehicle of economic development, as members or small producers combine to capture economies of size, and therefore have bargaining power (Lerman & Parliament, 1991). In South Africa agricultural cooperatives are regulated under the Cooperative Act of 2005, and the cooperatives are regarded as a vehicle to economic inclusion (Ortmann & King, 2007a). The Act defines an agricultural cooperative as 'a co-operative that produces processes or markets agricultural products and supplies agricultural inputs and services to its members. The major role of the Cooperative Act has been to coordinate functions such that cooperatives promote economic and social development through employment creation and generating income (Ortmann & King, 2007a). Since the enactment of the Cooperative Act, there have been concerns over whether the cooperatives are achieving economic and social development goals (Ortmann & King, 2007b; Chibanda, Ortmann & Lyne, 2009).

Performance evaluation is important, as it enables the firm to identify underlying problems, and to benchmark with other firms in the industry (Charnes and Cooper, 1984). Performance analysis is also important as it is considered a significant factor in driving the survival of a firm (Keramidou, Mimis, Fotinopoulou, & Tassis, 2013). This study employs performance measurement through efficiency and profitability analysis. The objective of the study is to establish if the cooperatives as organisations are efficient and profitable, can withstand economic shocks, and are able to achieve economic gains for its members or patrons. The study also tests the correlation between efficiency and profitability, that is, whether efficient cooperatives are also profitable. Data Envelopment Analysis (DEA) was employed to measure efficiency and Return on Assets (ROA) was used to measure profitability. The study further employed the profitability-efficiency matrix to determine the correlation between profitability and efficiency, separating the best performers from low performers.

2. Theoretical Literature Review

Cooperative as a Firm (Theory of a Firm): Studies of cooperative behaviour linked to firms have always advanced that agricultural cooperatives seek to minimise costs or inputs with the objective of maximising profits (Helmberger & Hoos, 1962; Aoki, 1984). Helmberger and Hoos used the neo-classical theory of the firm to develop short-run and long-run models of a cooperative, where each firm maximises its profits subject to its cost structure and product demand constraints (Helmbeger & Hoos, 1962). However, Emelianoff argued that cooperatives should be viewed as aggregate economic units, with a vertical integration model, where each independent enterprise seeks to maximise profits (Emelianoff, 1995). The extension of this argument is augmented by Phillips, who holds that cooperatives are vertically integrated firms, as the associated firms must each allocate resources to a common plant (Phillips, 1953). This theory underpins that a single integrated firm maximises profits through inputs from different firms, performing different functions, and yet are brought under single managerial control (Emelianoff, 1995; Helmberger & Hoos, 1962).

However fundamental problems have been pointed out from the vertical firm theory and profit maximisation objective, citing the agency problem where the objectives of the agent are not the same as that of the principal (Sykuta & Chaddad, 1999). The challenges are horizon problems, as cooperatives are seen to be focusing on short-term earnings rather than long-term earnings and sustainability (Porter & Scully, 1987; Ortmann & King, 2007b). It is also noted that cooperatives not only address the profit maximisation role, but they also need to balance social needs through economic fairness by equal access to markets, which means that over and above profitability the interests of the community become paramount (Schwettmann, 1997). Another argument advanced by Sexton and Iskow (1988) is that performance of a joint entity might be distorted, as different entities each have their own assets and can shift income from one entity to another. Having noted the conflicting measurement gaps, the fundamental objection remains that cooperative members are more concerned about the financial performance of their entity (Hardesty & Salgia, 2003).

Suffice it to say, as much as members are entitled to the net income generated by the cooperative, they are equally residual risk bearers of the firm's net cash flow (Soboh, Lansink, Giesen & Van Dijk, 2009). Notwithstanding the above, this study acknowledges the opposing views, however it has adopted the classical theory of a firm, that of cost minimisation and maximising output for profit maximisation, as across various theories, the common goal of profit maximisation is evident, with economic gains for economic advancement in developing economies. The adoption is also consistent with the theory adopted in the preceding paper on efficiency measurement, where the classical theory of a firm was adopted, with the objective of cost minimisation and profit maximisation (Helmberger & Hoos, 1962). This literature review section follows with a look at agricultural cooperatives and efficiency evaluation, and agricultural cooperatives and profitability evaluation.

Agricultural Cooperatives and Efficiency Evaluation: Performance evaluation through efficiency measurement analyses the ability of a firm to produce the maximum output possible given input constraints (Coelli, Rao, O'Donnell & Battese, 2005). According to Koopmans (1951), an input-output vector is technically efficient only if increasing any output or decreasing any input is possible by decreasing some other output or increasing some other input (Koopmans, 1951). This study employs technical efficiency (TE) which measures the performance of a firm using the extent to which it deviates from the best practice frontier given a specific dimension: cost, inputs, output or profit (Marwa & Aziakpono, 2016). A firm is only technically efficient if it operates on the frontier and all associated slacks are zero (Debreu, 1951). Efficiency can be measured with either accounting or economic methods. The accounting principle applies ratios as a measure of efficiency (Charnes & Cooper, 1984; Halkos & Salamouris, 2004). Economic methods present various techniques of measuring efficiency and TE: however, frontier estimation models such as Stochastic Frontier Analysis (SFA) and Data Envelopment Analysis (DEA) generally dominate (Marwa & Aziakpono, 2016).

Stochastic Frontier Analysis: SFA is a parametric approach which can estimate the productivity and efficiency of a decision-making unit (DMU). SFA was developed on theoretical literature of productive efficiency (Meeusen & Van Den Broeck, 1977; Aigner, Lovell & Schmidt, 1977), and resulted in developing the production frontier context (Kumbhakar & Lovell, 2000). SFA creates a framework that can analyse firms that do not succeed in optimisation, or are not fully efficient, by comparing firms to 'best practice' (Cummins, Feng

& Weiss, 2012). According to Andor & Hesse (2011), the limitation of SFA is that the best it can do is to obtain a 'mean' efficiency over a sample.

Data Envelopment Analysis: DEA, as developed by Charnes, Cooper and Rhodes in 1978, known as the CCR model, introduced the efficiency measurement which generalised the single output and single input ratio to multiple inputs and outputs without requiring pre-assigned weights (Charnes & Cooper, 1984). The methodology emerged as an alternative to the traditional regression method analysis. The units that lie in the 'surface' are defined as 'efficient' DMUs (Murillo-Zamorano, 2004). The limitation of DEA is its 'non-stochastic' nature: it does not account for statistical noise (Lovell, 1994). However, this limitation is addressed by employing a bootstrapping method (Efron & Tibshirani, 1998; Simar & Wilson, 2000). For efficiency measurement, this study adopted the DEA: Liu, Lu, Lu and Lin (2013), having surveyed DEA applications, found that DEA was more robust in measuring efficiency than parametric approaches from 1978 to 2000, in which agriculture efficiency analysis was listed within the top five applications in which DEA had been applied. DEA deals with individual DMUs as opposed to the population average, it utilises *n* optimisation for each DMU, which makes DEA results more reliable (Moffat, 2008).

Agricultural Cooperatives and Profitability Evaluation: Profitability is the primary goal of any business venture (Hofstrand, 2009). It can be measured as the net income over total expenses or the excess revenue over total expenses, or by return on assets (ROA) which is income before interest and taxes divided by total assets (Moller, Featherstone & Barton, 1996; Marwa & Aziakpono, 2014). Within the theory of the firm, optimal prices and quantities are determined by setting the cooperative's marginal cost equal to the marginal revenue and therefore the profit becomes the cooperative performance indicator (Soboh et al., 2009). It is noted that cooperatives behave differently in establishing profitability as they are user-owned, user-benefit, and user-controlled and they serve the interest of the members (Hardesty & Salgia, 2003, Ortmann & King, 2007b). The economic benefit of members remains the core foundation for income generation and sustainability, and as owners (residual claimants) members are entitled to the net income generated by the firm (Ortmann & King, 2007b; Soboh et al., 2009). Theory indicates that profitability can be measured through economic perspective or accounting perspective (Sexton & Iskow, 1988). The accounting model applying financial ratios to determine the performance of a firm can employ liquidity ratios, asset efficiency, profitability and leveraging for performance measurement. Empirical studies have always employed the traditional financial ratio method to measure the performance and profitability of a cooperative (Marwa & Aziakpono, 2014).

Empirical Literature Review

Agricultural Cooperatives and Efficiency: Studies on whether agricultural cooperatives are efficient have not yielded similar results. Tipi, Yildiz, Nargelecekenler and Cetin (2009) investigated the performance and TE and the determinants of rice farms in Turkey using an input-oriented DEA model to measure TE scores, and Tobit regression. The regression estimates showed TE was negatively influenced by a number of farmers, age, plot size and off-farm income (Tipi et al., 2009). Soboh et al. (2012) compared dairy cooperatives and investor-owned firms in Europe to measure performance, applying DEA to measure efficiency. They argued that economic literature had limitations in terms of measuring the performance of cooperatives and found that cooperatives' performance was influenced by members' objectives (Soboh et al., 2012). In South Africa, Piesse, Doyer, Thirtle and Vink (2005) investigated the efficiency levels of grain cooperatives in competitive markets using DEA and financial ratios, and found that increased competition led to increased efficiency of cooperatives (Piesse et al., 2005)

Agricultural Cooperatives and Profitability: The accounting method profitability analysis using ROA has been adopted by various studies. Many studies have compared the performance of cooperatives with investor-owned firms, with results signifying that cooperatives were less efficient and profitable than investor-owned firms (Lermann & Parliament, 1991; Hardesty & Salgia, 2003). Hardesty and Salgia used traditional financial ratios to measure performance through testing profitability, liquidity, and leverage and asset efficiency of investor-owned firms against those of cooperatives. They found that, overall, cooperatives demonstrated low rates of asset efficiency, and yet the relative profitability and liquidity was not conclusive (Hardesty & Salgia, 2003). These mixed results are also found in a study by Schrader, where Midwestern

cooperatives results between 1979-1983 found cooperatives had various functions and similar rates of return, whilst large diversified investor-owned businesses had high ROA compared to cooperatives (Schrader, 1989). The above studies demonstrate that measuring financial performance employing traditional ratios such as return on assets (ROA) and return on equity (ROE) has been tested on cooperatives. This study focuses on ROA as a measurement for profitability, as opposed to ROE. The argument is that with ROE, cooperatives have limited return on equity capital as the business pays strictly limited dividends on equity capital invested in the organisation (Staatz, 1987). Another limitation is that the value of an enterprise may exceed the value of members' patronage (Schrader, 1989). In the South African context, since agricultural cooperatives are funded by the government, employing ROE will distort the performance results.

Agricultural Cooperatives' Efficiency and Profitability: The debate on whether firm efficiency is directly related to profitability has received varying results. Camanho and Dyson (1999) measured branches of a Portuguese bank and found that branches' efficiency has a positive effect on profits, although high profitability is not necessarily directly related to high efficiency. However, in a study of Tanzanian financial cooperatives, the results demonstrated that the majority had low profitability and low-efficiency levels (Marwa & Azikapono, 2014). A study by Keramidou et al. of meat processing companies in Greece interrogated the relationship between efficiency and profitability by applying a decomposition model. The results indicate that there was no strong positive correlation between profitability and efficiency (Keramidou et al., 2013). Hence, there is a need to explore both explore both dimensions in empirical studies. With this study ROA becomes a realistic measure, noting that all the financial statements provided by the agricultural cooperatives have total assets as a variable.

3. Methodology

This study used data from the DAFF's 2015/16 Annual Report on cooperatives. South Africa had a total of 2,682 agricultural cooperatives, of which 571 were in Mpumalanga: however, the number of operational cooperatives was not ratified. The inclusion criteria in the study were the cooperatives that complied with reporting on audited annual financial statements. The study selected the 19 agricultural cooperatives that had complied with Annual Financial Statement (AFS) reporting. The data was available from the Mpumalanga Department of Agriculture, and permission was sought to use the data for the preliminary study. To recap on the study on technical efficiency on the preceding paper (awaiting publication) on efficiency evaluation of agricultural cooperatives, the efficiency scores were measured where technical efficiency was decomposed into pure technical efficiency and scale efficiency using DEA. In this study, a frontier function approach was employed. The frontier methodology technique presents the benchmarking model between DMUs: it measures how a DMU is performing relative to its peers. Frontiers are important for the prediction of technical inefficiencies in the industry (Batesse & Coelli, 1991). It is widely used in agriculture due to its consistency in production, profit and cost functions, with the notion of minimising input or output orientation, or maximising profit (Bravo-Ureta & Pinheiro, 1993).

Measuring Technical Efficiency: Input variables were total assets and total expenses, and output variables were revenue and profit. From the mathematical computation, the formulation of the problem was that cooperatives are treated as firms. In this regard firms seek to minimise inputs and maximise outputs, therefore the function was on cost minimisation and adopted a mathematical model by Coelli et al. (2005).

$$\text{Min } \theta,$$
$$subject\ to\ -q_i + Q\lambda \geq 0,\ \theta x_i - X\lambda \geq 0,$$
$$\lambda \geq 0 \qquad (1)$$

Where θ is a scalar and λ is a $I \times 1$ vector of constants. The value θ obtained is the efficiency score for the ith firm and satisfies $0 \leq \theta \leq 1$. In this regard, the value 1 indicates a firm lying on the frontier and therefore the firm is known to be technically efficient, according to the definition of Farrell (1957). Technical efficiency (TE) can be decomposed into Pure Technical Efficiency (PTE) and Scale Efficiency (SE). DEA was applied to decompose the results. In other words, TE = PTE * SE, and in most instances DEAP 2.1 software is able to give only TE and SE, but PTE = TE/SE.

Profitability: For profitability analysis the data from 19 agricultural cooperatives were used, with their financial statements for the financial year 2015/16. The data were sourced from the Mpumalanga

Department of Agriculture as secondary data. The methodology employed the traditional ratio analysis of ROA. As indicated in the literature review, ROE tends to overcompensate on equity against member patronage. ROA is arguably the most popular and user-friendly to managers for profitability analysis across firms (Joo, Nixon & Stoeberl, 2011). In essence, ROA gives a measurement on return: how much the return is for every rand invested. This approach is further entrenched by the observation that all the agricultural cooperatives selected had reported on their total assets rather than on equity.

ROA was measured using the following formula:

$$\text{ROA}= \frac{net\ income}{Total\ assets} \quad (2)$$

Efficiency/Profitability Matrix: This study also created an efficiency and profitability matrix, which provides management with an opportunity to review which areas they can improve to achieve higher profitability (Camanho & Dyson, 1999). The efficiency profitability matrix adopted has been employed as a comprehensive measure of performance through various dimensions (Camanho & Dyson, 1999; Keramidou et al., 2013; Marwa & Azikapono, 2014). This model separates the firms' performance levels in four quadrants, where quadrant I represents the sleepers, II represents the stars, III represents the question marks, and IV represents the dogs. Best performers are firms with high-efficiency levels and high profitability ratios. The stars are those DMUs that have high-efficiency levels and high profitability, which means these firms convert their inputs into outputs efficiently while at the same time recording high profits (Camanho & Dyson, 1999). The sleepers are DMUs with high profitability but low-efficiency levels. The dogs are DMUs with high-efficiency levels with low profitability, and the question marks are DMUs with low-efficiency levels and low profitability ratios (Kumar, 2008). This matrix followed work done by Boussofiane, Dyson and Thanassoulis (1991). The matrix deals with the limitation pointed out in using traditional financial ratios as a measurement, the argument is that it provides a 'snapshot' of the organisation's performance (Altman, 1968; Yeh, 1996). Stata was used to compute the results of the various quadrants, with efficiency plotted against the *x*-axis and profitability against the *y*-axis.

4. Results

Descriptive Results: Table 1 below gives a summary of our results from the 19 agriculture cooperatives using Data Envelopment Analysis Program (DEAP) version 2.1 developed by Coelli (1996).

Table 1: Efficiency Results

DMU #	Technical Efficiency	Pure Technical Efficiency	Scale Efficiency	Returns to Scale
1	0.501	0.502	0.999	-
2	0.516	0.519	0.994	Irs
3	0.670	1.000	0.670	Drs
4	0.598	0.697	0.858	Drs
5	0.691	1.000	0.691	Drs
6	0.687	1.000	0.687	Irs
7	0.694	0.835	0.831	Drs
8	1.000	1.000	1.000	-
9	0.675	1.000	0.675	Drs
10	1.000	1.000	1.000	-
11	0.945	0.969	0.975	Drs
12	0.192	0.322	0.597	Drs
13	1.000	1.000	1.000	-
14	0.574	0.575	0.999	Irs
15	0.667	0.696	0.959	Drs

16	0.746	0.750	0.995	Irs
17	1.000	1.000	1.000	-
18	0.769	0.952	0.808	Drs
19	0.671	0.865	0.776	Drs
Median	**0.68**	**0.95**	**0.95**	

Source: Authors' computation

From the results, the median score for efficiency is 68%, which means that the DMU's combined efficiency rate was at 68%, and there is a resource wastage of 32%. What is interesting to note is that when the observation is done on individual DMUs, only 21% of the DMUs are 100% technically efficient, operating at constant returns to scale (CRS). From the efficiency analysis, profitability was decomposed using the ROA methodology. Each DMU efficiency was then measured against profitability. Table 2 below shows the performance comparison for each DMU on efficiency and profitability. This firm has to look at how best to position itself in the market to increase its profitability levels. The results are consistent with the previous studies, which demonstrated there was no positive correlation between efficiency levels and profitability (Camhano & Dyson, 1999: Kumar, 2008; Marwa & Aziakpono, 2014).

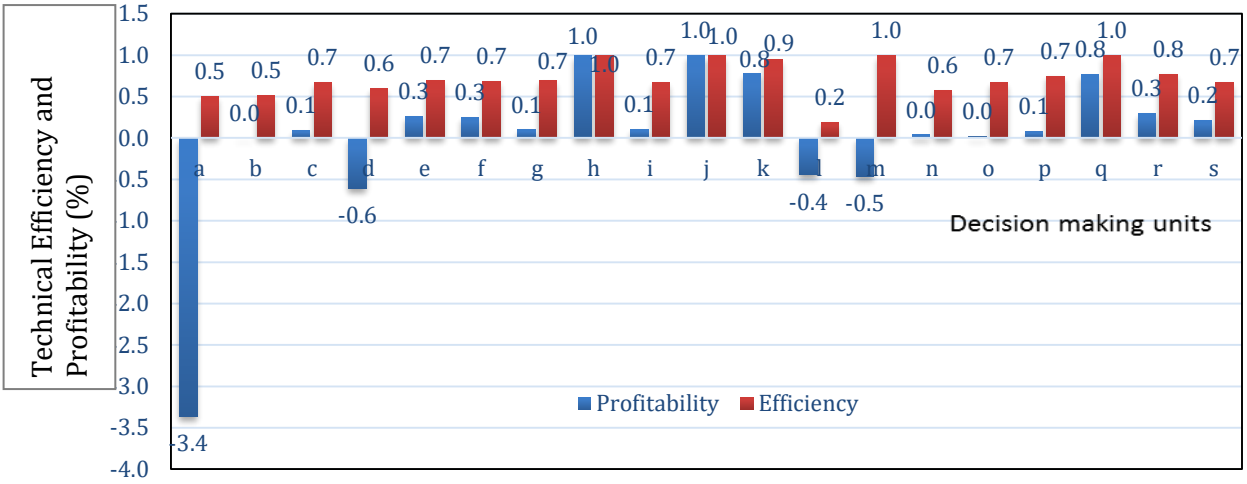
Table 2: Technical Efficiency and Profitability Measure Comparison

DMU #	DMU	EFFICIENCY	PROFIT (%)
1	A	0.501	-336
2	B	0.516	0.03
3	C	0.67	8.91
4	D	0.598	-61.15
5	E	0.691	25.5
6	F	0.687	25.00
7	G	0.694	9.71
8	H	1	100
9	I	0.675	10.25
10	J	1	100
11	K	0.945	77.73
12	L	0.192	-44.69
13	M	1	-46.68
14	N	0.574	3.47
15	O	0.667	1.38
16	P	0.746	7.59
17	Q	1	76.36
18	R	0.769	29.30
19	S	0.671	20.91
	Median	**68%**	**10%**

Source: Authors' computation

When we compare employ profitability scores, the median for profitability is 10% as seen in Table 2 and 37% of DMUs are above the 10% average. Having decomposed technical efficiency and profitability as shown in Tables 1 and 2, the technical efficiency and profitability dimension was employed to test if there is a positive correlation between efficiency levels and profitability. Figure 1 below provides a descriptive view of the performance, with some DMUs operating at above efficiency levels, and some operating at a loss (less than 0% return rate).

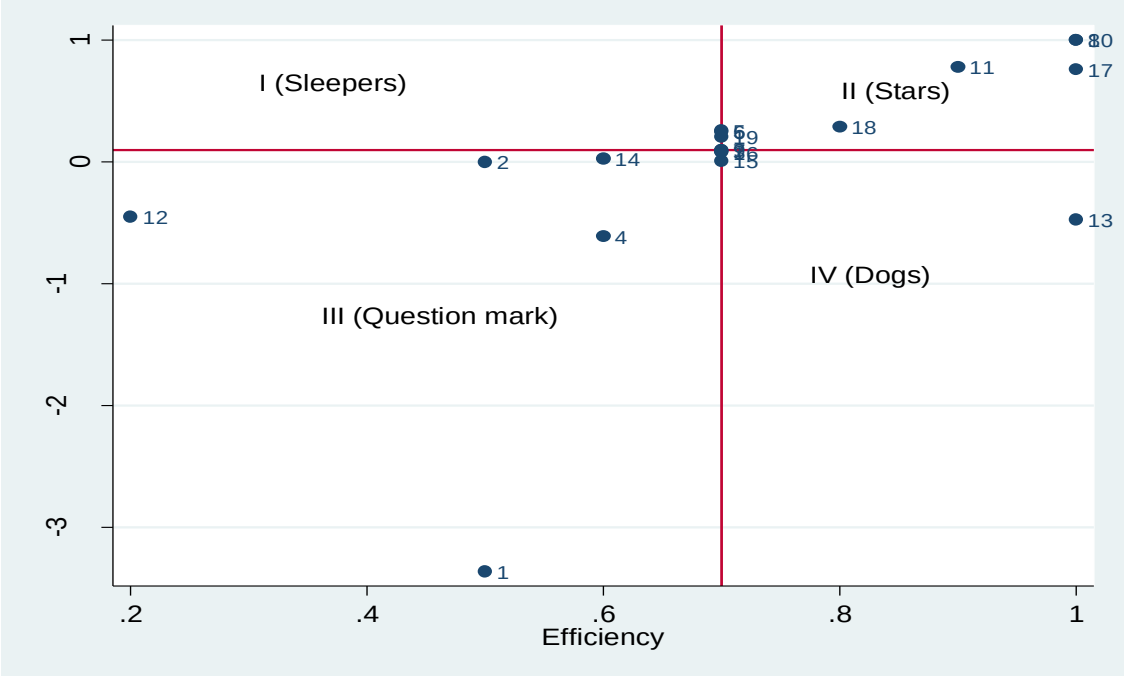
Figure 1: Technical Efficiency and Profitability Scores



Source: Authors' computation

Profitability and Efficiency Matrix: This study also created an efficiency and profitability matrix, which provides management with an opportunity to review as to which areas they can improve to achieve higher profitability (Camanho & Dyson, 1999). This matrix follows work done by Boussofiane et al. (1991), and has been further adopted by various studies measuring the relationship between efficiency and profitability for determining best performers (Camanho & Dyson, 1999; Kumar, 2008; Marwa & Aziakpono, 2014). Table 3 shows the profitability/ efficiency matrix results, and the quadrants expanding their performance measure, using STATA 14. Quadrant I shows sleepers, quadrant II stars, quadrant III question marks and quadrant IV dogs.

Figure 2: Descriptive Quadrants for Performance of DMUs



Source: Authors' computation

The number of DMUs per quadrant is reflected in Table 3 below, with the frequency of DMUs in each quadrant.

Table 3: Frequency of DMUs in Quadrants

Matrix	Frequency	Percent
I (Stars)	5	26.32
II (Sleepers)	5	26.32
III (?)	8	42.11
IV (Dogs)	1	5.26
Total DMU	19	100

Source: Authors' computation

Discussion: From the above, it can be seen that there is an even distribution between the stars and sleepers in the quadrants, 26% of the firms have high efficiency and high profitability, these firms are best performers and considered as stars. What this means is that 5 out of 19 cooperatives have high-efficiency levels with high profitability ratios (stars), and also 5 out of 19 have high profitability and low-efficiency levels (sleepers), these DMUs (sleepers) are found in the borders of the quadrants (DMUs 5, 6, 7, 9 and 19). The sleepers will have to improve their resource allocation, which may result in them moving to the stars quadrant. The majority of the DMUs (8 out of 19) are in quadrant 3 (question marks), meaning they have low-efficiency levels and low profitability. These firms need to reconsider their operations as there are resource wastages, and the firms should also look at whether their businesses are facing challenging economic conditions such as competition, economic downturn, or if their service is still relevant in the market. Only one DMU was in quadrant 4 (dogs), this firm has a high-efficiency level and low profitability level. This firm is utilising resources efficiently and yet operating at a loss.

5. Conclusion and Recommendations

The study tested efficiency levels and profitability ratios of agricultural cooperatives, linking efficiency levels with profitability to see if efficient firms are equally profitable. The technical efficiency median was 68%, and the profitability median was 10%. The study further employed the efficiency/profitability matrix, and the results separate the best performers from those firms who are not performing on both efficiency and profitability. There was an even distribution between sleepers and stars, but it concerns that the majority of the firms were in the question mark quadrant. Only five DMUs (26%) were found to be efficient and profitable, meaning the firms met the means of 68% and 10% profitability respectively. Efficiency does not always translate to profitability, there is a need for managers to continuously measure performance and investigate areas of improvement. Management has a role to play in efficient resource allocation to ensure there are no wastages. The existence of a firm does not mean that it is performing well financially: the weaknesses and characteristics of an organisation can only be established if there is continuous monitoring, focusing not only on one variable of performance, but employing a multi-dimensional approach to investigate areas of improvement.

Noting that efficiency and profitability are not always positively correlated, managers should understand a cooperative as a business as well as its social role towards economic development. Firms need to continuously follow the market and be in a position to respond to business competition. It concerns to see that the profitability of agricultural cooperatives is not witnessed across all firms. In this regard, policymakers should appreciate that agricultural cooperatives as firms also have a socio-economic role and members' patronage is inherent as they are user-owned and user-controlled. Future policy decisions should factor in empowering the agricultural cooperatives as firms, for them to be able to manage resources efficiently while at the same time being profitable, resulting in sustainable organisations. It is also important that agricultural cooperatives find the balance between their social role and economic development, such as that of member patronage benefit linked to positive financial benefit. Members of cooperatives also need to review their stance on taking the cooperative as a business, rather than an entity that services users' needs.

There is a need for a turnaround strategy to ensure that there is focus on efficient resource allocation and there are measures and systems to stay abreast with the market and competition for their survival.

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The Rural Immigration Effects on Urban Service Delivery in South Africa (SA)

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Abstract: The current socio-economic and political problems of South Africa are rooted in the colonial apartheid era as scholars and researchers suggest through extensive research. However, there have been high levels of service delivery protests related to the government performance on the issues of service delivery to the local communities' countrywide. Governments departments appear to be lacking much required knowledge and understanding of external factors associated with rural to urban migration such social-economic factors and other various relevant challenges, hence, local authorities are struggling to meet up with demands caused by the ever-increasing number of urban populations, which affects services delivery performance. The study was quantitative approach and used 5 Likert scale questionnaires which were distributed in the selected areas of eThekwini city. A total of 100 with 25 respondents per area, chosen areas include emhlabeni, emalandeni, ezimeleni and silver city. Whereas, qualitative aspects of the study were secondary data through extensive literature review, the study has found that indeed rural to urban migration has a negative impact on service delivery the study argue that service delivery, rural to urban migration, public participation need to be part of the government agenda holistically to improve service delivery and capacity of local authorities. This study recommends proactive urban planning and community involvement through public participation channels. The generalization of the findings of this study should be done with care.

Keywords: *Service delivery; Rural to urban immigration; Government; Municipalities*

1. Introduction

Rural to urban migration means that people move from rural to urban areas (Berry, Bowen & Kjellstrom 2010). In this process, the number of people living in cities increases, compared with the number of people living in rural areas; the natural increase of the populace can also contribute to population growth in cities, as a result, the urban populace seems to be higher than that of rural areas (Stillwell & Dennett 2012). However, a country urbanized when more than half of its population lives in urban areas (Rao, Tanton & Vidyattama 2013). Linked to significant social and economic transformations, urbanization is the main reason for migration for rural to urban environments. Urban living is for instance, related to higher levels of education and literacy, better health leading to a longer life expectancy and lower fertility, with improved social services access and better cultural and political participation opportunities on offer (UNDESA, 2015). Nonetheless, rapid and unplanned urban growths create various disadvantages for urbanization, resulting in poor infrastructure, such as inadequate housing, health care services, transport, and water and sanitation. It is generally advised that productivity in SA is lacking and that one of the main reasons for this is poor service delivery performance it is self-evident that unproductiveness must lead to unaccountable government and public administration.

Therefore, it is confirmed that unproductiveness is one of the leading causes of public service delivery protests by society (Mpehle, 2012). Public services are rendered within the realm of public administration, described as the world in which government and its institutions function to deliver services (Collier, 2011). The services rendered are influenced by economic, technological, socio-cultural and statutory environments (Congdon, 2010), which affect each other and affect negatively on service delivery. Government is responsible for the type of services that can and will be delivered, as well as the setting of standards on services to be delivered (Zubane, 2011). Rural migration is, however, one of the main contributors to housing backlogs, due to over-population in urban municipalities. In 2001, the housing backlog was 320 000 units in the eThekwini municipality, with 150 000 houses built since then. Accounting for new population movements, the backlog in 2010 was thus 230 000 houses. In addition, clean running water and sanitation are a means of reducing housing backlogs and advancement of service delivery performance for the eThekwini Municipality. Never the less it is projected that the backlogs in housing can only be eradicated by 2030 (Class, 2010). It seems obvious that this type of example is a statement that there have always been service delivery protests

regarding service delivery performance, especially in the eThekwini Metropolitan area. Migration in SA over the previous decades has been observed as a series of multifaceted movements, composed of several prevailing patterns of movement (Maass, 2013).

Aims and Objectives: The aim of the study is to investigate the impact of rural migrants on service delivery within the eThekwini Municipality Local government in KwaZulu-Natal (KZN).

Objectives: In order to achieve the aim of this study, the following objectives will be pursued,

- To identify and explain the impact on service delivery by rural migrants;
- To investigate to what extent the impact of rural migrants affects service delivery; and
- To suggest and recommend strategies that should be employed to improve the current state of service delivery, related to service delivery performance.

2. Literature Review

Rural-Urban Migration in the South African Perspective: The government of SA is mandated by the country's constitution to provide adequate houses for everyone, in the sense that the constitution assigns the right to passable houses, with the responsibility of the administration to ensure this right is understood (Republic of South Africa 1996). The upsurge in the population's varying socio-economic standing in SA has, however, resulted in major growth and the demand for accommodation (COJ, 2010), which is highly related to the need for the land, infrastructure and services for residential development (Maass, 2013). The land market is the vehicle used to transfer rights of ownership of land, and it is noted that land and housing markets can be easily separated from each other (Antman, 2012). Informal markets of land and housing have emerged in developing countries, as the formal market is unable to meet the demands that accompany urban development (Spicker, 2009). Both immigration and migration have good and bad influences over the development of urban society. (Chiloane-Tsoka & Mmako, 2014) argue that migration is seen as a key component of developing economies. Moreover, the authors note that migration has a negative effect on the overall development of the country, especially the poorest of all, with rural migration seemingly worsening the problematic employment issue in developing economies (Chiloane-Tsoka & Mmako, 2014). Added to this, there is an indirect impact on rural communities from the influence of rural migration but a direct impact on urban communities, with a knock-on effect on urban development (Goebel, 2007). There have been two sides in the endless debate on the positive or negative effect of migration on urbanization (Posel, 2009). The main assumption of the nature of post-apartheid internal migration has been of temporary labour migration that would be replaced, as opposed to permanent employment migration, together with strong trends towards urbanisation (Potts, 2011).

The bulk of the migration in SA spaces is inevitably intra-district, and intra-provincial, in that it is economically motivated and is, according to the (United Nations, 2011) to an extent, female-driven. In addition, it is proposed that, in relation to numbers, the quantity of internal migrants in SA is cumulative, as these tendencies become more recognized Rogan, (Lebani and Nzimande 2009). Most analyses of migration, however, show a significant level of internal migration in the country, which happens within the provinces (Wentzel, Viljoen and Kok, 2006). The most prominent contributing factors are education and housing, across all types of migration (Roux, 2009). Urbanisation has, nonetheless, remained a robust piece of migration, with numerous family circles residually and spatially alienated amongst rural and urban localities. Moreover, monetary factors are one of the most relevant contributors to internal migration in SA, across all types of internal migration (Bell, 2009) cited by (Rogan et al., 2009). KwaZulu-Natal is one of the strongest internal migration destinations in the country (Stats SA, 2011). Displaced populations have been an issue for the government over the years, as seen in the provision of government houses in urban spaces. The SA Constitutional court made headway when it was decreed the state should give more priority to the provision of shelter for the displaced populace through a shelter policy. The resultant government over-spending has mostly affected the poor and increased service delivery complaints (Rogan et al., 2009). It is further also important to understand that migrants are vulnerable in their destination. This phenomenon was observed by the global economic crisis, in terms of migrants not being able to return to their households or rather, place of origin (Hu, 2013). Furthermore, migration has been regarded as a means of development, in terms of

the transition from their current state to better economic opportunities and venture for better municipal services, as opposed to what their places of origin offer (Segatti & Landau, 2011).

Urban Service Delivery: The urban and rural spatial divide remains pronounced in respect of access to socio-economic goods and services; the phenomenon of inadequately housed urban poor is increasing. Redressing the inherited inequalities of the Apartheid state has established a complex and challenging context for meeting basic needs in contemporary SA. Given the physical and political segregation of Apartheid, meeting the demand for housing has been a central, developmental challenge since 1994 (Chipkin & Lipietz, 2012). With local or municipal governments being directly responsible for a range of public services, such as local streets and roads; street lighting; fire and police protection; and neighbourhood parks, funding for these services are mostly obtained from local taxes, grants from central governments, and other locally generated revenues. In many countries, services which local or municipal governments are responsible for are charged user fees, including prices for water, sewers, recreation and public transport (Fauvelle-Aymar & Segatti, 2011). Furthermore, (Graves and Dollery, 2009) argue that decentralisation of matters, such as road maintenance responsibilities; can improve both the speed and quality of service provision. The market is, however, not an effective mechanism for indicating needs or allocating public products or service. Thus, in the absence of effective market mechanisms, various levels of government carry out supply and market intervention activities, designed to ensure the availability of community services, when and where a need has been expressed. Local governments have been the principal providers, but have been hampered by limited ability to bear the associated costs, especially where population density is low and service delivery is costly or difficult (SA Parliament, 2012).

While services are generally defined as “deeds, processes and performances” (Akinboade, Mokwena & Kinfack 2014), implementation to date has been skewed and unable to address the land, housing and basic services needs of millions of poor South Africans, who still lack adequate housing and access to water, sanitation and electricity (Tissington, 2011). The SA administration has centralized infrastructure service at municipalities and this sphere of government is given full responsibility for the planning and budgeting of basic service delivery. In order to speed up service delivery, cities outsource the preparation of the design and management of basic service schemes to applying agencies (Bell & Jayne 2009). Kenyon (2011) discusses capacity building at the municipal level, in order to improve the performance of the municipality, in terms of the provision of basic services. Beyond dealing with the pressures, local people, as persons and collectives, have to improve capacity to make prolific use of the chances available (Sharp, Agnitsch, Ryan, & Flora 2002). This approach necessitates the government provision of social, overhead, capital infrastructure and services that serve the public interest, rather than that of a private organization (McQuaid 1997; Patel & Bhattacharya 2010). The providers of infrastructure and service areas should serve as a compound for LED by starting and allowing a local growth environment that serves the public interest, as manifestation of what is best for local persons, rather than the satisfaction of the choices of native politicians, professionals and planners (Sharp et al., 2002). The provision of public goods by the government should be guided by the local community’s felt-needs (Fannin et al., 2008). The administration cost recapture means that basic service areas delivered by the administration, are inherently contaminated public goods because the local inhabitants do not enjoy an exactly homogeneous quality and quantity, as far as consumption is concerned, despite there being sufficient quantity and quality from the production and supply side (Smith, 2004; Jaglin 2008).

The concept of service delivery is, in all likelihood, mostly linked to the notion of the government’s need to satisfy clients, which in this case are members of the public (Ceruti 2012). This then requires a consultative approach when it comes to service delivery of any nature. However, the government has special legislation for this drive in SA, known as the (White Paper on Transformation and Service Delivery 1997). The Batho Pele principles were developed by the country’s administration from such a paper, in order to strengthen both the notion of service delivery and good governance, within the SA civic sector spectrum (Cameron 2010). While (Bell et al., 2009) hold that government service should aim at the satisfaction of members of the public who are its clients, notes evidence of the opposite, some years earlier already. Service delivery and decent governance oversight organizations, which are the Public Service Commission and the Auditor-General, are shown to have articulated their displeasure with the failure of administration departments to pay courtesy to or devise their endorsements, making their imprecise functions on the public service ineffective (Bias, 2010). Democratic municipal governance is faced with an extra trial in South African rural

areas, where old-style power endures to play a pivotal role in everyday life of many individuals (Delcarme, 2011). Despite the Constitution requiring selected municipalities all around SA, old-style leaders have argued that in the traditional spaces it is they who should wield decision-making authority (RSA, 1997). It is further mentioned that any city may apply in writing to the MEC (Member of the Executive Committee), in the form prescribed by the MEC, to be credited under sub-section (2) for the purposes of managing one or more accommodation programmes (Part 4) (10). Whether or not adequate planning is on the one hand, undertaken prior to housing being delivered will fundamentally affect the type and location of delivery and whether it is able to contribute to spatially integrating SA's urban areas. On the other hand, planning is aimed at making sure the government expends resources in ways that meet its objectives and where beneficiaries are happy with what they receive (Aijaz, 2010).

Cities are, in addition, predicted to be the main role players where negotiating of decisive accommodation needs and demands is concerned. The site of accommodation should expedite spatial re-arrangements, corresponding to the supply of diverse accommodation kinds with demand and structure relationships across accommodation delivery (Benit-Gbaffou, 2011). The exact danger that arises from the cities is the accommodation projects that end up not satisfying basic community needs, recognized to the extent that they were emphasized in the Integrated Development Plan (IDP) (Cameron, 2010). Pressures therefore arise amongst local administration and elected councillors, and officials and the public because of the IDP process. Added to this is an outcry in respect of the processes predicted to be consultative but where the public was, confusingly, bypassed (Cameron & Thornhill 2009). The Centre for Development and Enterprise (CDE) reports that provincial accommodation departments have engaged over concerns in acquiring service suppliers, both contractors and project managers, to actually deal with the immediate delivery of houses (CDE, 2009). Provincial officials' concerns highlighted the impending collapse of projects from lack of capacity on the side of local authorities (Lekonyane and Disoloane, 2013). Housing distribution, as part of the overall procedure, is termed 'beneficiary administration'. This determination is to be done by both local and provincial authorities, whereas local government was reviewed to cultivate a demand database to accomplish accommodation lists, as well as take requests for accommodation subsidies and household accommodation, in terms of the need valuation throughout the IDP process. The province confirms requests and approves subsidizations (Muzondi, 2014). There have nonetheless, been tensions amongst local and provincial officials, to the extent where the provincial office overrides the waiting list. The report of the Auditor-General, with regard to Section 5.8 of the Auditor-general Act, describes checking of provincial programmes and classifies where it is in terms of the units provided with the budget allocation (RSA-Auditor General Report, 2007-2008).

Challenges Facing South African Municipalities: As stated in the earlier discussion, presently in the democratic government, Urbanisation is not really a 'new' phenomenon. Since the democratic dispensation in SA in 1994 (Statistics SA, 2014) many people have been gathering in urban areas where they previously had limited admission to and could only stay in homelands (Turok, 2012), with overall Urbanisation growth rising dramatically over the past 20 years (Allan & Heese, 2011). There are, however, problems related to development, such as joblessness and worsening sub-structures; narrowing service delivery volumes; ecological squalor; and over-population along with a housing shortage for growing informal dwellings (Lekonyane & Disoloane, 2013). Added to these problems, is the lack of attention to informal settlements in relation to sewerage, potable water, squall water drainage, as well as power (Bond, 2010). There are also some serious ecological influences in various low-cost housing sector settings, in terms of groundwater pollution; strongly related to a number of informal settlements deprived of good hygiene facilities and disturbance of fragile environments, such as estuarine or wetland areas (Frenkel, 2011). Since the low-cost housing sector is populated unfortunate people with comparatively minuscule energy and water usage (Hlongwane, 2012) agrees that the sector's general ecological footmark remains insignificant, due to the alterations on the country's urban civic fixture-driven alterations, in terms of townships and more organised societies. However, unfortunate societies also have an insignificant distal ecological impact, counter to that more prosperous societies (Joubert, 2012).

Goebel (2007) asserts that cost constraints evidenced by numerous families still utilising dangerous fuel, such as wood and paraffin as opposed to electricity. Hence, it can be deduced it is not the urban poor of the country straining its urban energy supply. This makes it imperative to note that a reduction in the environmental

impact in urban centres does not necessarily involve only low-cost households or poor communities. (Mahlangu, 2012) further affirms that the growing black elite community has exacerbated environmental concerns through their respective lifestyles, this through non-ecological cars and business habits of the black elite. There seems to be a perception that the major developing cities are over-crowded with sub-standard housing provision, accompanied by inadequate facilities for sanitation in urban spaces that are in turn highly related to the number and high levels of internal migration from deprived rural areas, with expectations. It found that these expectations are not, attended to or if they are attended to, they are not satisfactory to the beneficiaries (Mbuyazi, 2012). (Ndebele, 2012) argues that research has proven large cities have problems and there are more complexities in urban spaces, to the extent that they are vibrant and diverse in nature and unique as well. There is also a high populace growth in large cities, which leads to social-economic problems feasible to an observer, in respect of residences and the work environment. However, the majority of the populace receives an acceptable income and high levels of education, recorded in urban spaces, leading to considerable standards of living.

The principles of sustainability, equity, accountability, and community empowerment, as well as participation, and efficiency, are pivotal in terms of good governance critical to meet the needs of the community and ensure its adequate development (Sahib, 2012). It is further argued by (Ngwane 2010) that high levels of migration in urban spaces can be addressed by promoting environmental development. In terms of focusing development on rural spaces, as well as modification of the conditions in respect of people's power, which is driven by skills, knowledge, capacity building and the provision of basic and critical services in urban spaces.

Effects on Communities: There is an increasing demand for municipal services from municipalities, especially the metros, as they are more urbanized. This phenomenon is not only caused by internal migration but also by increasing municipal boundaries due to peripheries from other provinces, near provincial borders. This activity does not happen only in KZN municipalities, but across the country, in terms of the demarcation boards of municipalities (Landau, 2007; Azmat, 2010). The South African government has a long history of inadequate and insufficient housing for the urban population, which is below poverty lines, with policies of the apartheid era that trapped people in their homelands, leading to an over-crowded populace, with implications for the capacity of municipalities, in respect of townships and informal settlements (Andersson & van Laxerhoven, 2007). Understandably, this then leads to poor housing delivery, which has a long history in SA where local government is concerned, as more than a third of South African residents reside in informal settlements (Coovadia et al., 2009). There is still a narrow view and spatial boundaries from both rural and urban planners that seem to bind operations to the same notion, although there are imperative factors confirming the linkage of rural to urban migration for both towns and villages (World Bank, 2013). Nonetheless, while overall urbanization and economic trends have contributed to worsening poverty in urban spaces on the one hand, on the other hand poverty is decreasing from a global perspective.

This evident from the period 1993 to 2002, which showed a failure to live above the poverty line in rural, centres while urban areas are winning (Hetland & Goodwin, 2013). The growth of former rural spaces to form urban peripheries and the incorporation of small cities and towns into the overall urban populace is a major contributor to the rapid population growth and development to form Metro Municipalities (Missinne et al., 2012). The World Bank economists noticed a major problem in big cities as the poor direction in terms of urban policies, which has a negative influence on planners, with little sense of economic consideration (United Nations, 2011). Hollander, Bruce, (Burstrom & Ekblad, 2013) argue that internal migration has been a major factor in the enhancement of population growth in local government, in the process straining water infrastructure, which leads to poor urban dwellers consuming clean water (sometimes not clearly clean) at expensive prices, while the wealthier groups enjoy highly subsidized services. Moreover, the immunization of children in large numbers plays a significant role in enhancing health in developing economies (Breslau et al., 2011). Numerous challenges in the rural areas are born from a lack of adequate infrastructure and facilities to mobilise, such as roads, which makes it better to live in urban than in rural areas (Veling, Hoek, Selten, & Susser 2011). Population growth is nonetheless manageable in both rural and urban spaces, which has new demographic pressures.

There are, for instance, cities in Africa with high levels of child mortality, comparable to those of the United States (Posel, 2009). A pattern has also been found, of health personnel leaving rural areas and small cities, which does not improve the situation in rural areas, as developing economies use health sector reforms in an attempt to stabilize the political arena. Allowances thus need to be made in respect of reduced resources and capability problems in rural areas, small towns and cities (Missinne & Bracke, 2012). There is, however, a high prevalence of the use of the private sector for some basic services, such as health, in the urban environment, which is inevitable with high levels of income among the urban populace. This also stimulates urban growth and development (Leibbrandt, Woolard & de Villiers, 2009). The international community had observed a significant occurrence, as never before had the rural populace actually been comparable with the urban populace. This shows a change in the environmental, social, cultural and economic spheres, as there seem to be high levels of internal migration, in terms of rural to urban migration, as well as urban to rural migration but to a larger extent rural to rural and urban to urban migration (UN-Habitat, 2011). The metro municipalities create conducive environments for the economic, social, political and various other demographics, as well as environmental factors, which enhance development and growth (de Haas, 2010). Concerns exist regarding the quality of the formal health service received by the poor, especially in rural areas (Christensen et al., 2013). With different illnesses, there are varied hypotheses on the relevance of socio-economic factors to the health system (Wittenberg, 2009).

Furthermore, the use of unauthorised land is the main reason for the government to not provide social services (Statistics SA, 2011a). The living conditions in slums are far worse than that of the periphery urban spaces, with the location of slums having an influence on the living conditions of its dwellers. Not all informal settlements are semi-periphery and when the slums are within urban spaces, it tends to worsen sanitation conditions. It also raises the issue of unknown internal borders by both government and the public creating confusion in search of better social-economic conditions and greater job opportunities (Housing Development Agency, 2012). Research shows a high number of women seeking health services, which is to a large extent broadened to include other family members (Abbas & Varma, 2014). Further clarification is also required in terms of health implications due to the extent of weather change. Enough has, however, been covered on the primary elements of an urban adaptation strategy for developing economies such as SA (Satterthwaite et al., 2007). Whereas a ratio of 1:3 of city dwellers from slums, the projection of the number of people who live in informal settlements is close to one billion people around the world. Numerous local administrations have viewed slums as temporal, yet also as pathways to development; the income of informal settlement dwellers will grow gradually as time goes.

A component test conducted regarding the statement whether there were political conflicts in the rural area, leading respondents to migrate to the urban area, respondents indicated three group components. Nonetheless, substantial evidence by researcher shows informal settlements are growing and becoming a permanent element of urban centres. Informal settlements have incorporated themselves into becoming a known element of modern cities; in terms of being districts and a category that, establishes spaces amongst both rural and urban centres (Patel & Bhattacharya, 2010). Furthermore, the inevitable high volume of consumption by settlements also affects the total demand for energy in the urban populace. Three factors reflect changes in energy consumption, the types of households in terms of taxonomy; assumed patterns of consumption in terms of each type; and the profit distribution as per the different types (United Nations, 2012). Consensus has thus been reached regarding the possible drivers of internal migration to a never-ending process, as previously discussed (Van Hear, Bakewell, & Long, 2012). Even though a direct relationship exists between poverty and its eradication from internal migration, it may not be the major driver of migration (Landau, 2007: 61-76). The inclusive debate is on migration and development, in terms of possible pressures of development, and the high possibility of migration due to development bringing about more resources, which makes it easy to migrate (Marques & Torres, 2005).

Table 1: Areas of Origin

	Frequency	Percent	Valid Percent	Cumulative Percent
Empangeni	6	6.0	6.0	6.0
Ulundi	4	4.0	4.0	10.0
Nquthu	16	16.0	16.0	26.0
Escourt	12	12.0	12.0	38.0
Kwa-nongoma	14	14.0	14.0	52.0
Nkandla	6	6.0	6.0	58.0
Umlazi	3	3.0	3.0	61.0
Kwamashu	7	7.0	7.0	68.0
Adams Mission	6	6.0	6.0	74.0
Embumbulu	16	16.0	16.0	90.0
Richards Bay	3	3.0	3.0	93.0
Pietermaritzburg	5	5.0	5.0	98.0
Other areas in Kwazulu-Natal	2	2.0	2.0	100.0
Total	**100**	**100.0**	**100.0**	

Table 1: Respondents were asked to indicate their area of origin and what was the reason respondents migrated. A questionnaire was used as the measuring instrument for this survey. The main questions are summarized in table 2.

Table 2: Summary of Key Questions

Research Area	Questions
Reason for immigration from the area of origin	Do Respondents consider political conflicts to be the reason they migrated from rural areas to urban areas Response Alternatives: Agree; Strongly disagree; Neutral; Disagree; strongly disagree
What factor contributed to the migration	Do Respondents consider promotion at work as a factor for relocation? Response Alternatives: Agree; Strongly disagree; Neutral; Disagree; strongly disagree
Understanding why rural immigrants live here	Do Respondents consider running a business in town as a reason they migrated to the urban area Response Alternatives: Agree; Strongly disagree; Neutral; Disagree; strongly disagree
Work-related immigration	Do Respondents consider travelling cost from home as a reason for migration Response Alternatives: Agree; Strongly disagree; Neutral; Disagree; strongly disagree
Service delivery related immigration	Do Respondents consider better opportunities of getting a house as a reason they migrated Response Alternatives: Agree; Strongly disagree; Neutral; Disagree; strongly disagree
Individual driven migration	Do respondents consider Lack of rooms on their homes as their reasons for migration Response Alternatives: Agree; Strongly disagree; Neutral; Disagree; strongly disagree
Immigrants from RDP Houses	Do respondents consider that they come from families that were provided with RDP Response Alternatives: Agree; Strongly disagree; Neutral; Disagree;

	strongly disagree
Service delivery related	Do respondents consider that EThekwini municipality is providing all basic services in time, that's why they migrated they are living in informal settlement Response Alternatives: Agree; Strongly disagree; Neutral; Disagree; strongly disagree
Housing delivery related	Do respondents consider that they were attracted by the municipalities housing allocation Response Alternatives: Agree; Strongly disagree; Neutral; Disagree; strongly disagree

3. Methodology

Primary data was collected using a traditional 5-point Likert scale questionnaire as measuring instrument for statistical purposes. The use of the Statistical Package for Social Science (SPSS) was deemed relevant as it is a commonly used statistical programmed for the interpretation and summarizing of findings and results for this study.

4. Findings

The following chapter presents findings from 100 respondents and tables are used to present the Data. The study also indicates 39 percent of respondents that agreed to have migrated due to factors relating to their households having limited rooms. This calls for the eThekwini Municipality to improve the provision of housing, in considering the number of family members when implementing the housing programme to enhance service delivery. More than half of the respondents or 53 percent agreed the municipality does not take the number of family members into consideration when implementing housing programmes.

Table 3: Frequency Table

Variable Tested	Statement	Frequency	Percentage	Variable test	Statement	Frequency	Percentage
Political conflict	Agree	71	71	Own a Business in town	Agree	64	64
	Neutral	6	6		Neutral	16	16
	Disagree	23	23		Disagree	20	20
Relocation due to work promotion	Agree	51	51	Travel cost from home to work	Agree	55	55
	Neutral	18	18		Neutral	10	10
	Disagree	31	31		Disagree	35	35
Better opportunity to get a house	Agree	68	68	Provided with two rooms as extended family	Agree	59	59
	Neutral	6	6		Neutral	12	12
	Disagree	14	14		Disagree	29	29
Limited room at home	Agree	47	47	Basic Services supplied in time	Agree	68	68
	Neutral	8	8		Neutral	11	11
	Disagree	34	34		Disagree	21	21
Municipal housing allocation	Agree	64	64				
	Neutral	6	6				
	Disagree	20	20				

Table 1 illustrates results on findings regarding the statement on whether there were political conflicts in a rural area that is why respondents migrated to the urban area. Total agreement was indicated by 71 (71 percent) of the respondents with the statement, while six (6 percent) yielded a neutral response and 23 (23

percent) disagreed. With regards to relocated due to a promotion at work, with 51 (51 percent) of the respondents that totally agreed with the statement, whereas 18 percent yielded neutral, and 31 (31 percent) totally disagreed with the statement. Respondents stated migration of businesses as their reason to migrate to urban cities. Strong agreement with the statement was indicated by 64 (64 percent) of respondents, 16 (16 percent) were neutral, and 20 (20 percent) disagreed with the statement. In relation to the travelling cost from home to work being too high, as the reason why respondents migrate to urban spaces. There was total agreement with the statement by 55 (55 percent) of the respondents, 10 (10 percent) were neutral, and 20 (20 percent) totally disagreed with the statement. Better opportunities of obtaining a house if respondents migrate to urban spaces, with 68 (68 percent) that totally agreed with the statement, while 10 (10 percent) of the respondents were neutral and 14 (14 percent) totally disagreed with the statement. Respondents having moved out of the home because they did not own a room. Agreement with the statement was indicated by 47 (47 percent) of the respondents, while 8 (8 percent) were neutral and 34 (34 percent) totally disagreed with the statement. Provided with two rooms while an extended family, which is why respondents migrate to the urban spaces.

Total agreement was indicated by 59 (59 percent), 12 (12 percent) were neutral, and 29 (29 percent) of the respondents totally disagreed with the statement. EThekwini municipality is providing all basic services in time, motivating respondents to migrate to the urban spaces. Half of the respondents or 68 (68 percent) totally agreed, and 11 (11 percent) were neutral, while 21 (21 percent) totally disagreed with the statement. Respondents were pleased by the municipal housing allocation. This was totally agreed to by 64 (64 percent) of the respondents, with 6 (6 percent) indicating neutral, and 20 (20 percent) that totally disagreed with the statement. Testing of the first group yielded insignificant results of 0.075, the second group component test indicated significant results of 0.613, while the third group component test showed 0.293; this indicated mixed perspectives regarding the statement. On relocated due to promotion at work, the first group component test showing 0.701, which was significant, while the second group test indicated 0.139 and the third group component test indicated 0.119. In relation to respondents who run a business in town, which is the reason they migrated to urban areas. The first group component test indicated 0.036, the second component test 0.720 and the third component test showed 0.011, which indicated mixed opinions on the statement.

Rotated Component Matrix[a]

Table 4: Drivers of Internal Migration

Description	Component		
	1	2	3
There were political conflicts in the rural area That is why I came to live here	-0.075	0.613	0.293
I relocated due to promotion at work	0.701	0.139	0.119
I run business in town that is why I live here	-0.036	0.720	-0.011
The travelling cost from home to work was too high, that why I live here	0.711	-0.242	0.109
There are better opportunities of getting a house if I live here	-0.352	0.540	0.494
I moved out of home because I did not have my own room	0.838	0.023	0.069
We were provided with two rooms while we are an extended family, that is why I decided to live here	0.229	0.004	0.654
The EThekwini municipality is providing all basic services in time, That's why I live here	0.303	0.623	-0.312
I am pleased by the municipal housing allocation	0.112	0.044	0.811

Extraction Method: Principal Component Analysis Rotation Method Varimax with Kaiser Normalization

a. Rotation converged in 6 iterations.

The travelling cost from home to work was too high, resulting in respondents migrating to urban spaces. The first component group test yielded 0.711 which indicated it is quite significant to the statement on the drivers of migration, while the second group component test indicated 0.242 and the third component test shows

0.109, reflecting different opinions regarding the statement. While on better opportunities of obtaining a house, should respondents migrate to an urban area? The first group component test indicated 0.352, whereas the second group showed a 0.540 result, which were significant to the statement on drivers of migration. The third group indicated 0.494. In relation to respondents who moved out of the home because, they did not own a room. The first group component shows quite significant results of 0.838 to the statement on the drivers of migration. The second group component test was 0.023, while the third group component test was 0.069. The result indicates different opinions regarding the statement. On Respondents who were provided with two rooms while they were an extended family, which is why respondents migrated to urban spaces. The first group component yielded results of 0.229. The second group test indicated results of 0.004 which did not show strong significance. The third test group component indicated 0.654, which shows significance for the statement. On eThekwini Municipality providing all basic services in time that is why respondents migrate to town. The first group component test yielded 0.303, while the second group test indicated a significance of 0.623 and the third group component test shows 0.312. On respondents are pleased by the municipal housing allocation. The first results indicated 0.112 and the second group, component test results indicated 0.044, whereas the third group component test shows a significant 0.811. Most of the tests conducted showed significance with some not showing a strong significance.

Table 5: Chi-Squire Test

	Description	Chi-Square	df	ASYMP. Sig.
D12	There were political conflicts in the rural area That is why I came to live here	83.1	4	0.000
D13	I relocated due to promotion at work	22.9	4	0.000
D14	I run business in town that is why I live here	92.8	4	0.000
D15	The travelling cost from home to work was too high, that why I live here	46.1	4	0.000
D16	There are better opportunities of getting a house if I live here	92	4	0.000
D17	I moved out of the home because I did not have my own room	30.3	4	0.000
D18	We were provided with two rooms while we are an extended family, that is why I decided to live here	70	4	0.000
D19	The EThekwini municipality is providing all basic services in time, That's why I live here	58.3	4	0.000
D20	I am pleased by the municipal housing allocation	84.7	4	0.000

Chi-square analysis of the results was performed to determine if political conflicts in the rural area have strong value as a driver of internal migration. The statistical results were found to be significant at (X2= 83.1; DF= .4; P= .000), on relocated due to promotion at work, the statistical results were found to be significant at (X2= 22.9; DF= .4; P= .000), on respondents migrated due to owning a business in town. The statistical results were found to be significant at (X2= 92.8; DF= .4; P= .000) on traveling cost from home to work statistical. Results were found to be significant at (X2= 46.1; DF= .4; P= .000), on better opportunities of obtaining a house statistical results were found to be significant at (X2= 92; DF= .4; P= .000), on moving. Out of their homes because of limited room statistical results were found to be significant at (X2= 30.3; DF= .4; P= .000), on provided with two rooms while they were an extended family statistical results were found. To be significant at (X2= 70; DF= .4; P= .000), on eThekwini municipality is providing all basic services statistical results were found to be significant at (X2= 58.3; DFD= .4; P= .000), on municipal housing allocation statistical. Results were found to be significant at (X2= 84.7; DF= .4; P= .000), which confirms that the statistically significant result can be considered as trustworthy. Therefore, the hypothesis of this variable is accepted, which means these variables has a significant influence on whether these variables have strong value as a drivers of migration

Limitations: The limitation of this study is that it was specifically confined and limited to the eThekwini metropolitan municipal area and its residents and the findings could therefore, not be generalized to similar areas.

The Implication of the Study: The study has highlighted some of the critical factors affecting the impact of rural immigrants on service delivery at selected areas within the eThekwini Municipality.

5. Conclusion

More than half or 59 percent of respondents agreed with the statement that political conflicts in the rural area were the reason they migrated to the city. The study further found that 38 percent of respondents relocated due to promotion at work. It is concluded that owning a business in eThekwini Municipality was indicated by 58 percent of respondents as the reason they migrated, while 46 percent agreed that travelling cost acts as a push factor of migration. The study further indicates that 58 percent of respondents agreed the provision of houses acts as a pull factor, motivating migrants to migrate to urban spaces, especially to eThekwini Municipality. This calls for the municipality to improve human settlements for effective service delivery and counter-urbanisation efforts need to also be taken into consideration. The study also indicates that 50 percent of the respondents agreed that eThekwini Municipality's ability to provide all services in time, had motivated them to migrate to urban spaces such as the eThekwini Municipality. Provision of services in time thus acts as a pull factor attracts rural migrants to migrate to eThekwini Municipality in massive proportions, in search of better service delivery. Agreement was indicated by 56 percent of respondents that the eThekwini Municipality housing allocation seems to also be a pull factor for rural immigrants to migrate to eThekwini Municipality.

Recommendations: This study set out to analyse the effects of rural immigration on service delivery in the context of South Africa. This project aimed to provide information for municipalities in developing economies such as SA. Therefore, based on the findings of the research study, the following is recommended for further study. The study recommends further research on other municipalities and other stakeholders, also with other spheres of government, including national and provincial administration, in order to analyse internal plans and programmes and determine the manner in which that is going to help in urban planning and service delivery, as well as to enhance service delivery performance.

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Analysis of Relationships and Causality between Consumer Price Index (CPI), the Producer Price Index (PPI) and Purchasing Manager's Index (PMI) in South Africa

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Abstract: The variables the consumer price index (CPI), the producer price index (PPI) and the purchasing managers' index (PMI) and play major roles in economic forecasting. The overall objective of this study is to assess the inter-relationships between CPI, PPI and PMI as predicting variables. This study is quantitative in nature and employed an ARDL econometric model, error correction model (ECM) and Granger causality approaches to establish long and short-run relationships. The ARDL method was used due to the fact that the variables had a mix of stationarity at levels I (0) and the first difference I (1). Quarterly datasets were obtained from Statistics South Africa (Stats SA) and the Bureau of Economic Research (BER) for the period 2000 to 2017. Results from the estimations discovered that variables cointegrate in the long-run. Additionally, evidence of short-run relationships has been determined using ECM. Furthermore, causal relationships were also analysed with results indicating that CPI causes PMI and PPI causes PMI. The implication of the research is the confirmation of the importance of relationships between CPI, PPI and PMI, which is especially significant in the short-run and the three index indicators are important macro-economic indicators for changes in overall economic activity on a macro level.

Keywords: *ARDL, CPI, PMI, PPI, South Africa*

1. Introduction

An economy in the world is analyzed by means of critical macroeconomic variables such as inflation, GDP growth, unemployment rates, exchange rates (Auerbach & Gorodnichenko, 2012). In this study, a different approach was followed where three macroeconomic indexes were selected that have not been included in econometric models on a regular basis. Economists regularly speculate about the relationships between inflation or consumer price index (CPI), producer price index (PPI) and the purchasing managers' index (PMI). All three variables are seen as predictors of general economic activities in the business cycle of an economy, but each variable has a different focus in the economy. In time periods of high levels of economic activity and economic expansion, such activities could result in increased employment, with rising income and consumer expenditure leading to increased demand for goods and services as well as commodities. Such an increase in economic growth usually results in skills shortages and other macroeconomic problems such as supply backlogs. Such a situation where demand outperforms supply, usually leads to price instability and inflation due to higher production costs and demand (IHS Markit, 2017). The research question that is under investigation in this paper is focused on the inter-relationships between the predicting index variables of CPI, PPI and PMI. The overall objective of the study is to determine the relationships between the three variables. This study is unique and important in that limited studies have analyzed the three variables together and these indexes and their relationships are different in developed and developing countries.

This study analyzed the situation in a developing country, namely South Africa, which is seen in many cases as a proxy for emerging economies. The results of this study could present important findings for future policy formulation. CPI could be defined as the general, continuous and sustained escalation in price levels of services and goods in an economy and the average price level is measured by means of the CPI (Fourie & Burger, 2017). According to Mohr (2001) the CPI is the most used economic indicator in South Africa and CPI is used to calculate inflation rates on a monthly basis. According to Dornbusch et al., (2014), PPI is also described as a measure of the cost of a basket of goods, similar to CPI, but, PPI has a more limited and different range of goods included in the measurement. PPI includes only raw materials and semi-finished goods and measures good in the early stage of the distribution and supply chain system. Mohr (2001) states that PPI is also estimated on a monthly basis and measures the price level of the "first significant commercial transaction". Prices of manufactured goods are for example measured where they leave the factory. PPI is therefore different to CPI as it measures the cost of production whereas CPI measures the cost of living

(Mohr, 2001). According to Mohr, (2001) the link between CPI and PPI is that changes in PPI indicate possible movements or changes in CPI.

PMI is defined as a composite index that measures growth and activity in manufacturing and also indirectly, the total economy of a country (Chien & Morris, 2016). In addition, Aprigliano (2011) states that PMI provides timely information on the spread of improvement or deterioration of business conditions. PMI is compiled through surveys of purchasing and supply conditions in a country or region (Khundrakpam & George, 2013). Purchasing managers are surveyed on their short-run purchases and production conditions and decisions and could therefore be classified as a leading economic indicator (Khundrakpam & George, 2013; Pelaez, 2003; Tsuchiya, 2012). PMI data is available in the beginning of every month, before most other macroeconomic datasets. According to Khundrakpam and George (2013), PMI is used by many central banks to analyse overall economic activities relating to strength and direction. The rest of the study layout firstly includes a literature review which consists of an analysis of concepts, and an empirical review of quantitative results of previous studies; secondly the research methodology is explained with the associated empirical results and findings. Lastly, recommendations are made with some concluding remarks.

2. Literature Review

In this section an empirical overview of the relationships amongst the variables included in the study is provided as well as an analysis of the predictability value of the variables regarding the economy. Liping, Gang and Jiani, (2008) analysed the relationship between CPI and PPI in China utilizing a Granger-causality examination for the period from 2001 to 2008. They found that movement in CPI causes changes in PPI. PPI reacted to changes in CPI with a 1-3-month time lag. This indicates that demand-side factors could play a dominating role if compared to the supply-side factors in the Chinese economy. Akcay, (2011) also analysed the relationship between CPI and PPI in selected European countries from 1995 to 2007, also using a Granger causality test to determine causality. The results are not standard for all five countries. Some countries indicated uni-directional causality from PPI to CPI while other countries presented a bi-directional causality. Caporale, Katsimi and Pittis, (2002) investigated the relationship amongst CPI and PPI in the G7 countries, employing causality testing method. A summary of the results confirmed uni-directional causality from PPI to CPI. Barnes (2017), states that PMI is a significant indicator of general economic activities as most recessions or boom periods start in the manufacturing sector.

The PMI is a score between 0 and 100. For example, a PMI of 50 indicates that an equal number of managers indicated that conditions are better compared to getting worse. A PMI of 50 and above therefore indicates a possible expansion of specifically the manufacturing sector (Koenig, 2002). In South Africa (SA), the PMI is compiled by BER on a monthly frequency based on the principles as used by the Institute of Supply Management (ISM) in the US. PMI's strengths of a leading indicator are the freshness of data, power to explain and understand other indicators better, shows trends in changes and analyse supply in the commodity sectors (Barnes, 2017). PMI could be utilised as an effective forecaster of changes in GDP, inflation and economic sectors, especially manufacturing activity (Lindsey & Pavur, 2005; Tsuchiya, 2012). It should however be noted that the strength of PMI as a leading indicator, has in recent years lost some of its power due to the diminishing role of manufacturing in the global economy (Barnes, 2017). Banerjee and Marcellino (2006) also tested the relationship between PMI, inflation and GDP growth in the US and found a significant relationship between indicators.

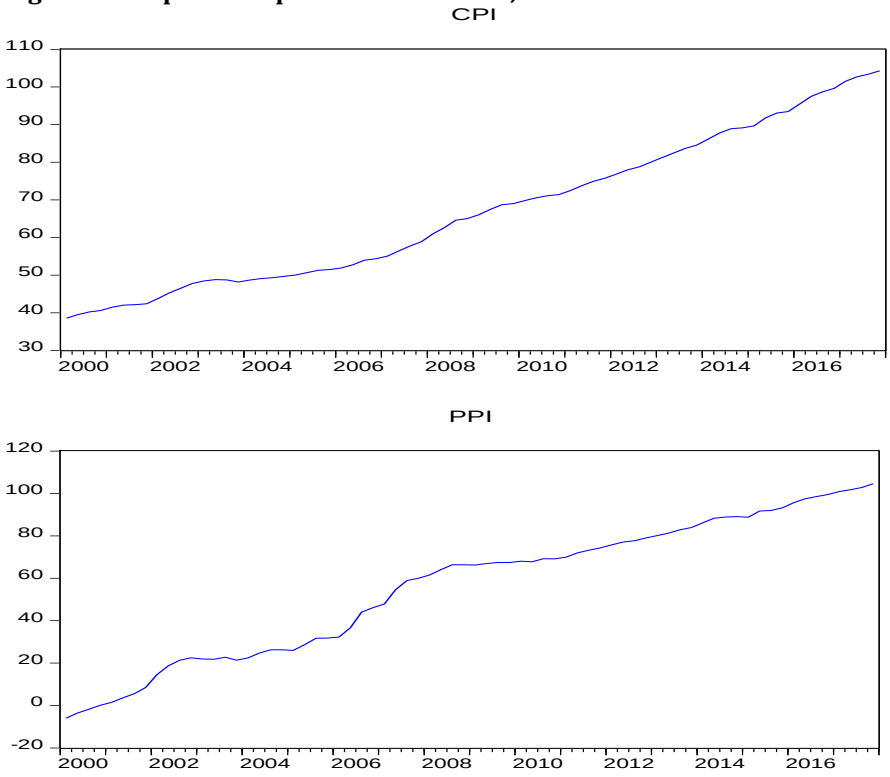
For the period 2005 to 2012, using an ARDL econometric method, it was found that PMI was a significant predictor of inflation and economic activities as well as the manufacturing growth in India (Khundrakpam & George, 2013). Rossiter (2010) analysed the relationships between various macroeconomic variables where the author utilized mixed-frequency forecasting equations for global quarterly economic output, imports, and inflation using PMI. The results of the study indicated that PMI is valuable in predicting changes in the economy. In period of shocks such as the financial crises in 2008, the PMI did not fully predict the changes in the economy. This study emphasises the usefulness nature of indicators such as PMI for short-term forecasting. Paterson (2014) analysed the relationship between inflation and PMI. The results of the study within a boom period in the UK, was that inflation was increasing in tandem with PMI on a monthly basis indicating that PMI was causing changes in CPI on the short term. In conclusion literature on the relationships

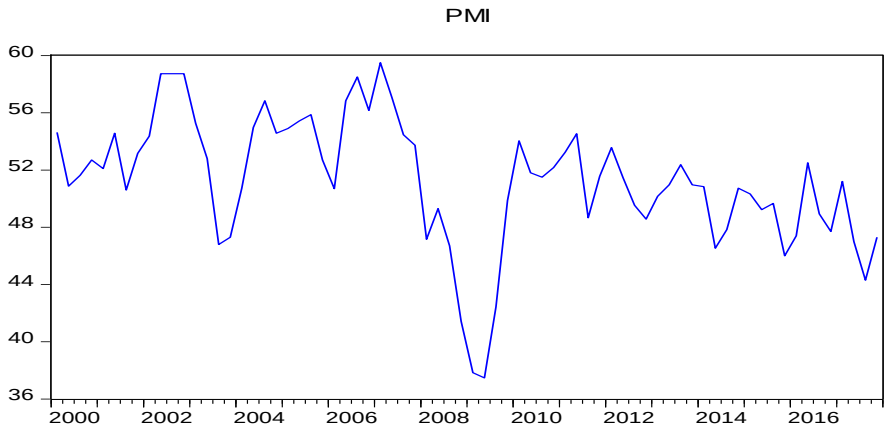
between the selected indexes limited. Findings from the literature indicate that PMI is a leading indicator that can be successfully utilized to predict changes in other indexes and macroeconomic indicators regarding the general economic conditions, but more specifically the manufacturing sector. Other researchers have also confirmed that PPI could in most cases cause changes in CPI.

3. Research Methodology

The study is based on a quantitative research methodology. The study used time series data for the period 2000 to 2017, with quarterly data. The data was retrieved from Statistics South Africa (Stats SA) and from the Bureau of Economic Research (BER) databases. The variables included in the analysis are: consumer price index (CPI); purchasing managers' index (PMI) and the producer price index (PPI). These variables were chosen given their significant forecasting value in the South African economy and the relationship that might exist amongst the variables. The time evolution or changes in time series trends for each variable are provided in Figure 1. CPI and PPI indexes indicating price changes over time with a specific base year, and have experienced upward trending movements. PMI on the other hand indicates the outlook of purchasing managers on the economy and has shown more volatile trends in both directions as the economy goes through boom and bust periods. For uniformity and stability purposes, variables were differenced, and non-stationary series are used to determine the long-run relationship. Thereafter, each deviation or shock from the equilibrium is expected to adjust in following periods (Engle & Granger, 1987). The general consensus from the literature is therefore that the order of causality is as follows: PMI causes PPI to change which causes CPI to change.

Figure 1: Graphical Representation of CPI, PMI and PPI





Sources: Stats SA and BER.

Numerous econometric models and approaches exist to determine or test long-run effects amongst economic and financial time series variables. During the last few decades, the impact of works of scholars such as Engle and Granger (1987), Johansen (1988), and Pesaran and Smith (1998) are recognised in the econometric field. Nonetheless, to achieve the objective of this study, the Autoregressive Distributed Lag (ARDL) model, introduced by Pesaran and Smith (1998) and revised by Pesaran et al. (2001), is chosen. The choice of this model was made based on its numerous advantages of the model. Firstly, the ARDL model has the ability to simultaneously estimate the long and short-run relationships. Secondly, it can be applied to variables that have a mixture of stationary, both I (0) and I (1). Thirdly, the ARDL model allows the utilization of different numbers of optimum lags. Furthermore, it is an appropriate model to determine the cointegration or long-run relationship while using a small sample size. The only drawback of this model is its inability to provide accurate results when applied to variables that are I (2) (Omar et al., 2015).

Applying a linear relationship and following the econometric empirical literature, the inter-relationship between CPI, PMI and PPI can be expressed as:

CPI_t = F (PMI_t, PPI_t, u_t).....(1)

PMI_t = F (CPI_t, PPI_t, u_t).....(2)

PPI_t = F (CPI_t, PMI_t, u_t).....(3)

Where u represents an error term and t denotes a time index. To analyse relationships on the long-run, amongst the variables, a Bounds test, built on F-statistics or Wald test suggested by Pesaran et al., (2001) was used. In these tests, the null hypothesis proposes the absence of cointegration, while the alternative hypothesis indicates the presence of cointegration between variables. The CPI equation with the unrestricted error correction model (UECM) is considered as:

$$\Delta lnCPI_t = \varphi_0 + \sum_{i=1}^{p} \varphi_{1i}\, \Delta lnCPI_{t-i} + \sum_{i=1}^{p} \varphi_{2i}\, \Delta PMI_{t-i} + \sum_{i=1}^{p} \varphi_{3i}\, \Delta PPI_{t-1} + \varphi_4 lnCPI_t + \varphi_5 lnPMI_t + \varphi_6 lnPPI_t + u_t \quad \ldots\ldots (4)$$

Where $\Delta lnCPI$, $\Delta lnPMI$ and $\Delta lnCPI$ denote first differences of analysed variables. This equation is repeated three times for each of the three variables (because each variable is firstly treated and dependent, then independent). To test the null hypothesis of no cointegration, the UECM is considered. The set of the null hypothesis and the alternative hypothesis are represented as follow:

$H_0 = \varphi_4 = \varphi_5 = \varphi_6 = 0$

$H_1 \neq \varphi_4 \neq \varphi_5 \neq \varphi_6 \neq 0$

Provides tables comprising of two sets: the lower bound critical values indicating I (0) and the upper bound critical values indicating series that are I(1). Such a conclusion can only be made if the F-statistics falls outside bounds. In other words, if the F-statistics is greater than the upper bound critical values, the null hypothesis suggesting no cointegration is rejected. Alternatively, if the F-statistics is smaller than the lower bound, the null hypothesis is not rejected meaning the lack of a long-run relationship. However, if the F-statistics fall

between the two bounds, unless further information, no conclusion can be made. The equilibrium relation of long-run ARDL (q1, q2, q3) can be express as follow:

$lnCPI_t = \alpha_0 + \sum_{i=1}^{q1} \delta_{1i}\, lnCPI_{t-i} + \sum_{i=1}^{q2} \delta_{2i}\, PMI_{t-i} + \sum_{i=1}^{q3} \delta_{3i}\, PPI_{t-1} + e_t$ ..... (5)

Where e_t denotes the gap between lnCPI_t and its equilibrium level, which is to be adjusted in the next quarter. This equation is repeated three times (because each variable is firstly treated and dependent, then independent). Subsequently, the outcome of the model expressing the speed of adjustment is expressed as: $\Delta lnCPI_t = \vartheta_0 + \sum_{i=1}^{q} \vartheta_{1i}\, \Delta lnCPI_{t-i} + \sum_{i=0}^{q} \vartheta_2\, \Delta PMI_{t-i} + \sum_{i=0}^{q} \vartheta_3\, \Delta PPI_{t-1} + \vartheta_4 \varepsilon_{t-1} + u_t$ ..... (6). In Equation (6), ε_{t-1} denotes the error correction term. Its coefficient ϑ_4 is expected to negative and significant. It expresses the speed of adjustment for the consumer price index (explained variables) towards the long run equilibrium. Equation (6) is repeated three times (because each variable is firstly treated and dependent, then independent). To ensure the accuracy of the ARDL model used in the study, stability and diagnostic tests are performed. Diagnostic test includes serial correlation, normality and heteroscedasticity.

4. Analysis and Empirical Results

Approach Dolado, Sosvila-Rivero Jenkinson (1990) were used for unit root testing and the outcome suggested the absence of deterministic trends within the series under investigation. The Augmented Dicky-Fuller (ADF) test was performed for unit root testing. Table 1 is a summary of the outcomes of the tests. As indicated, the variables under investigation comprise of I (0) and I (1) variables, supporting the choice of the use of an ARDL model for cointegration analysis.

Table 1: ADF Test Results

Variables	Variables in Levels		Variables in First Difference		Integration order (result)
	Constant	constant & trend	constant	constant & trend	
CPI	0.9999	0.6687	0.0596	0.0001*	I (1)
PMI	0.0447**	0.0157**	0.0000*	0.0000*	I (0)
PPI	0.6777	0.3069	0.0100*	0.0255**	I (1)

Note. *, ** indicate significance of variable at 1%, 5% respectively.

The procedure of ARDL analysis begins with the lag order selection (p) as represented in the equations (1), (2) and (3). Different criteria are available for lag length selection. In this study, the Schwartz Information Criterion (SIC) was used and the best models selected were ARDL (2, 0, 1) for the CPI model, ARDL (1, 0, 1) for the PMI model and ARDL (3, 0, 2) for the PPI model suggesting that p = 2 is the right lag length for CPI, p = 1 for the PMI, and p = 3 for PPI. The optimal numbers of lags were used in determining the existence of a long-run relationship amongst the variables using the Wald test. Using the F-statistics results, the conclusion was that a long-run relationship exists amongst the analysed variables. The F-statistics value is 6.84 for the first model; 4.59 for the second model and 3.47 for the third model. The F-test for model 1 and model 2 (as presented in the equation 1 and 2) are greater than the upper bound (4.38) critical value from the Narayan (2004:28) tables, with a significant alpha of 0.05 or 0.95 interval level of confidence. Henceforth, the null hypothesis of no cointegration is rejected in favour of the alternative. Thus, under the ARDL model with the optimum number of lags (q1, q2, and q3), variables are cointegrated.

As explained in the previous paragraph and displayed in Table 2, a long-run relationship (cointegration) exists. Therefore, it is pertinent to analyse that relationship using the long-run coefficients as indicated in equations (7), (8) and (9):

CPI = 84.88 - 0.989*PMI + 1.301*PPI..... (7)
PMI = 89.68 +0.085*CPI – 0.103*PPI..... (8)
PPI = 196.79 +0.667*CPI +0.5023*PMI..... (9)

The highlights from the three equations are that a 1 percent increase in PPI could cause CPI to increase by 1.3 percent; both CPI and PPI have limited impact on PMI; and both CPI and PMI have positive and above 0.5

percent impacts on PPI. These results are similar to findings by Caporale et al., (2002) and Barnes (2017). The result in Table 2 indicates the accuracy and goodness fit of the used model. The LM test confirms that no serial correlation exists and the ARCH test revealed that variables are homoscedastic. Additionally, the variables are normally distributed according to the Jarque–Bera test Furthermore, the CUSUM stability test result, reported in Figure 2, proved models to be stable.

Table 2: The ARDL Diagnostic Tests

Variables	CPI	PMI	PPI
F-stat	6.8480*	4.5983**	3.4734*
LM test (serial correlation)	0.0634	0.2791	0.3995
ARCH (homoscedasticity)	0.3821	0.7215	0.7841
Jarque-Bera (normality test)	0.8075	0.5120	0.3170

Note. *, ** indicate the significance of variable at 1% and 5%, significance respectively.

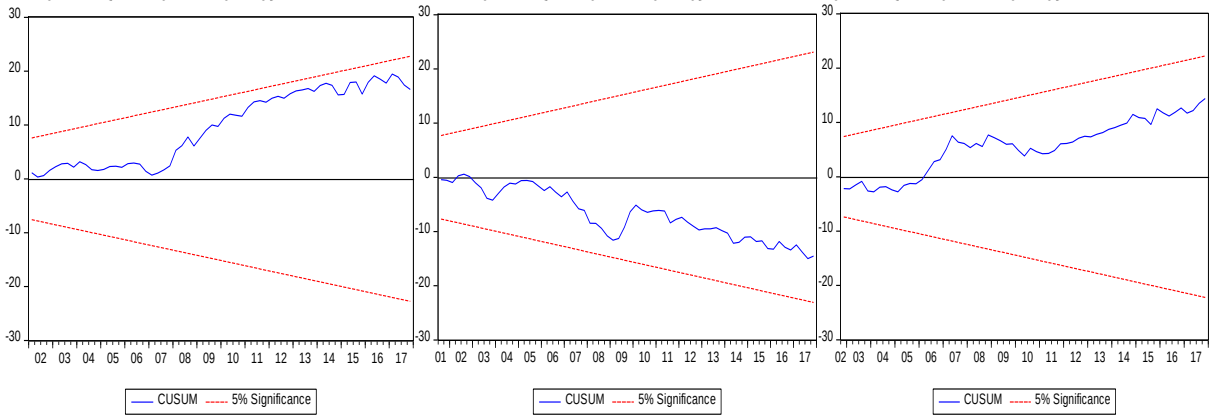
Table 3: Short Run and Error Correction Models

Variables	CPI	PMI	PPI
D(CPI)			1.6499*
D(CPI(-1))	0.2580*	0.5984**	-0.7044*
D(PMI)	-0.0019	----------	0.08440*
D(PPI)	0.1820*	-0.1811	----------
D(PPI(-1))	---------	----------	0.3935*
D(PPI(-2))	---------	----------	-0.2210**
ECT	-0.0100*	-0.3362*	-0.0184*

Note: *, ** indicate significance of variable at 1%, 5% significance levels respectively.

Figure 2: Stability Tests Results

CPI_t = F (PMI_t, PPI_t, u_t) PMI_t = F (CPI_t, PPI_t, u_t) PPI_t = F (CPI_t, PMI_t, u_t)



All variables in this study also interact in the short-run. This interaction is proven by the significant outcomes as indicated. The short-run level of CPI depends on PPI behaviour, but also on previous or lagged levels of CPI which is similar to findings by Liping et al., (2008). In contrast, the CPI level impact on both PMI and PPI. Nonetheless, PPI does not significantly affect PMI. Both CPI and PMI impact on PPI and PPI also responds to its own shocks. In addition, the results indicate that any short-run disequilibrium in the model is adjusted in the next quarters back to equilibrium. A Granger causality test was conducted to determine the causal relationships amongst the variables under consideration on the short-run and the test outcome is reported in Table 4. Based on this result, a uni-directional causal relationship exists between CPI and PMI. In other words, CPI is a predictor of PMI. Similar findings were also found by Paterson (2014). Uni-directional causality

occurs between PPI and PMI; that is to say, in short- run, changes in PPI can predict the PMI behaviours, with similar findings by Barnes (2017).

Table 4: Granger Causality Results

Null Hypothesis:	F-Statistic	Prob.
PMI does not cause CPI	0.06996	0.9325
CPI does not cause PMI	2.88814	0.0429*
PPI does not cause CPI	1.99922	0.1437
CPI does not cause PPI	0.98531	0.3788
PPI does not cause PMI	3.14092	0.0499*
PMI does not cause PPI	1.24331	0.2952

Note: *indicate significance of variable at 5% significance level.

5. Conclusion

This study analysed the inter-relationships and causality between CPI, PMI and PPI in the South African economy between 2000Q1 and 2017Q4. Firstly, a long-run interrelationship was examined and cointegration was found in the series. Nonetheless, the short-run behaviour of each variable can impact on the other variables in the model. In addition, causality tests were also performed and the outcomes revealed two uni-directional causal relationships: firstly, between CPI and PMI, and secondly between PPI and PMI. Based on this result, it is pertinent to indicate that although the variables cointegrate in the long-run their impact is more effective in the short-run. Thus the relationships between CPI, PMI, and PPI are more of a concern in formulating short-term than long-term economic policies in the South African environment. Interesting to note from this study is that the results are not exactly what was expected and what was found during the literature review process. Findings from the literature indicate that PMI is a leading indicator that can be successfully utilized to predict changes in other indexes and macroeconomic indicators regarding the general economic conditions, but more specifically the manufacturing sector. Other researchers have also confirmed that PPI could in most cases cause changes in CPI. The general consensus from the literature is therefore that the order of causality is as follows: PMI causes PPI to change which causes CPI to change. In this study on the South African situation, it was found that the causality between the variables different to what was expected. It was found that CPI causes PMI and PPI causes PMI and not vice versa.

The implication of the research is the confirmation of the importance of relationships between CPI, PPI and PMI, which is especially significant in the short-run and the three index indicators are important macroeconomic indicators for changes in overall economic activity on a macro level. These results indicate that more research is needed on the relationship between these variables and also other variables could be introduced. Although long-run cointegration was found amongst variables, the short-run results are interesting as it were different to traditional perceptions of the causality. The study has interesting and significant impacts for monetary policy formulation for developing countries. Each country is unique and a different set relationship between economic variables. Finally, it can be concluded that economic indexes are still important predictors for economic conditions but causality between variables differ from region to region.

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Small-Scale Agriculture as a Panacea in Enhancing South African Rural Economies

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Abstract: The small-scale agricultural sector is considered as an indispensable role player in improving the South African rural economies by means of enhancing sustainable rural livelihoods. This paper critically assesses the contribution of small-scale agriculture in enhancing the South African rural economies. The South African Government have numerous agricultural interventions as an approach to improving rural livelihoods. Despite various policies and interventions that have been in place to ensure that small-scale agriculture improves rural economies; there is still a dearth of research in understanding small-scale agriculture dynamics that affect rural economies. Some of the essential aspects of the findings reveal that rural communities in South Africa regard small-scale agriculture as a source of income generation and enhancing food security. These findings highlight the negative effects on the South African small-scale agriculture suffering from insufficient productivity, infertility of soil, insufficient water and climate change. The poor access to markets and inadequate financial support services were identified as the major constraints that hinder small-scale agriculture to contribute to the Gross Domestic Product (GDP) and rural economic development. The small-scale agricultural sector should come up with self-sufficient interventions to avoid dependence on the Government and other stakeholders.

Keywords: *Climate Change, Rural Communities, Rural Economy, Small-Scale Agriculture, South Africa*

1. Introduction

The agricultural sector is regarded as the main driver for rural economic development (Gomala & Baluchamy, 2018) an essential asset and primary source of income at a household level and in developing countries with more than 69% of poor people in the world making a living in rural areas. USAID (2018) acknowledges that almost 70% of Southern African rural communities depend on the agricultural sector to secure their livelihoods. The South African Government regards the participation of rural communities in the agricultural sector as a pivotal strategy to improve rural economies. In South African rural areas, small-scale agriculture is characterised by the production in both crop and livestock farming systems where rural farmers work in groups on a small portion of land (Lininger, 2011) intended to meet their household necessities (Mthembu, 2013). Due to the insufficient production in the South African agricultural sector and the lack of productivity in rural farming systems identified by Lahiff & Cousins (2005); the South African rural economy is threatened by inadequate economic activities that have resulted in restrictions in creating rural economic growth. Small-scale agriculture intends to make a significant contribution to improving rural economies by way of creating employment opportunities, provision of food and contributing to the Gross Domestic Product (GDP). Lehohla (2016) state that there is a decline in rural agriculture since the estimated percentage shows only 13.8% of South African rural households are still engaged in the agricultural sector as compared to 19.9% in 2011.

Small-scale agriculture is therefore vulnerable in contributing to rural economic development because of the inadequate formal and informal infrastructure, poor market and low productivity of farming systems (Mthembu, 2013). Sekaleli & Sebusi (2013), stress that the agricultural sector, which mostly depends on rainfall is experiencing tragic failure in productivity caused by the impact of climate conditions. Therefore, it has become critical to assess the contribution of small-scale agriculture towards enhancing South African rural economies. This paper seeks to address two main objectives the first is to determine the role of small-scale agriculture in enhancing rural economy; and to identify the challenges hindering small-scale agriculture to enhance rural economies. There are vast studies that have been undertaken to validate the role played by agriculture in spearheading rural communities in South Africa, included those by Van Zyl, Nel & Groenewald (1988); Sihlobo & Nel (2016) and; Pfunzo (2017). However, there have been limited studies undertaken to discuss the contribution of small-scale agriculture to rural economies in South Africa. The findings of this paper will contribute to the body of knowledge by signifying the importance of prioritising small-scale agriculture towards ensuring effective improvement in rural economies. The information retrieved from this

paper plays a vital role to comprehend the value of small-scale agriculture in improving rural economies. The South African small-scale agricultural sector faces the danger of climate change of drought negatively impacting.

2. Literature Review

The contribution of both subsistence and small-scale agriculture in improving the rural economy is not well studied in South Africa. Kleinbooi (2010) suggested the need to review the procedures used in exploring studies researching small-scale agriculture to ensure it accurately records the role of small-scale agriculture and its potential in contributing to rural economic development. The contribution of small-agriculture in the South African rural economy is not well recognised or documented because there is a dearth of environmental policies supporting and protecting rural farmers from all possible risks they may face (Khwidzhili & Worth, 2017). This has resulted in negative outcomes on the role of small-scale agriculture in accessing the market and its contribution to the GDP to enhance the rural economy. This section reviews literature that is related to the small-scale agriculture and its contribution to rural economies.

General Overview on Small-Scale Agriculture in South Africa: Small-scale agriculture is described as a sector where rural communities apply their indigenous knowledge for farming to ensure that their farms are productive (Simelane, 2017). South African small-scale agriculture is characterised by the production in a dualistic farming system, which includes both crop and livestock farming (Lininger, 2011). The integration of both crop and livestock farming has turned out to be very low in terms of productivity and has a negative impact on the contribution of small-scale agriculture in improving rural economies (Siegmund-Schultze et al., 2013). Small-scale agriculture is a process of transforming subsistence agriculture to commercial agriculture with the purpose of selling their products to the market and ensuring the availability of food in their households (Tagar & Shah, 2012). Small-scale agriculture is a major contribution to ensuring food security, creating employment opportunities and reducing poverty in rural households worldwide. Mthembu (2013) state that 92% of rural households engage in agriculture with the purpose of producing food and small-scale agriculture creating employment opportunities for almost four million of the Country's population.

Households participate in small-scale agriculture with the purpose of generating income in order to supplement their household expenses. These two incentives have turned out to be a proposition that plays a crucial role in supporting and motivating rural farmers to engage in small-scale agriculture and towards improving the standard of living in rural communities (Aliber, 2011). South Africa is reported to have an adequate production of food more especially at the national sphere (Baiphethi & Jacobs, 2009). Regardless of small-scale agriculture contributing to both food and income, it is also expected to contribute to the Country's GDP making sure there is an improvement in rural economies. Small-scale agriculture is struggling to contribute to the rural economy since rural communities participate in unstable rural based markets whereby they sell their product to other residents and neighbours. It is estimated that the agricultural sector contributes less than 3% in the GDP while contributing 7.2% towards formal employment. On the other hand, the Department of Agriculture, Forestry and Fisheries (2017) indicated that in South Africa, the agricultural sector was estimated to have the production value of R 273 333 million and it contributed almost R 80 245 million in 2016.

Challenges that Hinders Small-Scale Agriculture to Contribute in Rural Economy: The South African small-scale agricultural sector is currently suffering from the consequences of climate change crippling productivity of the agricultural sector (Mthembu, 2008). Ren et al. (2018) agreed that climate change conditions have a negative effect on the agricultural sector worldwide, with a tragic decline in agricultural production due to the number of incidences of natural disasters. The incidence of drought has led to the scarcity of water for irrigation during the dry seasons creating a struggle in small-scale agriculture to produce sufficient product to be sold in the market. Rowhani et al. (2011) state that climate change brings many fluctuations in the production of the country's agricultural sector and in turn an obstacle in the contribution of small-scale agriculture in rural economies. On the other hand, Chikazunga & Paradza (2012) perceived that small-scale agriculture has little to offer in rural economies because of the unavailability of financial support system in order to assist poor rural farmers. Hanf (2014), identified that the neglect of rural small-scale agriculture by the South African Government which focuses more on supporting the commercial agricultural

sector. Small-scale farmers become vulnerable with no financial support to purchase fertilizers and feeding resources to assist in keeping the farming sector more productive. Greenberg (2013) state that small-scale farmers experience these problems because the Government provides more support for the large-scale farming sector, aiming to adapt to the competition that takes place in a global level. Van Rooyen et al. (2017) agreed to most countries governments and benefactors focus more on assisting large-scale farmers by paying for infrastructural services.

3. Methodology and Materials

Data Collection and Analysis: The case study research was adopted in order to collect secondary data that is relevant to the small-scale agriculture and rural economy. This paper relied on secondary data to analyse the contribution of the small-scale agricultural sector in enhancing the rural economy. The case study played a significant role in understanding previous and the complex issues hindering the contribution of small-scale agriculture in rural economies. Zainal (2007) state that the case study method enabled researchers to reach the further side of the quantitative statistics results. Case studies help a researcher to include both quantitative and qualitative data in explaining the process and outcome of the phenomenon by the full reconstruction and analysis of cases that are under investigation. The case study helps researchers to collect the relevant information from different sources including officially published materials, technical reports and documentation of data collection methods and procedures (Johnston, 2017). For the purpose of data analyses, this paper adopted textual analysis as a tool to analyse reviewed literature, relevant to the small-scale agriculture and its contribution to rural economies.

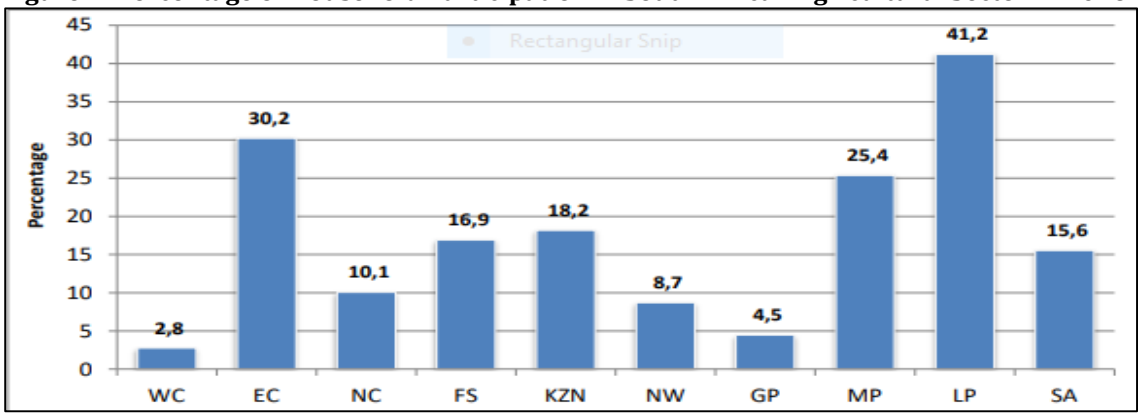
Theoretical Framework: The modernisation of agriculture through the modernisation theory was adopted because of its strength and positive orientation to enable poor rural people to be part of the social and economic development. Modernisation theory is often used to provide a full explanation of the processes of agricultural transformation within societies. Power (2004) referred to the modernisation process to a model of bringing transformation from the traditional societies to modern societies. Concerning the agricultural sector, modernisation theory promotes a shift away from practising traditional agricultural methods to adopting modern methods of agricultural practice. Toringepi (2016) mention that the modernisation theory gave the small-scale farmers an option to substitute traditional agricultural methods (such as depending on rainfall, hand digging, shift cultivation), with modern agricultural methods (such as utilisation of advanced machines and fertilisers). Power (2004) further clarified that this theory focused on the principles, which states there is a strong connection between the social and economic development towards bringing significant progress and improvement in human development. The modernisation theory encourages the adoption of technological process in order to assist rural communities to have control over their farming systems. The adaptation of technological advancement is pivotal in the background of this paper since small-scale agriculture currently linked with an underprivileged level of technology (Toringepi, 2016).

If small-scale agriculture can be granted the opportunity to be modernised, they can contribute to the economic development of rural communities. Barnett et al. (1995) modernisation phenomenon include a full range of changes and transformation which all traditional societies have to follow to reach the level of being modernised. The process of modernisation in small-scale agriculture encompasses guidance and motivation for farmers to start using new production, crops and try new marketing skills. Toringepi (2016) claim that modernisation of the agricultural sector introduced to the diversification of farming systems, utilisation of chemical fertilisers, tractors and the adoption of different scientific knowledge to replace traditional agricultural methods. Small-scale agriculture should be regarded as modern once farmers show some specific features. These features include being able to take effective decisions, having high technological skills and understanding the value of production (Toringepi, 2016). There are challenges faced by small-scale agriculture in most developing countries including inadequate scientific knowledge, lack of equipment and scant marketing skills. Previous research of the model revealed that governments in most developing countries do not focus on the role of small-scale agriculture in addressing rural issues ensuring rural economic development (Lewis, 2013).

4. Results and Discussion

The Nature of Agricultural Sector in South Africa: The results show that South Africa has two categories of agriculture. It is subsistence agriculture, usually practised by rural farmers; and large-scale agriculture, mainly practised by white people for commercial purposes. Tagar & Shah (2012) point out that small-scale agriculture is to transform subsistence agriculture to commercial agriculture by enabling rural communities to improve the rural economy and sustainable livelihoods. Despite the important role of small-scale agriculture in South African rural economies, studies have shown that there are insufficient details and reliable empirical evidence about the existence and operation of small-scale agriculture in rural areas. This includes the shortage of recorded data about the trades, value and volume production of small-scale agriculture in South Africa (Lahiff & Cousins, 2005; Ngcoya & Kumarakulasingam, 2017). Based on the aforementioned circumstances, data pertaining to agriculture is being collected through community surveys by Statistics South Africa, with the intention of understanding the nature of small-scale agricultural practice at the level of households in South Africa. Figure 1, clearly displays the percentage of household participation in the South African agricultural sector in 2016.

Figure 1: Percentage of Household Participation in South African Agricultural Sector in 2016

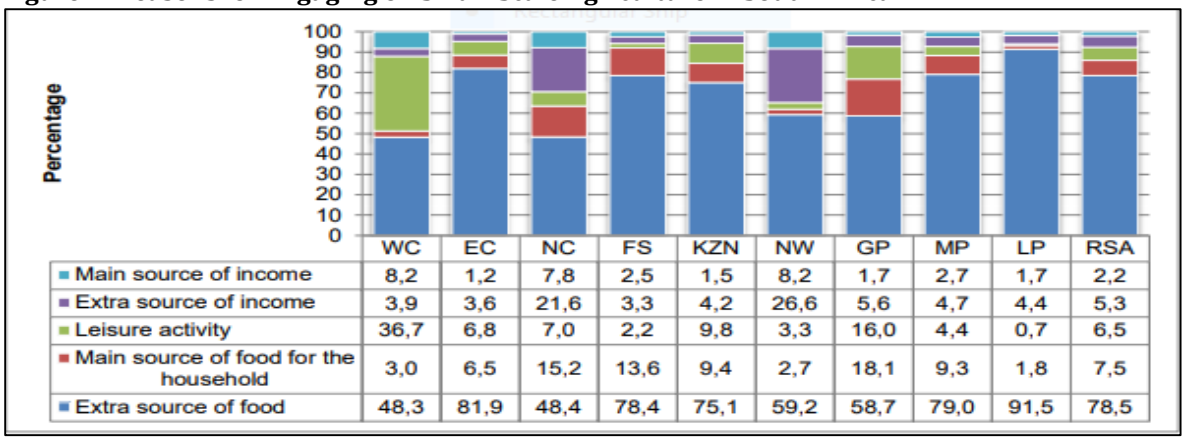


Source: Statistics South Africa, 2017.

Figure 1 showed that in 2016, 15.6% of South African households were engaged in agricultural activities with an increase of 0.8% as compared to 14.8% in 2015. It has been recognised that 9.9% of these households have cultivated farmlands, whilst 92.7% were engaged on small-scale farming (Statistics SA, 2017) including backyard gardens. The small-scale agriculture was dominated by the dualistic farming system, which includes both crop and livestock farming in some rural areas in South Africa. Statistics South Africa (2017) showed that the South African household from their small-scale agriculture produced 53.4% of crops (both fruits and vegetables) and 47.1% of livestock in 2016. In 2016, only 11.1% of agricultural households have received support from the Government to improve their small-scale agriculture. In contrast, only 2.2% of those households who have received assistance through training and 7.0% received assistance pertaining to livestock vaccination services (Statistic South Africa, 2017).

Reasons for Small-Scale Agriculture in South African Rural Areas: Aliber (2011) agreed that the percentage in the productivity of livestock and crops as mentioned above have turned out to be a proposition that plays a crucial role in motivating rural farmers to participate in small-scale agriculture toward improving the standard of living in their communities. Therefore, small-scale agriculture (see Figure 2) can be mainly observed as both a source of income and food in South Africa.

Figure 2: Reasons for Engaging on Small-Scale Agriculture in South Africa



	WC	EC	NC	FS	KZN	NW	GP	MP	LP	RSA
Main source of income	8,2	1,2	7,8	2,5	1,5	8,2	1,7	2,7	1,7	2,2
Extra source of income	3,9	3,6	21,6	3,3	4,2	26,6	5,6	4,7	4,4	5,3
Leisure activity	36,7	6,8	7,0	2,2	9,8	3,3	16,0	4,4	0,7	6,5
Main source of food for the household	3,0	6,5	15,2	13,6	9,4	2,7	18,1	9,3	1,8	7,5
Extra source of food	48,3	81,9	48,4	78,4	75,1	59,2	58,7	79,0	91,5	78,5

Source: Statistics South Africa, 2017

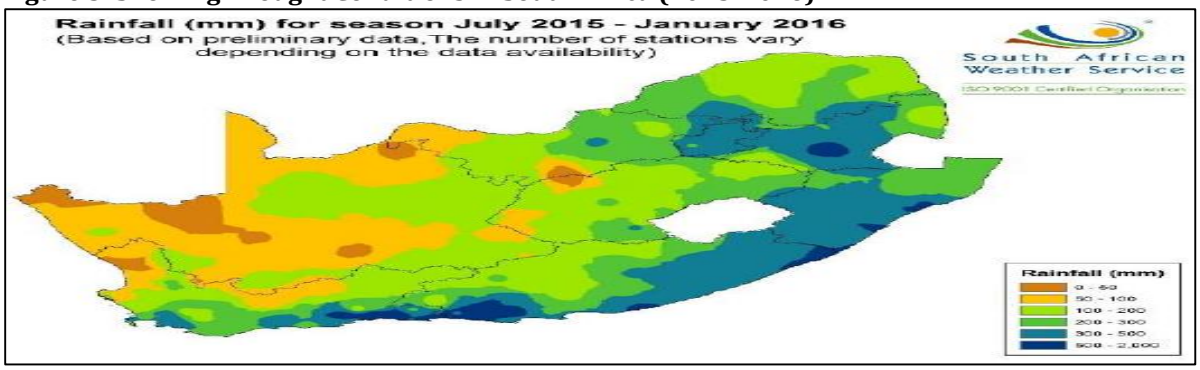
Small-Scale Agriculture as a Source of Food for Rural Communities: Figure 2 shows that almost 78.5% of South African households engage in agriculture to secure an additional source of food and income. Households engaging in small-scale agriculture as an additional source of food, more especially in rural areas can be seen as a motivating factor in the following provinces: Limpopo Province at 91.5%; Eastern Cape Province with 81.9%; and Mpumalanga Province with 79.0%. Baiphethi & Jacobs (2009) found that in South Africa, the issue of food insecurity has an impact on poor individuals who reside in urban areas. They are dependent on accessing food from markets, which is different from the rural context where people directly engage in subsistence and small-scale agriculture to ensure the availability of food and generating a source of income. Ruel et al., (1998); and Baiphethi & Jacobs (2009) note a severe increment on the reliance of rural and urban area households in purchasing food from the market. The expenditures on purchasing food from the markets can be estimated to be almost 60-80 % which is made up by the total income of households dominated by individuals with low income from urban areas.

Small-Scale Agriculture as a Source of Income for Rural Communities: The availability of employment opportunities for rural communities in small-scale agriculture could determine the sustainable generation of income for rural populace. Aref (2011) affirm that small-scale agriculture has made a significant contribution in generating income for rural households. The South African agricultural sector is currently unable to effectively contribute in the creation of job opportunities, following a decline of about 0.3% in agricultural employment opportunities during the first quarter of 2018 from 4.8% of the fourth quarter in 2017 (Statistic SA, 2018). In 2016, South African rural households experienced a huge decline in agricultural productivity (Lehohla, 2016). Figure 2 depicts two of the nine South African provinces North West (26.6%) and Northern Cape (21.6%) regard small-scale agriculture as an extra source of income. The contribution of small-scale agriculture in household income is too low compared to that of food per households. In the first quarter of 2018, Statistics South Africa (2018) indicate that only 5.3 % of South African households engage in agriculture as an extra source of income while 2.2% view it as a main source of income.

Challenges that Hinders Small-Scale Agriculture to Contribute in Rural Economy: Ikerd (2011) assert that small-scale agriculture must be able to protect the productivity of land and enhance the rural economy. The productivity of small-scale agriculture is facing challenges which constraint farmers' from benefiting from their farming activities in rural areas. The small-scale agriculture is currently struggling to enhance rural economies due to the following challenges:

Issues of Climate Change: It has been recognised that the entire agricultural sector is in serious jeopardy due to the circumstances of climate change conditions (Ojoyi et al., 2017). Small-scale agriculture in South African rural areas become more vulnerable to climate change conditions since they depend more on rainfall during the summer season. The effects of climate change have put rural economies in danger with the lack of water and food availability. Following the drought experience between the 2015 and 2016 the Country due to climate change has affected the productivity of small-scale agriculture in South Africa, see Figure 3 below.

Figure 3: Showing Drought Conditions in South Africa (2015-2016)



Source: Lehohla, 2016

The incidence of drought as it appears in Figure 3, negatively led to water scarcity leaving small-scale agriculture with no water for irrigation, especially during winter. Hristov et al. (2018) point out that productivity in livestock and crop systems are vulnerable because of climate change. Small-scale agriculture is an essential instrument in improving the rural economy, it is important that it remains productive even during the times of climate change so that it will manage to contribute in enhancing the rural livelihoods and economies. Ren et al. (2018) suggested that rural farmers create strategies to adapt to climate change circumstances by keeping small-scale agriculture productive and the ability to improve their economies.

Inadequate Infrastructural Services and Access to the Markets: Khandker & Samad (2018) identified prioritising investment in rural infrastructural facilities (such as irrigation systems, roads, telecommunications and so forth) could have an appropriate impact on small-scale agriculture enhancing rural economies. Simelane (2017) point out that small-scale farmers may have insufficient experience in technology to sustain their agricultural activities and accessing major markets. Infrastructural service in the South African rural areas remains a serious problem as the majority of small-scale farmers lack transport to access the markets and irrigation systems to facilitate their farms. The markets play an essential role in improving rural economies, since most South African farmers have a desire to sell their products to the market (Kapungu, 2013). The small-scale agricultural sector is still unable to gain access to the markets due to poor transport systems not catering to agricultural produce or production. This issue has been a persisting challenge in most South African rural areas where small-scale farmers use inappropriate transport to supply their product to the markets (Bourguignon & Pleskovic, 2008; Mthembu, 2008).

Transport services (such as roads) have an essential role to play in linking rural farmers with the market and circulating information when telecommunications are not available. The lack of transport services is still an issue that many rural areas across the globe experience. The lack of irrigation systems was also recognised as a hindrance for small-scale agriculture to be sustainable and contribute to rural economies. Antunes et al. (2017) regarded the irrigation system as the main activity necessary in making assurances that small-scale agriculture is sustainable and solidifying the existence of the environmental system for small-scale farmers to continue participating in their activities (Antunes et al., 2017). These activities involve livestock and cropping systems that rely more on rainfall for its survival. Mosha (2018) identified rural areas where the farmers experience the absence and inadequate irrigation systems used to sustain the productivity of their small-scale agricultural sector. Small-scale farmers cannot afford to buy irrigation facilities due to the lack of financial support.

Inadequate Financial Support Service: The growth and contribution of small-scale agriculture in improving the standard of livelihoods and rural economies rely on the accessibility of financial support. The process of sustaining and transportation of products to the markets requires sufficient funds. The sad reality is that the small-scale agricultural sector still experiences the draughtiness in terms of financial support for rural farmers (Ruete, 2015) through the non-existence of policies introduced by Government to cater directly for rural farmers in the expansion of banking services through formal stakeholders and financial institutions. In South Africa, the main focus of Government is not on small-scale farmers but large-scale farmers, since

Government does not manage to compensate for infrastructural facilities for rural farmers to access the markets. This situation leaves small-scale farmers unable to purchase enough feeding and fertiliser resources to cultivate their farms (Siegmund-Schultze et al., 2013).

5. Conclusion

This paper determined the role of small-scale agriculture in enhancing rural economies whilst pondering the challenges in doing so. In this regard, the findings have shown that the South African small-scale agriculture is dominated by crop and livestock activities in rural areas. Therefore, small-scale agriculture has reported to be struggling to play a significant role in improving rural economies and livelihoods. The challenges that faced the small-scale agriculture include climate change conditions and insufficient support services from Government which is crippling the sustainability of rural livelihoods and rural economy. The poor infrastructural facilities in rural areas have shown to be a disadvantage to rural farmers since they are unable to access the market and compete with the commercial farming sector. This is due to the lack of financial support services to assist rural farmers, with the results indicating that Government puts more focus on the large-scale farmers while farmers in rural areas are unable to meet the needs and demand of the markets.

Recommendations: The paper proposes the following recommendations to address the issues that hinder the contribution of small-scale agriculture in enhancing the South African rural economy:

Establishment of Rural Based Markets: The access to markets has been reported to be a problem hindering small-scale agriculture to contribute to rural economic development. Therefore, it is recommended that the South African Government should develop interventions for the small-scale agricultural sector to build rural based markets that would be a centre of connection between rural farmers and the market. This includes the advancement of technology such as online marketing strategies. It is also recommended to strengthen the rural-based market by investing in research and development to ensure the sustainability of rural livelihoods and the improvement of rural development.

Climate Change Adaptation Strategy: Climate change is a serious threat to the productivity and contribution of small-scale agriculture in improving rural economies. It is essential to bring some diversification in managing the small-scale agricultural practice. This includes a rotation in planting periods and density and processes in cultivation strategies, which would play a significant role in acting against the results of restricted moisture in order to reduce and neutralise climate change conditions. The conservation of different types of seeds that would protect the environmental diversity from danger and grant small-scale farmers with a prospect to make well-informed adoption strategies, that could be utilised towards fighting against the climate change conditions and enhancing rural economic development.

Strengthen Financial Support: The inadequate financial support services have proved to be an issue in the contribution of small-scale agriculture in rural economies. It is recommended that public or private sectors intervene in order to implement formal financial institutions which will play a significant role in the expansion of banking services in favour of rural communities. This initiative will play an important role as small-scale farmers will be able even to borrow money (loans) to purchase needed products (fertilizers, feeding resources, transport, irrigation facilities) required to sustain the productivity of their farms.

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Financial Sector Liberalization and Financial Instability: Case of Selected Southern African Development Community Member Countries

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Abstract: The importance of financial liberalization is well documented in the literature. However, there has been an emergency of studies, which indicate that this can be another channel through which financial instability is generated in the domestic economy. Utilising data from four SADC countries, the empirical findings show that financial reforms are positively related to financial instability in almost all the specifications. The empirical results further revealed that financial instability intensifies in the face of a financial crisis. The result suggests that financial liberalization can therefore be another source of financial instability in the region. The empirical results imply that though policymakers should liberalise the financial system, policies aimed at maintaining financial stability should also be promoted.

Keywords: *Financial liberalization, financial instability, Southern African Development Community*

1. Background of the Study

The past decade witnessed, several developing countries liberalizing their financial systems with the aim of increasing the scope of the financial sector, and enhancing its role of mobilising and allocating financial resources to productive sectors of the economy (Enowbi and Mlambo, 2012). According to Patnaik (2011) financial liberalization was introduced in developing countries in the 1980s with the aim of giving financial markets a greater role in the development of countries and not just relies on the state. Patnaik (2011) further noted that bringing in financial liberalization was also a response to a number of issues relating to finance in developing countries. These issues included inefficiencies in the financial system, which was stifling the financial sector. McKinnon (1973) and Shaw (1973) defined financial liberalization as "establishing higher interest rates that balance the demand for and the supply of savings". When a country has higher interest rates, this would eventually lead to increased savings and financial intermediation as well as enhance the efficiency of using savings in the economy. This will eventually translate into improved economic growth. However, Magud, Reinhart and Vesperoni (2012) indicate that even though financial liberalization succeeded in easing financial repression, its impact on growth and investment has not been convincing.

At the same time, there are studies such as Demirguc- Kunt and Levine (2008) and Enowbi and Mlambo (2012) which highlight that financial sector liberalization may create financial sector instability and crisis. The financial crisis could manifest itself in the form of bank failures, intense asset price volatility or a collapse in market liquidity. This has the potential of disrupting the payment and settlement process with dire effects as it can be transmitted to the real sector through its linkages with the financial sector. This is also supported by Kaminsky and Schmukler (2003) and Lorenzo (2008). Ikhide and Alawode (2002) also document a number of problems, which many of the African countries went through after liberalizing their financial systems. These challenges include sharp increases in interest rates, bankruptcies of financial institutions and high levels of inflation. Liberalization also resulted in increased capital inflows, which allowed rapid growth in credit to public and private institutions, which were regarded as weak at the time. Demirgüç-Kunt and Levine (2008) also highlight how the quality of lending in general deteriorated in many of the countries, which implemented liberalization.

The SADC 2012 report on financial sector development points out that through the development of the protocol on trade, the region is implementing plans, which are aimed at increasing economic liberalization within the Southern Africa Development Community. The protocol is in line with the SADC vision of a regional integration, which is supported by member states as it is viewed as another way through which the region may have a strong economy as well as increasing international investment. Although much has been put forward to support financial sector liberalization, it becomes important to also examine if it can be another source of financial sector instability in the region given the mixed results in the academic discourse. The paper is organised as follows: following the introduction, section two discuss the available literature, section

three presents the model utilised in the study with section four and five presenting the discussion of results and conclusions. The study is based on the De Meza and Webb (1987) model, which explains how financial liberalization may result in financial instability. According to the model, financial instability is defined as a decrease in the ability to repay bank loans.

2. Literature Review and Theoretical Framework

Financial liberalization is assumed to result in an increase in capital flows which is usually followed by a credit boom. When there is a credit boom, the probability of over-borrowing is high. This is supported by Kaminsky and Schmukler (2003) who argued that the probability of crashes in emerging markets is large in the event that the capital account is open. The model assumes that entrepreneurs borrow money from banks to start up projects. Due to financial liberalization there will be an increase in loanable funds due to an increase in capital flows. This will therefore intensify bank competition as the banks scramble for customers, which may result in a decline in franchise value of banks. In a bid to cope up with the competition, banks may respond by accepting risk exposures which are beyond the usual standards so as to increase profits. Bezemer, et al. (2015) highlights that some of the strategies which banks can engage in include economising on screening and monitoring efforts. Banks may also gamble on their loan allocation decisions. This is in line with Dell'Arricia and Marquez (2006) who argue that in a liberalised financial system, banks may relax their screening efforts, which may increase the risk of the funded projects failing. Lorenzeni (2008) also suggests that competitive financial contracts may result in excessive borrowing ex-ante and excessive volatility ex-post. There are a number of empirical studies, which have been carried out to examine the relationship between financial liberalization and financial instability though conclusions are varied.

Of the available studies, Dell'Arricia and Marquez (2006), argues that the liberalisation of the financial sector results in an increase in credit availability as banks relax their screen efforts. This will result in risk projects being funded, which increase the probability of failure and default. In another study, Bezemer et al. (2015) established that entry of risky entrepreneurs due to a decrease in borrowing costs can be another channel through which financial liberalization may result in financial instability. Utilizing impaired loans as a measure of financial liberalization the authors established that countries, which are more liberalized, experienced more financial instability during the 2008 global financial crisis. There are studies, which have established that financial liberalization results in a credit boom. Of these studies, Kaminsky and Schmukler (2003) established that financial liberalization results in an increased inflow of capital, which is then followed by a domestic credit boom. This is consistent with the IMF World Economic Outlook 2011 survey report, which shows that in 19 advanced, and 28 emerging economies financial sector liberalisation resulted in an increase in the inflow of external financial resources, which contributed to a credit boom. In addition, Magud et al. (2012) also established that in 25 emerging economies, huge capital inflow following financial sector liberalisation raised domestic credit.

These findings are consistent with Calderón and Kubota (2012) and Furceri, Guichard, and Rusticelli (2012). There are a series of studies also which have established that financial liberalisation may expose countries to crises. Of these studies Rancière, Tornell and Westerman (2006) established that countries which have financial systems which are liberalised, they have a high probability of experiencing a financial crisis. This will also result in a contraction in output. Studies by Bordo, Barry, Daniela, Maria, Martinez, and Andrew (2001), Eichengreen and Arteta (2000), Barrel, Davis, Karim and Liadze (2010), and Rodrik (2005), amongst many, also show a strong association between financial liberalization and the beginning of a financial crisis. Tornell, Westermann and Martinez (2003) also highlight that financial liberalization does come with benefits. The authors indicate that in countries with developed financial markets, financial liberalization has contributed towards growth, but as well as to higher chances of instability. Tornell et al. (2003) also suggest that liberalization results in faster growth as it results in lessened financial constraints, but this happens when agents take on credit risk, which in turn makes the economy fragile and exposed to a crisis. Financial instability is measured by impaired loan Ratio (ILR) which is a share of loans due by 90 days in gross loans.

3. Data and Research Methodology

Model Specification: The study is based on the De Meza and Webb (1987) model discussed earlier which proposes that there is a link between financial liberalization and financial instability. In the model, it is assumed that entrepreneurs borrow money from banks to start projects. As a country liberalise its financial sector, there will be more credit available, which increases the degree of over-borrowing. In addition, due to excessive credit availability, this may attract risk entrepreneurs who are likely to default. Thus, as many entrepreneurs' default, this amounts to financial sector instability. Based on the model and Bezemer et al. (2015), the following equation is proposed:

$$ILR_{it} = f(Fin\,\text{Re}\,form, dTxFin\,\text{Re}\,form, X) \quad 1$$

Where *ILR* is the impaired loans ratio, $FinLib_{it-p}$ is financial liberalization *dT* represents a dummy variable measuring the financial crisis. The study took into account the 2008 global financial crisis (dT_{global}) which assumes values of 1 and 0 after and before the respective crisis. X represents a number of control variables such as Private Credit, GDP, Government consumption and Inflation. *T* represents time and *i* represent the country. Equation 1 was adopted taking into account other important variables in the SADC countries. Thus the following empirical model was utilised:

$$ILR_{it} = a_0 + \beta_1 Fin\,\text{Re}\,form_{it-p} + \beta_2 (dT_{global} x Fin\,\text{Re}\,form_{it-p}) + \beta_3 PC_{it} + \beta_4 GDP_{it} + \beta_5 GovCons_t + \beta_6 Inflation_{it} + u_{it} \quad 2$$

The extent to which financial liberalization may influence the domestic banking sector is not instantaneous (Bezemer, et al. 2015). To account for this, Equation 2 was estimated including a lag of the dependent variable.

$$ILR_{it} = a_0 + a_1 ILR_{-1} + a_2 Fin\,\text{Re}\,form_{it-p} + a_3 (dT_{global} x Fin\,\text{Re}\,form_{it-p}) + a_4 PC_{it} + a_5 GDP_{it} + a_6 GovCons_t + a_7 Inflation_{it} + u_{it} \quad 3$$

Definition of Variables and Expectation Apriori: Financial instability is measured by an impaired loan which is a ratio of loans which are 90 days overdue to gross loans. This is consistent with Bezemer, et al. (2015). Financial liberalization is measured by financial reform Index of Abiad, Detragiache and Tressel (2010). The index is based on seven dimensions ranging between 0 and 21. The literature review section indicated how financial liberalization might act as a catalyst for financial instability after a shock. Thus the 2008 financial crisis will be treated as an external shock. In this case, the 2008 Global financial crisis interacted with the financial liberalization variable. For control variables, financial development is measured by Private credit as a percentage of gross domestic products (GDP). A negative relationship between financial instability and financial sector development is expected. Credit to the private sector is expected to have a negative relationship with financial instability. GDP per capita is used to measure economic growth. Inflation is measured by the GDP deflator. Government consumption represents the role of the government in the domestic economy.

Data Sources: Data were collected for four countries, thus South Africa, Mozambique, Tanzania and Madagascar. The choice for the countries to be included in the study was based on the availability of data. Data on financial liberalisation is up to 2012. This has resulted in the study period being confined to the period mentioned above. The data for impaired loan ratio was obtained from the DFID project database. The remaining variables namely private credit, per capita GDP, inflation and government consumption were obtained from the World Development Bank indicators in annual form.

Estimation Technique: The study utilised panel data given the nature of the variables utilised in the study. Panel data analysis is a combination of time series and cross-sectional data. Generally, the two approaches to panel data analysis are the random effects model and the fixed effects model. The Random effects model treats the constants for each section as a random parameter. The advantages of the of the random effects

model are that the model has fewer parameters as compared to the fixed effects model. It also allows the use of dummies. However, there are a number of challenges with the model. Firstly, there is needed to make assumptions pertaining to the distribution of the random component. Secondly, in the event that the unobserved group-specific effects are correlated with the explanatory variables, the estimates will be biased and inconsistent. On the other hand, concerning the fixed effects model, the constant is treated as group-specific. The model allows for the different constants for each group. The model is also known as the least square dummy variable (LSDV) estimator. In this regard, the model includes a dummy variable for each group. The model can be written as follows:

$$Y_{it} = a_i + \beta_1 X_{1it} + \beta_2 X_{2it} + \ldots\ldots\ldots + \beta_k X_{kit} + u_{it}$$

This can be written as:

$$Y = D\alpha + X\beta' + u$$

The dummy variable allows one to take different group-specific estimates for each of the constants for each different section.

The Hausman Test: The Hausman Specification Test was utilised to choose between the fixed effects and the random effects model. The test assumes that there are two estimators, β_0 and β_1 of the parameter vector β. The test thus tests the two parameters whether the random effects are consistent and efficient under the null hypothesis, against the alternative that the fixed effects are consistent.

Diagnostic Test: The study also used the residual cross-section dependence test as a diagnostic test. According to Pesaran (2004) this test is a simple test of error cross-section dependence which can apply to many panel data models with a Large N, but small T. Cross-sectional dependency in the panel, data can be tested by three tests. These are the Pesaran CD, Bruesch-Pegan and the corrected LM tests.

4. Presentation of Empirical Results

Correlation Matrix: Table 1 reports the relationship between impaired loans, financial reforms and the control variables namely inflation, domestic credit in the private sector, government expenditure and GDP. As shown in Table 1, the correlation between impaired loans, credit to the private sector and government expenditure is positive and also significant.

Table 1: Correlation Matrix

	FINANCIAL_REFORMS	LIMPAIRED_LOANS	LDCP	LGOVERNMENT_EXP	LINFLATION	GDP_GROWTH
FINANCIAL_REFORMS	1					
LIMPAIRED_LOANS	0.203*	1				
P-value	(0.309)	-----				
LDCP	0.750*	0.055**	1			
P-value	(0.000)	(0.781)	-----			
LGOVERNMENT_EXP	0.365*	0.023**	0.527*	1		
P-value	(0.061)	(0.234)	(0.004)	-----		
LINFLATION	-0.018**	0.046**	-0.121*	-0.162*	1	
P-value	(0.929)	(0.817)	(0.544)	(0.418)	-----	
GDP_GROWTH	-0.241*	0.006**	-0.231*	0.280*	-0.246*	1
P-value	(0.224)	(0.972)	(0.246)	(0.155)	(0.215)	-----

*** 0.01 p < level; ** p < 0.05 level; * p < 0.1 level
Source: Author (Computed with E views 8)

Choosing the Correct Model: The Hausman test was estimated so as to choose the appropriate model and the results are presented in table 2.

Table 2: Hausman Test and F-Test

Test	Test Statistic	Critical value	Conclusion
Redundant Fixed Effects Test H_0: Cross-sections are homogenous H_1: Cross-sections are heterogeneous	F=5.226	P-value= 0.000897	We reject H_0 and conclude that the Fixed effects model should be used to account for country-specific features.
Random effects vs Fixed effects H_0: $\mu_1 = \mu_2 = \ldots = \mu_{N-1} = 0$ H_A: Not all equal to 0.	Chi-Square=33.337	P-value=0.00	We reject H_0. This means the fixed effects model is the best model that allows heterogeneity.

Source: Author (Hausman test and F- test computed with E views 8)

Regressions on the Impact of Financial Liberalization on ILR: Table 3 shows the results of regressions with the impact of financial liberalization on impaired loans ratio. The empirical results indicate that there is a positive relationship between financial instability and financial liberalization. A 1% increase in financial liberalization contributed 0.0745 percent increase in financial instability these results are in line with the apriori expectation and are also in line with the study of Dell'Arricia and Marquez (2006). The authors argue that financial liberalisation results in an increase in financial resources. This does also result in funding of risk projects which may default in payment resulting in a financial crisis. The probability value for the test is less than 1% level of significance, indicating that the random effect panel data technique is not suitable for this study and a fixed effect was chosen. In Equation two, the financial reform dummy variable and domestic credit to the private sector were introduced.

The introduced dummy variables captured the global financial crisis. Financial reform without the dummy variable was found to be positive and significant. When the financial reform interacted with the dummy, the relationship between financial instability and financial liberalization was positive though insignificant. This suggests that a 1% increase in financial reforms resulted in 0.238 percent increase in financial instability. This result again is consistent with Dell'Arricia and Marquez (2006), Lorenzoni (2008), Magud, et al. (2012), Calderón and Kubota (2012), Bezemer, et al. (2015). The authors highlight that during the global financial crisis, financial liberalization resulted in an increase in competition by banks so as to maintain their profitability. This exposed the banks to risk entrepreneurs who defaulted in payment of their obligations and hence banks failures.

Table 3: Regressions with the Impact of Financial Liberalization on ILR

	Equation 1	**Equation 2**	**Equation 3**
Variables	**FE**	**FE**	**FE**
FINANCIAL_REFORMS(-4)	0.0745 (0.54)	0.638 (0.0006)	0.616 (0.001)
FINANCIAL_REFORMS(-4)*DT		0.238 (0.2291)	0.262 (0.195)
LDCP		-0.870* (0.001)	-0.740* (0.001)
LGOVERNMENT_EXP			-0.915 (0.035)
LINFLATION			-0.036** (0.889)
GDP_GROWTH			0.004 (0.896)
CONSTANT	0.463 (0.811)	-6.994 (0.0016)	-4.601 (0.037)
Years effects	Yes	Yes	Yes
R-squared	1.65	1.65	1.65
Adjusted R-squared	0.862	0.862	0.86

Note: *** p < 0.01 level; ** p < 0.05 level; * p < 0.1 level
Source: Author (Computed with E views 8)

On the other hand, the results show that for all the control variables, private credit, government expenditure and inflation they are all negatively related to financial instability. With regards to private credit which is the measure of financial development is negatively related to the financial crisis. This result is consistent with the findings of Abiad et al. (2010), Balmaceda, Fischer and Ramirez (2013) and Bezemer et al. (2015) who concluded that financial development increases financial openness which creates competitiveness, slowing down financial instability. It is essential to note that financial reform index including the Financial Reforms (-4)*DT capturing the dummy which captures the global financial crisis in all the three equations has a positive relationship with impaired loans. This implies that banks in more financially liberalized selected SADC region countries prove to be financially unstable when there is a financial crisis. This is consistent with Bezemer (2015). In addition, the findings of Rancière, Tornell and Westerman (2006), are in line with these results.

Regressions with Lagged Dependent Variable: In table 4 the dependent variable ILR is lagged. When the dependent variable has been lagged, the coefficients of ILR are significantly positive in all the three equations. This implies that there is partiality amongst the coefficients. The coefficient of ILR also increases. Bezemer, et al. (2015) indicates that a higher ILR ratio is an indication of financial instability. When the dependent variable is lagged, Equation one shows a negative relationship between financial reform index and financial instability and this relationship is also statistically insignificant. In Equation two and three the relationship changes to positive, but continues to be statically insignificant. On the other hand, financial reform index with a dummy variable has a positive relationship with financial instability and this relationship remains the same in all three equations. This is consistent with the study of Bezemer, et al. (2015). The authors highlight that liberalized economies are prone to the financial crisis which may also affect their growth prospects. Domestic credit to private is added into Equations two and three. In both the specifications, domestic credit to the public has a negative relationship with financial instability. The estimations show that an increase in credit in the private sector contributes to the decline of financial instability. These results are expected as according to Abaid, et al. (2010) who observed that more efficient credit allocation contributes to financial stability.

Table 4: Regression with Lagged Dependent Variable (ILR)

	Equation 1	**Equation 2**	**Equation 3**
Variables	**FE**	**FE**	**FE**
IMPAIRED_LOANS(1)	0.836 (0.0003)	0.696 (0.01)	0.424 (0.211)
FINANCIAL_REFORMS(-4)	-0.056 (0.943)	1.122 (0.453)	2.000 (0.198)
FINANCIAL_REFORMS(-4)*DT	0.113 (0.941)	0.044 (0.977)	1.226 (0.467)
LDCP		-1.572 (0.351)	-2.888 (0.132)
GDP_GROWTH			-0.199 (0.498)
LGOVERNMENT_EXP			-4.859 (0.187)
LINFLATION			-2.823 (0.212)
CONSTANT	2.046 (0.849)	-10.975 (0.533)	-4.623 (0.793)
Time Effects	Yes	Yes	Yes
Observations	30	30	30
R-Square	0.67	0.69	0.75

Note: *** p < 0.01 level; ** p < 0.05 level; * p < 0.1 level
Source: Author (Computed with E views 8)

Residual Cross-Section Dependence Test: Diagnostic tests were conducted on the model. The results are presented in table 5.

Table 5: Residual Cross-Section Dependence Test

Test	Test Statistic	Critical value	Conclusion
Breusch-Pagan LM H_0: There is no cross-section dependence in the residuals. H_1: There is no cross-section dependence in the residuals.	16.179	P-value= 0.0100897	We accept H_0 and conclude that the model has no cross-section dependence in residuals.
Pesaran scaled LM H_0: There is no cross-section dependence in the residuals. H_1: There is no cross-section dependence in the residuals.	1.784	P-value=0.00	We accept H_0 and conclude that the model has no cross-section dependence in residuals.
Pesaran CD Test H_0: There is no cross-section dependence in the residuals. H_1: There is no cross-section dependence in the residuals.	-0.0068	P-value=0.99	We reject H_0 and conclude that the model has no cross-section dependence in residuals.

The Residual Cross-Section Dependence Tests were run. In table 5 both LM test results showed a probability of 0.0128 and 0.0745, respectively. This indicates that, there is no correlation between the residual values in the model, and the null hypothesis is therefore accepted. The results of the Pesaran CD test show a probability of 0.99. This indicates that, there is a correlation between the residual values in the model and the null hypothesis can be rejected.

5. Summary and Conclusion

The main objective of the study was to empirically examine the extent to which liberalization of the financial system can contribute toward financial instability in the selected SADC countries. Findings indicated that, financial liberalization may be another source of financial instability in the region. The results also established that there is a negative relationship between financial sector development and instability. This suggests that financial sector development plays a very important role in reducing financial instability over time, and not just instantly. This suggests that policymakers should focus on reforms that give due share to the regulations rather than just simply liberalizing the financial sector.

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Factors to Measure the Performance of Private Business Schools in South Africa

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Abstract: This article identifies the latent variables embedded within the model to measure the performance of private business schools. In the quantitative research design, 247 questionnaires, using a five-point Likert scale, were analysed after completion by private business school supervisors and managers. The data has high reliability with a Cronbach alpha coefficient of 0.974 and excellent sample adequacy with a KMO value of 0.926. The analysis identified ten latent variables (or factors), identified using exploratory factor analysis explaining a cumulative variance of 70.56%. These are Regulatory compliance, Strategic communication, Educational technology stack, Strategic finance, Organisational development, Customer orientation, Sales, Pricing, Socio-political influence and Market focus. The study also succeeded to simplify measuring performance by eliminating 26 questions with low factor loadings (<0.40) or those that are cross-loading highly onto more than one factor from the questionnaire while retaining a satisfactory level of reliability. The results are valuable to private business school managers and to the employees wanting to measure and improve the business performance of a private business school. Researchers and academia could also benefit from the contribution of the study to either build on business performance of private business schools or, alternatively, in adopting the methodology employed in this study for another application setting.

Keywords: *Performance, private higher education institutions, management, success factors, business, PHEI*

1. Introduction

Globalisation and the rapid growth of the knowledge economy have created an increased demand internationally for higher education (HE). This is even more so in a developing country such as South Africa where there is a population growth of 1.45% (2017) and 1.2% (2018) (WorldoMeter, 2018). The inability of public education to cope with the historical increase in demand for education on all levels has resulted in an increase in private education, and also private higher education institutions (PHEIs) to fill the educational gap (Stander & Herman, 2017:206). The important role that higher education plays in economic growth is perceived as a panacea to the poverty and inequality faced by many people throughout the world. Hanushek (2016:538) specifically mentions the positive influences that higher education could have on South African economic growth and also individual economic empowerment. Here, increased knowledge capital, communication skills (Geldenhuys, 2018), exponential personal development, innovations, and inventions are key to facilitate economic growth. South Africa needs professionals across all sectors; managers, doctors, teachers and engineers are all vital to future economic success, and education stands central to deliver these professionals. This is a matter also facing many other countries. Furthermore, the rapid transformation of economies and countries due to the fourth industrial revolution has further impacted on governments to meet the need for a skilled population that can take their countries forward.

However, McGrath (2015) warns that particular skill sets are required for particular countries. South Africa, for example, is ideally suited for astrological skills development due to its ideal geographical location while skills for the motor-industry are less attractive because lucrative but geographically remote export markets (such as Australia), have a competitive disadvantage in transportation costs. Identifying and delivering the required country-specific skills are paramount and reside not only with educational policies and the state, but also with private higher education to identify and enter into entrepreneurial activities to harvest the market demand in South Africa. The higher education market demand is further fuelled by an age demographic profile of South Africa where the youth bulge in South Africa where the population of 57.4 million people has a median age of 26.3 years (WorldoMeter, 2018) and more than 50% of the population is younger than 25

[1] This article stems from the doctoral research by Ridwaan Asvat (student number: 25495577) at the NWU Business School, North-West University, Potchefstroom, South Africa

years old (South Africa Population, 2018). This creates a high-demand situation to equip and skill the upcoming new workforce. However, this is a serious challenge for all countries in Africa where high educational demand, public budget constraints, the exodus or brain drain of the skilled and young workforce, and limited suppliers are a reality.

In this regard, private education is a viable option for many countries to adopt to meet the need for the youth to be skilled and be of benefit to Africa. Although the highly regulated educational environment of South African complies with the CHE, SAQA and DHET requirements to be recognised and able to operate in the country (Stander & Herman, 2017:207), the South African higher education environment, including private business schools, strives to provide unsubsidised education to its students. Furthermore, despite the fact that PHEIs may not legally use the term 'private universities', they have to adhere to similar regulations, accreditations and oversights than the public universities. In this regard, business schools in South Africa face many managerial and entrepreneurial challenges to be successful and to meet the growing demand for higher education and to educate and form the skilled workforce for the next generation of South Africans.

Problem Statement: There are many barriers to entry and regulatory challenges in the South African PHE market. Stringent requirements from the government via particularly the CHE, the DHET and SAQA enforce quality standards in education; however, in doing so, also strain PHEIs in South Africa to comply. Some researchers (Stander & Herman, 2017:207-208) believe that quality control processes border on over-regulation. However, although they continuously present challenges that managers of PHEIs need to address and overcome to remain compliant and competitive in the educational market, the role that PHEIs has played in the education of South Africans is acknowledged by the government. In addition, the National Development Plan for 2030 (SA Government, 2012) acknowledges the role that PHEIs can play in addressing the need for higher education in South Africa. In this regard, the South African government should aim to create an enabling regulatory environment for education that invites PHEIs into the education system while also remaining the guardian of quality education in South Africa (SA Government, 2012:268). The National Development Plan aims to achieve a 25% graduation rate as well as aiming for an enrolment target of 1.62 million by 2030 in comparison to the 950 000 students who graduated in 2010; this signifies an increase of 70% graduates (SA Government, 2012:277). Public universities simply do not have the capacity to accomplish this goal, and as a result. PHEIs are part of the solution to equip and skill the people of South Africa and embrace the fourth industrial revolution. However, for PHEs to offer lucrative business opportunities in a developing economy such as South Africa, PHEIs compete with other industries and business opportunities for investors seeking to earn a satisfactory income from their investments.

In practice, this means that PHEIs must be competitive, profitable and, in general, able to perform well as a business. Measuring business performance is, however, complex and an intricate topic. Here, Van Looy and Shafagatova (2016:1797) concur that measuring the business performance of any organisation is a critical success factor. Typical factors to be considered range from finance, customers, internal business processes technology and also the issue of learning and development. In addition, Maulina (2018:214) highlights that businesses are also affected by external factors, which include politics, government policy, law, economy and social issues, as well as the cultural, demographic and community environment. Furthermore, other internal business factors such as human resources, marketing, profitability, production and innovation also play a role in business performance. Although various models or methods have been designed and applied to measure business performance, few delved into determining the performance of education businesses. Furthermore, given the history of the development of tertiary education in South Africa, most educational business performance models focus on public universities where subsidies and state income are the primary sources of funding. This study, therefore, aims to focus on identifying the factors that are important to measure the business performance of a PHEI.

Research Objectives: The primary objective of this article is to identify the latent variables (called factors) embedded within a theoretical model that measures the business performance of private business schools. This, in essence, postulates the challenge that PHEIs face, namely that inadequate research has been done on the unique challenges and performance indicators that PHEIs face if they want to measure their business performance in the South African business environment.

This Primary Objective is achieved by the Following Secondary Objectives:

- Scientifically simplify the questionnaire
- Identify the underlying factor structures
- Measure the reliability of the data and the factors
- Determine the relationships (if any) between the factors

2. Literature Review

The literature study consists of three key elements. Firstly, it provides theoretical support to underpin the research methodology and the statistical techniques used; secondly, to substantiate their suitability for this study; and thirdly, to provide theoretical support for the factors identified from the results. These factors could be confirmatory of existing literature in other application settings, or they could be new factors that were identified by the analysis. In addressing the primary objective of this study, to identify latent variables embedded in the data, this study employs factor analysis. Two gatekeeper tests are required to successfully employ factor analysis as a multivariate statistical technique; the measure of sample adequacy and Sphericity, which refer to the inter-relationships between the variables.

Factor Analysis: Factor analysis originated in the early 1900s, Factor analysis aims to find the simplest way to interpret the data obtained (Harman, 1976). Initially applied in human ability studies by Charles Spearman in the development of the Two-factor theory, factor analysis sparked a number of research projects based on the principles of factor analysis (Harman, 1976:159). Although initially applied to human behaviour and psychology (Kerlunger, 1973:659), the advantages of factor analysis were quick to migrate towards other disciplines such as the social and behavioural sciences, medicine, management, marketing science and even towards economics and geography as a suitable multivariate data analysis tool (Yong & Pearce, 2013:79). The main function of factor analysis is to simplify the dataset in fewer, more manageable summarised variable groups. These groups are called factors, which allow for easier comprehension, interpretation and discussion (Yong & Pearce, 2013:84). As a result, factor analysis simplifies measures by producing meaningful patterns in a group of variables (Child, 2006), and thereby regrouping the variables into a reduced set of factors (Yong & Pearce, 2013; Field, 2013; Pallant, 2013). Factor analysis can also be used to determine the validity of factors and its measuring criteria; in practice, this means that the criteria measuring a specific antecedent or construct can be confirmed as true measures of the specific construct (Patel, 2015). Many studies have successfully applied factor analysis to do so and to weed out unworthy measuring criteria from measuring instruments (for example Bisschoff & Moolla, 2014; Imandin, Bisschoff & Botha, 2016; Fields & Bisschoff, 2013a; Shaikh, Bisschoff & Botha, 2017). The two main factor analysis techniques are confirmatory factor analysis (CFA) and exploratory factor analysis (EFA); these techniques are discussed below.

Confirmatory Factor Analysis (CFA): In essence, the difference between the two approaches is that CFA is used to confirm previously identified factors in a new application setting. Exploratory factor analysis sets out to identify new factors; this means that no specific model or variable structure exists to fit the data. This means that confirmatory factor analysis is used later in the research process to test specific existing hypotheses or theories regarding the structure of the set of variables (Pallant, 2013:179). It is more complex and sophisticated and is used when the researcher anticipates or hypothesises that a specific application setting could be explained by a specific variable structure; confirmatory factor analysis then determines whether this application setting indeed fits the hypothesised model and its different underlying dimensions (Patel, 2015:2). The objective of CFA is therefore to identify the measurement model that best describes a specific set of data (Eaton & Willoughby, 2018:104), and thereby to check whether the model proposed by the researcher fits, or appropriately describes, the correlational groupings of items in a specific dataset by developing a model, estimating the model's parameters, as well as calculating the model-fit statistics and model refinement (Eaton & Willoughby, 2018:108. As a result, exploratory factor analysis is used mainly to better understand the variables and their grouping into fewer factors without losing their original meaning.

Exploratory Factor Analysis (EFA): Exploratory factor analysis is a multivariate statistical method to investigate whether a number of variables of interest are linearly related to a smaller number of unobservable factors (Tryfos, 1997). In doing so, it attempts to uncover the complex patterns in the dataset

and simplify it into a smaller, more understandable set of variables (which is normally unobserved) (Child, 2006). Pallant (2013:179), further states that exploratory factor analysis is used in the initial phases of research to obtain evidence about the interrelationships among a set of variables. Resultantly, the exploratory nature of the technique is usually the first step to reduce the dataset into fewer, more understandable variables (Yong & Pearce, 2013:79), especially in cases where existing models do not exist or established variable sets have not yet been identified (Samuels, 2016). In practice, this means that the researcher does not know how many factors there are (if any) and exploratory factor analysis can then be used to determine the factors, their variance explained and also how many factors actually exist that better explain the original data (Patel, 2015). Two forms of exploratory factor analysis exist, namely factor analysis (FA) and principal component analysis (PCA). Despite linguistic differences caused by the labelling of the factors (generated by the factor analysis), and components (produced from the principal component analysis) (Samuels, 2016), factor analysis is preferable because it attempts to provide a better fit with the variable groupings (factors) to the data.

It does so by rotating the factor axes, and thereby succeeds to produce a better explanation of each factor as measured in their respective variance explained. The factors are 'rotated' so that it is easier to interpret while they do not lose their original meaning. The next stage in the process is to determine or select the method of rotation. The one rotational technique is an orthogonal (uncorrelated) rotation where the angle between the axes is kept constant. This makes for easier interpretation and reporting, but the researcher is required to make more assumptions to label the factors (Pallant 2013:183). Orthogonal rotation is used to explore new datasets and variable structures and has the advantage that it attempts to maximise the variance explained by the data in fewer factors (Field, 2013:796). The more popular orthogonal rotational techniques are Varimax, quart IMAX and equamax. The alternative rotational method is the oblique rotation, which is more difficult to interpret report and describe. This method is usually used when the factors are correlated or established (Pallant, 2013:183). Oblique rotation methods include direct oblimin and promax rotations (Field, 2013:796). In exploratory studies, such as this one, the most common rotation used is the orthogonal Varimax rotation because this rotation disperses the maximum factor loadings so that most of the variance is explained by data (Field, 2013:796). Furthermore, Varimax rotation reduces the variables that contain high loadings across the factors and thereby reduces the probability for strong dual-loading variables (Pallant, 2013:184; Young & Pearce, 2013:84).

This study selected the orthogonal varimax rotation, mainly because of its ability to successfully extract factors in exploratory research settings (Shaikh et al., 2017; Hamid, 2015; Naidoo, 2011; Fields & Bisschoff, 2013b). The cut-off factor loadings to develop a conceptual model in this study retained only those criteria with factor loadings of 0.40 and higher; this decision criterion was implemented based on the success of similar research in various application settings (Shaikh et al., 2017; Hamid, 2015; Bisschoff & Moolla, 2014; Fields & Bisschoff, 2014; Naidoo, 2011;). The study aimed for a 60% cumulative variance explained as this signifies a good fit to the data (Field, 2013:672). Noteworthy, however, is that 50% is considered a satisfactory variance explained in exploratory research (Samuels 2016:2) and was set as the lower limit for the variance explained. The number of factors to extract was based on the eigenvalues to be equal to or higher than 1 as the initial guideline (Field, 2013:670), but the refined factor extraction methodology developed by Mishra (2008 in Patil et al., 2008:162) in their parallel research engine, was used to ascertain that the correct number of factors were extracted. In cases where the number of factors to be extracted differed, the parallel research engine was used as the definitive measure. Exploratory factor analysis requires the key gatekeeper statistics or tests to be meaningful in interpretation and data analysis. These tests and its decision criteria are discussed below.

Kaiser-Meyer-Olkin (KMO) Measure if Sample Adequacy: The Kaiser-Meyer-Olkin (KMO) measures whether the sample is adequate; this means that there have been sufficient data points used to provide an adequate sample. According to Patel (2015:3), interpretation of the KMO values is that values between 0.5 and 0.7 are mediocre, values between 0.7 and 0.8 are good, values between 0.8 and 0.9 are very good and values above 0.9 are regarded as superb. Furthermore, Osborne, Costello and Kellow (2014:17) indicate that the KMO statistic measures whether the data collected by the sample is adequate for analysis and that its results fluctuate between 0 and 1. If a value is near to 1, this signifies condensed correlation patterns and the factor analysis should produce distinct and reliable factors. If there are values below 0.5, the researcher has

to either collect more data or reconsider the variables to be included in the analysis (Field, 2013:1976). In this study, exploratory factor analysis is pursued and the KMO as a measure of sampling adequacy should be equal to or higher than 0.70 to be considered as acceptable (Hassan, 2016:889; Mbuya & Schachtebeck, 2016:232).

Bartlett's Test of Sphericity: Sphericity is a condition where the variances of the differences between all combinations of related groups are equal (Laerd, 2018). Bartlett's test of sphericity is also a secondary measure to test sample adequacy (Field, 2013:1980), because if the sample is inadequate, the sphericity should also portray insignificant values that are higher than the maximum significance level of 0.05. This test specifically examines whether the variance-covariance matrix is proportional to the identity matrix, and therefore effectively tests whether the group variances are similar in nature. If so, the off-diagonal elements would be approximately zero, which means that the dependent variables are uncorrelated and therefore indicate that factor analysis is a suitable multivariate technique to apply to the specific dataset (Field, 2013:2467). Bartlett's test of sphericity will usually be significant at a value of less than .005 (Field, 2013:2005; Pallant, 2013:190). In practice, this means that sphericity guides the researcher to determining how well the extracted factors explain the research setting.

Reliability: The Cronbach alpha is a statistical test performed to indicate the overall reliability as a measure of the internal consistency of the data collected (Mbuya & Schachtebeck, 2016:232); coefficients between 0 and 1 are displayed as reliability indicators (Hassan, 2016:891). High reliability implies that similar results (in this case factors) should present themselves in repetitive studies of a similar nature, while low reliability means that other factors should surface in such a repetitive study performed under the same conditions (Bester, 2018:60; Field, 2013:2031). It is noteworthy that a low alpha coefficient does not disqualify a factor from the current study; even factors with lower reliability remain important to the present study. Reliability, therefore, yields a verdict on the repetitiveness of factors in similar studies and, consequently, the predictability of these factors in confirmatory factor analysis studies (Field, 2013:666). Cronbach alpha coefficients are regarded to be satisfactory once they equal or exceed 0.70 (Hassan, 2016:891; Field, 2013:2037), although seminal research by Cortina (1993:98) indicated that coefficients of 0.57 and higher are also acceptable in exploratory studies. Coefficients higher than 0.8 are considered to be good, while those exceeding 0. 9 are considered to be excellent (Sekaran & Bougie, 2003:327).

3. Research Methodology

Research Design: The study makes use of a literature review and a mixed qualitative and quantitative research design to collect the data. The antecedents for business success under scrutiny were initially identified from the theoretical study. The study included all sectors and all businesses that measure their success. Financial and sales measures as business success antecedents were abundant, but literature scrutiny soon identified other antecedents as valued antecedents towards measuring the business success of PHEIs. Typically, antecedents such as employee turnover, satisfaction, returning customers and marketing metrics are but a few of the identified antecedents. The literature study employed similar studies and models that measure business performance (and/or success) and identified a wide array of possible antecedents to measure business performance (about all types of businesses). This extensive list was impractical and many of these antecedents had little or no relevance to the business performance of PHEIs specifically. These antecedents were critically evaluated and obvious irrelevant antecedents to the application setting were discarded. Measuring criteria were then developed from the literature for each of the retained antecedents.

These remaining antecedents and their respective measuring criteria were then subjected to qualitative scrutiny to evaluate, retain and to validate the business performance antecedents. The literature-based list of drafted antecedents and their measuring criteria served as the point of departure in the qualitative study. Semi-structured interviews were conducted with eight experienced executive managers in PHEI. The list of antecedents, as well as the measuring criteria relevant to each antecedent, was discussed with each of them to determine the importance and relevance of the antecedents and their criteria. Interviewees were also invited to add antecedents or criteria they deemed crucial in managing a PHEI. After the interviews, the initial list was amended and expanded to incorporate the interviewees' suggestions. The next step was to further

refine and reduce the number of antecedents and identify only those key antecedents relevant to PHEIs. Here, a group session with the same eight interviewees was conducted.

The Interviewee Profiles are:

Interviewee 1: Is a 60-year-old director of marketing with ten years' experience in PHEI and holds a B degree in marketing.
Interviewee 2: Is a 47-year-old senior manager with a PhD and 15 years' experience in PHEI.
Interviewee 3: Is a 73-year-old director with over 40 years of public and private higher education experience and holds a professorship.
Interviewee 4: Is a 65-year-old professor with over 30 years' experience in government, public education and private higher education.
Interviewee 5: Is a 42-year-old director with a professional accounting qualification and ten years' experience in PHEI.
Interviewee 6: Is a 40-year-old senior manager with 15 years' experience in PHEI with a professorship.
Interviewee 7: Is a 50-year-old director with 20 years' experience in private higher education and holds a professorship.
Interviewee 8: Is a 40-year-old senior manager with 15 years' experience in PHEI with a master's qualification.

The meta-technique (as adapted and applied by Coetsee, 2002:142-147) was employed to capture their views and identify the list of key antecedents relevant to PHEIs' performance (see Table 2). All the interviews were recorded and transcribed to ensure no information loss occurred. After the interviews, the initial list was amended and expanded to incorporate suggestions and also consider omitting criteria the interviewees did not deem important in managing a private higher institution.

Data Collection: The questionnaire contained two sections: Section A: Demographics, and Section B: Measuring criteria. Section A consists of five questions to compile the demographic profile of the respondents. Section B consists of the final 18 antecedents dealing with business performance constructs, each with its own measuring criteria. The criteria were formulated in statement format to which the respondents had to indicate their level of agreement or disagreement on a five-point Likert scale. In total, Section B consisted of 68 measuring criteria (see Table 2). The population consisted of all full-time employees at two private business schools. These schools have a wide geographic service area, which covers South- and also Southern Africa. The total population was targeted; no sample was drawn. The employees were requested to complete the questionnaires and it was clearly indicated that participation is voluntary and also anonymous. The researcher forwarded the questionnaires to trained office managers in the outlying offices and to the academic managers at the head office in Durban to assist with the distribution and collection of the questionnaire. A total of 250 questionnaires were distributed, of which 247 were completed and returned, signifying an effective response rate of 98.8%. The data was captured by the Statistical Consultation Services of the North-West University and analysed with the IBM Statistical Package for Social Services Version 25 (IBM SPSS, 2018).

Table 2: Constructs Supported by the Literature

Antecedent	Criteria	Interviewee-selected criteria	Literature support	Literature-supported criteria
1. Sales	1. Cost of the programmes	1, 2, 3, 4, 5, 6, 7, 8	Belch and Belch (2015) Collins Dictionary (2017)	1, 2
	2. Sales target achievement	1, 2, 3, 4, 5, 6, 7, 8	CSO Insights (2016) Lei (2012)	3, 4, 5
	3. Number of short courses sold	1, 5, 6, 7, 8	Kargic and Poturak (2014)	1, 2 1, 2, 3, 4, 5
	4. Number of students enrolled	1, 2, 3, 4, 5, 6, 7, 8	Thian et al. (2016) Bezuidenhout and De	1, 2, 4, 5
	5. Number of returning students enrolled	1, 2, 3, 4, 5, 6, 7, 8	Jager (2014)	1, 2 1, 2, 3

	(Criterion 6: Omitted)			
2. Growth	7. Increase in market share	2, 4, 5, 6	Lamb et al. (2016)	7, 8, 9
	8. Increase in student numbers	1, 2, 3, 8	De Meyer et al. (2017) Hanover Research (2017)	7, 9, 10
	9. Increase in new programmes	2, 3, 4, 6, 7	Thian et al. (2016) PWC (2017)	11, 12, 13
	10. New regions	1, 2, 3, 4, 5, 6, 7, 8		7, 8, 9, 10, 12
	11.Saturation of SADC and SA markets	2, 5, 6, 8	Akplu (2016)	10, 11, 12
	12. Entered into international partnerships	3, 4, 7	Levy (2015a)	7,10,11
	13. Leverage alumni network	1, 3, 6, 7		7,8,9,10,11,12
3. Profitability	14. Expense control	2, 5, 6, 8	Longenecker et al. (2017)	16
	15. Increase in revenue	1, 2, 3, 4, 5, 6, 7, 8	Kotler and Keller (2016)	
	16. Sustainable	2, 3, 5, 6, 8	Bateman and Snell (2015) Sazonov et al. (2015) Jashim (2016)	14, 15, 16 14, 15 14, 15, 16
				15
4. Technology	17. Website	1, 2, 3, 4, 5, 6, 7, 8	Alsemgeest et al. (2017) Longenecker et al. (2017)	17, 18, 19, 20, 21
	18. Social media	1, 2, 3, 4, 5, 6, 7, 8	University of Oxford (2017)	17, 18, 20
	19. Management information systems	2, 4, 5, 6, 7, 8	Hanover Research (2017)	19, 20
	20. On-line learning	1, 2, 3, 4, 5, 6, 7, 8	Navneet (2016)	
	21. CRM software	2, 5, 6, 8		20, 21
				19, 20
5. Customer	22. Customer value	2, 4, 5, 6, 7	Alsemgeest et al. (2017) Goetsch and Davis (2016)	24
	23. Continual improvement	1, 2, 3, 6, 7	Levy (2015b) Khalid (2014)	22, 23, 24
	24. Products offered	1, 4, 5, 6, 7, 8		24, 25
	25. The target market for distance education	1, 2, 3, 4, 5, 6, 7, 8		22, 23, 24, 25
6. Innovation	26. Teaching and learning	2, 4, 5, 6, 7	Alsemgeest et al. (2017) Longenecker et al. (2017)	26
	27. Academic programmes	3, 4, 6, 7	Hanover Research (2017) Navneet (2016)	28, 29
	28. Embrace innovation	1, 2, 3, 4, 5, 6, 7, 8		26, 27, 28, 29
	29. Online platforms	2, 3, 4, 5, 6, 7, 8		26, 27, 28, 29
7. Service	30. Level of service	1, 2, 3, 4, 5, 6, 7, 8	Bateman and Snell (2015)	30, 31, 32, 33
	31. Meeting needs	2, 3, 6, 7, 8	Altbach (2015)	31, 32, 33
	32. Meeting wants	1, 3, 4, 5, 6, 7, 8	Navneet (2016)	30, 31, 32, 33
	33. Considers the customer	1, 2, 3, 4, 5, 6, 7, 8		
8. Leadership	34. Goal directed	1, 2, 3, 4, 5, 6, 7, 8	Goetsch and Davis (2016) Longenecker et al. (2017)	34,35.36

	35. Innovative	2, 4, 5, 6, 7, 8	Alsemgeest et al. (2017)	34,35,36
	36. Passionate	1, 2, 3, 4, 5, 6, 7, 8	Al-Husseini and Elbeltagi (2016) Yirdaw (2016)	34,35,36,37
	37. Embraces organisational change	2, 5, 6, 7, 8		34,35,36,37 34
9. Return on investment	38. Investment by founder	1, 2, 3, 4, 5, 6, 7, 8	Longenecker et al. (2017) Carol et al. (2017)	38, 39, 40, 41
	39. Profit focus	1, 2, 3, 4, 5, 6, 7, 8	Yan and Levy (2015)	39, 40
	40. Monitoring expenses and revenue	1, 2, 3, 4, 5, 6, 7, 8	Thian et al. (2016)	38, 39, 41
	41. Target driven	1, 2, 3, 4, 5, 6, 7, 8		38, 39, 41
10. Stakeholders	42. Government institutions' influence	1, 2, 3, 4, 5, 6, 7, 8	Botha et al. (2016)	42, 43, 45, 46
	43. General public	1, 2, 3, 4, 5, 6, 7, 8	Longenecker et al. (2017) Levy (2015a)	42, 43
	44. Quality assurance bodies	2, 3, 4, 5, 6, 7, 8		43, 46
	45. Professional bodies	2, 3, 6, 7	Van Schalkwyk and Steenkamp (2016)	42, 43, 44, 45,
	46. Shareholders control and influence	1, 2, 3, 4, 5, 6, 7, 8		46
11. Society	47. Political changes	1, 2, 3, 4, 5, 6, 7, 8	Botha et al. (2016)	47, 48
	48. Community perceptions	1, 2, 3, 4, 5, 6, 7, 8	Alsemgeest et al. (2017) Akplu (2016)	48, 49
	49. Student population	3, 4, 6, 7		47, 48, 49, 50
	50. The public has accepted private providers	1, 2, 3, 4, 5, 6, 7, 8	Strydom et al. (2017)	51, 53, 54
12. Quality	51. Meet expectations of students	1, 2, 4, 5, 7, 8	Schiffman and Kanuk (2014)	51, 52, 53, 54
	52. Meet requirements of CHE	1, 2, 3, 4, 5, 6, 7, 8	Stander (2017)	51, 52, 53, 54
	53. Fit for purpose	2, 4, 6, 7	CHE (2001; 2016)	51, 52, 53, 54
	54. Compliance with regulations	1, 2, 3, 4, 5, 6, 7, 8	Van Schalkwyk and Steenkamp (2016)	51, 53
13. Marketing	55. Branding	1, 2, 5, 6, 8	Thian et al. (2016)	51, 53, 54
	56. Website	1, 2, 3, 4, 5, 6, 7, 8	Longenecker et al. (2017)	55, 59
	57. Social media	1, 2, 3, 5, 8	Lamb et al. (2016)	
	58. Software management	2, 5, 6, 8	Hanover Research (2017)	55, 56, 57, 59
	59. Physical infrastructure	1, 2, 3, 4, 5, 6, 7, 8		55, 56, 57, 58
14. Communi-cation	60. Personalised	2, 4, 6, 7	Goetsch and Davis (2016) Kotler and Keller (2016)	59,61, 62
	61. Updated communication	1, 3, 4, 5	Abdallah et al. (2015) Makhitha (2017)	60, 61, 63, 64
	62. Timeous communication	1, 2, 3, 4, 5, 6, 7, 8	Navneet (2016)	60, 61, 62
	63. Student feedback	3, 4, 6, 7		60, 61, 62
	64. Tutor feedback	4, 6, 7		60, 61, 62, 63,

15. Legality	65. CHE compliance	1, 2, 3, 4, 5, 6, 7, 8	Navneet (2016)	64
	66. DHET compliance	1, 2, 3, 4, 5, 6, 7, 8	Botha et al. (2016)	67, 68
	67. Financial and statutory compliance	1, 2, 3, 4, 5, 6, 7, 8	Jashim (2016)	67, 68
	68. Regulatory bodies' adherence	1, 2, 3, 4, 5, 6, 7, 8	CHE (2001; 2016)	65, 66, 67, 68

Ethical Clearance: This is a low-risk category study. It was submitted and ethically cleared by the Ethics Committee of the Faculty of Economic and Management Sciences at the North-West University. After the committee approved the study and classified it as a low-risk study, a study-specific ethics number (EMS14/11/12-01/10) was issued. Criteria with factors loadings of 0.40 and higher are retained provided they do not show strong dual-loading properties (second-factor loading exceeds 0.30) (Pallant, 2010:192). The results also provide a theoretical basis for future researchers and academia of business performance in education or in related research.

4. Results

Reduction of the Measuring Criteria: Exploratory factor analysis offers the advantage to simplify the dataset; this results in an easier understanding of the results. Simplification, according to Gaskin (2014), not only improves the validity of the analysis, but also enables better application and operationalisation of factor models in practice (Shaikh et al., 2017). In this case, varimax rotation is particularly suitable because it attempts to load criteria strongly onto specific factors, thereby reducing criteria that load onto more than one factor. This makes for easier factor interpretation (Field, 2013:1966). A varimax rotation also maximises the variance explained; this is important in exploratory studies because it offers the researcher a better understanding of the latent variables and their importance (Field, 2013:642).

Furthermore, based on the success of numerous exploratory studies to simplify and purify measuring instruments from dual-loading or low-loading criteria by successfully using exploratory factor analysis (Naidoo, 2011; Fields & Bisschoff, 2013a; 2013b; Bisschoff & Moolla, 2014; Hamid, 2015; Shaikh et al., 2017), the statistical decision criteria that are used are to accept factors if the KMO is equal to or higher than 0.70, Bartlett's sphericity is smaller or equal to 0.05, and the cumulative variance explained exceeds 60%. Factors' reliability should equal or exceed Cronbach's alpha coefficient of 0.70 (Field, 2013:675). The results show that five rounds were required to extract a satisfactory component matrix. Factors were retained as per the Kaiser criterion (where the eigenvalue exceeds or is equal to 1) (Kaiser, 1958:187; Pallant, 2010:184) and also where the eigenvalue exceeds the parallel analysis random matrix (Pallant, 2010:184) (as generated by the parallel analysis engine) (Patil et al., 2007). The results appear in Table 3. Eliminated criteria numbers correspond with Table 2.

Table 3: Purification of the Measuring Criteria

Round	Var. EXPL. (%)	KMO	BART-LETT	No. of factors	Alpha	Criteria eliminated
1	71.57	.920	.000	15	.982	None
2	72.60	.926	.000	12	.979	7.1, 5.6, 6.2, 13.3, 2.6, 3.2, 12.1, 6.4, 11.5, 2.1, 5.4
3	71.64	.927	.000	11	.977	2.5, 2.2, 16.9, 13.2, 6.3, 16.1, 13.1
4	72.26	.925	.000	10	.975	5.2, 16.6, 10.1, 2.3, 5.3
5	70.56	.926	.000	10	.974	7.3, 11.4, 16.12

The cumulative variance explained (in Table 3) decreased marginally with 1.01% after eliminating 26 unsuitable criteria. Additionally, the original 15 factors were reduced to 10 clear factors; this is a significant simplification of the factor structure to measure the performance of a private business school. Furthermore, the other statistical requirements were easily met and remained excellent with marginal differences in the sample adequacy (KMO) and reliability (alpha coefficients). Sphericity (Bartlett tests) remained unchanged

below the required 0.05 level. However, Shaikh et al. (2017) point out that the real value of purification resides with the reduction of the number of factors (from 15 to 10), thereby creating a much more measurable and manageable model to apply in practice. In this case, Hill and Hughes (2007:380) state that a marginal decline in total variance explained is "but a small price to pay for the additional validity gained by the reduction in the number of factors and measuring criteria".

Factor Analysis: The rotated component matrix showing the extracted ten factors and their factor loadings appears in Table 4. The variance explained and the reliability coefficient of each of the factors appears at the bottom of the table. The variance explained indicates that Factor 1 is the most important factor (18.2%) of the variance, followed by Factor 2 (11.4%), down to the least important Factor 10 (7.5%). The total variance explained (70.56%) shows a very good fit to the data exceeding the margin of 60% with ease (Costello & Osborne, 2005:8; Field, 2013:672). Regarding factor reliability, the first seven factors have excellent reliability coefficients that exceed 0.90, while the last three factors exceed the required margin for this study (0.70) with ease. This means that all the factors are reliable and can be operationalised in practice. In practice, this means that Strategic finance is the biggest predictor of compliance with rules and regulations, followed by Innovation and goal-directed activities, while Political and societal impact has the lowest predictable influence. Therefore, an improvement in Strategic finance will benefit and improve Compliance with rules and regulations more than any other predictors and should be dealt with first as this approach will yield.

Table 4: Rotated Component Matrix

Description	1	2	3	4	5	6	7	8	9	10
15.3 Adheres to DHET rules and regulations	.836									
15.1 Complies with CHE rules and regulations	.825									
15.4 Complies with SAQA rules and regulations	.815									
15.2 Complies with financial and legal requirements	.803									
10.4 Complies with CHE quality standards	.742									
12.3 Complies with CHE & DHET quality standards	.734									
10.2 Complies with Government regulation and policy	.692									
10.3 Follows professional body rules and regulations	.644									
12.4 Programmes are fit for purpose	.583									
10.5 Shareholders provide directional objectives	.484									
14.4 Is in constant contact with students		.813								
14.6 Communicates personally with the students		.799								
14.5 Communicates timeously with students		.786								
14.7 Social media used effectively as communication tool		.717								
14.3 Undertakes student surveys to understand students' experience		.704								
14.2 Students receive tutor or lecturer feedback		.644								
14.1 Updated communication to students is provided		.644								

7.4 Student orientation and focus are primary	.542					
7.2 Continuous improvement of processes	.484					
16.13 The costs of programmes are affordable	.452					
4.5 Students are registered via the CRM system		.785				
4.2 The LMS is effective		.780				
4.4 Uses the latest technology to communicate with students		.736				
4.3 Has an online teaching platform		.733				
4.1 MIS is effective		.704				
16.2 Human resources training and development programme exists		.487				
13.4 Uses software to track and evaluate marketing efforts		.475				
13.5 Has excellent infrastructure		.450				
9.2 Is profitable			.766			
3.4 Constantly reviewing strategies to be profitable			.696			
3.1 Revenue has increased year-on-year			.678			
9.1 Expenses and revenue controls are in place			.653			
9.3 Targets are aimed at achieving outcomes			.626			
3.3 Systems exist to control and monitor expenses			.626			
9.4 The founder provided the initial investment			.626			
8.4 The focus is on the mission and vision				.729		
8.1 Organisational change is embraced				.705		
8.3 Innovation is encouraged				.681		
8.2 Outcomes are achieved by being goal-directed				.634		
12.2 Quality student expectations are the focus				.532		
16.10 An efficient information technological (IT) system exists					.618	
16.11 Empowers the public on the importance of higher education					.607	
16.9 Staff are professional in their interaction with students and public					.586	
16.8 The organisation is accessible to students					.477	
16.7 Excellent infrastructure for higher education is in place					.429	
16.4 Promotional campaigns focus on students					.406	
1.4 The number of new students increased year-on-year						.705

1.3 Short course offerings have increased							.694			
1.5 Students returning to study have increased year-on-year							.671			
1.2 Sales targets have been achieved							.547			
2.4 Market share in SADC has increased							.443			
1.1 Cost of the programmes								.835		
16.3 The price of programmes is affordable								.687		
5.1 Programmes offered are value for money								.672		
11.3 Political changes affect operations in the various offices outside South Africa									.760	
11.1 Perception by society is positive									.543	
11.2 Society is impacted by the organisations it serves									.435	
5.5 Programmes offered to target the customers or students' needs										.531
6.1 Innovative programmes are continually developed										.527
Variance	**13.30**	**11.66**	**8.77**	**8.18**	**7.60**	**5.37**	**4.65**	**4.93**	**4.05**	**2.40**
Cum. variance	**13.30**	**24.95**	**33.71**	**41.89**	**49.49**	**54.87**	**59.52**	**64.11**	**68.16**	**70.56**
Cronbach alpha	**.952**	**.938**	**.902**	**.899**	**.923**	**.907**	**.780**	**.773**	**.785**	**.702**

Extraction Method: Principal component analysis; Rotation method: Varimax with Kaiser normalisation Rotation converged in 9 iterations.

Discussion of Factors

Factor 1: Regulatory Compliance: The analysis identifies criteria dealing with government regulation, rules and regulations, therefore compliance, as the most important factor that a private business school should adhere to in their quest to perform well. All the criteria listed show that the myriad of rules and regulations required to register and operate as a private business school by different governing bodies are key issues to adhere to. Factor 1 is the most important factor and explains a variance of 13.30%.

Factor 2: Strategic Communication: The second most important factor deals with issues pertaining to strategic communication and the role it plays in supporting a desirable student/customer experience. Strategic communication is an important tool by an institution to explain and fulfil its mission (Hallahan et al., 2007:20), while strategic communication between customer and institution also plays an important role in business performance (Roberts, 2018). This high factor rating of 11.6% of the variance demonstrates the importance of strategic communication.

Factor 3: Educational Technology Stack: Factor 3 identifies criteria dealing with technology as the third most important factor. Technology has an impact on business operations and performance. Technology has the ability to improve the financial position, enables faster communication (Holyoak, 2017), it also allows for innovation that keeps employees more engaged as well as increases capacity of the business to do more and ultimately saves time and money (SBDC Oklahoma, 2017). With the fourth industrial revolution, the educational technology stack having the best of breed technologies is to be looked at more closely as this is the way of the future in PHE and education in general. The factor explains 8.77% of the variance.

Factor 4: Strategic Finance: Factor 4 deals with strategy and finance. Various studies indicate that strategy in organisations is critical for the current and long-term growth and sustainability, also in PHEIs (Thompson

et al., 2018; Longenecker et al., 2017; Carol et al., 2017; Yan & Levy, 2015; Thian et al., 2016). In addition, these studies also highlight the importance of financial monitoring; here, both revenue and expenditure are critical factors for business success in organisations. Proper financial and strategic performance systems for regulatory compliance are essential because financial health enables PHEIs to retain their educational licences and comply with financial regulations. Strategic financial planning is therefore imperative to long-term survival and to adhere to regulatory requirements; noncompliance could have disastrous consequences for the business performance of a PHEI. The factor explains 8.18% of the variance.

Factor 5: Organisational Development: Factor 5 deals with the mission and vision and embracing innovation. Organisational development focuses on fulfilling the mission and vision as well as embracing changes that take place internally and externally of the organisation. Change is constant and to embrace the change is critical for the survival of any organisation (Carnall, 2018); this is especially true in relation to the changes in compliance required by the CHE and DHET. In the case of South Africa, the PHEI environment is constantly affected by the changes in regulations and compliance requirements in addition to the typical challenges experienced by other business environments (such as the economic factors of the country) (Wride, 2017). Therefore, PHEIs have to be strategic in the manner that they approach the achievement of their goals and outcomes. The factor explains 7.60% of the variance.

Factor 6: Customer Orientation: Factor 6 focuses on customer orientation. Customer orientation has a direct impact on the sales and delivery of the product or service of any organisation as well as an impact post-delivery of the service (Kasemsap, 2017:126). Customer orientation relates to service delivery, which includes areas of reliability, responsiveness and having empathy. This creates a view that the organisation is in contact with society in general and focuses on the needs of the customer (Orville, Walker & Mullins, 2014:253) Customer orientation and community involvement in PHE are critical for success in the higher education sector. Factor 6 explains 5.37% of the variance.

Factor 7: Sales: Factor 7 deals with increasing sales of programmes, both formal and short courses. Sales, as a result of marketing efforts, facilitate the flow of income into the PHEI. Resultantly, higher sales, either by geographic market expansion or market penetration, would increase income flows of PHEIs. Additionally, important to PHEIs are student retention and to lock students in for the full study time by ensuring that they complete their studies by moving from year to year in their programme. Ideally, continued or advanced training and education following a first qualification should also be actively marketed to the current student base. This factor ties in well with Factors 4 and 10, Strategic finance and Customer service, respectively. Factor 7 explains 4.65% of the variance.

Factor 8: Pricing: Factor 8 deals with the pricing of programmes being offered at an affordable price that provides value for money to students. The founding principles of being affordable and being accredited are adhered to in this factor. The pricing of service is critical to ensure that profits are achieved. In so doing, the right price has to be charged for the service delivered. Substantial growth in revenue and market share depends on the pricing model developed for the product or service (Nagle & Müller, 2017:2-4). The right price for the programmes offered in PHEI is important for the suitability and profitability of the institution. Factor 8 explains 4.93% of the variance.

Factor 9: Socio-Political Influence: Socio-political factors, which include society and the political or regulatory environment, are dealt with in this factor. Socio-political influence refers to both the impact and interaction of social elements and political elements on an organisation (Complexity Labs, 2018). PHEIs are affected by both the political system that is highly regulated and controlled as well as the social dimension due to the demand for higher education to meet the government objectives of increasing the entry into higher education. This business environment has an impact on the operations and their sustainability of PHEIs. Factor 9 is the second least important and explains 4.05% of the variance.

Factor 10: Market Focus: Factor 10 is the last factor and focuses on being responsive to market and student needs by offering programmes that they require. In this regard, Vendrell-Herrero et al. (2017:489) highlight that organisations need to be outward looking or market focused when delivering a product or service. This ultimately leads to having a competitive presence and catering to the needs of the market. This allows for

innovation and experimentation with new ideas and products. Singh et al. (2018:220-221) indicate that organisations grow through the institutional context, resource allocation as well as the industry context. This highlights that an organisation needs to consider the industry or the market when deciding on the product or service to provide, which ultimately leads to growth and delivers a viable return on investment. This factor is required in order for the PHEI to develop new programme offerings that are relevant in the marketplace. Factor 10 explains 2.40% of the variance.

Factor Correlations and Multiple Regression Analysis: Pearson correlation coefficients were used to determine the inter-factor correlations. All the factors showed high inter-factor correlations ($p \leq 0.1$; $0.70 > r > 0.35$). Although correlations between factors ($p \leq 0.1$; $r \geq 0.30$) (Pallant, 2010:185) are expected, cases where high correlations exist require further investigation. Various authors (Basilevsky, 1981; Carvalho, 2008; Field, 2013; Arayesh, 2015) suggest that multiple regression is suitable to determine whether the most important factor is influenced by the lesser important ones, and if so, to what extent. In this study, Factor 1: Regulatory compliance to rules and regulations is the most important factor because it explains the highest variance; Factor 1 then serves as the dependent variable with Factors 2 to 10 as the independent factors. The results appear in Table 5.

Table 5: Multiple Regression Model

Model	R	R square	Adjusted R square	Std. error of the estimate
1	.794[a]	.631	.616	.47325

a. Predictors: (Constant), Factor10, Factor 8, Factor 7, Factor 9, Factor3, Factor 4, Factor 6, Factor2, Factor 5

Model		Unstandardised coefficients		Standardised coefficients		
		B	Std. error	Beta	t	Sig.
1	(Constant)	.299	.219		1.362	.175
	Factor 4	.399	.062	.367	6.484	.000*
	Factor 5	.201	.063	.222	3.174	.002*
	Factor 6	.228	.069	.222	3.284	.001*
	Factor 9	.097	.058	.092	1.664	.097**

a. Dependent variable: Factor 1

* $p \leq 0.05$; ** $p \leq 0.10$

The table shows that the calculated variance is R^2=.631 (adjusted R^2=.616). This means that a satisfactory 63.1% of the variance in Factor 1 is explained by the four factors (Factors 4, 5, 6 and 9). These four independent variables are significant (Factors 4, 5 & 6: $p \leq 0.05$; Factor 9: $p \leq 0.10$) and contribute (as per standardised beta coefficients) regression weights of .367, .222, .222 and .092, respectively, to the variance of Factor 1.

The Regression Function Then Constitutes:

Compliance to rules and regulations (Y) = (.367 x Strategic finance) + (.222 x Innovation and goal directed) + (.222 x Visibility) + (.092 x Political and societal impact)

A Model to Measure the Business Performance of PHEIs: The factor analyses identified ten factors from the 18 antecedents and 68 measuring criteria as key factors to manage PHEIs' business performance. In total, some 26 criteria were omitted from the initial theoretical and qualitative model by the statistical analysis. The model has ten factors that explain a cumulative variance of 70.56%. All ten factors have excellent reliability that exceeds the minimum alpha coefficient of 0.70 with ease; six factors even have alpha coefficients that exceed 0.90. The empirical model of business performance for PHEIs is shown in Figure 1.

Figure 1: Business Performance Factors of PHEs

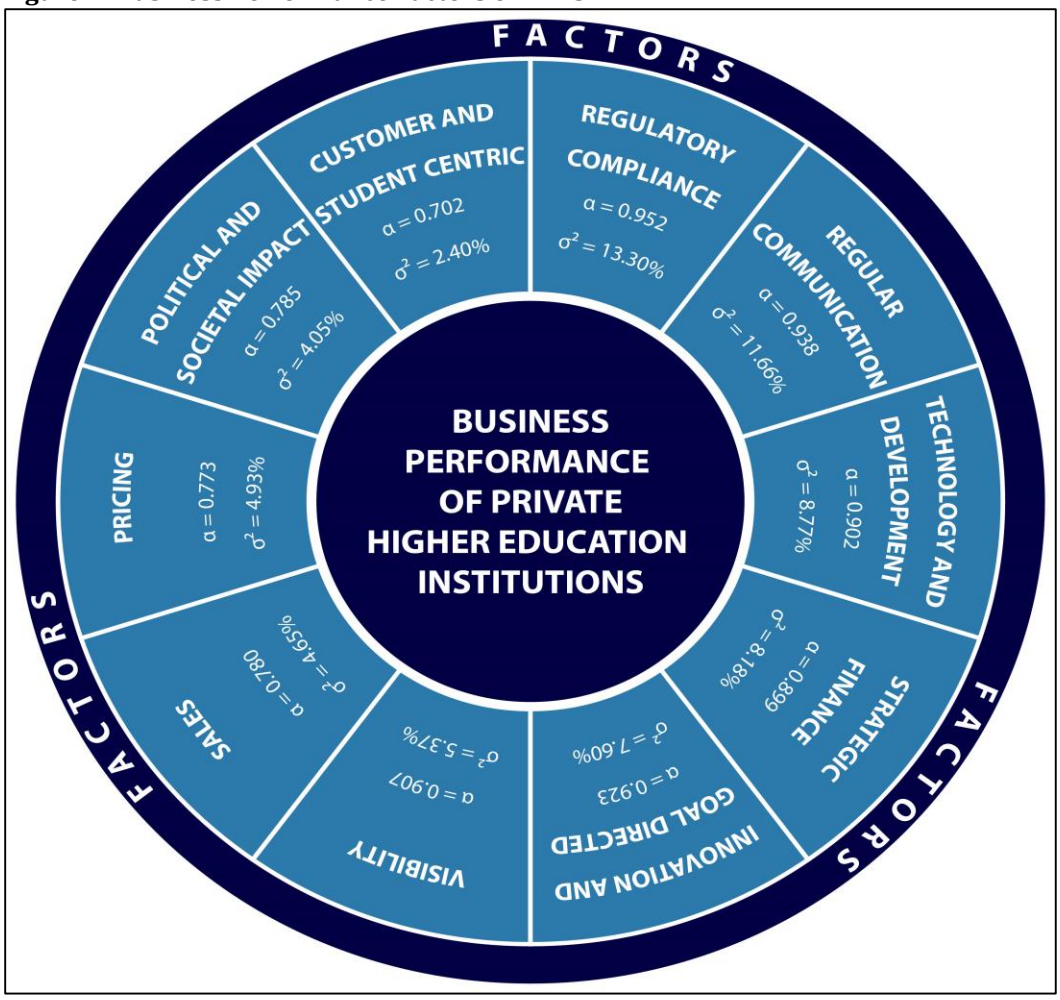

Figure 1 shows the ten factors. Noteworthy is that the factor structure does not possess any sub-factors within any of the ten identified factors. This means that each factor, in essence, is pure in nature and does represent business performance factors per se (Shaikh et al., 2017). The figure also shows the respective variance explained by each factor (as indicators of each factor's relative importance), their reliability and the factors as they were labelled. The findings of the model are partially supported (and in some cases also contradicted) by other researchers. In a study by the Advanced Institute of Management Research (2006:10), three factors are directly supported by their findings. They are Factor 1 (Regulatory compliance with rules and regulations), Factor 7 (Sales) and Factor 8 (Pricing). Their study also identified the most important factor as Regulatory compliance and rules and regulations, while Sales and Pricing were both factors that the institute identified as important educational performance factors.

In this case, Soriano also identified financial management (Factor 4), sales (Factor 7), goal-directedness (Factor 5), price (Factor 8), and research and development of new products and profitability (which is related to Factor 5: Innovation). Factors identified by other studies that were not identified by this study include a well-experienced leadership team (The Advanced Institute of Management Research, 2006:10), the need for achievement and optimism, leadership of the organisation, importance of technology and to be profitable (Soriano, 2010:468). The Advanced Institute of Management Research (2006:10) also reasons that educational performance is dependent on three key interrelated factors that have a significant influence on the current and future success of business schools in the United Kingdom. They are reputation, funding and faculty. The reputation category focuses on government reputation and compliance so as to attract research grants and rankings among business schools.

Soriano (2010:468) also investigated student fees and government grants as a means to assist students with tuition fees. Faculty identified recruitment and retention of experienced faculty members and leadership to guide the business school. However, it is interesting to note that these three factors and their descriptions embed and support most of the factors identified in this study. Regarding Factor 10 (Customer and student-centric) Webster, Hammond and Rothwell (2014:15) support the findings of this research by stating that factors influencing American business schools' performance include being a member of a professional accreditation board (such as the Association of MBAs or the Association to Advance Collegiate Schools of Business), students as the customers of the institution and marketing efforts to increase student numbers in the business school and to increase student retention in the business school. Webster et al. (2014:18) also support re-registration and returning students as a means to increase sales and market share.

5. Conclusion

From the analysis, the following conclusions can be drawn.

Conclusions 1 and 2: This article identified business performance antecedents and its respective measuring criteria. Strongly literature orientated, the study identified 16 business performance antecedents, measured in total by 68 criteria. The study scientifically reduced the 16 antecedents to a more manageable ten factors, measured by 59 criteria (thereby reducing the measuring criteria by 9). It is concluded that the study succeeded to significantly simplifying the model to measure business performance in business schools. Based on the conclusion above, it is also concluded that the simplification of the model now enables an easier operationalisation of the model in the industry, thereby putting academic research to use in practice.

Conclusions 3 and 4: The success of simplifying the model and achieving satisfactory reliability and validity can be attributed to high sampling adequacy as measured by Kaiser-Meyer-Olkin (KMO). (This study had a KMO value of .923.). Additionally, sphericity (as measured by Bartlett) measures whether the data is suitable for factor analysis. The statistics showed that the chi-square was estimated at 319.885 at 10 degrees of freedom. Bartlett's test shows that sphericity was significant with a value well below the 0.05 significance level. The cumulative variance, as explained by the five factors, is also satisfactory at 70.56%. It is therefore concluded that to successfully develop or simplify a model: An adequate sample was obtained; and Sphericity was tested to ensure the suitability of the data to be subjected to further analysis. Without these gatekeeper statistics, the attempts to develop a model are risky. However, the statistics show that, the employment of factor analysis to develop the conceptual model was a low-risk venture.

Conclusion 5: Regulatory compliance with rules and regulations is the most important factor. In this case, the model shows that PHEIs should focus on retaining their compliance in the private higher education sector. This constitutes a competitive advantage because the barriers to enter higher education are high and complex, keeping new entrants effectively out of the market. In addition, existing PHEIs cannot compromise to lose their licence to operate.

Conclusion 6: In addition to the conclusion above, leaders of private higher education institutions should also focus on regular communication, technology and development, strategic finance, innovation and goal-directed, visibility, sales, pricing, political and societal impacts and to be customer- and student-centric, to successfully negotiate the complex challenges to manage PHEIs. The high correlations between the factors clearly indicated that the factors all influence one another; therefore, a positive managerial change in one factor will also positively influence the other factors. This facilitates a better return on managerial inputs because it stimulates positive synergetic forces between the factors.

Summary: In this article, the latent variables or factors to business performance in business schools have been identified. In addition, in simplifying the original set of measuring criteria, the theoretical model was also subjected to reliability and validity confirmation. The data is reliable and the factors also returned satisfactory reliability coefficients. Regarding the validity, the factors can be regarded as pure factors because they do not contain sub-factors with the factor structure. As a result, the article presents a usable validated factor structure that identified the underlying factors that can be used to manage the business performance of

PHEIs. The factors, therefore, present a managerial tool for executives in PHEIs to employ if they want to measure the factors of their institutions and improve their business performance.

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List of Abbreviations

CHE	Council for Higher Education
CFA	Confirmatory factor analysis
DHET	Department of Higher Education and Training
EFA	Exploratory factor analysis
HE	Higher education
KMO	Kaiser, Meyer & Olkin
PCA	Principal Component analysis
PHE	Private higher education
PHEI	Private higher education institution

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Determinants of Informal Land Renting Decisions by A1 and A2 Farmers in Mashonaland East Province of Zimbabwe

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Abstract: Land rental markets are critical in developing economies as they contribute to efficiency, equity and welfare gains to farmers involved under conditions of low transaction costs. Despite lack of policy consistency in Zimbabwe, A1 and A2 farmers have been involved in these land rental markets, albeit in an informal manner. This study sought to establish the determinants of farmers' decision to take part in these informal markets. A survey was carried out in Mashonaland East province with a sample of 339 households selected through multi-stage sampling methods and data analysed using a bi-variate Tobit model. Results showed that combined together, the proportion of farmers involved in informal land rental markets are as much as those not participating. Determinants of renting-in were identified as gender, household income, permanent labour, cultivated area, tenure certainty, irrigable land size and crop diversification. Factors affecting renting-out decisions were age, permanent labour, irrigable land size and crop diversification and these results are not in any way different from findings from previous studies. The conclusion was that household characteristics and land endowments factors were strong in decisions to rent-in land while land endowments factors were dominant in decisions to rent-out land. Any future considerations for formalising land rental markets should consider these important factors having a bearing on land rental decisions.

Keywords: *Land rentals; A1 and A2 model; bivariate to bit regression; Zimbabwe*

1. Introduction

Land tenure has been recognised as an important institutional requirement towards full utilization of agricultural land (Hoken 2012). According to Awasthi (2009), there is a need for low-cost and supple land tenure systems to maximise on the productive use of land and to generate opportunities for agricultural based economies and increased welfare benefits. Under land tenure, usufruct rights in farmland are recognized as a key determinant to agricultural households' poverty levels, food security and vulnerability to shocks (Chamberlin and Ricker-Gilbert 2016). Hagos and Holden (2013) postulated that land rental and sales markets were now very widespread even though traditionally they have not been regarded as features of land tenure systems. This misperception makes studies on land rental policy and market development and their impacts of considerable interest to both researchers and policymakers. Rahman (2010) noted that land rental demands less capital investments when compared to land sales and, in the process, providing superior inter-temporal tractability and giving a chance to owners working off-farm to benefit from on-farm wealth creation activities.

Thus, land rental provides for a win-win situation for both the owners of land and potential farmers who can productively utilise the land. Vranken and Swinnen (2006) argued that in a typical Zimbabwean environment characterised by high risks and high transaction costs, defective credit and insurance markets as well as thin land sales markets, land rental markets provide a viable alternative to full utilization of land. Land rentals are pivotal in improving efficiency and equity in land utilisation and usufruct rights. Theoretically, by equalizing the marginal products of land among households with different land-labour resources, land rental markets subsequently enhance equity and agricultural productivity through transferring the land resource from less to more productive users (Feng 2008). The above literature serves to show that land rental markets are critical in promoting efficient utilisation of land as a resource and in reducing land usage disparities between the landowners and landless but potentially efficient farmers. Understanding of factors likely to influence participation in land rental markets is therefore critical in the promotion of land rental markets as a way of improving farm efficiency and equity.

Policy makers are able to enhance the success of the operation of rental markets by critically designing institutional arrangements in tandem with those factors that have a bearing on renting-in or renting out of the land (Reid 2016). According to Chamberlin and Ricker-Gilbert (2016), renting-in occurs when farmers utilise additional land from other farmers or those without land access lend from existing landowners while renting-out is when farmers allow potential farmers to utilise their land. Zimbabwe has a strong history with land reforms which dates back to pre-independence (Moyo and Chambati 2013). Four distinct phases of land reforms can be alienated, namely land discrimination on the basis of race (1930-1979), the willing buyer willing seller (1980-1989), the government first refusal of the right to land (1990-1998) and the fast track land reform program (FTLRP) from 2000 to 2010. The FTLRP led to two land tenure models; model A1 mainly aimed at self-sufficiency food and nutrition security and limited marketed surplus production and A2 model, which is a commercial production settlement scheme catering for small, medium and large-scale commercial farming (Matondi and Dekker 2011). However, most of these resettled farmers either lacked appreciation of farming as a business or were not adequately capitalised to undertake farming activities. As a result, agricultural production plummeted in the country with the country resorting to food imports from once being the breadbasket of Southern Africa (Moyo and Chambati 2013).

By 2003, approximately 222,000 ha of land was under cultivation, implying a decrease of about 50% compared to the period prior to FTLRP, with tobacco, maize, soybean and wheat being the most affected. Beef declined to a fifth of the year 2000 levels, milk by 36%, poultry by 25% and piggery by 70% during the same period (Moyo 2007). In 2007, the government introduced land rentals aimed at encouraging productive use of the land. The rentals were set at US$15 for A1 farmers irrespective of the size of land and US$5 per hectare per annum for A2 farmers (Government of Zimbabwe 2016). In the aftermath, resettled farmers began to have private arrangements to rent-out and rent-in land in light of required government rental payments, with potential tenants being both former white commercial farmers and indigenous blacks. A study by Matondi and Dekker (2011) in Shamva showed the prevalence of renting in/out among A2 farmers at 18% compared to A1 farmers at 7% and 3-tier farmers at 4%. The study also concluded that some farmers were multiple owners of land, with some giving their plots to children or relatives, in some cases bartering for agricultural produce share. While the majority of A1 and A2 farmers were renting-out land without any authority (informal), some have entered into formal partnership arrangements with tenants and some have allocated resettled land to relatives.

Another study by Scoones et al. (2011) in Masvingo showed that A1 and A2 farmers experienced an influx in cattle holdings as part of sharing (*kuronzera*) arrangement. Communal farmers failing to get adequate grazing areas for their cattle would give their friends or relatives with good grazing pastures cattle to keep. In return, the resettled farmers were allowed to use the cattle for both household and farming activities and sometimes were offered a heifer as a token of appreciation. The existing land rental markets are mainly informal, with government indicating its illegality but turning a blind eye to the practices. The prevalence of the practice has increased after the adoption of the multi-currency system in 2009 and gazetting of land rental payments to the state, putting pressure on farmers to look for alternative income sources to pay for these rentals. This paper therefore aims to unravel the dynamics of informal land rental market participation in Zimbabwe, by analysing the determinants of land renting-in and renting-out decisions among resettled farmers in the province of Zimbabwe. The rest of the article is organised as follows; section 2 outlines the theoretical framework adopted in this paper. Section 3 and 4 give the research methodology and results plus discussions respectively, while Section 5 concludes the research article.

2. Theoretical Framework

Previous theoretical assessment studies (Chamberlin and Ricker-Gilbert 2016, Deininger and Jin 2009) have shown that there is the potential of rental markets in enhancing farm efficiency by bringing into equilibrium land and other factor ratios among different households even when other factor markets are not perfect. Household characteristics, land endowments and transaction costs associated with land rental contracts have also long been acknowledged in literature as important factors in the decisions to rent-in or rent-out land (Hagos and Holden 2013). Transaction costs arise due to the need to monitor tenants' behaviour, plus the renter's management practices and potential mismanagement. Additional transaction costs comprise the costs of bargaining, searching for partners, and enforcing contracts (Hagos and Holden 2013).

These types of transaction costs are particularly high in environments where land rights are not secure (Chamberlin and Ricker-Gilbert 2016) and where the land transfer is controlled (Kimura et al. 2011). Despite the apparent evidence of beneficial contributions of rental markets, well-established perceptions remain that land rental markets could contribute to land concentration and amplified poverty levels, which then justifies the need for close government policing of land rental markets. There are three ways in which smallholder farmers are impacted by land rental markets according to theory (Hagos and Holden 2013), namely equity, efficiency, and welfare. These ultimate outcomes are achieved within the context of moderating factors, which are governance (policy administration and macro-environment), farmer practices, land use as well as capital and land markets. Equity gains are achieved from the reallocation of land across households with varied assets, which process occurs in a way that likely equilibrates land and non-land factor ratios (Hagos and Holden 2013). The efficiency gains are achieved when land is transferred from less productive to more productive users.

3. Methodology

Study Area and Sampling: The study was conducted in Mashonaland East Province of Zimbabwe which has an estimated 326 825 households and an average household size of 3.1. Population density is 42 persons per square kilometre and 86% of the population is rural. There are 17 731 A1 and 4 700 A2 households (Zimbabwe National Statistics Agency 2012) and they are mainly concentrated in four out of nine districts. The other districts are mainly populated by communal farming areas. The province was selected for the study as it is one of three provinces in the country which had the highest number of FTLRP beneficiaries. Key informant interviews also revealed that land renting practices are relatively higher for A1 and A2 farmers in this Province compared to other provinces. The study was carried out through the survey method coupled with key informant interviews and focus group discussions. For calculation of sample size, the population was considered as all A1 and A2 households in Mashonaland East, which stands at 22 431 (Zimbabwe National Statistics Agency 2012). The main considerations made in calculating the sample size were the margin of error and the significance level. In order to calculate the sample size, the following formula was used (Lefever, Dal, and Matthiasdottir 2007).

$$\boldsymbol{n} = \frac{\boldsymbol{X^2 * N * P * (1-P)}}{\boldsymbol{[ME^2 * (N-1)] + [X^2 * P * (1-P)]}} \quad [1]$$

Where:

n = Sample size
X^2 = Chi-square for the specified confidence level at 1 degree of freedom
N = Population Size
P = Population proportion (assumed at 0.5)
ME = desired Margin of Error (expressed as a proportion).

Considering the given population and the aforementioned margin of error and significance level, a sample of size of 378 households was generated. The sample size was reduced to 339 after data cleaning. The sample was prorated for A1 and A2 farmers and for Goromonzi and Marondera districts, as these have highest resettlement beneficiaries. Multi-sampling methods were used to capture critical aspects of the study, with stratified sampling used to select particular A1 and A2 farmers, simple random sampling being used in selecting the wards and purposive sampling used for selecting those involved in renting-in and renting out. A questionnaire was used to collect household data while guides were used to collect key informant and focus group discussion data. Data from the survey was transcribed to CsPro 5 and analysed using Stata.

Tobit Regression Model: Most of the studies on land rental market participation uses either Probit (Shifa 2016) or Tobit models (Bizimana 2011, Hou, Huo, and Yin 2017, Rahman 2010). Those using Probit had a binary variable as the dependent variable while Tobit models tend to have a dependent variable that quantifies the extent of rental participation in terms of the size of the land. Following the study by Rahman (2010) this study also hypothesizes a chronological order of decision making where a farmer makes the decision first to get involved in land rent markets followed by the decision of the size of the transaction. A censored regression model (bivariate Tobit model) is regarded as the appropriate model to use to identify the determinants of renting behaviour.

Where participation observations (above and below limit) are taken into account. The bivariate model analyses renting-in and renting-out decisions within the same model and not as two separate models. The specific estimation is given as follows:

$$y_i = \alpha_0 + x_{i\beta} + z_i\gamma + r_i\delta + \varepsilon_i \quad [2]$$

where: y_i is the dependent variable; x_i, z_i, and r_i are vectors of variables measuring household characteristics, land endowment characteristics, and transaction cost effects respectively; β, γ, δ are vectors of parameters related to the household characteristics, the land endowment characteristics, and transaction cost variables, respectively, and ε_i is an error term (Rahman 2010). The selection of the bi-variate Tobit model was based on extensive literature review and considerations for best fit models. Farmers renting-out land in most cases do not let all of it but remain with some land for their own production. A number of farmers also rent-in land not just as tenants but also own some of the land, which they were fully utilizing and therefore landlords are also tenants in some situations. Accepted reality is also that some farmers are multiple landowners in different locations (Matondi and Dekker 2011) therefore they might be tenants in some physical locations and landlords in others. Moreover, the data showed that there is a strong correlation between the amount of land rented-in and that rented-out, with Spearman's rho value of -0.256 and a two-tailed significance ($p<0.01$). Consequently, a bi-variate Tobit model was used as opposed to separate models for renting-in and renting out. The factors used in the model and their explanations are given in table 1:

Table 1: Tobit Model Variables

Variables	Explanation
Land_rented_IN	Land rented in per farm in Ha
Land_rented_OUT	Land rented out per farm in Ha
Gender	Gender of household head; 1=Male, 0 otherwise
Marital status	=1 if household head is married 0 otherwise
Age	Age of household head in years
Num_Edu_yrs	Number of years in formal education
total_Hh_incom	Estimated total income for a household per year in USD
Total_F_members	Total number of resident family members
Permanent_labor	Number of permanent labour
Cultivated_area	Size of cultivated area in Ha
TenureCertainity	Security of tenure=1, 0 otherwise
Irrigable_landsze	Size of irrigable land per farm in Ha
Crop_Dive_Index	Crop Diversification Index 0=complete specialization, 1=perfect diversification
Setlmnt_A1	Type of settlement=1 A1 Model 0 otherwise
Capital_value_Assets	Value of farm capital assets
Livestock_value_Assets	Value of farm livestock assets

Following the studies by Hou et al. (2017); Shifa (2016) and Rahman (2010) the variables that were included in the model were shown in the table as well as the explanations. The interpretation of the results was based on the signs of the coefficients and their likelihood to affect the decision to rent in or out. That likelihood is measured by the t-ratio and the significance of each variable is them measured using the t-test.

4. Results and Discussion

Goromonzi district had 67.6% of the farmers while Marondera had 32.4%, reflecting on the distribution of beneficiaries in the two districts. The sampled farmers were all taken from a total of 8 wards covering these

two districts. Of the total sample, 78.5% were from A1 settlement model while 21.5% were from the A2 resettlement model. Results showed that most of the households were male-headed (79.9%), while only 20.1% was being headed by females. The majority of the households also were couples (82%), with 14% indicating that they were widowed. Agriculture was the main source of income for the sampled households (77%), followed by pensioners (8.8%) and formal employment (8.3%), while 4.1% was involved in informal trading activities. In terms of the land rental activities being involved, 51.3% was not involved at all in land markets (autarky). A combined 22.2% was involved in some way in renting-in activities, while 26.5% was involved in renting-out activities.

Descriptive Statistics of Variables Considered in the Model: The factors that have been considered, which have a bearing on farmer's decision to rent-in or rent-out land are shown in Table 2. These are categorised into farmers not involved in land rentals (autarky), renting-in and those renting-out.

Table 2: Descriptive Statistics for Variables used in the Model

Variable	Autarky	Renting-in	Renting-out
Setlmnt_A1	0.839	0.773	0.689
Gender	0.816	0.773	0.789
Marital status	0.833	0.773	0.833
Age	55.672	57.813	58.656
Num_Edu_yrs	9.584	10.040	9.533
total_Hh_incom	9818.793	20993.333	95745.000
Total_F_members	5.224	5.667	5.222
Permanent_labor	1.126	3.147	3.211
Cultivated_area	3.968	20.360	15.212
Capital_value_Assets	5298.621	19452.427	16381.167
Livestock_value_Assets	5983.753	4552.760	5996.178
Tenure certainty	0.477	0.520	0.444
Irrigable_landsze	4.608	23.408	33.542
Land_rented_IN	0	19.636	0
Rental_Amnt_IN	0	64.424	0
Land_rented_OUT	0	0	20.988
Rental_Amnt_OUT	0	0	75.581
Crop_Dive_Index	0.805	0.700	0.796

Source (Survey, 2017)

Results in table 2 showed the means for the variables across the different farmer categories. For most of the variables, there appeared not to be much difference in their measurements. Also, permanent labour was lowest for farmers in autarky. Land farm size, cultivated area and capital assets were all lowest for farmers in autarky compared to those farmers either renting-in or renting out.

Determinants of Renting-In and Renting-Out Land: The study used a bivariate Tobit model to understand the factors that have a bearing on farmer decision making to rent-in or rent-out land. The results of Tobit model analysis are shown in Table 3.

Table 3: Determinants of Participation in Land Rental Markets (Likelihood Ratios)

Variables	(Land rented-in)	(Land rented-out)
Gender	5.974**	-6.505
	(2.781)	(4.536)
Married	-2.992	3.301
	(2.927)	(4.655)
Age	0.031	-0.239**
	(0.072)	(0.115)

Num_Edu_yrs	0.183	0.143
	(0.186)	(0.294)
total_Hh_incom	-0.000***	0.000
	(0.000)	(0.000)
Total_F_members	-0.013	-0.824
	(0.397)	(0.633)
Permanent_labor	-1.418***	3.155***
	(0.269)	(0.433)
Cultivated_area	0.415***	-0.014
	(0.046)	(0.073)
TenureCertainity	3.521*	1.877
	(1.953)	(3.099)
Irrigable_landsze	0.117*	-0.239**
	(0.063)	(0.101)
Crop_Dive_Index	7.204*	17.616***
	(3.844)	(6.070)
sigma1	14.225***	
	(0.758)	
sigma2	22.613***	
	(1.206)	
atan_rho	-0.253**	
	(0.115)	
Observations	339	339
Log likelihood =	-1572.492	
Wald chi2(11) =	218.26	
Prob > chi2 =	0.0000	

Source (Survey, 2017), Figures in parenthesis are standard errors

The study used a bivariate Tobit model to analyse the factors influencing farmer decision making to rent-in or rent-out land. The farmers that were considered were only those that are involved in land rental markets, either renting-in or renting out. The log likelihood ratio, which is analogous of the F-test in multiple regression ($p<0.01$) was significant. The results in Table 3 showed that compared to women, the likelihood of renting-in land is increased 5.974 times if the household head is male. This result is significant at 5% level. According to Bert et al. (2015) men are likely to take risks and seek more land for expansion purposes rather than be content with the allocated land, when compared to female heads of households. In addition, results have also shown that a significant number of households not allocated land but participating in rental markets were male-headed. The findings contrast that of Shifa (2016) who concluded that males are less likely to be involved in renting-in compared to their female counterparts. Ensuring more certainty to land rental markets through government policy such as formalising the markets might provide possible solution towards encouraging female-headed households to participate in these markets. A lower income has the effect of not changing much the likelihood of a farmer renting-in land. This is significant at 1% level of confidence. Given statistics that have shown that 67% of households depend on agriculture for their income, renting-in therefore provided a means through which farmers could increase their household incomes.

Also, an increase in permanent labour by one unit reduced the likelihood of a farmer renting-in land by 1.418 points. In production economies (Rahman 2010), farmers who have more permanent labour are mostly those with higher levels of productivity. As such they are likely to seek more land to rent in. The results therefore were a deviation from this expected norm. A possible explanation for this deviation is that farmers who were capital intensive (less labour) were more likely to seek more land (renting-in) in order to achieve economies of scale from the available capital. Another reason could be that those farmers who were renting-in but do not have land of their own (consequently fewer permanent workers) were more involved in renting-in than those allocated land by the state. Indeed Moyo (2016) argued that farmers involved in renting-in activities tend to have reduced number of permanent workers. An increase in cultivated area by one unit (hectare) is likely to increase the likelihood of renting-in by 0.148 points. A farmer with a higher hectarage of cultivated land was

more likely to be fully utilizing the landholding and be more efficient by taking advantage of economies of scale (Rahman 2010).

Therefore, such a farmer was likely to rent-in more land after fully utilising all allocated land and then start to look for underutilized land among fellow farmers. Even for those farmers renting-in but not owning any land, participation in rental markets required that a higher hectarage of land be devoted to production to compensate for the rentals being charged by landlords if the enterprise was to remain profitable. The results of this study contrasted those of Rahman (2010) and Amare and Beyene (2015) which showed that lower size of cultivated land determined renting-in decisions. However, it is noted that for both Bangladesh and Ethiopia where the studies were done, the average size of land is about 3 hectares or less, which is far lower than what A1 and A2 farmers are allocated in Zimbabwe. This probably explains the differences in the results obtained in this study. Results presented in Table 3 also showed that perceptions of tenure security increased the likelihood of renting-in land. For those farmers without land and who were renting-in, perceptions of tenure certainty probably referred to their contractual agreements with the landlord, and not necessarily state tenure certainty. For those who were in investment partnerships, tenure security is enhanced by the formal agreements which were approved by the Ministry of Agriculture, reducing possible contractual violations in the process.

This result was however different from the findings by Shifa (2016) who observed no significant effect of tenure security in renting-in decisions. It is important to note that culture and social capital play an important role in production (Hou, Huo, and Yin 2017). Among those nations where private tenure has never been adopted, tenure security is enhanced by the time period one has been on the farm more than the documentation giving one access to land (Shifa 2016). Hence in such nations as Ethiopia, tenure certainty might not be important, while it is important in the Zimbabwean context. According to Bizimana (2011), a strong secured tenure reduces transaction costs associated with land rentals and in the process encourage participation in rental markets. Increasing the size of irrigated land by a hectare increases the likelihood of participating renting-in markets by 0.117 points. Irrigable size of land has the effect of increasing the probability of being involved in land renting-in. Where farmers had irrigable land, the risk of production is reduced, and it is expected that once irrigable land is available, then farmers become more interested in renting-in the land. Also, farmers who normally purchase irrigation facilities are resource endowed farmers who normally are more likely to seek more land for renting-in. The findings however differed from that of Rahman (2010) and Hou, Huo, and Yin (2017) which showed that irrigable land has no effect on renting-in decisions.

The decision by a farmer towards complete specialization in crop production as indicated by the crop diversification index had the effect of increasing the likelihood of renting-in land by 7.204 points. One of the tenets of commercial agriculture is specialization in limited enterprises (Rahman, 2010)). Farmers with a commercial approach to farming were more likely to seek more land to expand on production (Amare and Beyene 2015). It is therefore possible that farmers with such an orientation were inclined to seek more land for renting-in. A higher diversification index implied a propensity to specialize and consequently more demand for larger portions of land to practice agricultural production and hence renting-in behaviour. It is evident from the analysis that gender, household income and number of permanent labourers are household characteristics affecting the decision to rent-in land. Cultivated area, irrigable land size and crop diversification index represented land endowment factors while tenure security was a measure of transaction costs associated with the decision to rent-in land.

Determinants of Renting-Out (lessor) Decisions: The results of determinants of renting-out land showed that age, irrigable land size, crop diversification and permanent labour were significant factors. The first two factors were significant at 0.05 level of confidence while the last two were significant at 0.01 levels. It can be deduced that household characteristics and land endowments were the determining factors for farmer's decision to rent-out land. A decrease in age by one unit had the effect of increasing the likelihood of being involved in land rental markets by 0.239 points. Age is a culmination of the level of risk tolerance, agility to farm and farming experiences. Young farmers were more likely to take the risks of renting-out land if they were not fully utilizing it (Hou, Huo, and Yin 2017). Risk taking is naturally higher for the younger generation and in the face of conflicting political statements from policymakers, it was expected that young farmers were

more involved in renting- out land compared to their older generation (Moyo 2016). The younger generation also does not have the capital to be fully engaged in agriculture (Matondi and Dekker 2011).

Furthermore, they constitute a large portion of the economically active group, preferring to seek formal employment in industry, thereby exhibiting a higher propensity towards unutilized, rented-out land. The results were supported by those of Masterson (2007); Amare and Beyene (2015); Nyangena (2014), who reported a significant and negative impact of age but contrasted with the findings of Bizimana (2011), whose conclusion was that age does not have a significant influence on the decision to rent-out land. The differences could have been accounted for by differences in the household characteristics. An increase in permanent labour by one unit also increased three times the probability of the farmer renting-out land. An increase in the irrigable land size by a unit also decreased the likelihood of a farmer renting-out land by 0.239 points. Increase in irrigable land size allowed the farmer to be efficient by maximizing output on a given piece of land (Hou, Huo, and Yin 2017). Hence, farmers were unlikely to rent-out land where there were irrigation facilities (Hou, Huo, and Yin 2017). Irrigation equipment was also expensive, and renting-out increased the risk of theft and misuse, hence the reluctance to rent-out irrigable land. This means that farmers who had irrigation facilities on their farms were unlikely to be renting-out land.

5. Conclusion

Increased specialization in crop production (crop diversification index) had the effect of increasing the probability of a farmer participating in renting-out of land by 17.6 points. These results were supported also by (Tikabo & Holden, 2004)) but contrasted by the findings of a study by Rahman (2010). A farmer practising specializing is likely into commercial production and is therefore most probably to have a very limited amount of land to rent-out. The paper was aimed at understanding the determinants of the decisions to rent-in or rent-out land among A1 and A2 farmers. The bi-variate Tobit model results showed that the decision to rent-in land was influenced by gender, household income, permanent labour, cultivated area, tenure certainty, irrigable land size and the crop diversification index, which were statistically significant. Previous studies have shown no particular trend on the impacts of these variables on the renting-in decision. On the other hand, age, permanent labour, irrigable land size and crop diversification index significantly influenced the decisions to rent-out land. As with renting-in, literature has not shown any consistent tendencies for these variables. The conclusions were that household characteristics, land endowments and transaction costs significantly influenced renting-in decisions, while renting-out decisions were influenced more by household characteristics and land endowments. It is recommended that to improve land rental market participation, the following factors should be enhanced; income generation activities, promotion of capital-intensive technologies and irrigation facilities as well as improve the security of tenure.

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Benefits of an Irrigation Scheme and Its Determinants to Surrounding Peripheral Rural Communities

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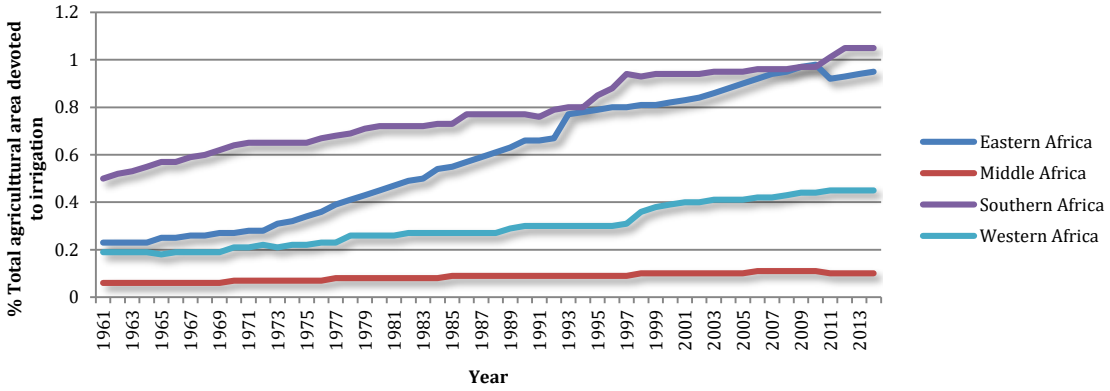
Abstract: The objective of the study was to identify the extent of benefits and their determinants to communities surrounding the Qamata Irrigation Scheme (QIS) in the Eastern Cape Province, South Africa. The study used a quantitative based cross-sectional survey of 197 households within a radius of 20 km from the QIS. Multiple sampling methods were utilized where the villages were randomly and the households conveniently selected. A semi-structured pre-coded questionnaire was utilized to collect the data which was analyzed using descriptive statistics and multinomial logit regression. The study identified 14 discriminant benefits ranging from job opportunities, income increment food diversification to share cropping. Sixty-two percent of the households identified less than 5 benefits, whilst 27% and 11% identified 6-10 and 11-14 benefits respectively. Determinants of a surrounding household to attain benefits were significantly influenced by the distance from the scheme, the main source of income and gender of household head ($P<0.01$); marital and employment status ($P<0.05$); and access to farm land ($P<0.1$). The study concludes that the level of benefit diffused to surrounding households is based on socio-economic factors. The study recommends conscientization of surrounding communities on the peripheral benefits accrued from the proximity to the QIS, achievable through awareness initiatives.

Keywords: *Irrigation Scheme, peripheral communities, benefit*

1. Introduction

Irrigation agriculture is the panacea to increase food supply, with multiplier increases in incomes, employment, and food security for the rural poor (Chazovachii, 2012; Dowgert, 2010; Dube, 2012; Hussain, 2004; Oni, Maliwichi, & Obadire, 2011; You, et al., 2010). Irrigation enhances cultivation area and crop intensity (Sinyolo, Mudhara, & Wale, 2014). However, there have been realizations that irrigation has produced low economic and social outputs (Arcus, 2004; Birendra, Schultz, & Prasad, 2007; Briceño-Garmendia, Smits, & Foster, 2008; Mutsvangwa & Doranalli). In Sub-Saharan Africa (SSA), irrigation has been identified as a promising strategy in the endeavour to improve agricultural productivity (Xie, Wielgosz, & Ringler, 2014). Several authors have identified two main poles of smallholder irrigation in SSA: small private irrigation and conventional irrigation schemes (de Fraiture & Giordano, 2014; Marcella & Eltahir, 2013; Xie, Wielgosz, & Ringler, 2014). These have resulted from an array of factors chief among them dysfunctional institutions, poor access to markets and limited farmer skills (Pittock, Bjournlund, Stirzaker, & Rooyen, 2017; Stirzaker, Mbakwe, & Mziray, 2017). Figure 1 shows that land under irrigation in SSA has been gradually increasing since 1961, with little change being exhibited in Middle Africa (FAOSTAT, 2017).

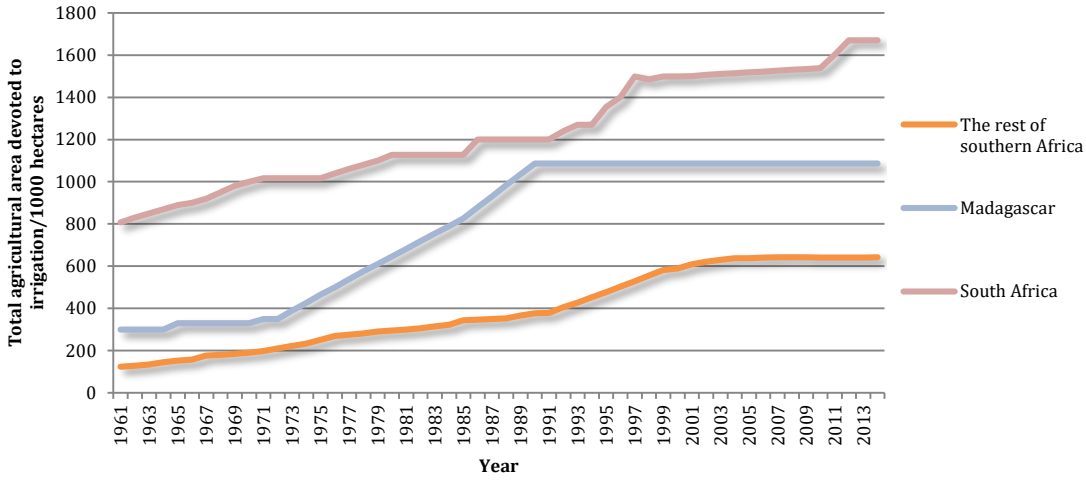
Figure 4: **Total Agricultural Area Devoted to Irrigation Agriculture in Eastern, Middle, Southern and Western Africa**



Source: (FAOSTAT, 2017)

Southern Africa has shown the highest increase in land devoted to irrigation doubling since 1961 (FAOSTAT, 2017). This can be in direct response to being confronted by water deficit (Goldblatt, 2011). Figure 2 shows that agricultural land devoted to irrigation in Southern Africa has been dominated by South Africa, doubling from 1961 to 2014 (FAOSTAT, 2017; van Averbeke, Denison, & Mnkeni, 2011).

Figure 5: Total Agricultural Area Devoted to Irrigation Agriculture in Southern Africa



Source: (FAOSTAT, 2017)

Irrigation has been a priority in South Africa due to its water scarcity and semi-arid nature, contributing 30% of agricultural production (Cousins, 2012; Goldblatt, 2011; Sinyolo, Mudhara, & Wale, 2014). South Africa has 330 002 households engaged in exclusive irrigation agriculture, dominated by KwaZulu-Natal (20%), Eastern Cape (19.1%) and Limpopo (16.6%) Province. The Northern Cape Province has the lowest number of households engaged in irrigation agriculture at 1.98% of the total. Twenty-six percent of the agricultural households in South Africa engage in exclusive irrigated crop production, whilst 34.4% tend to combine irrigation and dry land production (StatsSA, 2016). In the year 2000, 63% of the surface water withdrawal in South Africa was attributed to irrigation. As at 2010, the country had 302 smallholder irrigation schemes, with 206 being operational (van Averbeke, Denison, & Mnkeni, 2011). However, in South Africa, irrigation schemes have performed poorly mainly due to poor and dilapidated infrastructure, limited farmer knowledge, lack of extension services and lack of both input and output markets (Fanadzo, Chiduza, Mnekeni, van der Stoep, & Stevens, 2010; Gidi, 2013; Machethe, et al., 2004; van Averbeke, Denison, & Mnkeni, 2011; Vink & Rooyen, 2009). Despite substantial investments in irrigation schemes and rural development in South Africa, little benefits have been realized in the smallholder sector. As a result, no substantial gains in community welfare have been realized from the schemes (Gidi, 2013; van Averbeke, Denison, & Mnkeni, 2011; Shah, van Koppen, Merrey, de Lange, & Samad, 2002).

In South Africa, the inability of local schemes to bring about the expected social and economic development has raised doubts about irrigation being a suitable option for rural development. In South Africa, multiplier effects of benefits accruing to the entire surrounding communities were not being realized due to political, institutional and organizational challenges (Denison & Manona, 2007). The Qamata Irrigation Scheme (QIS) was initiated in the 1960s, with the objective to alleviate natural water supply shortages leading to improved sustainable rural livelihoods through sustainable crop production for food security and poverty alleviation, sustainable job creation and micro-economic growth. The primary goal was to ease the impacts of low rainfall and support rural development (Gidi, 2013; Kodua-Agyekum, 2009; Loxton, Venn and Associates, 1998; Tracor, 1989; van Averbeke, Denison, & Mnkeni, 2011). Farmer involvement in the planning, design, and implementation was minimal, with a centralized administration determining the use of irrigated fields and power to evict non-performers (Bembridge, 1986; FAO, 2000). Despite studies being conducted pertaining to the Qamata Irrigation Scheme (QIS), most studies have focused on the benefits accrued by the scheme participants only (Gidi, 2013; Kibirige & Obi, 2015; Kodua-Agyekum, 2009), negating the surrounding communities. The current study, therefore, investigated the factors that determine the extent to which

surrounding communities benefit from the QIS. Irrigation schemes involve the sharing of a distribution system for accessing irrigation water (Reinders, et al., 2010; van Averbeke, Denison, & Mnkeni, 2011).

Smallholder irrigation schemes have failed in the reduction of farmer poverty, sustainable use of water and land as well as in maintaining irrigation infrastructure (Pittock, Bjournlund, Stirzaker, & Rooyen, 2017). Indirect benefits accrued from irrigation through multiplier could actually outweigh the direct benefits (Husain, 2007). In India, irrigation schemes have been farmer centred negating the semi-public good characteristics providing rural economy-wide benefits (Bhattarai, Barker, & Narayanamoorthy, 2007). Irrigation schemes play a crucial role in the surrounding communities through provision of increased productivity (Cousins, 2013; Dube, 2012), stable production (Lipton, Litchfield, & Faurès, 2003; Ortmann & King, 2010), job opportunities (Gundu, 2009; Sinyolo, Mudhara, & Wale, 2014; You, et al., 2010), resulting in higher incomes (Chiwaya, 2013; Kodua-Agyekum, 2009). Irrigation schemes also enhance the local economy through forward and backward linkages with local merchants increasing labor use in the marketing and distribution sectors (Chitsa, 2014; Gundu, 2009; van Averbeke, Denison, & Mnkeni, 2011). Proximity to other farmers in the irrigation scheme can also improve diffusion of farming husbandry information and practices among farmers themselves and surrounding communities. Ironically, the increase in production which offsets lower prices for irrigation farmers will benefit the surrounding communities through access to cheaper food. However, this will have a more profound effect on surrounding non-irrigating farmers who would also be negatively affected by these low prices (Mtonga, 2014).

A wider variety of crops can also be grown through irrigation schemes (Buthelezi, 2013). Their produce is more preferable in the local market due to its freshness, larger size, healthy looking and longer shelf life. Surrounding communities in proximity to irrigation schemes can further benefit from access to assets and entrepreneurial skills (Mombeshora, 2003; Mujuru, 2014). Despite the identified benefits from the literature, the current study argues that these benefits are context and area specific, being pertinent in some cases and irrelevant in others. Benefits accrued to irrigation vary, dependent upon the status of the beneficiary. It therefore requires that each irrigation scheme is scrutinized in its own right (Husain, 2007). Furthermore, there have been few studies that attribute socio-economic and institutional factors to benefits accrued to surrounding communities. The "sphere of influence" studies pertaining to irrigation schemes have been scanty in the South African context (van Averbeke, 2008; van Averbeke, Denison, & Mnkeni, 2011). Identifying benefits accrued to peripheral communities is significant as input into rural development policy beyond the irrigation schemes. It identifies areas requiring attention so that irrigation schemes could provide benefits beyond the primary beneficiaries. It also improves awareness of the benefits of irrigation to non-scheme members to improve their welfare. The objective of the study was to identify the factors that determine the extent to which surrounding communities benefit from the Qamata Irrigation Scheme (QIS) in the Eastern Cape Province, South Africa.

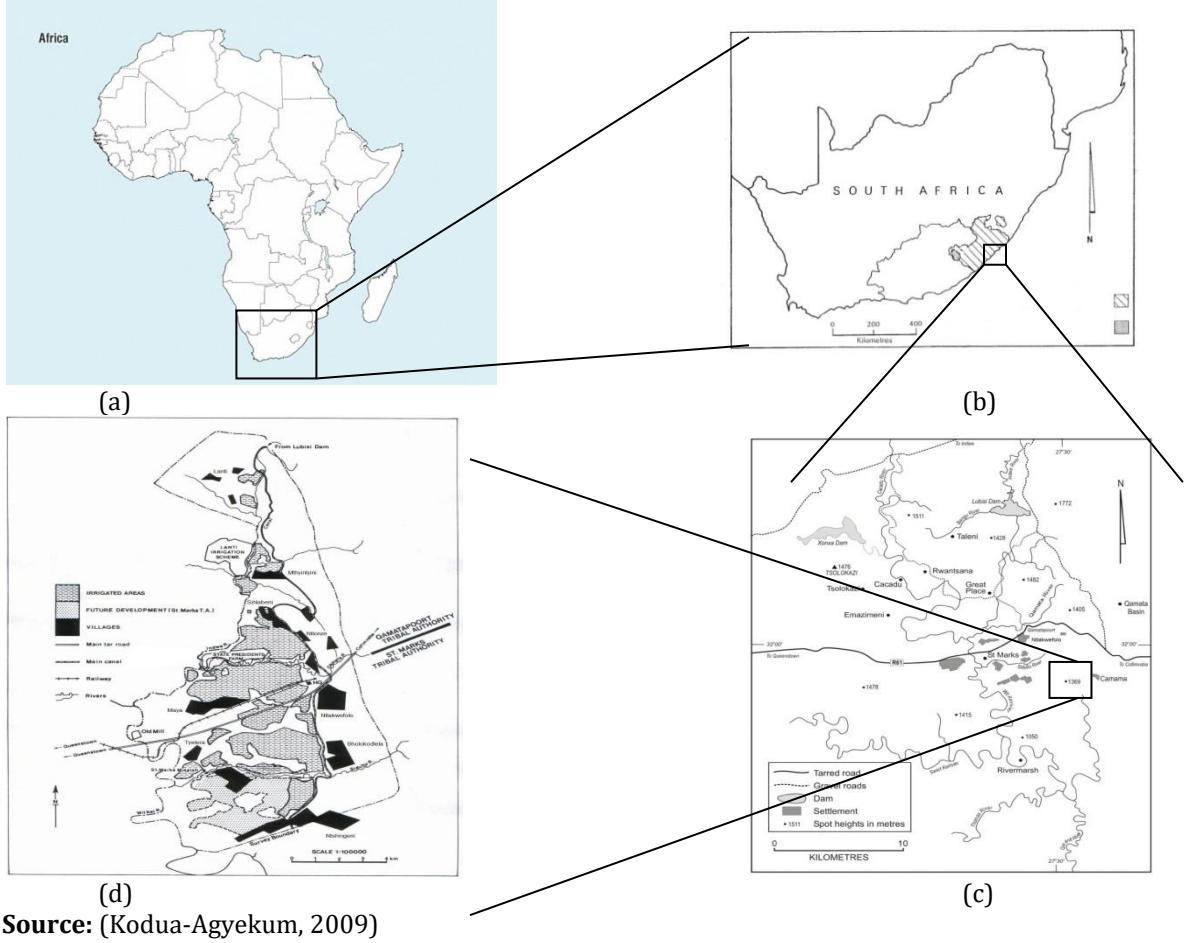
2. Research Methodology

The Study Area: The study was conducted in the surrounding communities of the Qamata Irrigation Scheme (QIS) in Qamata, Intsika Yethu Local Municipality, Eastern Cape Province South Africa (Figure 3). Eastern Cape Province was purposively selected because it has the second highest number of irrigation households (6350 households) and one of the highest poverty levels in the country, with agriculture playing a significant role in poverty reduction (Tshuma & Monde, 2012). Qamata experiences a cool climate, with temperature ranges from 14 ^{0}C to 35 ^{0}C, with unreliable rainfall between 6mm and 86 mm (ARDRI, 1996; Lent, Scogings, & van Averbeke, 2000). Farmers practice dryland farming, with unreliable amount and distribution of rainfall, with high run-off and high summer temperatures reducing the effectiveness of the rainfall. Farmers in the area practice livestock farming and smallholder crop production. Dryland farming is being practiced and droughts are common and so there is a high rate of crop failure, influencing crop selection (Gidi, 2013). Qamata Irrigation Scheme (QIS), covering an area of 2 601 ha, is supplied by water via gravity canal by Lubisi Dam, with the western parts of the scheme drawing water from the Great White Kei River and the Xonxa Dam (ARDRI, 1996; Kodua-Agyekum, 2009).

Research Method: The study used a cross-sectional, descriptive and quantitative-based survey interview of households in a 20 km radius surrounding the QIS. These households were assumed to have enough

confluence to be influenced by the QIS. A structured pre-coded questionnaire was used as the research instrument for data collection. The data collected included socioeconomic, demographics and the benefits accrued from the proximity to the QIS. For the purpose of capturing a well-represented sample of the smallholder farmers in the study area, multiple sampling was used as the sampling technique. Qamata Irrigation Scheme (QIS) was purposively selected. This is because the scheme is one of the largest in the country.

Figure 6: Map Showing Location of (a) South Africa, (b) Eastern Cape Province, (c) Intsika Yethu Local Municipality, and (da) Qamata Irrigation Scheme



Source: (Kodua-Agyekum, 2009)

Stratified random sampling was used to select the villages, where 2 strata were selected from the 13 villages around QIS: those within a 10km radius and those outside a 10km radius. This was done to avoid the bias of only choosing villages that are within a 10km radius, since 12 of the villages were located within the 10km radius. Six villages within the 10 km radius were randomly selected, whilst the 1 village outside the 10 km radius was selected. Availability sampling was utilized in each selected village to identify a total of 197 households. This was because of the lack of a full list of all households surrounding the scheme. Furthermore, both time and financial resources restricted the sample size to 197. Descriptive statistics and multinomial logit regression were used to analyze the data, through Excel and STATA 13. Stratified random sampling was used to select the villages, where 2 strata were selected from the 13 villages around QIS: those within a 10km radius and those outside a 10 km radius.

Analytical Framework: For the multinomial logit model, the extent (number) of benefits accrued to surrounding communities from the proximity of the QIS was classified into three distinct categories: 0-5 (low benefits); 6-10 (intermediate benefits); and 11-14 (high benefits). Rural households who benefit from the irrigation scheme are more likely to move from a low benefitting status to an intermediate benefitting status

as well as into a high benefitting status (Bouis, 2007). Multinomial logit model predicts the probability of category membership of a dependent variable based on independent variables. The model reduces assumptions concerning homoscedasticity, linearity or normality (Schwab J. A., 2002). The study assumed that the benefits were mutually exclusive. In the multinomial logit model, assume

$$P_r\{Y_{i=j}\} = \frac{exp[\beta_j' X_i]}{\sum_{j=0}^{j} exp[\beta_j' X_i]} \quad (1)$$

where $P_r\{Y_{i=j}\}$ is the probability of category of benefits (0-low benefits; 1-intermediate benefits; 2-high benefits), j is the number of benefiting categories in the choice set (3), X_i is a vector of the exogenous variables, β_j is a vector of the estimated parameters. When the logit equation (1) is rearranged, the regression equation is as follows:

$$P_i = \frac{e^{(b_0+b_1x_1+\cdots+b_vx_v)}}{1+e^{(b_0+b_1x_1+\cdots+b_vx_v)}} \quad (2)$$

Thus considering a household having a category of benefits amongst n alternatives, with $X_{1\ldots n}$ independent variables, the logit for each non-reference category $j = 1, \ldots, C-1$ against the low benefit category (0) depends on the values of the independent variables, with probability parameters $\pi_i^{(0)}, \pi_i^{(1)}, \ldots, \pi_i^{(C-1)}$ through:

$$\ln\left[\frac{\pi_i^{(j)}}{\pi_i^{(0)}}\right] = \beta_0^{(j)} + \beta_1^{(j)} X_{1i} + \cdots + \beta_k^{(j)} X_{ki} \quad (3)$$

for each $j = 1, \ldots, C-1$ where $\beta_0^{(j)}, \ldots, \beta_k^{(j)}$ are unknown population parameters. This expands to:

$$\ln\left[\frac{\pi_i^{(j)}}{\pi_i^{(0)}}\right] = \beta_0^{(j)} + \beta_1^{(j)} GEN + \beta_2^{(j)} AGE + \beta_3^{(j)} MARST + \beta_4^{(j)} DIST + \beta_5^{(j)} SORINC + \beta_6^{(j)} EMPST + \beta_7^{(j)} ACCFRM + \mu \quad (4)$$

Where the independent variables include: GEN-gender of household head, AGE-age of household head, $MARST$- marital status of household head, $DIST$- distance from the irrigation scheme, $SORINC$- source of income, $EMPST$- employment status and $ACCFRM$- access to farm land as well as μ,-error term.

3. Results and Discussion

Descriptive Results: Table 1 shows that 80.20% of the households were located within the 10 km radius. There were more female respondents (63.45%) in relation to male (33.55%), with an average age of 58.41 years, with 48.3% of the respondents having more than 60 years. Most of the respondents were married (48.22%), with an average household size of 5. Most respondents attained education to be gainfully employed (73.60%), living in the distance between 6 and 10 km from QIS. The main source of income of the households surrounding QIS is social grants, with an average annual income between R20 000 and R30 000. Most of the respondents were unemployed (85.79%), with most having no access to land, with those having access to land having average land sizes of 1.47 hectares.

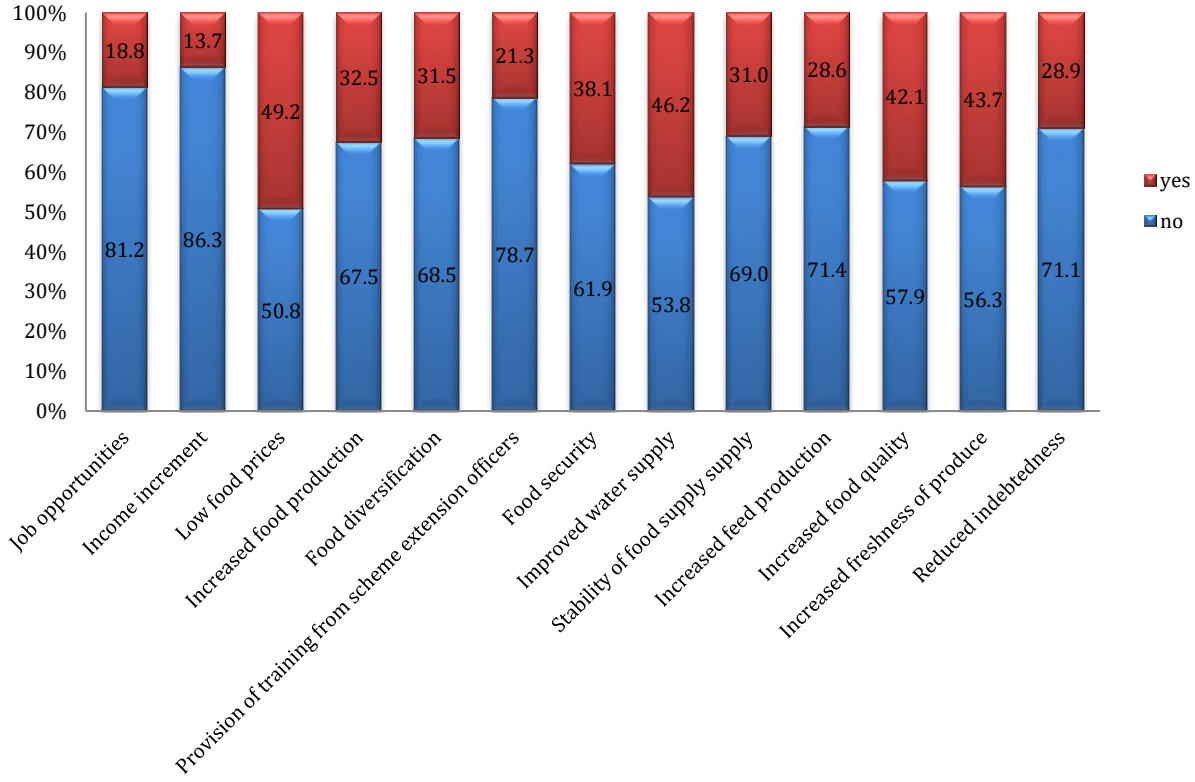
Table 1: Descriptive Results

Variables	Village distances from QIS					
	<10km		>10km		Total	
	Freq.	%	Freq.	%	Freq.	%
No. of households	158	80.20	39	19.80	197	100
Gender						
Female	104	65.82	21	53.85	125	63.45
Male	54	34.18	18	46.15	72	36.55
Age						
<30	13	8.23	2	5.13	15	7.61
31-40	20	12.66	4	10.26	24	12.18
41-50	13	8.23	6	15.38	19	9.64
51-60	33	20.81	10	25.64	43	21.83
>60	79	50.00	17	43.59	96	48.73
Educational level						
No formal school	37	23.42	9	23.08	46	23.35
Grade 1-12	115	72.78	30	76.92	145	73.60

Bachelors	6	3.80			6	3.05
Marital status						
Single	49	31.01	13	33.33	62	31.47
Married	76	48.10	19	48.72	95	48.22
Widowed	29	18.35	4	10.26	33	16.75
Divorced	4	2.53	3	7.69	7	3.55
Employment status						
Unemployed	136	86.08	33	84.62	169	85.79
Formally employed	9	5.70	2	5.13	11	5.58
Self employed	13	8.23	4	10.26	17	8.63
Household size						
1-3	64	40.51	9	23.07	73	37.06
4-6	58	36.71	16	41.02	74	37.56
7-9	34	21.52	11	28.21	45	22.84
>9	2	1.27	3	7.69	5	2.54

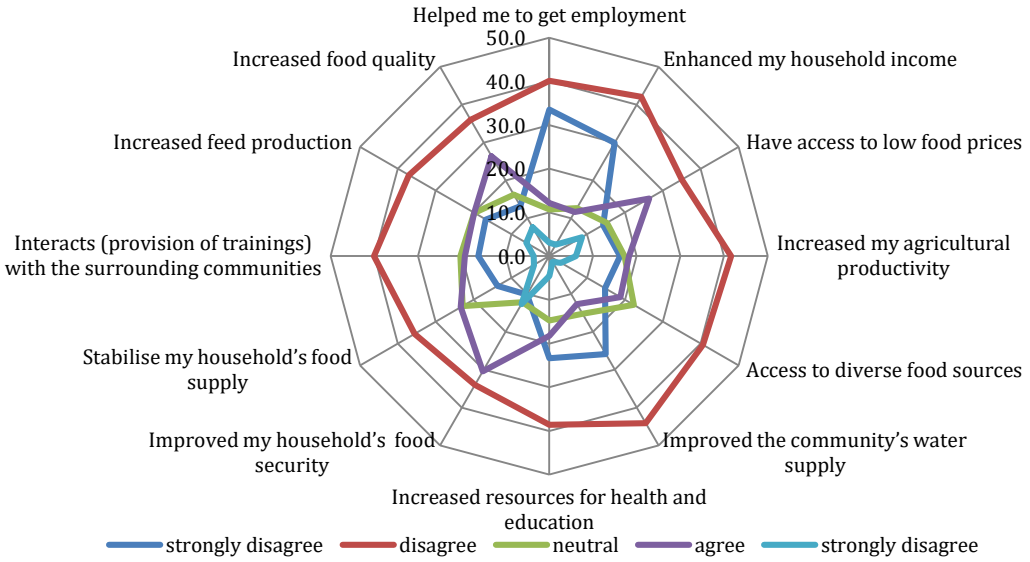
Figure 4 shows the benefits accrued from being close to the QIS. The figure shows that 86.3% of the respondents indicated that the QIS provided income increment, with 81.2% highlighting that the scheme provided job opportunities. A further 78.8% indicated that the scheme provides the surrounding communities with training whilst 71.4% identify it is increasing feed supply. Only 53.3% of the respondents identify the QIS improving water supply and 50.8% indicating that proximity to the scheme has lowered food prices.

Figure 7: Benefits Accrued to QIS Surrounding Communities



However, the perceptions of the respondents as shown in Figure 5 show that most of the respondents had a negative perception of the QIS in terms of it being an enabler in attaining benefits.

Figure 8: Perceptions of the Benefits Accrued to QIS Surrounding Communities



Empirical Results: Figure 6 shows that 53% of the respondents within a radius of 10km from the QIS identified less than 5 benefits, whilst 33% identified 6 to 10 benefits, with 14% having between 11 and 14. Ninety-seven percent of the respondents in a radius exceeding 10km had less than 5 benefits with 3% having between 6 and 10 benefits from the proximity of the QIS.

Figure 9: Number of Benefits Accrued to QIS Surrounding Communities

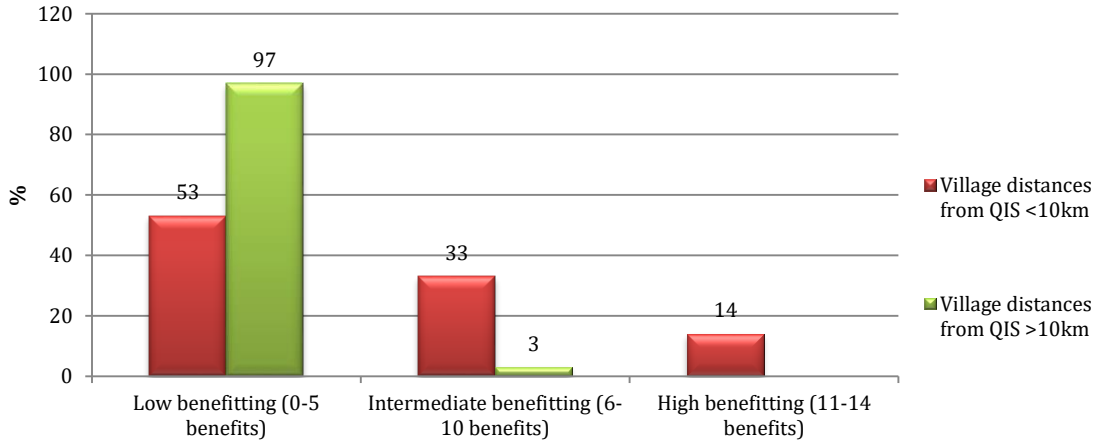


Table 2 shows that the multinomial logit model was significant at the 10% level, with gender, marital status, distance from the scheme, the main source of income, employment status and access to farmland being significant determinants of the benefits accrued to QIS surrounding communities. The R^2 value shows that the variables utilised explain 36% of the variance in the benefits accrued to proximity to the QIS.

Table 2: Multinomial Results of Determinants of Benefits Accrued to QIS Surrounding Communities

Predictor Variables	Factors determining the extent to which surrounding communities benefit from QIS			
	Intermediate benefitting		High benefitting	
	β	**Sig**	***β***	**Sig**
Intercept	-2.14	0.033	-0.03	0.976
Gender	-1.70	0.088*	2.57	0.010***
Age	-1.05	0.294	1.16	0.246
Marital status	-2.02	0.043**	-0.33	0.738
Distance from the scheme	-3.08	0.002***	-1.43	0.151
Main source of income	3.51	0.000***	0.04	0.971
Employment status	1.13	0.259	2.33	0.020**
Access to farmland	1.87	0.061*	0.02	0.984
Model summary				
Base Category	Low benefitting (0)			
No. of Observations	197			
LR Chi-Square (24)	127.19*			
Log-likelihood	-112.72522			
Pseudo R-Squared	0.3607			

*, **, *** Sig at 10%, 5%, 1% respectively

Table 2 shows that gender had a 10% and 1% significance of obtaining intermediate and high benefits from proximity to the QIS respectively. Intermediate benefits are likely to be realized when the household head is male whilst high benefits are more likely to be realized when the household head is female. Women provide more labor in irrigation schemes relative to males. Furthermore, female have spousal control over the food sources and its quality as well as selling agricultural output (Domenech & Ringler, 2013). Surrounding female-headed households are therefore likely to identify more benefits from the QIS. However, the gender skewness of participating in the QIS was more slanted towards males (Kodua-Agyekum, 2009). In this case male irrigation farmers were likely to obtain more benefits in participating in the QIS whilst females who were non-QIS were going to benefit from the scheme.

Due to the patriarchal characteristics of a household in Africa, with unequal rights and access to resources, women who are peripheral to the QIS are likely to realise more benefit relative to their male counterparts (Chopra, 2004). Marital status was significant at the 5% level, with benefits likely to increase when the household head is single or married. Non-married individuals have less assets and high poverty levels, hence would accrue more benefit with proximity to an irrigation scheme (Hirschl, Altobelli, & Rank, 2003). Single household heads have more room for mobility due to flexibility in decision making thus increasing the chances of searching for employment (Obi, 2011) and this may increase the probability of benefitting from the QIS. Distance from the QIS was significant at the 1% level, with benefits likely to increase when the distance from the scheme decreases. Other authors identified benefits being accrued to being in close proximity to irrigation schemes (Maddison, 2006). Proximity to irrigation schemes improves access to cheaper, diversified and nutritious foods; reduces cost and distance to market; and improves access to employment opportunities from the scheme (Buthelezi, 2013; Mtonga, 2014; Sinyolo, Mudhara, & Wale, 2014; van Averbeke, Denison, & Mnkeni, 2011). The main source of income was significant at the 1% significance level, with benefits likely to increase when more of the surrounding households receive social grants.

Being reliant on social grants means that surrounding households can engage and benefit from enhanced employment in the QIS. Other authors highlighted that most of the dry land farmers in close proximity to the QIS had social grants as a source of income (Kodua-Agyekum, 2009). This reflects that a large proportion of the household heads in proximity to the QIS were unemployed. The QIS therefore provides income opportunities through full time and part time employment within the scheme (Kodua-Agyekum, 2009). As respondents become employed, the less likely that their benefits will increase due to their proximity to the QIS. Employment status was significant at the 5% level. Unemployed households benefit from the irrigation

scheme because they spend enough time in the irrigation scheme to find part-time jobs (Lipton, 1996). This is supported by other authors who stated that unemployed households spend more time in irrigation schemes and that consequently increases their probability of highly benefitting from the irrigation schemes (Gidi, 2013). Equilibrium does however need to be struck between continued employment absorption and technology expansion (de Hartigh, 2016). However, this does not tally with other authors who argued that household heads which are employed may have more disposable income to have an effective demand for produce (Kodua-Agyekum, 2009).

The low prices envisaged from the proximity to the QIS also offers a benefit to surrounding households with low annual incomes from social grants. However, households with a regular source of income are more likely to benefit from irrigation schemes than those who do not have a regular source of income (Thangata, Hindebradt, & Gladwin, 2002). The low prices can be attributed to the communities' surrounding irrigation schemes face due to the small surrounding farm gate market, which lacks organized markets and guaranteed producer prices (Kodua-Agyekum, 2009). Access to farmland was significant at the 1% level indicating that the more a respondent surrounding the QIS had access to land the more likely benefits will accrue to that individual. This could be because households with access to farmlands produce a variety of crops thus benefit from improved community water supply and provision of training. Other authors partitioned direct benefits of irrigation directed to landholders whilst indirect benefits being realised by smallholders and the landless (Husain, 2007). Comparable conclusions were also suggested by (Bouis, 2007) who argued that in households with access to farmlands, there is high agricultural productivity with improvements in nutrition and welfare.

4. Conclusion and Recommendations

In conclusion, because of their proximity to the QIS, households are benefitting from income increments, job opportunities, training, increased feed supply, reduced indebtedness and a stabilized food supply. Furthermore, they are also benefiting in terms of diversified food supply, increased food production, food security and improved food quality. In addition, the surrounding households benefit through fresh food supply, improved water supply, and low food prices. The study identified that factors such as gender of the household head and their marital status, distance from the scheme, the main source of income, employment status of household head and access to farmland were major determinants of the benefits accrued to QIS surrounding communities. Women obtain more benefits from being in close proximity to irrigation schemes. This is exacerbated by their side-lining in participating in irrigation schemes due to patriarchy. Unmarried individuals in close proximity also benefit from employment opportunities created by irrigation schemes. The further the distance from irrigation schemes, the less benefits that accrue due to proximity to the scheme.

Unemployed individuals who have access to social welfare gained more benefit in having proximity to the irrigation scheme, mainly through accessing part-time and seasonal jobs. The proximity to the irrigation scheme reduced agricultural output prices which were beneficial to the surrounding communities by improving access to more food with higher quality, but however not beneficial to surrounding farmers who will face low producer prices. Benefits of proximity to the irrigation scheme were also more pronounced to a household with access to land, since the training and water use could also diffuse to non-scheme farmers. The study recommends conscientization of surrounding communities on the peripheral benefits accrued from the proximity to the QIS. This should take into cognizance the gender sensitivity of the benefits accrued to surrounding communities as well as their socio-economic circumstances to realize the full benefits of being in close proximity to an irrigation scheme.

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China's Progress in Poverty Reduction: What Can South Africa Learn from China to Attain the Poverty Eradication Goal in the Sustainable Development Goals?

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Abstract: During the evaluation of the Millennium Development Goals (MDGs) from 2000 to 2015, it was discovered that there was no country managed to meet the envisioned goal of eradicating poverty. However, it was observed that China is the only country that managed to half its poverty levels. Just like other developing countries, South Africa is one of the countries whose performance in the attainment of the first goal of MDGs was not satisfactory. Through the utilization of secondary data in a qualitative approach, this paper argues that South Africa can perform better if it can learn and follow the strategies used by China to shrink its poverty levels. The study shows that China mostly supports State Owned Enterprises, which make the economy to grow and help in poverty alleviation. For that reason, the study recommends that in order for South Africa to attain the poverty eradication goal by 2030 more SOEs have to be established.

Keywords: *SDGs, poverty, South Africa, China*

1. Introduction

South Africa is a country that is rich in mineral resources like coal, gold, and platinum, however, it still experiences high rates of unemployment and poverty. The approval of the MDGs in 2000 brought hope about the issue of poverty that was targeted by the MDGs. Unfortunately, most of the African countries failed to achieve the MDGs by 2015, more especially the poverty eradication goal. The only country that managed to halve its poverty levels was China. The Chinese economy has been growing since the decades ago. In the year 2010, the Chinese economy went beyond Japan's economy and became the biggest economy following the United States of America (USA). In the 1980s, China's rural population who were living below the poverty line was reduced from 96.2 percent to 4.6 percent in 2016 (Westmore, 2018). Moreover, the Chinese economy grows very fast compared to other developing countries. While countries like China grows economically, South Africa still faces the perpetuation of both unemployment and poverty. For that reason, the paper traces the development of China. Since most of the countries aim to eradicate poverty as proposed in the SDGs by 2030, understanding how China managed to halve poverty is important to a country like South Africa since poverty is perpetuating and the country seeks various strategies to alleviate poverty to its citizens. It is within this background that this paper explores the strategies that were employed by China to half its poverty levels and how these could perhaps be implemented in South Africa to solve its poverty levels. The paper provides a conceptualization of SDGs; it goes further to discuss the rise of the Chinese economy. It also gives a methodology where it explains how data was collected and analyzed. The findings and discussions are also discussed lastly the study provides a conclusion and recommendations.

2. Literature Review

The literature review covers the conceptualization of the SDGs. The section goes further to discuss the challenges faced by South Africa as well as the rise of the Chinese's economy. The section starts by conceptualizing SGDs.

Conceptualizing Sustainable Development Goals: Since the concept of 'sustainable development goal' is new in the development agenda, a proper definition of the concept is important. One can define the concept (SDGs) as second MDGs responsible for any development or change taking place from 2015 to 2030. There is no way the term can be defined without referring to the given period of operation which is 2015 to 2030. The year 2015 was marked as an important year to end the MDGs era and perhaps move to a new development agenda (Harmancioglu, 2017). The idea of developing a post-2015 development framework started in 2010 during the Millennium Summit in New York, in the USA. The former United Nations (UN) Secretary-General (Ban Ki-moon) was asked to evaluate and check the progress of the MDGs. During the evaluation, it was discovered that the majority of countries will not be able to meet the MDGs in 2015 (Mubecua, 2018).

The Rio+20 conference that was held in Rio de Janeiro, Brazil from 13 to 22 June 2012 pushed member of states to launch a process of formulating a new framework that will succeed the MDGs (Harmancioglu, 2017). The SDGs were successfully formulated to succeed the MDGs. The 193 countries of the UN General Assembly on the 25th of September 2015 approved the 2030 development framework titled "Transforming our world: the 2030 Agenda for Sustainable Development". On the agenda, there were 92 paragraphs, paragraph 51 focused on the SDGs and its targets. Historically, Sustainable Development Goals comes from the name "sustainable development". Sustainable development arose in the context of environmental problems that was shown in the World Charter for Nature (WCN) (Hák, et al., 2016). The WCN was approved and declared by the General Assembly of the UN on the 28th of October 1982.

The WCN supports that the benefit that is received from nature relies on the maintenance and ensure sustainability of the natural resources. The concern of the SDGs was also seen in 40 Chapters of the Agenda 21 of the Earth Summit in 1992. The World Summit on Social Development that was held in Copenhagen, Denmark in the year 1995 provided an important role in sustainable development, in ensuring global social development. The notion of global goals and the indicators was initiated by the government of Colombia and Guatemala, and it was formally introduced at the Rio+20 conferences (Hák, et al., 2016). The UN agencies that are part of the United Nations Development Group took a decision to support the independent campaign to present the new development program. The campaign was named "Project Everyone" aimed to put the power of communication behind the new development agenda (SDGs) and fast-track the creation of a better world by 2030 (Saxena, 2017). The mission of the campaign was to "ensure that everyone on the planet knows what the Global Goals are so that the goals may stand the greatest chance to be achieved". The director of the campaign (Alice Macdonald) revealed that people did not know about the MDGs and there was a huge communication gap, for that reason, there was a need to communicate the message to everyone. The Deputy Secretary-General of the United Nations (Amina J. Mohammed) stated that the more people know about SDGs is the more the government leaders are forced to introduce and implement policies that will channel countries to the attainment of the SDGs by 2030 (Saxena, 2017).

The SDGs remain the hope of the world since the majority of the countries failed to achieve the MDGs that were set between the periods of 2000 to 2015 as discussed above. The concept of SDGs was built considering that the SDGs should focus on the inclusivity in the attainment of the global goal (Saxena, 2017). The global goals were made not to discriminate by race, class, creed or gender. Moreover, the SDGs aimed to end poverty and ensure everyone's physical well-being. They were built on the ground that every development (social, political and economic) has to be sustainable. All countries must ensure that the three aspects of development are recognized (social, economic, and environmental) to ensure that the use of resources will still be available in the future. Furthermore, the SDGs have to encourage the transformation of the economy for job creation (Saxena, 2017). There is a difference between MDGs and the SDGs. The difference is that the SDGs invite every country (whether developed or developing) to come together and take collective action whether poor, middle-income or rich countries, it also promotes prosperity and protection of the environment. However, the MDGs were mostly targeting the developing countries (Lehikoinen, 2017). Moreover, the SDGs has 17 goals and 169 targets, the figure below shows the goals and objectives of the SDGs.

South Africa and its Challenges: Ever since South Africa got independent in 1994, it has been searching for a strategy that can be used to develop its social, economic and political aspects. In the social and economic aspects, this has been seen by introducing various approaches and policies to improve the living standard of South African citizens. There are many political organizations that have emerged with the aim of transforming the country. The political change in 1994 gave hope to South African populace that all the oppression, poverty and inequalities face in the country will be solved (Chopra, et al., 2009). However, the country still faces challenges that others consider better when compared to challenges of the erstwhile apartheid government. Unemployment in South Africa (see figure 2) remains extraordinarily high the domination of unemployment, especially in the youth is a threat to the dignity and economic growth of the country. There are many causes of unemployment but the main cause is the lack of experience. However, there is a close relationship between experience and working, it is not possible to get experience without a job On the other hand, it is not impossible to get a job without experience. As a result, the South African government introduced an internship as a strategy to give young people working experience so that they can be employable.

Figure 1: Showing the Sustainable Development Goals (2015-2030)

SDG	Objective
Goal 1	End poverty in all its forms everywhere
Goal 2	End hunger, achieve food security and improved nutrition and promote sustainable agriculture
Goal 3	Ensure healthy lives and promote well-being for all at all ages
Goal 4	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
Goal 5	Achieve gender equality and empower all women and girls
Goal 6	Ensure availability and sustainable management of water and sanitation for all
Goal 7	Ensure access to affordable, reliable, sustainable and modern energy for all
Goal 8	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
Goal 9	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation
Goal 10	Reduce inequality within and among countries
Goal 11	Make cities and human settlements inclusive, safe, resilient and sustainable
Goal 12	Ensure sustainable consumption and production patterns
Goal 13	Take urgent action to combat climate change and its impacts
Goal 14	Conserve and sustainably use the oceans, seas and marine resources for sustainable development
Goal 15	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
Goal 16	Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
Goal 17	Strengthen the means of implementation and revitalize the global partnership for sustainable development

Source: Nam, (2015)

As shown above that there are 17 goals, the first goal of the SDGs focuses on the eradication of poverty by 2030. This goal had created a debate since the MDGs expired before it eradicated poverty in 2015. The question is whether the goal of eradicating poverty will be achieved in 2030 or not since the MDGs failed to eradicate poverty. In addition, the first goal of the SDGs links with the South African National Development Plan (NDP) that also aims to eradicate poverty by 2030. The performance of South Africa in the process of achieving the MDGs was not good, because of the perpetuation of poverty and high unemployment as revealed above. The following section discusses more the South African challenges in the economy.

Figure 2: Showing the Unemployment Rate in South Africa (2015 – 2018)

Source: Moya, (2018)

The above graph shows the unemployment rate in South Africa from July 2015 to January 2018. The graph depicts that unemployment rate increases in 2015 from 25 to 25.5 percent although the unemployment

dropped in January 2016 it also grew high to 26.7 percent. From July 2016, the unemployment decreased from 26.7 to 26.6 percent. Furthermore, the percentage grew from 26.6 to 27.1 percent. In general observation, the unemployment rate decreases by one percent but when it increases it goes more than one percent. In 2017, the percentage dropped from 27.1 to 26.5 percent. However, the unemployment increased to 27.7 percent in July 2017. In January 2018, the percentage of employment declined to 26.7 percent. The increasing of unemployment and poverty cast doubt about the attainment of the first goal of the SDGs (ending poverty) by 2030. The unemployment rate is high for both young people and adults however it is higher among South African youth. Unemployment in South Africa can be considered as an economic problem. It causes threads to the people living in South Africa (Mazumdar & Mazaheri, 2018). However, the internship strategy is not useful since the majority of young people who are employed as interns still don't get permanent jobs when their internship contracts are over.

Moreover, most of the public and private sector internship programs only last for one to two years. While permanent vacancies require at most above three year's working experience. South Africa is not only facing a high unemployment rate but also the perpetuation of poverty as it has been stated before. Currently, South Africa has a challenge of reducing poverty, inequality, and crime. After the apartheid period in 1994, many people were living below the poverty line and the majority of them were black people (Saayman, et al., 2012). The arrival of the Europeans and British colonizers to South Africa in the 1800s was a driver of poverty (Palacio-Mejía, et al., 2003). Ngwane et al. (2001) argue that in previous years, South Africa has undergone vast political and social change but the country still faces challenges of poverty. Lilenstein et al. (2018) support the above argument by stating that the levels of poverty are high in South Africa. In addition, Noble et al. (2008) mention that the spread of poverty in South Africa continues to affect the country as it is still in the process of becoming a developed.

The Rise of the Chinese Economy: There are many reasons that make countries want to adopt the strategy used by China in its economic development (Child & David, 2001). Understanding the development of China can give direction and also helps in predicting challenges that might be experienced in the future. The development of China is complex to understand because its institutions have developed massively inter-dependent in formerly closed and state-owned institutions (Child & David, 2001). The first stage of the economic reform in China started between the 1970s and the early 1980s (Wu, 2016). The third assembly of the eleventh Chinese Communist Party Congress took place in December 1978 was considered as a reform era. The main aim of the assembly was to shift the party from class struggle to focus on economic development. After that gathering, there were many debates held. This debate paved the way for the start of China's reform (Qian, 2000). The open door policy was introduced by Deng Xiaoping in 1978 with the aim of allowing foreign businesses to invest in the country (Baek, 2005). The privatization in 1979 contributed to the increase of the GDP of China. During that period (1979) the development of universities has been low, even China's market-distribution system was also low (Child & David, 2001). However, China shared an open door policy, where the country permits the system of trade to be opened to all countries equally. The development of China in the 1980s was supported by the neo-classical economist theory. For instance, the non-government sector which includes private enterprises, foreign-invested enterprise and those who are out of financial support by the state.

Even though there were many industries but most of them were owned by the state. The second stage of reform in China was in the 1980s. The decade of 1980 is considered as a reform decade in China. In that period, the SOEs were diminished, only banks and petroleum remained. This means that the country followed a capitalist-oriented reform, which resulted in rapid economic growth (Solinger, 2016). On the same view, Baek (2005) revealed that during that period (the 1980s), China was considered the most developing state when compared with others. As a result, the state was said to be the new world economic centre. The USA became the largest China's export market. Beijing was only dependent on imports of technology from Japan. On the same view, Roland (2002) argues that China has a great success story in the transition of its economy by escaping the deep recession and quickly moving to the rapid growth path. What made China survive the financial crisis was the strong capital control by the state the unavailability of capital convertibility, manageable debts, and the foreign exchange reserves was very high. Moreover, the country endured the financial crisis because it promoted the inflows of foreign direct investment. From the mid-1980s, China's

economic growth was driven fast by the proliferation of industrialization and urbanization (Du, 2005). In the 1990s, the economy of China was transformed into a theorized Socialist Market Economy.

The concept socialist market system economy was initially used in 1992, where the 14 Congress of the Chinese Communist Party proposed the new goal of the economic reform (Lei, 2018). The reform was motivated by the Soviet Model. Soviet Model refers to the form of economic planning that includes centralized investment decisions (Lei, 2018). During the 1990s, the role of the state transformed the mandatory planning of the economy to the guideline plan setting (Baek, 2005). The transformation of China's economy made the country to be considered as a state that is using a dual economy (Baek, 2005). The dual economy had an important role in the development of China. In that period, the country encouraged economic policies that will motivate the industrial upgrading of the technology sector. The term corporate governance started to be emphasized. The researcher of the Chinese Institute (Wang Yungui) from the State Development and Planning Commission, proposed that the state needs to establish and develop firms with intermediate-level technology with the aim of encouraging a labor-intensive industry (Baek, 2005). The Chinese stock market was developed very quickly and it was ranked as the second largest economy in Asia (Baek, 2005), and was developed at Shanghai and Shenzhen.

Another important factor in China's development was the provision or the supply of human resources, more especially those who have businesses (Child & David, 2001). As a result, the country (China) managed to design five hundred and twelve big State-Owned Enterprises (SOEs) through government industrial policy in the 1990s. As a result, there was a time where other East Asian countries were deeply affected by the Asian Financial Crisis of 1997 and 1998. The country (China) was least affected by the Asian Financial Crisis (Baek, 2005). In the year 2000, the Chinese global trade improved from one percent to three percent. After a decade, the country managed to triple its international trade (Wu, 2016). In the past years, the overall growth rate of China's GDP reached 9.7 percent (Zhang, et al., 2008). The country did not only improve its GDP per capita, but it also experienced structural changes (Rasiah, et al., 2013). From the start of the economic reforms, China managed to make a remarkable impact on poverty reduction. The government established an organization named the State-owned Assets Supervision and Administration Commission of State Council (SASAC) (Baek, 2005). Wu, (2016) reveals that globally, the SASAC is one of the influential economic actors it controls half of the Chinese companies on the Fortune Global 500 list of the world biggest corporation.

Each province and municipality in China has its own SASAC, which report to the central government. SASAC is the agency that serves to regulate the shareholder of the SOEs in the country. The agency aimed to realize and address the property rights of SOEs. The banking industry in China continued to be in the hands of the Chinese on the other hand, the development of banks that are not owned by the state is very low. Moreover, most of the banks that are not owned by the government have been established by the SOEs or the local government with the intention of promoting local investment (Baek, 2005). Government banks remain in command in the financial sector of the country. The saving and loans in the financial institutions of China have greatly increased, showing the high rate of savings. For instance, the total bank loans in 2001 amounted to 14 trillion 361 billion Yuan, which is 1 trillion 723 billion US dollars (Baek, 2005). China is a country with the improving economy when is compared with other countries because of its enormous size of financial resources (Baek, 2005). It was predicted that the future of the Chinese financial system is impossible to be weak.

The central bank and the People's Bank of China are possible to continue to be governed by the State Council. The government of China prefers direct control instead of indirect control through the central bank. From the time when the Asset Management Companies emerged to address the issue of the non-performing loans of the four commercial state banks (Baek, 2005), the government of China has been the major role player in reign forcing economic reforms. In China's economic growth, it is revealed that the country wants to develop a robust market system with socialist characteristics. Contradictory to the European transition economies, China followed a pragmatism idea with the intention of balancing the pace of reform with social stability (Child & David, 2001). Pragmatism believes in the practical impact of an object of the conception (Wen, 2018). Following the idea of pragmatism has helped China to be able to support continuously the economic reform without open conflict between their political parties (Bisley and Schreer, 2018). The central government has delegated power to the lower level of government (provincial, city and village government).

As a result, the local government is capable of creating their own policies that will help them to draw investors. This has been an important part of China's industrial restructuring. China's commitment to marketization led to the growth of competition within the country domestic economy.

This has permitted any type of Multinational Corporations (MNCs) to enter China's economy with confidence. China's impressive growth will still proceed in the next coming years (Rasiah, et al., 2013). The development of China has also been observed in 2013 where its international trade exceeded that of the USA, the Chinese economy is now ranked the largest or the second-largest in the world (Wu, 2016). Moreover, Chinese law firms have started to branch out globally. While China's global trade increases so as to the number of disputes from the World Trade Organization (WHO), as a result, in 2006 to 2015 they were forty-four cases against China. The USA and the European Union (EU) were the front-runners of these disputes. The only thing that sets apart China with other countries is that the SOEs are regulated by a central government (Wu, 2016).

3. Methodology

In order to understand what South Africa can learn from China's progress in poverty alleviation, different literature has been consulted, basically, the study employed secondary data. According to Szaboand and Strang (1997), secondary data uses existing or published data from different sources the data may be collected from the database and internet website. The paper followed a qualitative research approach in a qualitative research approach the researcher has a choice to select their own data which is relevant to the selected topic(s). Moreover, the qualitative data assist in ensuring that the researcher uses coherent data, and the collected information is indeed helpful to resolve the problem (Szaboand and Strang, 1997). The data were analyzed by content analysis to understand the rise of the Chinese economy and all the methods behind its development. Harris (2001) reveals that it is important to utilize content analysis when analyzing secondary data because it reduces distortion.

4. Findings and Discussion

The findings of the study show that SDGs emerged after the MDGs were unable to meet the targeted goals in the year 2015. The MDGs can be traced back to the 1990s in the Rio Conference, moreover, there were formally approved on the year 2000 and they expired on the year 2015. Then is where the SDGs emerged in the development agenda. The findings of the paper reveal that from the end of the apartheid period in 1994, South Africa has been searching for a strategy that can be used to develop its social, economic and political aspects. In the social and economic aspects, South Africa introduced various approaches and policies to improve the living standard of the citizens. The approval of the MDGs in 2000 also gave countries a hope that their economy will be improved and people be freed from the bondage of poverty. However, during the evaluation of the MDGs, it was discovered that there was no country managed to eradicate poverty as stated, except for China which managed to half its poverty levels. For that reason, the findings of the paper show that there are many things that can be learned from China that can make South Africa develop and be able to meet the first goal of the SDGs by 2030. On the basis of the findings, the development of China is complicated since the country developed interdependency in formerly closed and state-owned institutions. Initially, in 1978 China promoted open door policy with the aim of allowing foreign businesses to invest in the economy (Baek, 2005). During that period, the development of China was supported by the neo-classical economist theory. The results of the study show that even though there were many industries but most of them were owned by the state.

When the time goes by most of the SOEs in China were demolished only a few remained. In the 1990s, the economy of China was also transformed into a theorized Socialist Market Economy. Jackson (2006), states that the Socialist Market Economy is the economic system and model, of the economic development that is used in the Republic of China. In that era, China was considered to be using a dual economy. It is shown that the development of China was on the proliferation of international trade, industrialization, and urbanization. South Africa is the biggest producer of gold, platinum, coal, and others. The opportunity for establishing and enhancing international trading that can lead to job creation and poverty alleviation is very high. Moreover, the findings of the paper depict that China designed five hundred and twelve big SOEs. It is important for South Africa to have more SOEs than companies that are not belonging to the government. This means that

South Africa has to process all the minerals (gold, oil, and platinum) in South Africa, without transporting them overseas for processing. On the basis of the findings, it is shown that through international trading and industrialization even the USA became the largest china's market. Having more SOEs can make South Africa earn huge revenues without any extra cost?

5. Conclusion and Recommendations

The findings also show that the operation of the SOEs has to be guided by well-structured policies. As revealed that in China there is a SASAC, which controls the SOEs. South Africa needs a private organization (not political organizations) the organization will ensure accountability and transparency in the SOEs in South Africa. SOEs require a proper operational strategy that will also be accountable and transparent to the proposed private organization which will not be influenced by South African politics. In the beginning, the paper started by conceptualizing the term Sustainable Development Goal with the aim of understanding how the concept came to exist. It is revealed that the concept derives from the MDGs which started in 2000 and expired in 2015, the unmet MDGs led to the SDGs. The study went further to discuss the challenges faced by South Africa and the rise of the Chinese economy. On the basis of the findings of the study, South Africa should promote the creation of State Owned Enterprises like banks, mines, and other important institutions, doing this will stimulate South African GDP. The increasing GDP will help citizens to have access to jobs, which will enable them to escape the poverty trap. It is shown that the banking industry in China is owned by the Chinese themselves. In other words, South Africans require to own the banking industry in order to stimulate economic growth, which will then lead to the attainment of the first goal of the SDGs. Encouraging SOEs do not mean that the country will restrict the operation of the market. Moreover, the findings of the paper also revealed that China invested in research to motivate the technology industry sector, this also contributed to the development of China. For that reason, the paper also recommends that South Africa should as well invest in research to enhance the technology sector that will then lead to more job creation and poverty alleviation.

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An Analysis of Nation Brand Attractiveness: Evidence from Brand Zimbabwe

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Abstract: This paper examines the attractiveness of Brand Zimbabwe based on the factors perceived to impact on national competitiveness. Nation brand attractiveness is a necessary condition for a country to achieve influence and to effectively compete for global resources. Countries can enhance their attractiveness by building on their national brand equity and dealing with negatives around the national brands. The research sought to determine the perception towards Zimbabwe's global risk and competitiveness; to ascertain the variables that promote competitiveness for Brand Zimbabwe and to contribute to the literature on risk perception and its impact on behaviour towards nation brands. The study followed a mixed approach; a combination of interpretivism and positivism. The research drew 372 respondents from politicians, scholars, the media, civic organisations, government officials, church and international organisations. The research established that Brand Zimbabwe faces glaring threats risks that impact on the country's international image. The brand is affected by politics and governance together with socio-economic factors. Management and control of nation brand perception are critical for nations to distinguish themselves and to create vantage positions for sustainable performance. The way a country is viewed internationally is a function of how the country deals with factors that threaten its global competitiveness and perception towards the nation brand. Zimbabwe's quest for foreign direct investment, international visitation and export revenue requires that the country deals with its nation brand image.

Keywords: *Nation branding, competitive, risk, attractiveness, differentiation*

1. Introduction

Zimbabwe has gone through a corrosive period spanning nearly two decades during which the country's once celebrated reputation and image lost significant equity. The period saw the country experience deteriorating quality of life and global attractiveness. The country disengaged from the international community and endured economic and political isolation. The diplomatic fall-out between Zimbabwe and the United Kingdom was due to Zimbabwe's efforts to promote equitable and distribution and ownership of the economic factors including land. A major inflection point in the history of the brand is the fall of the former President R.G. Mugabe's administration in November 2017 and the entry of President E.D. Mnangagwa. This marked a major opportunity for turning around the fortunes of the national brand. The former Senior Principal Director in the Office of the President and Cabinet, Ambassador Mary Mubi said that the country needed to develop a global campaign that informs the world that Zimbabwe is a viable nation with working institutions, tremendous opportunities in all sectors, vibrant culture and great places to visit and with a peaceful, resilient people and the most literate workforce in Africa. Branding Zimbabwe could be such a daunting task given the negative Brand association suffered by Zimbabwe given its subsequent comparison with such ill-reputed countries as Burma, Iraq, South Sudan, Cuba, Belarus and North Korea (Gumpo, 2005). It is also advised that being proactive in rebranding and repositioning goes beyond communication and doing cosmetic work to a complete and integrated reconfiguration of the brand (Gilmore, 2002).

Problem Statement and Objectives of the Study: It has been noted that it is not sustainable for Zimbabwe's nation brand to continue existing in its current form. The nation brand has lost so much attraction and equity due to perennial political, social and economic challenges faced by the country. Nation branding activity should deal with the mind and perception of consumers to influence their behaviour towards the national brand. Perception of risk can be such a significant driver of consumer buying behaviour. Consumers define their own reality through perception. This research thus attempts to unpack the risk profile of Brand Zimbabwe (as perceived by the respondents) to inform the reconfiguration of the national brand. This study set out to achieve the following objectives:

- To determine the perception towards the country's global risk and competitiveness.
- To ascertain the variables that promote competitiveness for Brand Zimbabwe.
- To contribute to the literature on risk perception and its impact on behaviour towards nation brands.

Hypothesis 1: Zimbabwe is not a competitive country based on identified competitiveness and differentiating indicators

Hypothesis 2: Zimbabwe is a high-risk country based on social, economic, environmental, geopolitical, and technological factors.

2. Literature Review

Nation branding is a concept that stems from marketing (Ih-Prost & Bondaz, 2014). It is defined as the way in which a country influences how it is perceived by foreigners, particularly in the context of positive opinion at the evocation of the said nation (Anholt, 2010). Nation branding has become a global phenomenon that requires countries to take control of their brand identities to overcome international economic, social, cultural, and political competition (Tecmen, 2018). Many countries, including the United States, France, United Kingdom, Spain, Japan, China, South Korea, Singapore, South Africa and Israel have accepted and practiced nation branding (Anholt, 2010).

Purpose of Nation Branding: The overall aim of nation branding is to produce a differentiated image which can drum up attention to competitiveness and comparative advantages of the nation. As eluded earlier, nation branding discourse borders on boosting export performance, mobilisation of foreign direct investment, drawing talent, elevation of tourist activity (Zeineddine, 2017). Positive brand equity is expected to marshal real commercial, social, and political returns for a country (Dinnie, et al., 2010). Additionally, when a nation holds positive brand equity, it wields capacity and strength to combat foreign threats, since powerful brands can safeguard the nation from negative publicity (Dinnie, 2015). Nation branding is viewed as a concept in sync with the escalating international competition and pressure facing nations equally in local and external spheres (De Chernatony, 2006). Nation branding is attracting a lot of interest from academics, professional consultants, governments and non-state actors (Bolin & Miazhevich, 2018). The notion of nation branding is presented by branding experts as a strategic imperative useful to deal with the dynamics of geopolitics, international economics and the influence of international media.

Nations are getting more business-orientated in their socio-economic programming in response to pressure from global competition and increasing domestic socio-political sentiment (Alvarez & Campo, 2014). Progressive nations realise the need to proactively manage and control their brand reputation to distinguish and enhance their attractiveness (Lee, 2009). The way a nation is viewed by other nations is a function of collective opinion about that country's attractiveness and their lived experiences of such a nation (Dinnie, 2015). It is believed that nation branding presents a platform to cultivate the attractiveness profile for a country (Konecnik & Go, 2008) and (Lee, 2009). Each nation has its own identity, which if not prudently managed, potentially gets subjugated by (adverse) stereotype. Stereotypes are known to potentially impact a country's strategic objectives (Skinner & Kubacki, 2007) and (Dinnie, 2008a). Nearly all countries face both positive and negative generalisations and stereotypes (Avraham, 2018). Notwithstanding the fact that stereotypes pose a serious barrier against tourism and investment, studies have been done to suggest possible nation brand repair strategies. Experts and researchers accept that brands evolve over time and at worst suffer damage from internal and external risk factors.

It remains the responsibility of the country to, at best, proactively deal with the threats before they manifest by influencing negative behaviour towards the brand. The author observes that international images of most nations are hounded by negative stereotype (ibid). Such emergent perceptions, however, and negative stereotypes can be corrected over time through conscious and coordinated nation branding activity (Dinnie, 2015). It usually takes some time to alter and correct the negative nation image, thus nations should adopt a long-range perspective, to attain conscious awareness and acceptance of desired national identity (Quelch & Jocz, 2009). Only through concerted and long-term engagement can nations restore impaired nation brand images in targeted audiences, as quick short-gun publicity and public relations campaigns are of no

consequence. The challenges around the 'Canada is back!' campaign highlighting the importance of dealing with the real issues affecting the nation brand rather than dwelling on propaganda (Nimijean, 2018). Nation branding strategy was not successful owing to basic challenges around political management and public administration under which brand threats were manifest. It is essential to focus more on doing than on communicating intentions in the face of real issues around the brand (Nimijean, 2018).

Therefore, it is paramount for nation branding strategy to go far beyond graphical identity to integrate broader facets such as national development strategy, consumer and stakeholder engagement, messaging harmonisation for internal and external audiences among others (Lee, 2009). Nation branding provides an opportunity to identify and articulate a country's competitive and comparative advantages as a value proposition to the world (Anholt, 2007a). Observers believe that destinations cannot overcome global competition simply on the basis of their comparative advantages embodied in the landscape, natural or human-made features because such advantages are found in other places (Bregoli, 2016). What remains essential is for nations to construct and align their brand image and reputation to support their long-term nation brand equity. Findings from a study on Haiti and the Dominican Republic confirm the positive nexus between a country's level of stability and tourism (Anglade, 2018). The study also affirmed that the level and quality of infrastructure influences a country's reputation and global competitiveness.

Attentive nation brand positioning affords a nation a competitive position over others and successful repositioning can unlock great potential, in instances where a nation's image lags behind its reality (Reibstein, 2017). Nations are attempting to create and portray meaningful differentiation ahead of their counterparties. It has been emphasised that nation branding be taken as long-term undertakings done beyond paying lip service to issues facing the country. Caution should be taken against the incidence of the 'Dallas experiment' in which the then New Zealand Market Development Board inundated Dallas City with the New Zealand campaign. The campaign was run for a period and witnessed an exponential growth in export sales. A significant slump in sales was, however, experienced 12 months later after the campaign was terminated. As such, tactical short-term promotional exercises must not be seen as a substitute for strategic nation branding (De Chernatony, 2006). Nation branding rides on truthfulness. One needs to have a good product to compete effectively. Good national policy is fundamental in dealing with nation branding challenge. The Winner is Georgia Campaign failed because of the facts on the ground conflicting with the new branding narrative (Dinnie, et al., 2010).

Nation branding effort has a tough time to overcome poor national policy and government behaviour. It has been noted that "just a good name on its own cannot make a brand" but a sustained building of market-leading brand capacities does (Abimbola, 2010). This, however, is more than a brand communications strategy. Legacy nation brands are advantaged compared to emerging nations because they enjoy established historical positive associations. Such destinations with legacies include America, Germany, Britain, Italy, France, London, New York, Munich, Rome, and Dubai among others. On the contrary, are also the little countries that people struggle to differentiate; thus, "who knows the difference between Kazakhstan, Pakistan, and other stains?" (Olins, 2013) there is no substitute for nation branding and as such it is a real issue that requires government attention. It has been observed that nation branding needs to be consciously pursued otherwise lack of a resolute drive to brand a nation invites image drift as other people do it on behalf of the government - albeit, for their selfish reasons (Wharton, 2016).

Strategic Implications of Nation Branding: There are a number of strategic implications of nation branding. Nations compete daily with the entire world and economic blocks for global resources, tourism, investment and export markets. In addition, it is observed that nations with unknown or poor reputation are marginalised perceptually and that their top of mind awareness levels is very low (Spio, et al., 2011). They, thus, do not feature in the minds of their global audience, which adversely influences their commercial success. In addition, the emphasis of public opinion and attitude towards another nation is gaining prominence in international economics and politics. Public diplomacy aims to define state activities and non-state players whose role influences the sustenance and elevation of a nation's soft power (Kemming, 2009). The traditional diplomatic undertakings are certainly being complemented by the involvement of these other stakeholders in the modern global context. The new paradigm requires that public diplomatic efforts be cast beyond the purview of consulates, ambassadors, and departments of international affairs. Governments

should facilitate some collaboration linking multiple actors outside the administrative realm across the business, academia, think tanks, non-governmental organisations (NGOs), media and political parties. Public diplomacy has leapt beyond traditional propaganda to generating strong advocacy to affect the public's psychosomatic and attitude forming processes. The reality of global dynamics remains that nation branding is applicable to countries as they seek to reposition themselves on the global market. There is a unanimous national consensus that the country's brand has lost significant equity over time. As for qualitative data set, thematic analysis was used where emerging themes were presented and analysed keeping with the research objectives.

Nation Branding Pressure: A country's image greatly influences and impacts on a nation's ability to promote its exports, visitation and attraction of global investments (Kapferer, 2008). Researchers have observed that low level of FDI inflows to Zimbabwe has been explained in the context of an underlying negative image faced by the country as an investment destination (Sikwila, 2015). Countries inexorably jostle for the limited FDI hence the need for nations to craft strategies to salvage a reasonable share of the global resources. Zimbabwe has performed badly against its regional counterparts over time according to the World Economic Forum report (Klaus, 2016). A positive nation brand image thus becomes an essential global negotiation instrument for all countries. Governments should ascertain the world's view on their countries and develop appropriate image management strategies (Anholt, 2007a), (Haig, 2005) and (Jaffe, 2015). It is the role of governments to proactively manage their country's reputation and image to meaningfully support their economic, political and social objectives. This huge task has become one of the primary preoccupations of modern governments and Zimbabwe is not an exception to this. Zimbabwe's nation brand has been under attack for nearly twenty years as the country's economy witnessed a serious slump, tourism performance plummeting, and also the general social welfare and standard of life reaching its lowest ebb since independence. Generally, the academics, businesspersons, tourism players, politicians, diplomats and the public agree that Zimbabwe should work on reclaiming its regional and global status.

3. Research Methodology

This study was thus based on a mixed approach methodology; a combination of interpretivism and positivism consistent with (Rolfe, 2006) and (Kato, 2002) who accept that methodological triangulation provides better results and a complete picture of social phenomena. Mixed methodology enhances the breadth and depth of the research as it combines measurement of the extent of occurrence with the explanations and narratives about phenomena. It can be argued that by combining both types of research, the limitations of each individual method can be offset and gaps of data can be filled or predicted especially perceptions, opinions, meanings, attitudes and beliefs. The research was based on a survey on stakeholders around brand Zimbabwe where a sample of 384 computed through the sample size statistical formula (Cochran, 1977). A total of 372 respondents however, participated in the survey. In this enquiry, an internal constancy method was employed to ascertain the consistency of the data collection tool. Computed results for the Cronbach's Alpha Coefficient for the instrument was 0.883. It drew respondents from politicians, scholars, the media, the civic organisations, the government, local community and traditional leadership, the church and international organisations. The study targeted adult respondents above 18 years given the complexity of the subject under study. The study consciously considered respondents who related with Brand Zimbabwe from a political, economic, social angle, or who could offer valuable opinions and insights based on their professional exposure. The sampling approach was consistent with the stakeholder theory given the multiple stakeholders who consume the national brand. The selection of respondents was based on competence, perspective and experience dimensions.

Data Collection: The research utilised questionnaires and in-depth interviews to collect primary data. A set of five-point Likert Scale type of questions was used to gather primary data from Brand Zimbabwe stakeholders whilst open-ended questions were used to collect data from key informants. A Likert Scale uses an ordinal psychometric measurement of views, attitudes, beliefs and opinions. Each question in the instrument was presented as a statement or claim where research subjects would show the extent of agreement or otherwise in a structured response type format. The Likert Scale questions were used because they are universally used for survey data collection and are easily understood by respondents. In-depth interviews were carried out with the aid of a depth interview guide. The interview guide carried a list of

open-ended questions to allow key informants the leeway to freely and fully express themselves on issues under investigation. Participation was drawn from the public, government, business, and non-governmental institutions. The use of self-administered questionnaires together with personal interviews brought the advantages of triangulation to the research (Sudman, et al., 1965).

Data Analysis: Survey data was analysed using SPSS version 21. Frequency analysis was used to analyse questions asked using a five-point Likert Scale, and these were presented in a percentage format. In addition, factor analysis was used for hypotheses testing using a dimension reduction methodology. Verification of the hypothesis, for acceptance or rejection, made use of the null hypothesis based on the analysis of item loading factors of each variable. Factor Analysis remains applicable in social sciences to test hypothesis achieving this by measuring relationships between observed scores and latent scores of variables. The more correlated the variables are, the better (Schmitt & Sass, 2011). Varimax rotation with Kaiser-normalisation was also employed, given that its cross-loadings were lower than the other factor matrix rotation. Correlation Matrix was employed to check multi-collinearity and the relationship between variables.

4. Findings and Discussion

Characteristics of Respondents: The respondents in this study were drawn from across nine sectors of the economy, the country, age groups; a reflection of views from people of diverse backgrounds. Respondents to the quantitative research were from Harare (70.2%) followed by Bulawayo with 8.6%, Mutare with 7.5%, Masvingo (4.8%) and then Gweru with 3.8%. Bindura had 1.6%, Diaspora had 1.6%, Chinhoyi, and Hwange had 0.8% each and Kwekwe with the least number of respondents (0.3%). More males participated in the research with a frequency of 222 (59.7%) as compared to their female counterparts with a frequency of 150 (40.3%). In terms of age, the age range 26 to 45 had the highest frequency of 238 (64%) with the 45 to 55 range following with a frequency of 63 (16.9%) then the 18 to 25 whose frequency was 58 (15.6%). People who are more than 55years had the least frequency (13) with the percentage (3.5). In addition to the above, interviews were conducted with participants from government, industry, civil society and foreign investors and tourists. A total of 10 respondents were drawn from the Zimbabwe Investment Authority (ZIA), ZimTrade, Zimbabwe National Chamber of Commerce (ZNCC), from Ministry of Macroeconomic Planning and Investment Promotion, from Ministry of Industry and Commerce, from Ministry of Foreign Affairs, from the Office of the President and Cabinet (OPC), Ministry of Tourism and Hospitality, banking, development partners, civil society, the tourism and hospitality sector, academics and economists. The research also drew participation from 7 foreign tourists and investors.

Competitiveness and Differentiation: An assessment of the market perception of the competitiveness and differentiation of Brand Zimbabwe based on such factors as physical infrastructure, macroeconomic environment, health, education, and product and service market efficiency was part of the investigation. The respondents were required to express their view on Zimbabwe competitiveness based on a set of competitive and differentiating factors. The country viewed positively on natural resources and factor endowments (76%); the country's geographical location (74.8%); education and literacy levels (72.6%); labour market efficiency (68.8%); and skills profile (66%). The factors were considered to give brand Zimbabwe some competitive and comparative advantages. Most respondents, however, concurred that Zimbabwe was weak and uncompetitive in terms of cost and ease of doing business (74.5%); currency stability and volatility (74.1%); macroeconomic environment (74%); political uncertainty and instability (73.1%); health services and systems (70.5%); financial market efficiency (68.8%); public institutions (68.5%); physical infrastructure (66.4%); factor prices (65.8%); facilities and services (61%); product and service market efficiency (57.5%); and technology environment and adoption (55.1%). There seems to be a heavy skew against the brand. Whilst the country could is viewed to be endowed with natural advantages, its administration and support environment impairs on the attractiveness of the country. The country's political and economic space management weighs heavily against the country.

The respondents concurred that Brand Zimbabwe presented a hostile environment for investors and visitors alike. They advised that the general perception held by foreigners particularly from the traditional source markets was that Zimbabwe was very risky, politically unstable and economically troubled. Some visitors to Zimbabwe however, advised that they changed their negative opinion on the country after visiting. The

negative views on the country were formed after the government-sponsored agricultural reforms and the indigenisation and economic empowerment programmes. There were suggestions from the respondents that the country was a victim of 'unfair and detrimental' media (local and international) coverage that impaired investor perception and behaviour. Fair or not fair coverage, the country needs to do something to generate positive perception towards the brand. It is crucial to relate with the realities of life in branding bearing in mind that brand consumers make their purchase decisions based on their perception of the brand rather than the realities of the product (Anholt, 2007a), (Haig, 2005) and (Jaffe, 2015). The research findings from foreign interviews corroborate the findings from the local key informants that the country was viewed as a political hotbed with immature democracy where there was an abuse of resources and high poverty levels. There was an emphasis that Zimbabwe was once an attractive country and economy whose fate was ravaged by politics and poor governance to recede into a 'failed economy'.

The general sentiments that emerged from foreigners were of skepticism, negativity and at worst, utter dislike for the country. It was however also thought-provoking to note that whilst some viewed the country as a failed state, others highlighted Zimbabwe's natural beauty and heritage; hospitable people and a possible great future regional country. It was however, established that the negative image for Zimbabwe was not unique to that country. Most African countries suffered from negative reports on Africa escalated by developed countries that advance Eurocentric or American views on development. The nation branding discourse should therefore be approached from a Pan-African perspective. The research identified education as one of Zimbabwe's positive competitive factors with 52% of the respondents affirming whilst financial market efficiency was regarded negatively by 55% of the respondents. A factor price was also viewed negatively by 51% of the respondents. The research findings reflect the reality on the ground. Another big issue viewed negatively against the national brand was currency and the cash situation. Accordingly, the Reserve Bank of Zimbabwe (RBZ) commented that apart from the declining GDP and trade deficits, cash shortages were a major characteristic of the economy since 2015. Long queues for withdrawals in banking halls and at automated teller machines (ATMs) remained a permanent feature of the banking experience (RBZ, 2016). In May 2016, the RBZ introduced bond coins and notes to ease the cash shortages. The liquidity crisis signified a "dysfunctional multi-currency system" dominated by a strong United States Dollar. The US Dollar substituted all other currencies in the Zimbabwe's multi-currency basket, making the country a high cost producing country and an expensive tourist destination (RBZ, 2016).

This is particularly so given the uncoordinated approach to nation branding predominantly driven to advance the tourism destination brand. A country brand has an influence on its tourism, exports, governance, investment and unification of people and cultures (Kalamova & Konrad, 2010). It is also advised that national prosperity is not inherent in the natural endowments but its competitiveness depends on its innovativeness (Porter, 1998). According to the World Economic Forum Competitiveness Index ranking, Zimbabwe has been faring badly, an observation corroborated by a general consciousness on the part of respondents that Zimbabwe has many issues that need redress for competitiveness. As confirmed by the hypothesis test, Zimbabwe is not a competitive country as an investment or tourist destination compared to its counterparts. On the investment front, the Government of Zimbabwe should advance the initiative adopted on implementing the ease of doing business reforms to attract both domestic and foreign investment. The macro environment should be configured to protect private enterprise and bilateral trade and investment agreements. The tourism players and the industry should work on addressing their product quality and pricing. According to the World Economic Forum's 2015/16 Global Competitiveness Report, the most problematic factors for doing business include policy instability, inadequate foreign currency regulations, inefficient government bureaucracy, difficulties in access to finance, inadequate supply of infrastructure, restrictive labour regulations, and inefficient tax administration and regulations.

Global Risk Factors Facing Zimbabwe: An analysis of what were perceived to be global risks facing Brand Zimbabwe was done. The global risk factors were categorised under social, economic, environmental (ecological), geopolitical and technological.

Social Risk Factors: The social risk factors examined included the threat of an ageing population; failure of urban planning; food shortages and crises; large-scale involuntary migration; social instability; the spread of infectious diseases; water crises; increasing national sentiment; poverty; and crime. The respondents were

asked to indicate their opinion of Brand Zimbabwe against the risk factors. Overall, the respondents concurred that the country faced a handful of social risk factors. The most significant social risk factors facing the country based on perceptual scores were threat of failure of urban planning (75.4%); poverty (71%); large-scale involuntary migration (70.7%); water crises (66.4%); social instability (61.6%); food crises (61%); and increasing national sentiment (58.8%) in that order, respectively. The least threatening social risks were, the threat of the spread of infectious diseases (34.9%); crime (35%); and followed by the threat of an ageing population (35.5%). The statistics above indicate a plethora of social risk drivers facing the nation brand which is a cause for concern (for it threatens tourists and investors alike and affects the country of origin effect for the country's exports).

Economic Risk Factors: An examination of the economic factors facing the country included commodity prices; energy price shocks; failure of financial systems; failure of critical infrastructure; fiscal crises; unemployment or underemployment; and currency volatility. The statistical findings revealed that all the economic risk factors were perceived to pose threats for Brand Zimbabwe. The most impacting risk against the country was the incidence of structural unemployment and underemployment with a score of 81%; followed by currency risk (80%); fiscal crises (78.8%); higher commodity prices (78.4%); failure of financial systems (75.2%); failure of critical support infrastructure (66.7%); and lastly price shocks that are induced by energy problems (66%). The macroeconomic environment was seen to be a source of threat against the nation brand's equity as they affect the cost and standard of living**,** the cost of doing business, the competitiveness of the country's exports.

Environmental and Ecological Risk Factors: An examination of the ecological and physical environmental risks facing Zimbabwe was also done. The ecological factors examined were extreme weather conditions; adaptation to climatic changes; biodiversity loss; and the collapse of the natural ecosystem. The majority of the respondents (61%) disagreed that extreme weather events like floods are a risk facing the nation branding as an international destination. Approximately 35% of the respondents agreed that biodiversity loss and collapse of the natural ecosystem are risk factors impacting Zimbabwe. The results however, suggest that Zimbabwe is viewed as marginally faced with risk from extreme weather conditions.

Geo-Political Risk Factors: The research also assessed geo-political factors around Brand Zimbabwe. The factors examined were inter-alia, failure of national governance (corruption, and organised crime); failure in the rule of law and property rights; and large-scale terrorism; state collapse (civil conflict, military coup, and failed states). The research established that the failure of national governance (e.g. corruption, organized crime, etc.) was a major risk factor (86%) facing Brand Zimbabwe. The research also suggests that failure in the rule of law and property rights was also observed as a geopolitical risk factor affecting the national brand with a frequency of 79%. The threat of civil conflict, a military coup and failed state was regarded as a potential threat by a frequency of 65%. The results could have been influenced by the country's history of political violence, contested elections, the fall of former President Mugabe's administration, the unresolved cases of corruption and politically-induced loss of property.

The importance of perceived risk is underscored for consumer brand decision making (Kapferer, 2008). The research established that Brand Zimbabwe was perceived to be exposed to various threats inclusive of political volatility, economic instability, foreign exchange shortages and volatile exchange rates, currency volatility and cash risk, threats to property rights and expropriation. It was also observed that the country is also exposed to the problem of unattractive ease of doing business environment and policy and legislative mishmash. The country was observed to lack legislative and policy consistency giving rise to the need to harmonise the legislation and policy environment, uphold property rights and bilateral and multilateral agreements, the rule of law among other things to avoid scaring investors. Discord in government and policy administration has a detrimental effect on stakeholder confidence particularly foreign visitors and investors.

Technological Risk Factors: An interrogation of the technological environment was undertaken for Brand Zimbabwe. The respondents expressed their perception of the country with regards to large-scale cyber-attacks; the incident of data theft; abuse of technologies (social media, and piracy); and breakdown of information infrastructure. The results suggest that Zimbabwe was less risky with regards to large-scale terrorism; large-scale cyber-attacks and large incidents of data fraud. The incidence of data fraud or theft was

considered a minor technological risk factor affecting the nation by close to 40% of the respondents. The statistics indicate that there are significant technologically-driven risk drivers facing the nation brand around the abuse of technology. The abuse of technologies such as social media and piracy was considered high impact risk factors affecting the nation with a score of 72%.

The research also assessed the nation brand on the basis of globally identified risk factors that influence global behaviour. The global risk factors were classified as social, economic, environmental, geopolitical and technological**.** The research findings show that the major social risk factors facing the country were poverty (51%) and water crises (50%). The economic risk factors impacting the nation brand were largely on high prices for commodities slightly above (59%). Biodiversity loss and ecosystem collapse were also among the identified risk factors by 35% of the respondents. On geopolitical factors, failure of national governance was cited as a high-risk factor for the nation brand by 45% of the respondents. The findings however suggest that Zimbabwe has low-risk exposure with regards to large-scale terrorism, state collapse or crisis, large-scale cyber-attacks and large incidents of data fraud. As such, technological factors were not considered as a major threat for the country.

Research has highlighted that perceived risks that crowd and impact on consumer's decision were economic and social risks linked to people's social image (Kapferer, 2008). Hence it is very important to build brand saliency at brand awareness stage and trust in the beliefs of brand image. The statistical findings were a mere confirmation of the elongated macroeconomic challenges facing the country for nearly 20 years. The country experienced periods of haemorrhaging inflation and negative returns from investment and that saw company closing down, consumers losing their savings in the face on massive bank closures and currency reforms. Essentially the research findings suggest overwhelmingly that Zimbabwe is a high-risk country based on a number of social, economic, environmental, geopolitical, and technological factors.

Results of Hypothesis Test

Hypothesis 1: Zimbabwe is not a competitive country based on identified competitiveness and differentiating indicators. Following the statistical observations on Zimbabwe's competitive and differentiating indicators, a correlation analysis was conducted to test the above hypothesis. The broad factors were drawn from economic, social, governance and physical domains. Table 1 shows the correlation matrix.

Table 1: Correlation Matrix on Competitiveness of Zimbabwe

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Correlation	SQ21	1.00	0.42	0.52	0.44	0.15	0.26	0.00	0.29	0.32	0.33	0.27	0.36	0.04	0.34	0.33	0.14	0.00
	SQ22		1.00	0.47	0.41	0.22	0.32	0.12	0.31	0.35	0.29	0.50	0.41	0.13	0.33	0.30	0.17	0.05
	SQ23			1.00	0.47	0.07	0.30	0.01	0.41	0.38	0.28	0.40	0.40	0.03	0.45	0.34	0.21	0.03
	SQ24				1.00	0.14	0.32	0.04	0.36	0.28	0.36	0.41	0.38	0.03	0.34	0.35	0.20	0.06
	SQ25					1.00	0.26	0.41	0.23	0.14	0.33	0.27	0.08	0.27	0.00	0.08	0.01	0.07
	SQ26						1.00	0.28	0.42	0.34	0.35	0.44	0.25	0.16	0.37	0.27	0.24	0.04
	SQ27							1.00	0.22	0.05	0.24	0.18	0.03	0.32	0.02	0.03	0.03	0.13
	SQ28								1.00	0.41	0.28	0.44	0.38	0.07	0.33	0.35	0.26	0.00
	SQ29									1.00	0.35	0.39	0.36	0.04	0.31	0.31	0.22	-0.07
	SQ210										1.00	0.41	.2.4	0.15	0.22	0.21	0.19	0.05
	SQ211											1.00	0.48	0.04	0.41	0.30	0.33	0.01
	SQ212												1.00	0.02	0.39	0.28	0.24	0.05
	SQ213													1.00	0.02	0.01	0.04	0.31
	SQ214														1.00	0.57	0.39	0.02
	SQ215															1.00	0.51	0.04
	SQ216																1.00	0.08
	SQ217																	1.00

Key:
SQ: Survey questionnaire component (2.1)
1: Public institutions
2: Physical infrastructure
3: Macroeconomic environment
4: Health systems
5: Education systems
6: Product and service market efficiency
7: Labour skills and market efficiency

8: Financial market efficiency
9: New technology adoption
10: Market size
11: Facilities and services
12: Factor prices
13: Natural resources
14: Cost of doing business
15: Political stability
16: Stable currency
17: Geographical location

Source: Calculated from Survey Results (based on the Global Competitiveness Report by WEF)

The correlation matrix, Table 1, shows the correction factors, which potentially influence nation branding for Zimbabwe. All factors with correlations with values $p<0.05$ had a significant relationship. Essentially, physical infrastructure, macroeconomics, health systems, labour market and skills, financial market efficiencies, technology adoption, public facilities and services, factor prices and cost of production, cost of doing business and currency instability were identified as major negative issues affecting the brand. The factors had significant correlations between the observed and latent scores. Correlations that range from 0 to 0.4 are weak, 0.4 to 0.7 are moderate while those correlation coefficients $p>0.7$ greater are strong (Jolliffe, 2011). Table 2 below shows the rotated component matrix on the competitiveness of Zimbabwe based on the same competitiveness and differentiating factors.

Table 2: Rotated Component Matrix on Competitiveness of Zimbabwe

Rotated Component Matrix[a]

	Component			
	1	2	3	4
Public institutions	.752			
Physical infrastructure	.683			
Macroeconomic environment	.760			
Health systems	.687			
Education systems				.655
Labour and skills market efficiency			.750	
Market size			.516	
Facilities and services				
Natural resources				.668
Cost of doing business		.667		
Geographical location				.848

Extraction Method: Principal Component Analysis;
Rotation Method: Varimax with Kaiser Normalization
a. Rotation converged in 5 iterations.

Source: Calculated from Survey Results

The component matrix (Table 2) confirms that Brand Zimbabwe is not competitive because of a number of negative perceptions on the identified competitive and differentiating factors. Four principal factors are present with factor 1 (negative) consisting of economic and physical infrastructure factors, while component 2 is about doing business, component 3 is market factors and component 4 (positive) is composed of ecological factors. Based on the rotated component matrix above, the four factors extracted suggest that Zimbabwe was perceived as uncompetitive on a number of competitiveness and differentiating indicators. The nation brand however, enjoys equity from environmental factors and education in component 4, perceived positively, and followed by labour and skills market efficiency and product market size. All other factors 1 and 2 namely health systems, public institutions, macroeconomics, physical infrastructure and cost of doing business were significantly negative rendering the nation brand rather uncompetitive.

Hypothesis 2: Zimbabwe is a high-risk country based on social, economic, environmental, geopolitical, and technological factors. There was a general consciousness on the part of respondents that Zimbabwe has many issues that should be addressed to be competitive on the global market. Factor analysis was conducted on the data to test the above hypothesis so as to extract the principal factors with statistical significance. The findings are in Table 3 below.

Table 3: Rotated Component Matrix: Zimbabwe is a High-Risk Country

Rotated Component Matrix[a]

	Component						
	1	2	3	4	5	6	7
Ageing population					-0.542		
Failure of urban planning							-.572
Food Crises			.673				
Large-scale involuntary migration			.657				
Profound social instability			.733				
Spread of infectious diseases			.501				
Water crises			.598				
Increasing national sentiment			.511				
Poverty			.553				
Crime		.503					
Higher commodity prices	.515						.562
Energy price shocks	.551						
Failure of financial systems	.758						
Shortfall of critical infrastructure	.663						
Fiscal Crises	.759						
Structural unemployment	.743						
Currency volatility	.615						
Extreme weather events				.684			
Failure of climate change adaptation				.796			
Biodiversity loss and ecosystem collapse				.791			
Failure of national governance					.664		
Failure of the rule of law					.661		
Large-scale terrorist attacks							.688
State collapse or crisis						.758	
Breakdown of information infrastructure		.765					
Large-scale cyber attacks							.716
Massive incidents of data fraud						.556	.601
Abuse of technologies		.507				.627	

Extraction Method: Principal Component Analysis
Rotation Method: Varimax with Kaiser Normalization
a. Rotation converged in 13 iterations

Source: Calculated from survey results (based on the Global Risks Report by WEF)

The calculated research results illustrate that Zimbabwe is a high-risk country based on social, economic, environmental, geopolitical and technological factors. Seven components were extracted and component 1 being the most influential risk and component seven being the least. Social and economic factors constituted component 1 and included issues of fiscal policy and activity, high prices, currency volatility and lack infrastructural development and maintenance. These placed Zimbabwe at risk the most, followed by those in Component 2, mainly technological abuse, crime and breakdown in infrastructure. Security issues, vulnerability to cyber-attacks, threats to terrorist attacks, state collapse and crisis and large cases of data fraud were minimal. Component 3 of the matrix comprise a mix of critical issues that affect the nation brand from a social perspective including the threat of spread of infectious diseases, food crises, large-scale emigration, water crisis and increasing national sentiment.

Zimbabwe was viewed to be at the risk of failure to adapt to climate change and extreme weather conditions, which threaten biodiversity and ecosystem collapse. The issue of risk around governance encompassing the rule of law and intellectual and property rights was also evident. One can easily conclude that Zimbabwe has a high-country risk profile based on social, economic, environmental, geopolitical, and technological factors. The quantitative research findings on the risk profile of the country were validated by the depth interview

findings from the local key informants and foreign respondents. One is however, convinced that the sources of risk are predominantly issues that can be resolved if the country is sincere in its nation rebranding mantra.

Brand Zimbabwe's Impact on FDI Performance: Key informants were convinced that Zimbabwe was punching below her weight for far too long. They were positive that the poor foreign direct investment (FDI) performance by the country was a direct consequence of how the nation brand was perceived by foreign investors. Zimbabwe attracted low FDI compared to her regional counterparts over time which signals a positive relationship between nation brand image and FDI performance consistent with (Sikwila, 2015) and (Kalamova & Konrad, 2010). Nations naturally have to compete for the scarce foreign direct investment which heightens the need for nations to craft strategies to attract a reasonable share of global FDI. Countries pursuing FDI are reminded that their policymakers should realise that they compete with a lot of other nations with similar characteristics (Smallbone, 2008). Policymakers therefore should comprehend how national policy affects perceptions and behaviour towards the national brand. Policies that threaten the image and reputation of a country should be monitored and managed to minimise the overall impact on the country's investment performance. They are largely issues springing from of a governance perspective thus nation branding effort for Zimbabwe should be anchored by the governance pillar of the nation.

The research findings suggest that whilst investment from the traditional source markets (EU and America) plummeted, Chinese investment was however on the rise. Could this paradox be explained in the context of change in government policy after the R.G Mugabe administration's 'Look East Policy' or a function of the different risk appetite of the investors coming from the two different source markets? The observation was that government and investment policies were friendly to the East and assured investors from that region security and investment protection whilst harsh for investors from elsewhere. The research established that investors were extremely careful before making decisions on Zimbabwe. It was suggested that some of the positives drawing investor interest to Zimbabwe included the country's natural resources, a well-educated workforce, friendly and loyal population, fast-growing regional economies and great long-term overall potential. Zimbabwe's negativities were largely governance and economic issues as substantiated by the local key informants. The major issues included heavy state involvement in private business, government expenditure and recurrent budget deficit, uncertainty regarding repatriation of earnings, private property rights and threat to the rule of law, currency and cash crisis, deteriorated infrastructure, exchange rates and foreign currency shortages, among other issues. The research established that the country performed poorly against its global counterparts with regards issues around the ease of doing business. These factors included basics such as availability of information, company registration, administrative requirements, infrastructure, and utilities to the cost of doing business. The research identified the following as key ease of doing business factors requiring attention:

- Stability and security of investment
- Investors are attracted by easy, quick start-up procedures; no unnecessary hassle
- Harmonised local and central government regulations
- No excessive labour regulations
- Availability of well-educated personnel with modest salary expectations
- Easy monetary system – easy foreign payments to / from abroad
- Manageable in- and export regulations
- Availability and easy access to information and investment service touch-points

The raised issues are subjects under review of the ease of doing business reforms championed by the office of the president. The country is in the process of enhancing the investment environment through the Special Economic Zones (SEZs) investment model. The Zimbabwe Investment Authority was created to create a one-stop shop investment service Centre for FDI. All that the country requires is full operationalisation of her noble and great intentions to build equity for the national brand. Theory propositions on foreign investment points to different reasons for international flow of capital, thus, the resource market and efficiency seeking objectives. Whilst the research suggests a positive opinion of Zimbabwe's standing on resource endowments, the country was seen to be performing badly on market efficiency and market availability arising from a distorted currency regime and poor economic performance.

Brand Zimbabwe and Tourism Performance: The research established that the Ministry of Tourism and Hospitality of Zimbabwe put up a solitary fight to promote the image of the country. Some respondents observed that hosting international conferences and events such as the UNWTO 2015 were essential for the promotion of positive word of mouth for the national brand. The tourism visitation from 2008 to 2017 performed reasonably well compared against how the nation brand was projected by the international media. There are factors to explain this trend. It was highlighted that visitation to such places as the Victoria Falls and nearby game parks were as a result of foreign promotion by South Africa or Zambia. Thus, the numbers that visit the country are not a direct reflection of the power of the national brand. To fully leverage the tourism products from the country, Zimbabwe should formulate a holistic nation branding strategy, deal with a host of the nation brand negatives and consciously recover the lost nation brand equity. Foreign visitors raised concern with regard to holiday travel to Zimbabwe. They advised that Zimbabwe was perceived as weak on tourism goods and services namely unattractive hotels, restaurants and shops and also a negatively perceived security problem. In a global village with competing countries, the implication of these findings is that the attractiveness of Zimbabwe is compromised.

Views on Country of Origin Effect on Zimbabwean Exports: The research established that export performance for the country over the period was largely below the country's capacity. There were issues around export competitiveness, product quality and negative country of origin (COO) effect. Whilst some believed that the country produced very good quality products, the product portfolio predominantly comprised primary or semi-processed products. The country falls short in matching world quality standards and suffers from the high cost of production aggravated by the use of the strong currency (US Dollar), constraints in capacity utilisation and outmoded machinery. It must be understood that local manufacturers and exporters are the drivers of the exports for the nation brand (Chitty, et al., 2016). If the manufacturers are not competitive on quality, pricing and other conditions, the country performs badly. Perception of COO is however, very negative for Zimbabwean products particularly to markets outside Africa. Retooling was highlighted as a major strategic issue requiring attention to enhance the country's export competitiveness assuming that the negative COO effect on exports is attended. Consistent with findings from researches which observed, that the Germany nation brand is such a fundamental cog in the development and growth of exports arising from a positive 'made-in-Germany-effect' (Joseph, 2016).

5. Concluding Remarks

The research concludes that nation branding for Zimbabwe is such a strategic imperative requiring immediate attention to improve the fortunes of the country. Brand Zimbabwe is negatively viewed owing to myriad risk factors that require a holistic and sincere approach from the policymakers. The threats to the viability of Brand Zimbabwe were largely of a political and governance origin with a ripple effect on the economics and social space of the country. There is a general consensus that the country's investment attraction, visitation and export promotion cannot be resolved if the country's image question remains unresolved. The new administration led by President E.D. Mnangagwa realised the need to restore the country's relationship with the international community hence the mantra that 'Zimbabwe is now open for business. This is the first step in the right direction. What is required to restore the nation brand lustre is to decisively act on addressing the threats identified by the research. The nation's performance at the global market is largely a function of the nation brand's attractiveness and image as perceived by its visitors, investors and buyers.

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Success Factors for Creating Spin-Out Companies by South African Publicly Financed Research and Development Institutions: A Resource-Based View Perspective

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Abstract: Technology commercialisation using spin-out companies has shown to be a viable option by publicly financed research and development (R&D) institutions internationally. In South Africa (SA) this trend of spin-out company creation for technology commercialisation is anticipated to be on the rise since the inception of the Intellectual Property Rights from Publicly Financed Research and Development Act number 51 of 2008 (IPR-PFRD Act). This study aimed at trying to understand the factors that influence the successful creation of spin-out companies by SA publicly financed R&D institutions, utilising the RBV as the main theoretical framework. A survey questionnaire was distributed using a purposive sample approach to 49 key individuals (technology transfer professionals) who have been involved in spin-out creation in the past and the response was received from 17 respondents. A mixed methods research methodology was utilised and the data was presented using descriptive statistics and narration. The results of the data indicate a similar pattern to international trends and in some instances unique resource combinations that are relevant to SA.

Keywords: *Technology commercialisation, Spin-out companies, Research & Development Institutions, Resources Based view, Intellectual Property Right*

1. Introduction

Several studies have been conducted to look at factors that influence the successful creation of spin-out companies emanating from universities (Di Gregorio & Shane 2003; Powers & McDougall, 2005; Gómez-Gras et al., 2006; Lockett, Wright and Franklin, 2003; Landry, Amara, Rherrad, 2006; Renault et al., 2016). These studies have looked at the factors that influence spin-out company creation by universities by looking at various factors from a resource base view perspective (RBV). The observation made from the studies mentioned above, is that they are largely focused on university-based spin-out companies and more on the international perspective. The important gap is that little research has been done on understanding spin-out companies within the South African context. The aim of this study was to investigate the success factors for creating spin-out companies by publicly-financed Research and Development (R&D) in South Africa (SA) with a view of determining which are considered the most important. The study was undertaken with the objective of analysing the factors that play a role in the successful spin-out company creation process in a structured manner. The sub-objectives being: identifying the factors of importance in the spin-out creation process, categorising the factors identified and assessing the factors' role in spin-out company creation. The theoretical framework being the resource-based view. The objectives of the Intellectual Property Rights from Publicly Financed Research and Development Act number 51 of 2008 are to make provision that intellectual property (IP) emanating from publicly financed.

Research and development are identified, protected, utilised and commercialised for the benefit of the people of the Republic. It further states that publicly-funded research institutions must within 12 months of the coming into effect of the Act— *(a)* establish and maintain an office of technology transfer (OTT); or *(b)* designate persons or an existing structure within the institution to undertake the responsibilities of the OTT. Hockaday (2009) states that an OTT is that part of the institution responsible for commercialising institution-owned IP through the core activities of attracting and assessing invention disclosures; identifying ways and means of IP protection; making decisions on exploitation of IP such as licensing and or spin-out company formation. Table 1 attempt to elaborate when each commercialisation route should be considered, together with advantages and disadvantages of the licensing and spin-out companies. From Table 1 it is clear that there are possible circumstances that call for either licensing or spin-out company formation as methods for commercialisation. The OTT should therefore be prepared to understand spin-out company formation when circumstances arise allowing for establishing new companies that are formed specifically to develop and exploit IP. These new business ventures are called spin-out companies (Cook, 2007). In essence, a spin-out is

a new company that is formed: (1) by individuals who were former employees of a parent organisation, (2) a core technology that is transferred from the parent organisation (Steffensen, Rogers & Speakman, 1999).

Table 1: Selected Aspects Relating to Commercialisation Routes (licensing and spin-out company).

Commercialization Route	When to consider	Advantage	Disadvantage
Licensing	Evolutionary technology/ incremental Established markets and suppliers	Once the transaction is complete, less diversion Upfront and early revenue	Return can be long-term
Spin-out company	The technology needs further development to obtain "full" value New markets and/or more space for new suppliers More capital/more risk	Longer term, intimate involvement Potential for greater return Allows further development of early IP before "sale"	Time and resource intensive No early money High risk

Source: University of Southampton (2014).

The process for spin-out creation within the publicly financed research institutions is usually facilitated by OTTs. Pirnay, Surlemont and Nlemvo, (2003) further extended the spin-out company definition to "new firms created to exploit commercially some knowledge, technology or research results developed within a university". They also indicate the following as being main characteristics: new companies; created from universities; exploit knowledge produced by academic activities; a profit-making perspective. Pattnaik and Pandey, (2014) posit that, spin-out company characteristics are as follows: Firstly the parent organisation from which the innovation emerges has to be a university or academic institution, secondly the output that is a university spin-out has to be a separate legal entity which is not an extension or controlled body of the university, thirdly the new entity has to exploit knowledge produced from academic activities or academic pursuits and fourthly the spin-out company should be aimed at profit generation and commercialisation of technology.

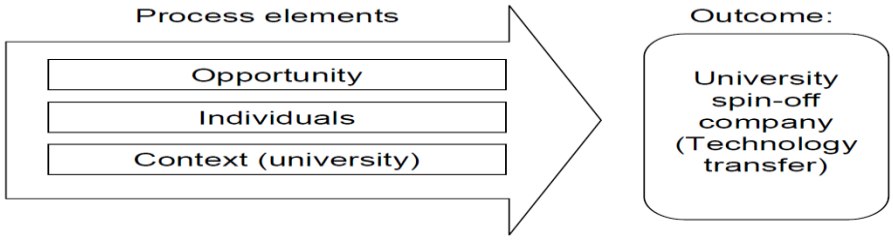
International historical trends show that spin-out company creation by OTTs has been on the rise (Djokovic & Souitaris, 2006). "In the United States of America (US), the annual number of spin-outs increased from 202 in 1996 and to 424 in the year 2001. In the United Kingdom (UK), a sharp rise of spin-out creation between 1996 and 2001 has been reported from an average of 94.8 % per year" (Djokovic and Souitaris, 2006). This rise in spin-out company formation suggests that OTTs internationally have considered this as a viable option for IP commercialisation. The assumption being that circumstances indicated on Table 1 had raised at the time Corsi and Prencipe, (2016) also make the same observation that publicly funded research institutions are choosing the creation of spin-out companies as a preferred route for commercialisation versus licensing whilst reflecting academic entrepreneurs as social capital. Academic/institutional entrepreneurship has somewhat become a trend due to publicly-financed research institutions such as universities have had increased difficulties in maintaining requisite funding levels (Lui and Dubinsky, 2000). In line with this academic/institutional entrepreneurship trend, spin-out companies have proven to be an important economic phenomenon (Di Gregorio and Shane, 2003).

Miranda et al. (2017) define academic entrepreneurship as the process by which an individual or group of individuals are linked through their work to a university or research centre by using knowledge created in their research to set up spin-out companies. They emphasise the importance of these spin-out companies as an instrument that contributes to the generation of businesses, the creation of jobs and maintaining the balance of the economic system, as well as having a positive influence on innovative processes. In the process reflecting that spin-out creation phenomenon as part of academic entrepreneurship, had help assist in establishing an estimated total of 1110 spin-off in Spain by 2012. From this, an observation can be made that academic entrepreneurship as a phenomenon can assist in playing a role in spin-out company creation. In an attempt to understand the spin-out company formation process, a number of consulted texts reveal certain models. Ndonzuau, Pirnay and Surlemont (2002) indicate that spin-outs are created over four stages. These

being: "(i) generation of business ideas from research, (ii) new venture projects out of ideas, (iii) launching of spin-out from projects and (iv), strengthening the creation of economic value by the spin-out company."

Furthermore, Roberts and Malone (1996) identified four principal entities involved in the spin-off process:"(i) the technology originator, the person or organisation that brings the technology from basic research through the stages of the innovation-development process to the point at which the transfer of technology can begin, (ii) the parent organisation in which the R&D is conducted by the technology originator, and that assists or restricts the spin-off process by controlling the intellectual property rights to the technology, such as through the parent organization's technology licensing office, (iii) the entrepreneur (or the entrepreneurial team), who takes the technology created by the originator and attempts to create a new business venture cantered on the technology, and (iv) the venture investor, who often represents a venture capital organisation that provides funding for the new company in return for partial equity ownership in the new company." Rasmussen, (2006) takes an entrepreneurial process view in approaching the context of spin-out company creation. Emphasis is made on the individual(s), the opportunity, the context, and the process over time as reflected in Figure 1.

Figure 1: The Entrepreneurial Process of Spin-Out Company Creation



Source: Rasmussen, (2006)

In dealing with the context related to an entrepreneurial process for spin-out company formation, Rasmussen, (2006) elaborates on three perspectives influencing the spin-off process as follows: Firstly, the development process of a technology or business opportunity from being an idea to become an independent new venture. Secondly, the role of the individual (s) or entrepreneur (s) in the business development processes. Thirdly, the role of the context and how this influences the venturing process. Ultimately stating that within the university spin-off literature, special emphasis has been on the institutional context within a university and how this setting influences the business development process. Elpida et al. (2010) reconcile spin-out creation models as explained above (such as the entrepreneurial process model and the four-stage model of Ndonzuau, Pirnay and Surlemont, (2002). A further model is reviewed such as the Universidad Politecnica de Valencia (UPV) spin-out creation model. Stating that "on this model, the spin-off generation process is viewed as a process driven by the interaction of three elements: the entrepreneurs, the opportunity and the resources. These three elements at the first awareness or 'embryo' stage need to be combined by the entrepreneur's mind to create the fertile seeds of new ideas. These seeds are accumulated to a pre-incubator phase to concrete concepts, configuring the Cells of Opportunities (Coo)." From the models discussed above, Elpida et al. (2010) introduce their own model which integrates the above aspects of the entrepreneurial view and stages involved.

At the centre of the model being the entrepreneurial core however what gets introduced is the elements of the operational environment (available human capital, government policies and regulatory framework) and supportive structures (sources of capital and bridging institutions). Wnuk and Mazurkiewicz (2012), take a view of the spin-out creation process being either a downstream or an upstream model. The downstream model relates to four (4) stages that are: invention, incubation, seed-up and start-up. Stage one consists of the identification, assessment and protection of technologies with commercial potential. Stage two being the stage where business plans are drafted. The third stage being the phase of seeking business advice and initials seed funding. Stage four being the start-up phase entailing financial support for the venture to be formally incorporated, and spin-off startup process undertaken by means of prototyping, business models and markets validated. The downstream model on the other hand entails a reverse development from sales and services to innovation creation. This can be regarded as the opposite of the downstream model. In this model

the spin-out company is created with no core propriety technology on, so the company is launched to generate revenue for the development of internal research and development (R&D) infrastructure, which will then lead to new marketable inventions. In recent times, Berbegal-Mirabent et al. (2015) looked at factors that explain the creation of university spin-out companies by focusing on mechanisms that technology transfer offices (TTOs) and universities employ. These mechanisms include technology transfer activities that support spin-outs, normative frameworks, support infrastructures such as business incubators and science parks.

Finally, TTO staff's specialist technical skills assessment of the models involved in spin-out company creation as discussed by the authors above (Roberts and Malone, 1996; Ndonzuau, Pirnay & Surlemont, 2002; Pirnay et al., 2003; Rasmussen, 2006; Wnuk & Mazurkiewicz, 2012; Berbegal-Mirabent et al., 2015), it becomes clear that spin-out formation is a multi-variable aspect and can be complex to understand. A deeper look at the text of these authors mentioned above reveals that there are perhaps in one way or the other resources involved in spin-out company creation. For instance, Elpida et al. (2010) mention the human capital resource and financial resource in the operational environment and supportive structures respectively. Wnuk and Mazurkiewicz (2012), makes reference to financial resources in the form of seed funding on stage three and venture capital in stage four of their spin-out creation model. They also identify technological resources being central in their upstream and downstream model. Berbegal-Mirabent et al. (2015) deal with the aspect of physical resources in the form of support business incubators and science parks. Given that resources were identified as a pattern that seems to be common in the discourse of spin-out creation, an approach of visiting the resource-based view (RBV) theory of the firm was done starting from its pioneer Wernerfelt, (1984) to date.

2. Literature Review

Defining the Spin-Out Company: The literature reviewed in this study was based on understanding the Resource-Based View (RBV) theory in establishing factors that could influence the successful creation of spin-out companies by publicly financed R&D institutions. The spin-out companies considered were those created through the facilitation of a technology transfer office (TTO) in a publicly financed R&D institution. As a first point, spin-out Company working definition had to be established. This was done by looking at several authors that made attempts to define the concept of a spin-out company within the context of publicly funded R&D (Pirnay et al., 2003; Borges and Fillion, 2013; Pattnaik and Pandey, 2014). In defining the concept, there appears to be a pattern which reflects that the definition of a spin-out company is sometimes interchangeably defined with other concepts such as spin-off companies or university start-ups or academic enterprises.

When using these definitions interchangeably, Pirnay et al. (2003) reconciled these aspects and developed a working definition for this multi-facet concept. In their paper titled toward a typology of University Spin-off, Pirnay et al. (2003) define spin-off companies as "new firms created to exploit commercially some knowledge, technology or research results developed within a university." Pattnaik and Pandey, (2014) have made their contribution to the academic spin-out company definition by stating that its characteristics are as follows: Firstly the parent organisation from which the innovation emerges has to be a university or academic institution, secondly the output that is a university spin-out has to be a separate legal entity which is not an extension or controlled body of the university, thirdly the new entity has to exploit knowledge produced from academic activities or academic pursuits and fourthly the spin-out company should be aimed at profit generation and commercialisation of technology.

Theoretical Framework

General Overview of RBV Theory: The Resource-Based View (RBV) theory examines the success of an organisation to gain a competitive advantage as a result of a bundle of resources that it owns (Wernerfelt, 1984). The concept of studying the firm as a set of a wide variety of resources dates as far back as Penrose (1959), when she stated that "a firm is more than an administrative unit; it is also a collection of productive resources the disposal of which between different users and over time is determined by administrative decision. When we regard the function of the private business firm from this point of view, the size of the firm is best gauged by some measure of the productive resources it employs." However, it was Wernerfelt (1984)

who came up with the term research-based view (RBV) on his paper (A research-based-view of the firm). This paper researched more on the relationship between profitability and resources and furthermore how firms can manage their resource position over time. Wernerfelt (1984) further explored the usefulness of analysing firms from the resources side, rather than from the product side. In dealing with resources certain aspects were examined such as: looking at firms in terms of their resources, identifying the types of resources that can lead to profits which are higher, striking a balance between exploitation of existing resources and developing new ones and purchasing of a bundle of rare resources. Barney (1991) further contributed to the resource-based view theory by stating that in essence the RBV theory indicates that typical resources of a firm are assets, capabilities, organisational attributes, information and knowledge. In a way of consolidation, resources can be bundled as either tangible or intangible.

Once these resources are established only then can a firm/organisation create strategies to improve its competitive and sustained advantage, Barney (1991). Given the debate above, it becomes apparent that resources and capabilities etc. are of importance in understanding organisational outputs or more importantly how organisations use their resources and capabilities to achieve a competitive advantage. Amit and Schoemaker (1993) indicate by definition that resources are stocks of available factors that are owned or controlled by the firm, that are converted into final products or services. Capabilities, on the other hand, are a firm's capacity to deploy resources. This deployment can be in combination, using organisational processes, to produce the desired effect. This statement then makes it clear that there is a distinction between resources and capabilities. Grant, 1991 makes the distinction that although resources are the source of a firm's capabilities are the main source of its competitive advantage.

RBV Theory in Spin-Out Company Creation: Some of the relevant factors that could influence the successful creation of spin-out companies that were identified in this literature review taking into consideration RBV as discussed by several authors were: Venture capital, intellectual eminence, university policy and commercially oriented research were resources discussed by Di Gregorio & Shane (2003) in their article "why do some universities generate more start-ups than others?" Research and Development (R&D) revenue, faculty quality, university patents, technology transfer office and venture capital munificence were the five particular resource sets discussed by Powers & McDougall (2005). Lockett et al. (2003) assessed the impact of university resources and routines/capabilities on the creation of spin-out companies, these being intellectual property protection, the business development capabilities of technology transfer offices and the royalty regime of the university. Whilst Markman et al. (2005) looked at the type of organisational structure as a resource in influencing spin-out creation. Seemingly Powers & McDougall (2005) touch on venture capital aspects. Finally, Walter, Auer and Ritter (2006) looked at the impact of network capability (NC), defined as a firm's ability to develop and utilize inter-organisational relationships, and entrepreneurial orientation (EO) on organisational performance.

From the numerous list of relevant spin-out creation success factors discussed, it was clear that a consolidated list had to be created to reduce the resources considered to be success factors for spin-out company creation into a workable number. A consolidation of similar factors that featured widely was done to reduce them to the prominent list cited on the study of Gómez-Gras et al. (2006), who studied and summarised these resources relating to spin-out company creation from a RBV perspective as follows: intellectual eminence/faculty quality, patent importance, total research income/expenditures, expenditure on IP protection, formal venture capital available at the university's geographical area, capability to access to external finance, industry funding of university research/revenues, licensing/technology transfer policies and strategies, OTT archetype, university-affiliated incubators, university venture capital funds, experience/age of OTT, number of OTT staff and business development capabilities including NC and EO by (Walter et al., 2006).

Success Factors for Creating Spin-Out Companies: Given that a number of authors as indicated above in the literature had some similarities and in some instances had differences, it was deemed fit to place these factors into a more structured list. A two (2) step approach was used in formulating a final list of fifteen (15) success factors by firstly combining similar factors for a relevant meaning and secondly discarding non-significant factors.

Researcher's Quality: This factor was a combination of the wording "intellectual eminence" and "faculty quality." From a South African publicly financed R&D perspective it would be relevant not to restrict the study to university faculty but rather include science councils of which then faculty quality would not apply. By not restricting the definition to university faculty, research/researcher quality would be deemed fit to accommodate science councils. Also, taking into consideration that the research is conducted by researchers, therefore it would be necessary to understand the researchers behind the research. The quality of research and the researcher would cover the "faculty quality" outside of a university setting.

Intellectual Property (IP) Strength: This factor was derived from the patent importance factor as listed by Gómez-Gras et al. (2006) who discarded this factor stating that "Powers & McDougall (2005) did not prove patent importance to be predictive of a number of start-ups". However, what seems to be not looked at was intellectual property as a whole which extends beyond patents to include trademarks, design rights, trade secrets/know-how, copyright etc. The assumption here is being that there would most likely be value in assessing the IP strength through including other types of IP. In the South African publicly finance R&D context, taking into consideration the IPR-PFRD Act, it is necessary to note that this defines IP as "any creation of the mind that is capable of being protected by law from use by any other person, whether in terms of South African or foreign intellectual property law and includes any rights in such creation, but excludes copyrighted works such as a thesis, dissertation, article, handbook or any other publication which, in the ordinary course of business, is associated with conventional academic work."

Research Income: This factor considered that total research income/expenditures could be ambiguous and therefore the expenditure part was discarded to only focus on the income side. This would take into consideration that any income that a research project brings would have to result in its expenditure. Publicly financed R&D institutions in SA are involved in a variety of contract Research and Development (R&D). As per Gómez-Gras et al. (2006) the following emerges on research income. Powers & McDougall (2005) found industry R&D revenues, was positively predictive of both the number of start-ups formed and the number of initial public offering (IPO) licenses. Di Gregorio & Shane (2003) don't find adequate support for the argument that industry funding of university research makes start-up activity more likely.

Intellectual Property Protection Funding: Given the case that in this study protectable IP will be looked at as a whole, its expenditure on protection would be necessary to be examined. Liu and Jiang (2016) investigate the effects of bank equity connections and intellectual property protection on enterprises' innovation behavior, and the regulating effect of intellectual property protection on the relationship between bank equity connections and innovation. Stating that bank equity connections and intellectual property protection improves innovation performance.

Venture Capital Funding: This factor is derived from the factor titled "formal venture capital funding available at the university's geographical area" as stated by Gómez-Gras et al. (2006). The element regarding the geographical area is discarded given that in South Africa it is observed that venture capital funding is not necessarily geographically bound in provinces but spread across Southern Africa as indicated on (www.savca.co.za) where they state that they promote transactional venture capital and private equity investments throughout Southern Africa. The element regarding university was also discarded due to the study being targeted at publicly financed R&D institutions which include science councils. For example, Powers & McDougall (2005) indicate that there is evidence that universities situated in areas with abundant venture capital investment formed a greater number of start-ups. From this perspective, it would be interesting to find out the South African perspective.

Capability to Access to Third Stream Income: This factor is based on the combination of the factors "capability to access external finance and "industry funding of university research/revenues" Gómez-Gras et al. (2006). In a university context, the income generated from sources other than government subsidies and tuition or student fees are generally referred to as third steam income (MacGregor, 2008). With the understanding that from a RBV perspectives, this capability would be existing in higher education institution's TTO or science councils for that matter.

Technology Transfer Policies and Strategies: This factor is derived from the factor "licensing/technology transfer policies and strategies." The licensing component was excluded in the definition as in publicly financed R&D institutions licensing could be a policy or a strategy in itself. Roberts and Malone (1996) deals with these aspects extensively and reflects the importance of policies and processes in the spin-out company creation process. Within the technology stations are high-tech equipment forming part of the infrastructure (www.tia.org.za/tech-stations).

Technology Transfer Structure: This factor was defined by taking into consideration that a technology transfer office either exists as departments within institutions or subsidiary companies. Importantly reflecting that a subsidiary TTO the ability to commercially exploit the opportunities more efficiently than inside the university setting. The OTT framework was as published by the National Intellectual Property Management Office (NIPMO) was a document of consultation as which deals with factors such as OTT staff, model, structure, vision and mission). Regarding the revenue model**,** the OTT framework reflects contract R&D, Licensing (royalty revenue) and Start-up activity. This indicates that potential focus on start-up activity could lead to a propensity for spin-out company creation. Regarding vision and mission, there is a strong emphasis on the publicly financed R&D organisation (university or science council) vision and mission and its alignment to the TTO. Taking into consideration the IPR-PFRD Act objective relating to ensuring that IP emanating from publicly financed R&D is identified**,** protected, utilised and commercialised for the benefit of the people of the Republic of South Africa.

Access to Incubation Facilities: This factor took into consideration that most incubators in South Africa are mainly managed by the Department of Trade and Industry and are not necessarily linked specifically to individual universities although they could potentially benefit these incubators are found on (www.seda.org.za).

Entrepreneurial Orientation: This factor is influenced by the Walter et al. 2005 study which indicates that entrepreneurial orientation has positive effects on spin-off performance. Finding that it has a highly significant directs effect on the realization of competitive advantages. Concluding that it can preserve a spin-off's existence attract customers, and improve the organization's reputation as a competent technology provider. Ultimately this talks to the role of the individual(s) or entrepreneur(s) in the business development process of a spin-out as indicated by Rasmussen, (2006).

Business Development Capability of TTO Staff: Business development capabilities of TTO staff are identified as important by the NIPMO OTT framework and are included for that reason. These business development capabilities being technology assessment, drafting market reports, analysing market structures that the institutional IP can be licensed to, reviewing industry value chains, drafting commercial strategies for disclosed inventions, business plans for IP with spin-out potential and creating spin-out companies.

Access to Technology Stations: Technology stations have a presence in a South African publicly financed institution in order to assist in the commercialisation of research. According to the Technology Innovation Agency (TIA) website technology Stations support industry in diversified sectors, ranging from agro-processing, chemicals, clothing & textile, automotive industry and tooling Sector. These centres are world-class service providers of Engineering services to Technology based SME's, which are provided by technical experts from various universities and industry, with the requisite skills and expertise. The assumption here that publicly financed R&D institutions could have access to technology stations as a physical resource that could potentially assist with the process of spin-out company creation.

Type of Technology: Assessing whether the technology is based on radical (different from prior solutions) or incremental (makes a relatively minor change from existing practices) Schilling, 2010. Furthermore, Clarysse et al. (2005) contribute to the literature on university spin-offs by exploring how different characteristics in the technological knowledge base at start-up influence spin-off performance. This is done by them looking at technologies under the categories relating to the scope of technology, the newness of the technology, tacitness of the technology and relatedness of the technological knowledge. Whilst Renault et al. (2016) emphasizes that the technological resources category refers to the basic skills and technologies specific to each company. Indicating that technology-based spin-out companies has a variety in their degree

of innovation and technological scope, the nature/intensity of their R&D activities and positioning in the product development cycle.

Stage of Development of the Technology: Assessing if it is early or late stage technology. One way of assessing this is by looking at Renault et al. (2016) who cited the stage of technology in relation to the type of product/service the spin-out company provides. For example, service-oriented forms tend to utilise customised consulting and R&D services stage technology. Whilst product oriented firms tend to utilise technologies at a mature stage and tested in the market being part of the production.

Number of OTT Staff: Regarding staff, the OTT framework examines the staff component of the technology transfer office elements such as skills set, staff size and the role these individuals play in the TTO. Inference can be made that staff can potentially play a vital role in the spin-out creation process should they be aligned to tie objective.

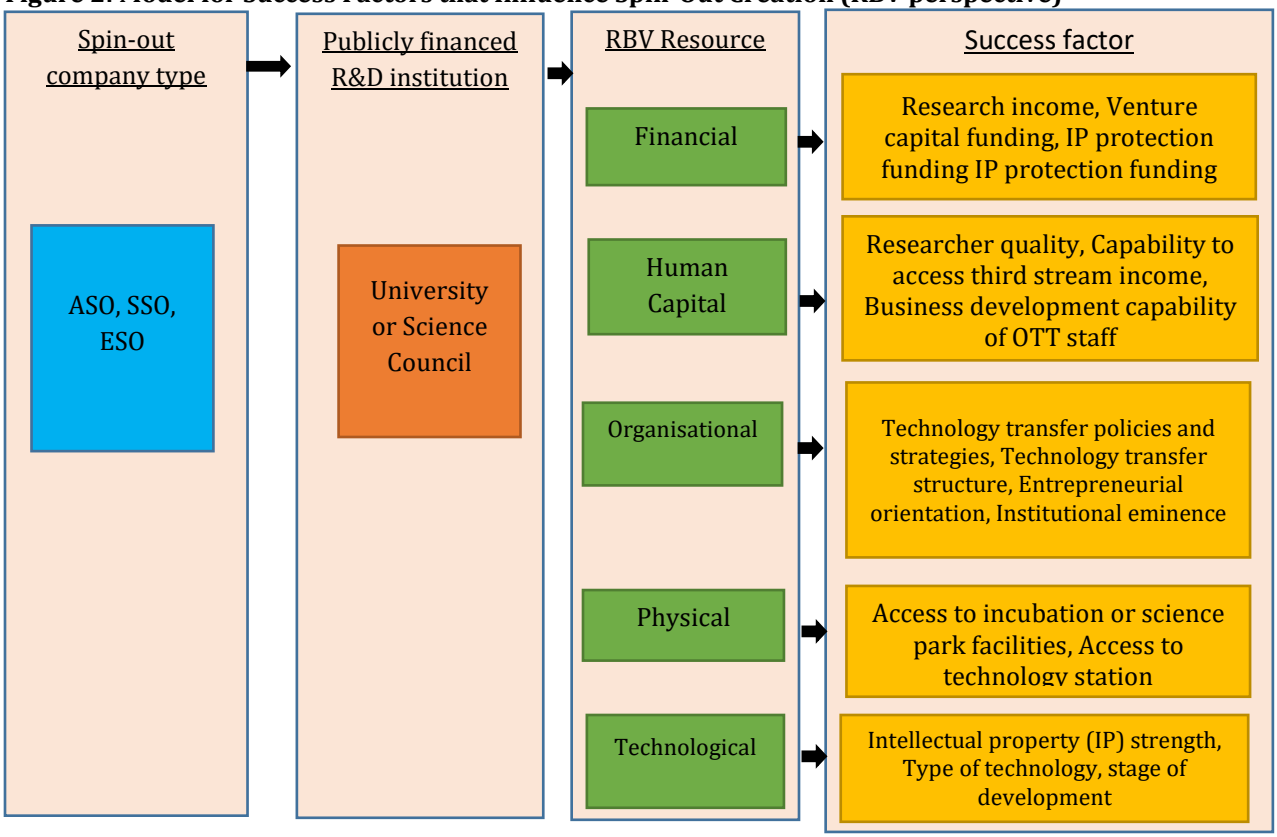
Linking RBV Resources to Success Factor for Spin-Out Company Creation: Different authors have categorised RBV resources differently, although somewhat related (Barney, 1991; Landry, Amara, Rherrad, 2006; Renault et al., 2016). Researchers using a resource-based view of the firm have, in general, grouped resources into the five (5) categories: financial, physical, human capital, organisational and technological. Table 2 links the factors discussed in section 2.3 to the identified resource categories. When assessing success factors there has to be an indication of whether these are influenced by which resource categories. A model was created in order to systematically understand the link between the RBV theory and the potential success factors for spin-out creation. Four elements were taken into consideration i.e. (the spin-out company type, the type of publicly financed R&D institution, the RBV resource and the success factor). Figure 2 below attempts to depict this concept graphically:

Table 2: Linking the Selected Fifteen (15) Success Factor to the Five (5) RBV Resource Categories

Resource Category	Success Factor
Financial	Research income
	Venture capital funding
	IP protection funding
Human Capital	Researcher quality
	Capability to access to third stream income
	Business development capability of OTT staff
Organisational	Technology transfer policies and strategies
	Technology transfer structure
	Entrepreneurial orientation
	Institutional Eminence
Physical	Access to incubation or science park facilities
	Access to technology station
Technological	Intellectual property (IP) strength
	Type of technology
	Stage of development of the technology

Source: Authors own table (interpretation of linking success factors to RBV) considering the following references (Barney, 1991; Landry, Amara, Rherrad, 2006; Renault et al., 2016).

Figure 2: Model for Success Factors that Influence Spin-Out Creation (RBV perspective)



Source: Authors own figure (interpretation of linking success factors to RBV). When taking into consideration the model above, it was relevant to place the type of a spin-out company at the beginning of the chain. In this instance contextualising if the spin-out company is an Academic Spin-offs (ASO), Student Spin-Offs" (SSO) or Entrepreneurial Spin-Offs (ESO).

3. Research Methodology

Research Design: The study utilised a mixed methods research approach (both quantitative and qualitative). The majority of the questions were closed-ended (to probe quantitative data) and few open-ended (to probe the qualitative data).

Population and Sampling: The main sampling approach was non-probability sampling. This approach was chosen because it provided a range of alternative techniques to select samples based on the subjective judgement of the researcher, Saunders, Lewis and Thornhill, (2009). Non-probability sampling can be categorised into quota, purposive, self-selection, convenience and snowball sampling. For this study a purposive sample was selected. The target population size was 49 and this also part of the sample. The study therefore considered this as a census where the size of the population is equal to the sample size. This form of the sample is often used when working with very small samples. Furthermore, this method involved identifying and selecting individuals or groups of individuals that were knowledgeable or experienced (Cresswell and Plano Clark, 2007). The process for sampling step by step is as follows: (a) the target population was defined (b) the sample was determined and (c) the final sample was sent out questions.

Data Collection Approach: Institutions that were involved in spin-out company creation. The respondents were given a week turn-around time to respond to the researcher. Of the 49 distributed, 17 were returned.

Questionnaire: The data collection instrument consisted of questions (open-ended and close-ended) assessing different aspects relating to respondents deemed success factors in the spin-out company creations

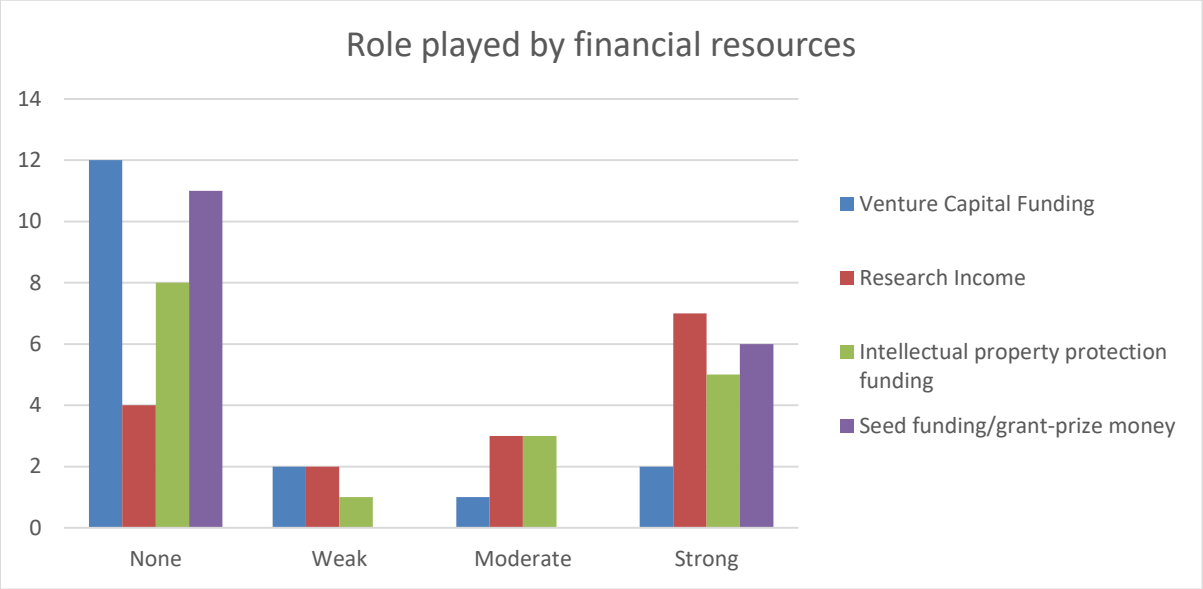
process. The questionnaire structured for self-administration. The questionnaire was designed by means of first laying out the demographical data of the respondents, followed by having sections dealing with the categories relating to RBV factors that played a role in creation of the spin-out company (close-ended) and lastly by having a section asking opinions of the RBV categories that played a role in the creation of spin-out companies. The main variables being the RBV factors in spin-out company creation.

Data Analysis: The study used descriptive statistics rather than inferential statistics in order to describe the facts through graphs and tables.

4. Results and Discussion

Financial Resources: The data on this study reflected that financial resources as a whole do play an import role in the creation of spin-out companies as indicated in the figure below:

Figure 3: Role Played by Financial Resources



This is consistent with Landry et al. (2006) who found in general that the likelihood of spin-out company creation increases by the availability of financial resources. Landry et al. (2006) however make a distinction from the source of funding i.e. grant funding vs. private sector funding. Indicating that grant-funded R&D can have a positive effect on launching spin-outs for example. This thesis however did not identify aspects such as by Di Gregorio & Shane (2003) who on the one hand indicate from a financial resources perspective that types of private equity (e.g. angel capital) might influence start-up activity but on the other hand the amount of formal venture capital available in a particular location has no significant effect on spin-outs once university technology production is measured. This is a reflection of the diverse nature of this resource category. It can be concluded that the role that some of the individual financial resources played in the creation of spin-out companies is reflected on two opposite ends. On the one hand, some respondents felt that for example venture capital funding played no role in the creation of spin-out companies while a few felt it did play a role and a very strong role for that matter. Wnuk and Adam (2012) identified the importance of financial resources by placing them on stage three (seed funding) and stage four (venture capital) in their spin-out creation model. From the opinions of the respondents, the identified financial resources are important in spin-out company creation in that they are perceived to be third after scientists' availability, and technology strength. Most importantly, funding can assist to develop the market for the opportunity. In the absence of financial resources, the appetite to spin-out the technology would be low. In addition to technology development funding, instruments such as seed funding were made available, albeit that the criteria differed from opportunity to opportunity.

Research Income: Research income played the most important role of all the financial resources. Powers & McDougall (2005) found industry R&D revenues (which for the purpose of this research has been termed research income), was positively predictive of the number of spin-outs formed.

Venture Capital Funding: This factor played the least important role in spin-out company creation. It is important to note that Powers & McDougall (2005) indicated that there is evidence that universities situated in areas with abundant venture capital (VC) investment formed a greater number of start-ups. The cause for this result could be related to the observation that VC funding is minimal in SA and most probably in its infancy compared to established markets such as America and Europe.

IP Protection Funding: The results of this study place IP protection funding to be the second least important resource which can then be not that much in line with Lockett et al. (2003) who found expenditure on IP protection to be consistently significant in the creation of university spin-offs that attract external equity finance.

Seed Funding/Grant Prize Money: Interestingly it is worth noting that seed funding/grant-prize money was not a factor or resource stated upfront on the questionnaire but rather it emerged on the "other" section and formulated as a theme. More importantly this factor or resource emerged as the second most contributing aspect in this process. This could suggest that this is an SA unique phenomenon, given that over the past years institutions such as the innovation hub have been running competitions linked to prize money with the aim of developing start-ups (www.theinnovationhub.com). From the opinions of the respondents it seems that there needs to be a distinction between two broad categories of financial requirements namely: technology development funding & new venture creation funding. Without adequate technology development funding, new venture creation funding would not even have been a prospect. Access to research funding during the background research, and access to seed funding for the spin-out process, makes it possible to explore the commercial viability of the invention by taking the technology from lab prototype to early product, can make it possible for spin-out companies to access third-party funding. Ultimately financial resources can be considered the go/no-go in determining the decision to spin-out even if all other requirements were in place. In some instances, spin-out companies can have the ability to return research funding to the organisation and this factor can influence somewhat the decision on whether to spin out, or enter into a license.

Human Capital Resources: Firstly, on the issue of assessing human capital specifically "researcher quality", Powers & McDougall (2005) indicate that this is a critical human capital resource for the development of sophisticated, cutting-edge technologies. Going even further to state that if the publicly financed R&D institution acquires it over time this becomes likely a source of competitive advantage. This is fundamentally what the RBV theory is about as defined by Barney (1991). Consistent with the literature, the findings of this study reveal that "researcher quality" plays the strongest role of all the human capital factors that were being reviewed. Secondly, on the issue of "business development capability of TTO staff", Locket et al. (2003) indicates the importance of a university having appropriately experienced staff in a technology transfer office to perform the function of opportunity recognition. The data on the study suggests that this function varies in the role it plays as a human capital resource across the lines of being weak to strong. Powers & McDougall (2005) also affirm that as TTOs gain experience, they are more willing to consider equity in start-up companies. What is important to note is that during spin-out company formation, multiple personnel from different roles in the publicly financed institution can be involved. These key human capital resources can either be in the publicly financed R&D institution or external. They can perform a wide variety of functions such as technical support, new IP generation, and marketing of the technology. In some cases, the combination of TTO staff with researchers being involved in spin-outs can allow researchers to learn the commercialisation aspects together with TTO staff, as a business case had to be developed. The themes based on the respondent's opinions are reflected below:

Table 3: Human Capital Resources Themes

Human Capital Resources Themes	
Internal facilitators	Internally, experienced facilitators can make it possible to coordinate the spin-out company creation process. These facilitators could be personnel in the organisation such as Vice Chancellor's sitting on the board or technology transfer professionals playing a surrogate entrepreneur role
Researchers and academics	Other personnel that could be involved in the creation of the spin-out company are the researchers such as academics and students (especially postgrad) which form the core of the R&D team. This can allow for continued R&D and subsequently lead to improvements to and new technologies to be licensed further to the spin out. As a whole, access to high-talent human capital was instrumental to successfully spinning out the technology
TTO staff	Respondents seem to comment that it is evident that the skills within the TTO can enable the formulation of the business case of which researchers would not be able on their own to package the opportunity in a manner that the case could be made for a new venture. It is key that in their involvement, the personnel such as the TTO staff are empowered to make decisions and should get very involved in the detail of the business, particularly through the difficult start-up period
External entrepreneurs	Externally, entrepreneurs can be roped in who have the skill to start and run a business and act as CEO. These individuals are extremely important. There should be an entrepreneurial champion as such. Entrepreneur in resident programs can assist in this regard as a pool of entrepreneurial resources externally.

Source: Author's Concept

Organisational Resources: Roberts et al. (1996) indicated the importance of technology transfer policies and strategies together with structures in the spin-out company creation process. Reflecting on how the change on or the other aspect can alter the dynamics associated with the spin-out company creation process either for the positive or the negative. An interesting finding is made on this issue around organisational resources which is that the highest impact can be made by combining all the four (4) organisational resources identified for this study i.e. technology transfer policies, technology transfer structure, entrepreneurial orientation and institutional prestige. On the other hand, it is to be noted that technology transfer policy as a stand-alone organisational resource could influence the creation of spin-out companies. But what is critical is to note that the combination of technology transfer policy and structure play the most important role according to the respondents in this study. When assessing the element of institutional prestige, Di Gregorio & Shane (2003) argues that institutional reputation makes it easier for researchers from more eminent universities to start companies to exploit their inventions than researchers from less eminent universities for example when it comes to the aspect of entrepreneurial orientation, it found that it is the second most important stand-alone resource.

Technology Transfer Policies and Strategies: These played the most important role in spin-out company creation. From RBV perspective policies and structures could be related to capabilities i.e. a firm's capacity to deploy resources (this deployment can be in combination, using organisational processes, to produce the desired effect). It should be noted that in the questionnaire there was no specificity on what the technology transfer policies and strategies are in depth. So, depending on the respondent's positive/negative experience then can this be understood? Under the assumption that the thinking upon responding was a positive policy/strategy in mind, then these results are consistent with for example the findings of Di Gregorio & Shane (2003) who for example found that a positive policy such as allowing for inventors' share of royalties and a willingness to make equity investments in start-up companies increase spin-out company creation.

Technology Transfer Structure: Technology transfer structure played the least important role on par with institutional prestige, but not to say that it did not play a significant role because it is fairly strong. To a certain extent element of this resource are in line with Markman et al. (2005) who found that the for-profit

technology transfer office structure played a positive role in the transfer of new technology via new venture formation. This is of course with the assumption that this was the structure considered. In the SA context, as per the OTT framework by NIPMO, it is worth noting that other structures exist such as department/office within the institution, a subsidiary company of the institution or regional office.

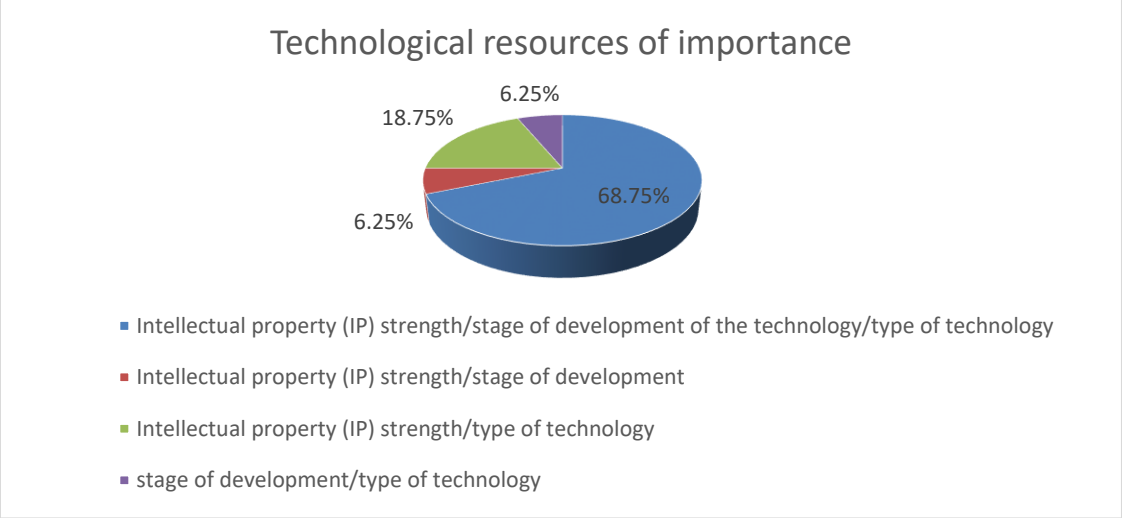
Entrepreneurial Orientation: This factor reflects as the second most important factor in the spin-out company creation process consistent with Walter et al. (2006).

Institutional Eminence: Least important and contradictory to Di Gregorio & Shane (2003) who found that more eminent universities have greater start-up activity than other universities.

Physical Resources: Physical resources identified in the literature review seem to not play much of a strong role in the spin-out company creation process. This prompted to visit more literature and it was found that other authors seem to suggest that this is the case. For example, the research of Clarysse, Wright, Lockett, Van de Velde and Vohora (2005) shows that the incubator model results in fewer spin-outs. What is of interest is that this thesis found that a category of "lab facilities" to be of great importance. To quote directly from a respondent: "Availability of facilities to manufacture the product & test the market directly from an R&D institution pre-incorporation of a new venture." Laboratory space and equipment use of biotech laboratory and analytical equipment**.** The data also indicated that a combination of incubators and science parks play just as an important of a role as lab facilities with both coming in at 25% each. In the opinion section, some comments were made around the issue of incubation being either internal or external. And some suggestions were made for example on how the incubator inside the organisation can make it possible to initially incubate the technology in a research lab. This can allow for the spin-out company to grow in a very cost-effective way, and close to the university staff involved in the spin-out. Also, internal incubation could include mentoring and business coaching. Finally, physical resources as a whole help to de-risk the technology, they supply supportive testing/development capacity for the start-up and help avoid the need for early capital expenditure. Without the physical resources, it could be difficult to make a success out of a spin-out company. On the other hand, however it is important to note a respondent indicated that physical resources were not important at all to their spin-out company creation.

Technological Resources: The technological resource category in this study strongly suggests that the combination of intellectual property (IP) strength, stage of development of the technology and type of technology play an important role. Furthermore, this combination is regarded as a strong indicator of whether spin-out company creation will occur or not as shown. It is to be noted that it scored the highest percentage out of all the studied resource categories, suggesting that successful spin-out company creation is perhaps stronger and mostly influenced by the combination of resources in the technological category. The opinions made on this section also went steps further to clarify which types of technology are likely to influence this process and which ones don't. What was not conclusive was the issue of IP strength as a stand-alone resource. From the respondents, two extreme views emerged. On the one hand, some respondents emphasised the importance of IP strength while some respondents indicated that the spin-out did not depend on IP but rather what is important here is getting the product to market. It is important to note that "Powers & McDougall (2005) did not prove patent importance to be predictive of a number of start-ups" as stated by the Gómez-Gras et al. 2006. Ultimately the technological resources should have elements of quality, credibility and be of good status. Even to the extent that comments were made indicating that without technological resources there would have been no spin-out company in the first place. This seems to be consistent with the results of this study reflecting the combination of technological resources.

Figure 4: Important Technological Resources that Played a Role in Spin-Out Company Creation



5. Conclusion

The findings in this study about success factors for spin-out company creation closely resemble the RBV theory approach to understanding spin-out company creation as per the literature reviewed. In some instances, it agreed with the literature reviewed and in some instances, it did not. The gaps that existed were identified. Some of the notable important finds are in connection with: All five resource categories i.e. (financial, physical, human capital, organisational and technological) through the sub-category factors do play a role (positive or negative) one way or the other in the process of spin-out company creation as indicated in section 4. Lab facilities within publicly financed R&D institutions and their ability to help de-risk technology development. This is discussed in section 4 indicating that they supply supportive testing/development capacity for the start-up and help avoid the need for early capital expenditure. The highest indicator coming from the combination of technological resources (IP strength, stage of development of the technology and type of technology) as reflected in section 4.

Implications for Policy Makers and Technology Transfer Practitioners: With the advent of the IPR-PFRD Act's requirements of commercialisation and use, spin-out company creation is becoming more and more important. This study will allow for policymakers and technology transfer professionals, especially commercialisation practitioners to have a point of reference for this aspect (spin-out company creation) within the South African context.

Limitations: While this study provides useful insights into the successful creation of spin-out companies by publicly financed R&D institutions, it is not without its limitations. A first potential shortcoming would relate to the resource category variables. For example, more variables could have been added to each resource categories, but this would have potentially caused an endless list, hence the category approach was chosen. This then provides an opportunity for further research on other potential RBV categories within this aspect of spin-out company creation. The research narrowly focused on resources and in some instances capabilities, but did not divulge deep into dynamic capabilities. No assessment was made on understanding the reconfiguration of resources within firms. This places an opportunity for further research.

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Cash Flow Volatility and Firm Investment Behaviour: Evidence from African Listed Firms

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Abstract: This study explored the association between cash flow variability and investment behaviour of African listed firms. The research employed a dynamic panel data model estimated with the difference and system Generalised Method of Moments estimation techniques on a panel of 815 listed African non-financial firms. The estimation techniques control for unobserved heterogeneity, endogeneity, autocorrelation, heteroscedasticity and dynamic panel bias. Two different measures of volatility were employed; the exponentially weighted moving average, a forward-looking measure that captures innovations in cash flow volatilities and the coefficient of variation that captures the mechanical effect of the possible relation between cash flow levels and volatility. The results obtained suggested that cash-flow volatility is associated with average lower investment in African firms. These findings show that not only cash flows are an important determinant of investment decisions, but the variability of the cash flows also has a significant bearing on the investment levels of African firms. Cash flow volatility has a significant negative impact on investment even for firms with higher cash flows and unconstrained firms. African firms should not only aim at achieving higher cash flows, but the stability of the cash flows is equally important to sustain solid investment levels.

Keywords: *Cash flow Volatility, Investment, Generalised Method of Moments, Africa*

1. Introduction

Cash flow is the lifeblood of any firm as is blood to the heart. Firms in Africa and other developing economies suffer unhealthy cash flow streams and liquidity challenges accentuating financial constraints. Cash flow shortages and volatility may propel budgets into disarray, deter capital expenditures, disrupt production, or delay debt repayments (Minton & Schrand, 1999). Cash flow variation influences the firm's financial behaviour and financial commitments (da Costa Moraes, Nagano, & Sobreiro, 2015). Low cash flows imply financial constraints and thus impacting on t+he investment behaviour of such firms. As a result, it is essential to examine the effect of cash flows on investment given the inseparability interplay among these financial pillars. The effects of financial "constraints on firm behaviour and the manner in which firms perform financial management are central areas in corporate financial management. The Keynes school of thought argues that if a firm has unrestricted access to external capital, such a firm is financially unconstrained there is no urgency to safeguard against future investment needs.

The literature on the impact of financial constraints on the behaviour of firms has traditionally focused on corporate financial constraints and firms in developed economies. There is persistent behavioural and structural heterogeneity between firms in developing and developed economies, resulting in diverging economic and financial implications for firms' fundamentals. Financial constraints will vary with the availability of internal funds, rather than only with the availability of positive net present value projects (Minton and Schrand 1999). To the best of the researcher's knowledge little or no studies have been undertaken in the context of developing economies such as in Africa on whether cash flow volatility influences firms to time their investment decisions or should they decrease their investment (Amo Yartey, 2011). Accordingly, the need exists to examine the influence of financing friction on investment by comparing the empirical sensitivity of cash flow to investment across firms with evidence from Africa a developing economy." This study contributes in a number of ways to the literature on cash flow volatility and firm investment behaviour. First, the paper offers new evidence on cash flow volatility and firm investment behaviour in developing economies/markets.

The majority of the existing studies does not provide any developing market evidence, despite the fact that firms from developing markets are increasingly occupying a significant role in the world economy (Alfaro, Chanda, Kalemli-Ozcan, & Sayek, 2004). Second, from a methodological perspective, the current research improves on previous work by utilising a dynamic panel data model and the two estimation techniques: the difference and system Generalised Methods of Moments (GMM) to control for heterogeneity and endogeneity.

The results showed evidence that higher cash flow volatility is associated with average lower investment in African listed firms. Controlling for financial distress, the availability of internal funds and growth opportunities the volatility of cash flow remains a significant determinant of firm investment. Previous studies reveal that the level of cash flows determines the firm's investment power and ability (Donaldson, 1964; Myers and Majluf, 1984; Booth, 2006). These studies emphasised on the importance of high cash flows for firms. This study also contributes to the literature by exploring evidence on how the volatility of these cash flow impact on investment. Firm investment behaviour is not only dependent on the altitude but the stability of cash flow also has a significant bearing on discretionary investment. Firms should also pay attention to maintaining cash flow stability not only higher cash flows.

The rest of the article is structured as follows: Section two expounds the theoretical aspects of cash flow and firm investment; Section three describes the research design and methodology; Section four presents the results and findings; Section five explains the limitations of the study and areas for further research. Section six concludes this article with a number of concluding remarks.

2. Cash Flow Volatility and Firm Investment Behaviour in Africa

Cash flow stream is fundamental to investors, creditors, and rating agencies inter alia. Investors pay attention to cash flow for investment decision purposes, creditors are concerned with solvency decisions of the firms they extended credit to. Yuan and Motohashi (2014) explained that cash flow directly measures the operational ability of the firm to meet its day-to-day financial commitments. In conventional finance theory, the discounted value of all expected future cash flow theoretically equates to the intrinsic worth of a firm. Yun et al. (2015) posit that cash flow prediction is of essential value to investors, analysts and managers. Firms with more uncertainty in cash flow will be associated with more risk, calling for a higher discount rate yielding a lower firm value. In this regard, firms generating high and stable cash flow are regarded as more valuable than low cash flow firms. Most African firms are crippled with low cash flows coupled with high volatility in cash flow streams due to unstable economic and political environments (Monga & Lin, 2015). African firms operate in extremely harsh and challenging environments with high levels of volatility, inadequate inputs, uncertain basic goods supply such as electricity and water (Bigsten & Söderbom, 2006).

Monga and Lin (2015) highlighted that African firms face too much volatility in their cash flows mainly due to fluctuations in demand, irregular payments from customers, volatile operations and prices arising from unstable exchange rates and political atmosphere. Volatile operating environments in these economies raise the risk premium and increase the threshold return that is necessary on triggering investment, low real returns and volatile cash flows in African firm scares investors away, thereby lowering investment. Gwatidzo and Ojah (2009)) document that African financial markets are weak with limited long-term borrowing and lending. The limited credit supply affects the firms to expand the supply capacity derailing investment in African firms. Most African firms are trapped in a vicious cycle of stagnation. Firms in Africa are currently unable to hedge against currency and external fluctuations thereby creating more volatility on their operations and cash flows generating poor performance-limiting investment (Bigsten & Söderbom, 2006). African firms are producing lower output levels which are leading to higher inefficiency levels (Monga & Lin, 2015). Monga and Lin (2015) found that African firms face similar constraints (of limited access to credit, limited goods market and input shortages) compared with other developing countries in general, however the impact of the constraints different on African firms. Access to credit depends on firm size.

Small firms face numerous challenges in accessing funds (Bigsten & Söderbom, 2006). Söderbom, Teal, and Wambugu (2005) found that two-thirds of the small firms appear to be credit constrained compared with 10% of large firms appearing to be credit- constrained. Most African economies are dominated by the informal small firms with limited access to credit drawing back investment. Investment is stagnant and insignificant, and the economies of these countries are not growing. The European Parliamentary Research Service (EPRS) reported economic stagnation in most countries in Sub-Saharan African (SSA) in the period 2000-2015 (Zamfir, 2016). The investment rate in Africa on average for the past two decades has hovered around 18% and was either unchanged or declining in a number of countries in Africa (UNCTAD, 2014).

Firm Investment and Cash Flow Volatility: Considerable effort has been expended in analysing the linkage between uncertainty and investment at aggregate levels (Baum, Caglayan, and Talavera (2009). In literature, there are various sources of uncertainty that cause fluctuations in aggregate investment. A multiplicity of studies has analysed the impact of exchange rate fluctuations on aggregate investment and firm-level investment such as Goldberg (1993), Campa and Goldberg (1995), Darby, Hallett, Ireland, and Piscitelli (1999) and Servén (2003). Other studies found the impact of uncertainty from the output, interest rates, prices (Driver and Moreton (1991), Calcagnini and Saltari (2000), Ferderer (1993), Hurn and Wright (1994), Edmiston (2004). Using firm-level data several studies employed measures of uncertainty from the output, firm-specific liquidity, stock prices, the exchange rate on the firm-level investment. Ghosal and Loungani (2000) found a negative relationship between output and firm-level investment. Using stock return data, Leahy and Whited (1995) found a strong negative impact of stock return uncertainty on investment. Guiso and Parigi (1999) observed a negative correlation between demand uncertainty and capital accumulation. Beach et al. 2001 reported that uncertainties in the macroeconomic fundamental significantly affect investment. Bloom, Bond, and Van Reenen (2007) suggested that higher uncertainties reduce demand shocks effects on investment.

These studies examined the linkages of various uncertainties and sensitivities and investment at the aggregate and industry levels. An insignificant number of studies focused on the interaction between investment and cash flow uncertainties only in the developed economies. Studies that have been done focused more on cash flow levels. However, not only cash flow levels are deemed essential in investment decisions, but their volatility has a significant bearing on the firm's behaviour. Few studies that have been conducted on the volatility of cash flows were based on firms in developing economies. Up to the present no research has been conducted to analyse how firms behave in environments of cash flow volatilities in Africa and in developing nations. This article contributes to filling that gap. Numerous studies have analysed the relationship between cash flow levels and investment. In theory, firm investment should be unrelated to internally-generated cash flows (Modigliani & Miller, 1958). The majority of empirical studies in developed economies, including Bates (2005), DeAngelo, DeAngelo, and Stulz (2004), Harford (1999), Jensen (1986) and (S. Fazzari, Ferri, & Greenberg, 2008), (Carpenter, Fazzari, & Petersen, 1998; S. M. Fazzari, Hubbard, Petersen, Blinder, & Poterba, 1988) documented a positive relation between cash flow and investment, implying that firms with higher cash flows invest more.

However, the volatility of the cash flows has not gained substantial attention. Risk management theories suggest value-creating firms should maintain smooth cash flows (Froot, Scharfstein, & Stein, 1993). In the context of risk management, A. Shapiro and S. Titman (1986), Lessard and Lightstone (1990), Geczy, Minton, and Schrand (1997) and Tufano (1996) found that firms active in risk management have more benefits from reducing cash flow sensitivity. They argue that firms that can smoothen their cash flow reduce costs from external financing and subsequently add value to the firm. This result has two key implications for this study, first explaining the negative relationship between cash flows and investment and second, emphasizing on the negative impact of cash flows on investment and value of the firm. Minton and Scharand (1999), using United States of America (USA) firms, confirms that cash flow volatility increases the need for external financing and increases the cost associated with internal financing which, in turn, affects a firm's investment policy. Riddick and Whited (2009) suggest that in financing future investment needs firms to trade off the benefits of generating internal funds and the costs of holding cash.

This analysis showed that internal funds are valuable to a firm's investment and financing. The availability of internal funds determines the decision to seek external funding. This should then imply that the volatility of the internally- generated funds will influence the stability of investment and firm value as well. The analysis of Riddick and Whited (2009) indirectly suggested a negative relationship between cash flow volatility and investment using data from firms in the USA. Minton et al. (1999), found a negative association between investment and volatility in cash flow, implying that firms experiencing lower cash flow forego investment opportunities without accessing external capital markets. Minton et al. (1999) estimated the standard investment equation with the Ordinary Least Squares (OLS) technique. This technique may have problems on heterogeneity and endogeneity issues from measurement errors and the possibility that Tobin's Q in the model might be an endogenous variable (Muñoz, 2013).The study of Allayannis and Weston (2003) on

earnings volatility, cash flow volatility and firm value on Comp Stat firms, found evidence that investors negatively value the volatility in cash flow.

They also found a negative relationship between cash flow volatility and investment opportunities, as measured by Tobin's Q. This was not an indirect measure of volatility on cash flow and investment, however, investment is highly related to value if positive net present value projects are taken into account. Thus, factors that affect value should also affect investment, from this analysis it is also expected that investment will negatively correlate with cash flow volatility as firm value. Fazzari et al. (1988) documented that "the sensitivity of cash flows should be higher for financially constrained firms. This brings in internal and external financing. Kovacs (2005) suggested that firms rely on external financial markets when there are low informational asymmetries. Almeida, Campello, and Weisbach (2004) indicated that non-constrained firms have less cash to cash flow volatility compared to constrained firms. Acharya and Schaefer (2006), developing the concept from Almeida's (2004) idea, added investment opportunities and found an inverse relationship. Considering the elements of corporate cash holdings, Ferreira and Vilela (2004) found that firms with more investment opportunities hold more cash and generate higher cash flows than firms with lower investment opportunities."

Using data from firms in the USA, Booth and Cleary (2006) on analysing cash flow volatility financial slack and investment decisions in the presence of market imperfections, found less correlation between investment and cash flows owing to the construction of a financial slack and strengthening balance sheet by firms should they anticipate any shortages, resulting in less effect on the investment outlays. They suggested that the higher the volatility of cash flows, the higher the level of financial slack and consequently resulting in less sensitivity to cash flows. However, this finding is inconclusive on whether these firms increased or decreased their investment levels in being less sensitive." Donaldson (1963), based on the separation of firm ownership and management justified a financial hierarchy. Myers and Majluf (1984) concurred with the financing hierarchy basing on informational asymmetry, when managers have insider information. These studies indicate that a financing hierarchy restricts investment to internally generated cash flows due to risk aversions. The financial hierarchy caused by an agency or informational asymmetry, implied financial constraints which will, in turn, affect the firm's investment. If the firm is restricted to internal cash flows, the volatility of such cash flows poses a major risk to the firm's investments.

Gilchrist and Himmelberg (1995), found higher investment-cash flow volatility in respect of small firms than large firms. Small firms face greater agency costs and informational asymmetries resulting in more financial constraints. Cleary (2006) found that large firms have more cash flow sensitivity than small firms." Booth and Cleary (2006)), found that the uncertainty in the firm's cash flows introduces uncertainty in the investment present values. Investment value increases monotonically at a decreasing rate in cash flows (Booth and Cleary, 2006). Increases in cash flow increase the ability of a firm to undertake investments. In modelling the Net Present Value (NPV) function, Booth, Aivazian, Demirguc-Kunt, and Maksimovic (2001) documented that as the volatility of cash flows increases with a reduction in future cash flows, the volatility of financial slack increases. The increase in financial slack will, therefore, imply a reduction in available funds for investment purposes, thereby lowering investment. There is a value to financial slacks from the internal and external financing wedge (Booth and Cleary, 2006).

They suggested that firms with more volatile cash flows experience more value in adding financial slack, since they experience the greatest wedge between internal and external capital. Such firms with more financial slacks have less correlations between their investments and cash flows. Firms with stable and less sensitive cash flows will have a small external and internal capital wedge which will see little value in financial slack. Such firms increase their debt and have more sensitive investment ratios to cash flow. However, the models were estimated with the fixed- effects estimators which cannot account for Nickel bias and the endogeneity issues, an estimator that is capable of controlling for such biases may yield better results." This study provides the first and direct evidence of the association between firm investment behaviour and the volatility of cash flows in Africa and complements the findings of the indirect tests from the developed economies using a dynamic panel data model as developed by Arellano and Bond (1991) with the GMM estimation technique to cater for endogeneity and heterogeneity using evidence from African firms and contributing to the existing body of financial literature in this respect."

Hypotheses: In light of the empirical literature and the contexts of African firms, expectations regarding firm investment behaviour were:
H1: Cash flow volatility (CFV) has a negative effect on the current investment of African firms.
H2: the effect of cash flow volatility on investment is heterogeneous by financial constraints.
H3: There is a positive relationship between growth opportunities and Investment.
H4: There is a positive relationship between sales and investment.

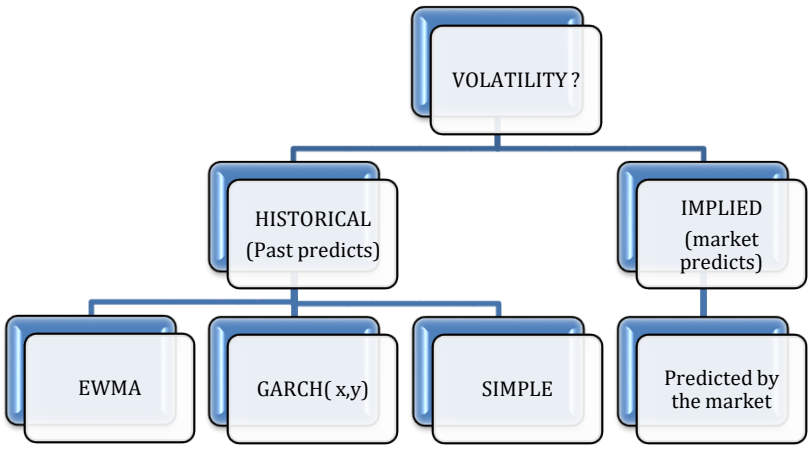
3. Empirical Approach

The study hypothesised a negative association between firm investment and volatility of cash flows. The relationship was tested following (Carpenter & Guariglia, 2008; B. A. Minton & C. Schrand, 1999). The study extended Carpenter and Guariglia (2008) and B. A. Minton and C. Schrand (1999) model to a dynamic panel model estimated in levels and in first differences to eliminate unobservable heterogeneity with two-step GMM estimators in an unbalanced panel data of African listed firms, from 1996 to 2015.

Data and the Variables: The research considered 1074 non-financial firms listed on all African stock exchanges as given on the Bloomberg online financial database. All African non-financial firms were selected to avoid selection bias. Listed firms were specifically selected because of the availability of reliable financial data. In constructing the sample, financial firms were excluded because of the complexities in their capital structure nature, their capital structures are regulated (Akhtar & Oliver, 2009) and their financial strategies are different from the context of the study. The estimation techniques used require estimation of equations in first differences and lagging of regressors twice or more. To allow for the instrumentation processes and first differencing at least three cross-sectional observations are needed, firms with at least 4-year financial reported data were kept. The final sample remaining for estimation comprises 815 firms from 22 stock exchanges for a period of 20 years (1996-2015) the period allowed for the collection of complete and audited data reported by the time of data collection. The study employed an unbalanced panel data of 16300 observations after checking and screening for apparent coding errors and missing variables. Panel data enables the observation of multiple phenomena over many periods of time and the ability to reduce co-linearity in explanatory variables, improving the efficiency of econometric estimates (Akhtar, 2005).

Measures of Cash Flow and Cash Flow Volatility: Volatility is a widely used measure of risk in financial markets. In this regard, volatility can either be historical (observed over time) or implied (predicted from market data) (Guo, 2012). The assumption in terms of a historical volatility measure is that the past is prologue, the historical trend is measured hoping that it is predictive. In this regard, the implied volatility observes at the volatility implied by the market and ignores history (Guo, 2012). This study focused on historical volatility since historical cash flows observed by African firms over the past periods as given in the financial statements were used.

Figure 1: Measures of Volatility



As shown in Figure 1, historical volatility can be estimated in three ways, namely simple volatility, exponentially weighted moving average (EWMA) and the Generalised Autoregressive conditional heteroskedasticity, GARCH (x, y) approach. Following financial literature (Minton et al., 1999) simple volatility as measured by the coefficient of variation of cash flows was used and the EWMA measure for robustness checks.

Coefficient of Variation of Cash Flows (CVCF): The first measure was defined as the coefficient of variation in a firm's operating cash flow over the period preceding each of the sample years (Guoming, 2009). In this respect, for the year 2015, the coefficient of variation was computed with 19-year data from 1996 up to 2014 and for 2014 it will be 18-year data from 1996-2013 and so forth. The coefficient of variation accounts for the size of the firm's cash flows as well as the volatility thereof Booth (2006). The coefficient of variation also reduces the mechanical relationship between volatility and cash flow levels (Minton, A, B. & Schrand, C. 1999). However, this measure may result in serial correlation from the calculation of the standard deviation over time. A dynamic panel data model and the estimation technique are robust in dealing with autocorrelation. Cash flow from operations was obtained from the firms reported statements through the Bloomberg financial database, measured as the sum of earnings before extraordinary items and depreciation (Net income add back non-cash charges, adjusted for working capital changes).

The coefficient of variation was estimated as:

$$\frac{\sigma_{OPCF_{i,t}}}{\mu_{i,t}} \qquad (1)$$

Where: $\sigma_{OPCF_{i,t}}$ is the standard deviation of operating cash flows for each firm. CF_i is the firm's cash flow.$\mu_{i,t}$ is the expected value of the realised cash flows for each financial reporting period. The expected value $\mu_{i,t}$ was calculated as the simple average of all cash flows in each financial reporting period for the 20-year period. To estimate the standard deviation, the previous *n* observations in cash flows were used to estimate an unbiased estimator of variance, then the standard deviation of cash flows was estimated as the square root of the variance as follows;

$$\sigma = \sqrt{\frac{\sum_{1=1}^{n}\left(OCF_{i,t} - \in (OCF)\right)^2}{n-1}} \qquad (2)$$

σ is the standard deviation of operating cash flows $(OCF_{i,t})$. $\mu = \in (OCF)$ is the mean of operating cash flows calculated as the arithmetic average of the observations for each year from 1996 to 2015 for the respective period.

Exponentially Weighted Moving Average (EWMA): The standard deviation of cash flows over time may fall short in the sense that it may give rise to substantial serial correlation and also all observations are similarly weighted, the technique cannot mimic volatility clustering. In this regard, a more sophisticated different technique, the EWMA, a particular case of the GARCH model was employed, which has the ability to mimic volatility clustering normally found in financial series for the robustness of the results. The EWMA is forward-looking in nature and it predicts the innovations in volatility by weighing more recent levels and considers the fact that recent changes in cash flow levels are more relevant. This approach provided a more representative measure of the perceived volatility and it also enables forecasting of future levels of variances. The EWMA considers that volatility is persistent and tends to cluster. Particularly higher volatility periods tend to be followed by higher volatility periods and **lower volatility** is followed by periods of lower volatility (Taylor, 2004).

The EWMA is a special form of the ARCH (m) model developed by Engle (1994) given by,

$$\sigma^2{}_n = \omega + \sum_{i=1}^{m} \alpha_i \, x \, r^2{}_{t-i} \qquad (3)$$

Where, α_i is an observations weight i days ago, $\alpha_i > 0$ and$\sum_{i=1}^{m} \alpha_i = 1$, The weight of α_i decreases exponentially backwards in time such that;

$$\alpha_{i+1} = \lambda\alpha_i = \lambda^2\alpha_{i-1} = \cdots \lambda^{n+1}\alpha_{i-t} \qquad (4)$$

The some of the weights are applied such that they equal the unity constraint, it follows that;

$$\sum_{i=1}^{\infty} \alpha_i = \alpha_i \sum_{i=1}^{\infty} \lambda^i = 1 \quad (5)$$

For $\lambda < 1, then\ \alpha_i$ =1- λ
It follows that for ${\sigma^2}_{t-1}$ estimate:

$${\sigma^2}_{t-1} = \sum_{i=1}^{n-1} \alpha_i {r^2}_{t-i-1} = \alpha_1 {r^2}_{t-2} + \lambda\alpha_1 {r^2}_{t-3} + \cdots \lambda^{t-3}\alpha_1 r^2 \quad (6)$$

The volatility at period t (${\sigma^2}_t$) is estimated as follows;

$${\sigma^2}_t = (1-\lambda){r^2}_{t-1} + \lambda {\sigma^2}_{t-1} \quad (7)$$

More generally the EWMA model used to estimate volatility takes the following form:

$${\sigma^2}_t = (1-\lambda){\epsilon^2}_{t-1} + \lambda {\sigma^2}_{t-1} \quad (8)$$

Where ${\sigma^2}_t$the current volatility at period t is, ${\sigma^2}_{t-1}$ is the volatility for the previous period (t-1), ${\epsilon^2}_{t-1}$ is the cash flow mean for the prior period. λ Take the value 0.94 as given by the Taylor, (2004).

Descriptive Statistics: Table 1 shows the descriptive statistics of investment, cash flows and the control variables. There is more variation on realised cash flow volatility (CFV) measured by the coefficient of variation of cash flows as shown by a very high standard deviation (114.16) relative to the mean which is 2.36. n of cash flow volatility CFV2 measured by the EWMA has less variation (as it reported a standard deviation of 0.3512) compared to the CFV. The less variation is a result of the smoothing effect of the calculation methodology. The variation in cash flows in Africa can be explained by uncertainties in the business cycle operating environment, economic instability, technological hindrances and political unrest. The descriptive statistics also show that there is a high variation of cash flows the standard deviation of cash flow (0.1218) is one-and-half times above the mean (0.1009) indicating the high variation of cash flows among African firms.

Table 1

Variable	Description	Mean	SD	25%	Median	75%
CFV2	Cash flow volatility EWMA	0.2595	0.3512	0.0411	0.1273	0.3236
CFV	Cash flow volatility CV	2.3631	114.1612	0.1280	0.3734	0.8084
INVSTNET	Tangible Investment	0.2217	0.2599	0.0617	0.1517	0.2931
${\boldsymbol{OPCF^2}}_{i,c,t}$	Operating Cash flow	0.1009	0.1218	0.0328	0.0959	0.1757
CF2	Operating Cash flow square	.02690	0.0420	0.0025	0.0109	0.0322
CFXCFV2	Cash flow sensitivity of cash	0.0234	0.0536	0.0014	0.0087	0.2818
CFSHORT	Cash shortages	-0.2986	0.6850	-0.3085	-0.1321	-0.0155
CFEXCESS	Cash excess	0.0395	0.2766	0.0000	0.0000	0.0000
SALE	Sales	1.0941	0.7275	0.5847	0.9544	1.4174
Q	Growth opportunities	1.5070	0.8056	0.9498	1.2512	1.8096
Leverage B	Leverage (long term debt)	0.1220	0.1220	0.0258	0.0855	0.1775
Non distress	Non-distressed firms	0.2073	0.3155	0.0094	0.0835	0.2468
High growth B	High growth firms	0.2489	0.3328	0.0408	0.1232	0.3105

Source: Authors calculations based on data obtained from Bloomberg

The table provides descriptive statistics of dependent and the explanatory variables of the sample firms for the 20-year period between 1996 to 2015 for listed African firms.

Correlation Analysis: Table 2 reports the correlation matrix of the response variables and investment. The correlations are included to check for multicollinearity. A correlation above 0.8 between independent variables is an indication of the presence of multicollinearity. From the table above, the highest correlation is 0.37 between cash flows and Tobin's Q. All the values are below 0.5 which proves the absence of multicollinearity among the independent variables. The correlation table also pre-evidenced a negative

correlation between investment and cash flow volatility for all measures of cash flow volatility. There is a statistically significant negative correlation between investment and cash flow volatility. Firms with too volatile cash flows tend to invest less. There is a statistically significant negative relationship between cash flow shortages and investment and a positive relationship between excess cash and investment as shown on the correlation matrix in table two. African firms experiencing cash flow shortages have less investment ratios and firms with excess cash flow invest more. There is a significant negative correlation between cash flow volatility and operating cash flows. Sales and growth opportunities as expected have a positive relationship with investment.

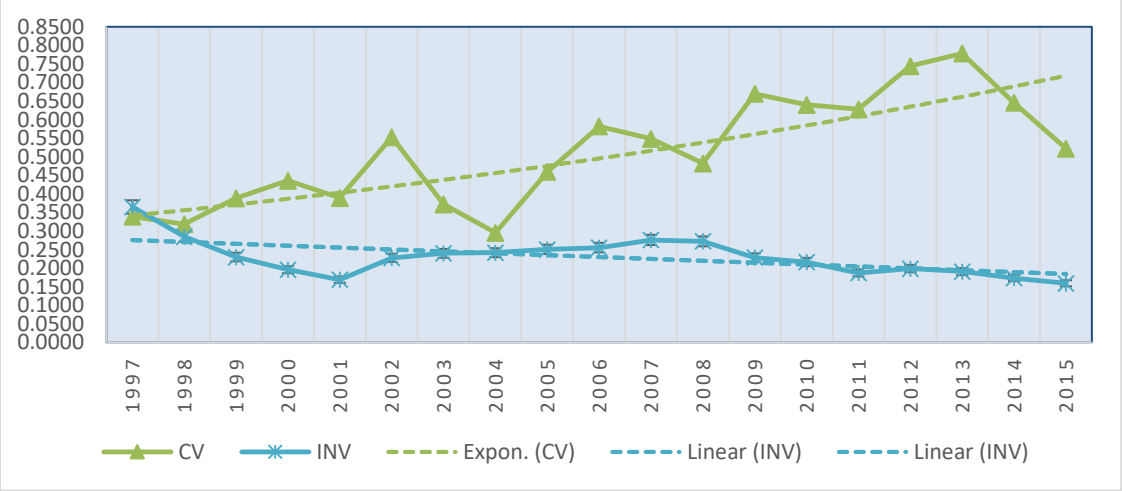
Table 2: Correlation Matrix

	Investment	CFV2	CFV	CF	CF SHORT	CFEXCESS	SALE
Investment	1						
CFV2	-0.055*	1					
	0.0001						
CFV	-0.0144	-0.0009	1				
	0.2976	0.9449					
CF	0.1865*	-0.1347*	-0.0141	1			
	0.0000	0.000	0.2947				
CFSHORT	-0.179*	-0.0352*	0.0037	-0.060*	1		
	0.0000	0.0078	0.7854	0.0000			
CFEXCESS	0.0618*	0.0358*	-0.0035	-0.059*	0.0623*	1	
	0.0000	0.0068	0.7951	0.0000	0.0000		
SALE	0.2033*	0.0009	-0.014	0.1401*	-0.1542*	0.0037	1
	0.0000	0.9444	0.2804	0.0000	0.0000	0.0541	
Tobin Q	0.1827*	-0.0708*	-0.0174	0.3543*	0.1178*	-0.0027	0.1154*
	0.0000	0.0000	0.196	0.0000	0.0000	0.0894	0.0000

Source: Own calculations based on sample data

CFV cash flow volatility EWMA measure CFV volatility measured by the coefficient of variation, CF operating cash flows * statistically significance.

Figure 2: Cash Flow Volatility (CFCV) and Investment Trend in African Listed Firms



Source: Bloomberg online database

Figure 2 shows investment and cash flow volatility trends of listed African non-financial firms for the period 1996-2015. Cash flow volatility measured by the coefficient of variation of cash flows (CV). The trend reveals a notable decline in investment levels over the period as shown by the negative gradient on the trend line. The evolution of cash flow volatility is random depicting a stochastic trend. The random trend in cash flow volatility is associated with a decline in investment and cash flow levels. It can be noted from Figure 2 that the levels of volatility and the trend is increasing over time associated with a gentle decline in cash flows and investment levels. The figure shows that from 1996 investment levels in Africa were declining until 2000, from then there was a notable constant increase in investment levels for the period 2002-2007. This was reported to be due to the effects of globalisation, new foreign direct investment, capital injection and adoption of new technologies in Africa which have seen the region being the highest destination of FDI during this period. A notable decline from 2008 can be explained by the global financial crises. Since then African firms' investments have not yet recovered from the financial crisis effects coupled with other regions' peculiar effects as shown by a declining trend in investment.

Model Specification: To examine the relationship between cash flow volatility and investment extended Lang et al. (1996) and Minton, A, B. and Schrand C. (1999) investment model was extended to a dynamic panel data model which enables the observation of multiple phenomena obtained over multiple time periods for the same firms and countries. Given that investment trends are dynamic, current levels of investment are driven by past investments. Firms generally want to smoothen their investment pattern (Aivazian, Ge & Qiu, 2005) as their past behaviour influences current behaviour. Lagging the investments variable helps to examine the impact of previous investment trends on current investment levels. A lagged dependent variable reduces autocorrelation that may arise from any misspecification (Arellano & Bond, 1991). Investment dynamics over time are captured, and the estimation method deals with endogeneity problems and Nickell bias in fixed effects. A dynamic model also allows partial adjustment mechanism modelling (Baum, Barkoulas, & Caglayan, 2001).

Consider a dynamic model, which caters for individual effects, as given by

$$y_{i,t} = \gamma y_{i,t-1} + x_{it}\beta + \eta_i + \varepsilon_{i,t}; |\gamma| < 1 \qquad (9)$$

where η_i is a fixed effect, x_{it} is a vector of explanatory variables with k factors (k=1… ,4).$\varepsilon_{i,t} \backsim N(0, \sigma^2{}_\varepsilon)$ is a random disturbance and assuming $\sigma^2{}_\varepsilon > 0, \in (\varepsilon_{i,t}, \varepsilon_{j,s}) = 0$

Lang et al., (1996) and B. Minton, A, and C. Schrand (1999) standard investment model were extended to a dynamic panel fixed model which includes a fixed effects parameter to cater for individual firms and country's effects as shown by Judson and Owen (1999). The specific model estimated takes the following form;

$$\frac{Inv_{i,c,t}}{TA_{i,t,c}} = \beta_0 \frac{Inv_{,i,c,t}}{TA}_{t-1} + \beta_1 CVCF_{ic} + \sum_{i=2,3} \beta_{ic} CONTROL_{ic} + \eta_{i,c} + u_{i,t} \quad (10)$$

$Inv_{i,c,t}$ is a proxy for firm investment scaled by the firm's total assets (TA) to do away with the effect of size and diverging figures. CVCF is the coefficient of variation of cash flow the proxy for cash flow volatility. $CONTROL_{ic}$ Are the control variables/other explanatory variables that explain a firm's investment behaviour,η_i is time invariant unobservable specific effect and $u_{i,t}$ is the error term. Fixed effects at the firm and country level η_i was included also which captures firm-specific characteristics and business-cycle effects inherent to each country. β_1 / β_{ic} are the coefficients of the model to be estimated. The control variables (CONTROL) are Tobin's Q and sales growth that measure growth. Fazzari et al. (1988) categorise sales growth as a significant determinant of CAPEX. Sales growth is measured for the 20-year rolling period as volatility as average annual change in sales divided by beginning of period sales. Tobin's Q was measured as the firm's market to book value ratio.

Estimation Technique: In "light of the view that corporate finance studies exhibit uppermost levels of serial correlation and endogeneity as a result of multiple independent variables (Mark & Hankins, 2012), there is a need for an estimation technique that deals with this problem. Previous studies including Minton and Schrand (1999) assumed non-unobservable individual effects and used a pooling regression. The pooling method is inefficient given that μ_i is not directly observable and it correlates with other explanatory variables (Antoniou, Guney, & Paudyal, 2008). Even if we take first differences of the variables to eliminate the time invariant fixed effects, OLS will still be inefficient due to the correlation of $\Delta Inv_{i,t}(Inv_{i,t} - Inv_{i,t-1})$

and $\Delta\varepsilon_{i,t}(e_{i,t} - e_{i,t-1})$. There is also high heterogeneity across firms, noting that we extended to a panel of numerous countries, heterogeneity is inevitable. Some studies used a fixed effects estimator. A fixed effects estimator, however, cannot control for endogeneity problems, which can be controlled by using the instrumental variables (IV) technique.

Nevertheless, the Anderson and Hsiao (1982) IV technique might not be efficient since it does not use all the available moment conditions and the difficulties in identifying the instruments. Muñoz (2013) highlighted that the endogeneity problem arises from possible measurement errors, omitted variables, possible bi-directional causation and the presence of endogenous variables such as Tobin's Q. This results in the explanatory variables being correlated with the error term. The introduction of a lagged investment variable as an explanatory variable in equation 9 introduces autocorrelation with the error term, a dynamic bias that cannot be controlled by the IV and the traditional techniques. In such a model, there is a need to introduce stochastic variation into the model. Given endogenous explanatory variables, the presence of heteroscedasticity and serial correlation from idiosyncratic disturbances are beyond fixed effects. The system GMM attests to it being the suitable technique in such conditions (Roodman, 2006). System GMM enhances efficiency by employing additional instruments of the lagged first difference variable (Inv_{t-1}). This solves the problem of weak instruments with difference GMM.

The technique instruments levels equations with first differenced instruments and instruments differenced equations with levels instruments generating a system of equations. The second equation provides additional instruments and increases efficiency (Blundell & Bond, 1998). Level and lagged endogenous instruments make endogenous variables predetermined and not correlated with the error term. Variations among firms are also partially retained (Antoniou et al., 2008).

$u_{i,t}$ in equation 10 consists of country unobservable effects v_i and specific errors $e_{i,t}$

$$u_{i,t} = v_i + e_{i,t} \quad (11)$$

Through first differencing equation 10 is transformed, to

$$\Delta Inv_{it} = \beta_0 \Delta Inv_{i,t-1} + \beta_1 \Delta CVCF_{it} + \beta_2 \Delta X_{i,t} + \Delta u_{i,t} \quad (12)$$

The country fixed effect does not vary over time and by differencing the regressors it is removed, and equation 11 becomes:

$$\Delta u_{i,t} = \Delta v_i + \Delta e_{i,t} \quad (13)$$

$$u_{i,t} - u_{i,t-1} = (v_i - v_i) + (e_{i,t} - e_{i,t-1}) = e_{i,t} - e_{i,t-1} \quad (14)$$

The presence of $Inv_{i,t-1}$ is a source of autocorrelation, which is controlled by instrumentation with past levels and differenced instruments in system GMM.

Additional Tests: The two-step system GMM technique developed by Blundell and Bond (1998) was employed to estimate the model. The utilisation of the orthogonal conditions on the variance-covariance capacitates control for the correlation of errors over time, heteroscedasticity in firms and simultaneity (Antoniou et al., 2008) and the ability to address the problems of endogeneity. Under these considerations, Blundell and Bond established that the system-GMM estimator becomes a handy tool. To obtain robust results, the study also controlled for the potential relationship between investment and cash flows and cash flow excess and shortages. To test "the impact of cash flow shortages and excess on investment firms were apportioned based on cash flows levels. In accordance with B. A. Minton and C. Schrand (1999), low cash flow firms were considered based on the difference between a firm's operating cash flows for time t and its average historical cash flows for the cumulative periods. A negative figure indicates a shortfall position and a positive one will be an excess position. Cash flows variables controls for the observed sensitivity of investments to cash flow levels as documented by (Fazzari et al., 1998), Cleary et al. (1991) and KZ (1997). To control for the potential relationship between investment and cash flow levels.

The following specification was used extending from equation 10.

$$Inv = \beta_0 \frac{Inv_{ic}}{TA}_{t-1} + \alpha_i + c_1 \frac{OPCF_{i,c}}{TA_{i,t,c}} + C_2 OPCF^2{}_{i,c} + c_3 CVCF + c_4 CVCF_{i,c,t} * OPCF_{i,c} + \sum_{i=5,6} c_i CONTROL_i + e_i. \quad (15)$$

$OPCF^2_{i,c}$ is the square of the operating cash flow value, C_2, C_3, C_i are regression coefficients to be estimated. $CVCF_{i,c,t}$ is coefficient of variation of cash flows as defined in equation 1 times operating cash flows. Equation 15includes a continuous measure of firm-adjusted annual operating cash flow ($\frac{OPCF_{i,c}}{TA_{i,t,c}}$). $OPCF^2$ is the square of operating cash flows which controls for probable nonlinearities on the relation between operating cash flows and investment (B. Minton, A, & C. Schrand, 1999). CVCF*OPCF is the interaction between the coefficient of variation of cash flows and operating cash flows which measure the impact of a firm's cash flow level on the estimated sensitivity of investment to cash flow volatility.

Cash Flow Volatility and Growth Opportunities: High growth firms are theoretically known for high retention levels associated with high investment levels (Kester, 1984). The cash flows of such firms are expected to vary more since they are still in the growth phase and they have higher risks from numerous investment opportunities they may undertake. Impact of cash flow volatility on high growth firms was also examined. Firms were also separated into high and low growth firms. Following financial literature, high growth firms were defined as those firms with Tobin's Q greater than 1 (Aivazian et al., 2005). Firms with Tobin's Q > 1 have more investment opportunities, higher market values and may generate higher cash flows from their profitable investment prospects. Their cash flows are different from low growth firms with no growth opportunities. This analysis will enable the researchers to determine if the effect of cash flow volatility is not influenced by the growth opportunities firm encounter. To examine the variances on the impact of cash flow volatility on high- and low-growth opportunity firms.
The researchers followed Aivazian et al. (2005). Extending from equation 9 to include a dummy variable for high- and low-growth firms to interact with cash flow volatility the following model was examined.

$$\frac{Inv_{ic}}{TA} = \beta_0 \frac{Inv_{ic}}{TA}_{t-1} + \alpha_{c,t} + \beta_1 CVCF_{ic} + \beta_1 \not{\Phi} * CVCF_{ic} \sum_{i=2,3} \beta_{ic} CONTROL_{ic} + e_{i.c} \qquad (16)$$

Where, $\not{\Phi}$ is a dummy variable = 1 if Tobin's Q >1, and 0 if Tobin's Q is < 1. $\not{\Phi}$*CFVF has been added to the regression, for firms with Tobin's Q >1, the coefficient for volatility will be $\beta_1 + \beta_2$. $CONTROL_{ic}$is a vector of other control variables that explains investment including size and growth opportunities.

4. Empirical Results

Regression Results: Table 3 presents the regression output of the investment model given in Equation 10. Two GMM estimation techniques were used to estimate the model: the two-step difference and system GMM with orthogonal deviations option which handles unbalanced panel data. Two measures of volatility were used, the coefficient of variation on the historic cash flows and the EWMA technique. The coefficient of variation reduces the mechanical relationship between volatility and cash flow levels. The EWMA predicts the innovations in volatility by weighing more recent levels and considers the fact that recent changes in cash flow levels are more relevant. System GMM uses the levels equation together with the AB type orthogonally conditions to obtain a system of equations in levels and the other differenced. The second equation provides additional instruments and increases efficiency (Blundell & Bond, 1998). Instruments for orthogonal deviations equations used were: for standard forward orthogonal deviations (FOD) Cash flow volatility and time dummies, for the GMM type (those assumed to be endogenous) investment, CFXCFV, Tobin Q sales were used. For the levels equations, cash flows and cash flow volatility were used as additional instruments to the orthogonal equation instruments. The coefficients of $CFV2_{i,c,t}$ (EWMA) and $CFV_{i,c,t}$ (coefficient of variation of cash flows) were found to be negative and statistically significant at one percent significance level. These results provided evidence that there is a negative relationship between cash flow volatility and investment at a ninety per cent confidence level. Variation of cash flows has a significant adverse effect on investment in African firms. This is in accordance with risk management theories which suggest that smooth cash flows create value for firms (Froot et al., 1993).

Table 3: Dynamic Panel-Data Estimation, Cash Flow Volatility and Firm Investment

	VOLATILTY= EWMA		VOLATILITY=COEFFICIENT OF VARIATION	
	Difference GMM	**System GMM**	**Difference GMM**	**System GMM**
L. Investment	0.199***	0.269***	0.351***	0.430***
	(-0.0721)	(-0.0517)	(-0.0097)	(-0.00888)
$CFV2_{i,c,t}$	-0.203***	-0.0541**		
	(-0.0516)	(-0.0223)		
$Sales_{i,c,t}/TA_{i,c,}$	0.0765**	0.0909***	0.121***	0.0731***
	(-0.0359)	(-0.0105)	(-0.00859)	(-0.00313)
$Q_{i,c,t}$	0.0682***	0.0363***	0.0384***	0.0170***
	(-0.018)	(-0.00897)	(-0.00423)	(-0.00248)
$CFV_{i,c,t}$			-0.00309***	-0.00211***
			(-0.000275)	(-0.00035)
Observations	3,546	4,138	3,593	4,192
Number of id	543	592	550	599
Instruments	173	382	217	230
AR (2)	0.643	0.37	0.191	0.128
Hansen test	0.337	0.365	0.264	0.077

Regression results of cash flow volatility on investment on African publicly traded firms. Two estimation techniques were used (Difference and System GMM) and two different measures of cash flow volatility (CFV and CFV2), standard errors are provided in parenthesis below the coefficients estimates. AR (2) is used to test for serial autocorrelation and the Hansen test is used to test for over-identification of instruments.

*, **, *** Significant at the 10%,5% and 1% level respectively

From the risk management theories perspective, firms that can smoothen their cash flow reduce costs from external financing which can add value to the firm. B. A. Minton and C. Schrand (1999) confirmed that cash flow volatility increases the need for external financing and increases the cost associated with internal financing, affecting a firm's investment policy. A. C. Shapiro and S. Titman (1986), Lessard and Lightstone (1990), Géczy, Minton, and Schrand (1997), Tufano (1996), in the context of risk management, found that active firms in risk management derive more benefits from reducing cash flow sensitivity. Firms experiencing high volatility in cash flows will experience higher financing costs lowering the NPV of its investments. As a result, cash flow stability is valuable to a firm's investment. From the perspective of cash holding and cash sensitivity, Opler, Pinkowitz, Stulz, and Williamson (1999), showed that firms with higher cash flows result in higher cash holdings and the volatility in cash flows will lead to higher precautionary needs and increase cash holdings. In this regard, an increase in cash holdings would mean a reduction in investment since cash holding and investment are not interdependent decisions. More cash holdings will mean less investment so if cash flow volatility leads to more cash holding then a reduction in investment will result.

The results are consistent with Minton (1999) in USA firms who found that volatility is associated with the lower investment. Indirectly, Allayannis and Weston (2003) on the study on earnings volatility, cash flow volatility and firm value on firms on Compustat found evidence that investors negatively value the volatility in cash flow and a negative relation between cash flow volatility and investment opportunities, as measured by Tobin's Q. Since investors value the volatility of cash flows negatively, this will reduce liquidity, increase the cost of accessing external finance and negatively impacting on firm investment. By using firms in the United States of America, Booth and Sean Cleary (2006) analysed cash flow volatility, financial slack and investment decisions in the presence of market imperfections which causes distinctions in internal and external financing. They found less correlation between investment and cash flows owing to the construction

of a financial slack and strengthening balance sheets by firms should they anticipate any shortages. This will exert less effect on the investment outlays.

Economic Impact of Regression Results: Table 4reports the economic impacts of cash flow volatility and other explanatory variables pertaining to investment. The results show the percentage change relative to investment per one standard deviation change on the explanatory variable. The negative relationship is robust for the two estimation methodologies the difference and the system GMM and for the two cash flow volatility measures used. "The coefficients estimated range from -0.00035 to -0.203 for the two estimation techniques and measures of cash flow variation. The economic impacts of these results are that for one standard deviation change in cash flow volatility, investment ratio decreases by -0.0731% to -1.3572% for the four models.

Table 4: Economic Impact of the Regression Estimates

	VOLATILITY = EWMA		VOLATILITY = CVCF	
VARIABLE	**Diff GMM**	**SYS GMM**	**DIFF GMM**	**SYS GMM**
$CFV2_{i,c,t}$	-0.2743	-0.0731		
$Sales_{i,c,t}/TA_{i,c,}$	0.2141	0.2544	0.3387	0.2046
$Q_{i,c,t}$	0.2114	0.1125	0.1190	0.0527
$CFV_{i,c,t}$			-1.3572	0.9268

$$Economic\ impact = \frac{SD_{EXPLANATORY\ VAR} \times Regression\ Coefficient}{SD_{DEPENDENT\ VAR}}$$

Source: Own calculations based on regression results.

The EWMA measure of volatility depicts a higher sensitivity of investment to cash flow variation as shown by higher coefficients (-0.203 and -0.0541 compared with -0.000275 and -0.00035 for the coefficients of variation) and higher impact values -1.3572% to 0.9268% compared with -0.0731% to 0.2743%. The results imply that cash flow volatility is a key determinant of firm investment in African firms. African firms with more volatile cash flow substantially reduce their investment. The results are in accordance with expectations for African firms' due to many uncertainties in African economies business operations becomes uncertain which makes cash flows as well to be volatile. Firms in such markets will reduce their investment in fear of the unknown and hold more cash and reserves instead for precautionary purposes". In theory, Modigliani and Miller (1958)) hypothesised that firm investment should be unrelated to internally generated cash flows. With respect to this the researchers expected the volatility of cash flows to be unrelated to the investment policy. In spite of this, the evidence against this proposition was found. Cash flows and their volatility exert significant information about investment policy embedded in it. The stability of cash flows is a key determinant of investment in Africa. Cash flows are positively correlated to investment firms that generate more cash flows invest more. The volatility of these cash flows is negatively associated with the investment. African firms with unstable cash flows also reduce investment."

The "negative impact of cash flow volatility on investment can be explained by the fact that high volatility predicts cash flow shortages, firms will hold more cash to counter the shortages, if firms hold more cash investment is foregone. Alternatively, firms in deficit may borrow from the external financial markets which are costlier, affecting investment negatively. The results imply that African firms with higher levels of cash flow uncertainty tend to reduce their investment. African firms should advance their risk management techniques and diversify their portfolios to keep lower leverage levels in order to maintain sustainable cash flows to generate stable cash flows for investment purposes. Higher cash flow volatility will invite borrowing from the external financial market increasing leverage will suppress available cash flows to interest payments constraining investment. Firms should not only focus on generating more cash flows, but the stability of the cash flows has a significant bearing on the investment policy. Stable cash flow generation improves the investment policy of the firm." Consistent with financial theory, firm size as proxied by sales, has a positive impact on firm investment. As firms expand they tend to invest more. Growth opportunities, as measured by Tobin's Q have a significant positive impact on investment, and high growth firms have high investment ratios implying higher investment levels compared to low growth firms. The coefficient of the lagged investment

variable is statistically significant and positive, implying that previous investment affects the current investment levels and firms with high invest levels tend to invest more in the subsequent periods.

Controlling for Possible Relation between Investment and Cash Flow Levels: To control for a possible relation between cash flow levels and investment, we estimate equation 15 which includes a measure of annual operating cash flows scaled by total assets ($OPCF_{i,c,t}$) averaged over the 20-year sample period as cash flow volatility. Following Minton and Schrand (1999) a square of operating cash flow variable ($OPCF^2{}_{i,c,t}$) which controls for possible non- linearities between average cash flow levels and investment was included. The study also included CFXCFV an interaction of cash flow levels and coefficient of variations which captures the sensitivity of investment to cash flow volatility. Table 2 shows that there is a significant negative correlation between operation cash flows ($OPCF_{i,c,t}$) and EWMA cash flow volatility measure (CFV2) with correlation coefficients of -0.115 this relation justifies the use of levels variable in equation 14 for this estimation.

Table 5: Two-Step GMM Possible Relation between Investment and Cash Flow Levels

	VOLATILTY= EWMA		VOLATILITY=COEFFICIENT OF VARIATION	
	Difference GMM	System GMM	Difference GMM	System GMM
L. Investment	0.210***	0.295***	0.233***	0.308***
	(-0.00189)	(-0.00154)	(-0.00356)	(-1.80E-05)
$OPCF_{i,c,t}/TA_{i,c,}$	0.168***	0.107***	0.0573***	0.294***
	(-0.00836)	(-0.00492)	(-0.01640)	(-5.02E-05)
$OPCF^2{}_{i,c,t}$	0.496***	0.405***	1.054***	-0.212***
	(-0.01580)	(-0.0142)	(-0.0537)	(-0.000167)
$CFV2_{i,c,t}$	-0.0197***	-0.0395***		
	(-0.00140)	(-0.000951)		
CFXCFV2	-0.0505***	-0.0324***		
	(-0.00475)	(-0.00517)		
$Sales_{i,c,t}/TA_{i,c,}$	0.0760***	0.0677***	0.0449***	0.0550***
	(-0.00100)	(-0.00049)	(-0.00261)	(-9.16E-06)
$Q_{i,c,t}$	0.0326***	0.0348***	0.0478***	0.0344***
	(-0.00033)	(-0.000434)	(-0.000876)	(-5.39E-06)
$CFV_{i,c,t}$			-0.0100***	-0.00813***
			(-0.000249)	(-9.88E-07)
CFXCFV			-0.0370***	0.0101***
			(-0.00300)	(-1.03E-05)
Observations	3,671	4,267	3,718	4,320
AR (2)	0.71	0.316	0.51	0.311
Hansen test	0.449	0.424	0.303	0.99

Standard errors are provided in parenthesis below the coefficients estimates. AR (2) was used to test for serial autocorrelation and the Hansen test tests for over-identification of instrument. *, **, *** denotes significance at the 10%, 5% and 1% level respectively.

The coefficient of variation measuring of cash flow volatility controls for this mechanical relation between levels and volatility by scaling the standard deviations variable by the absolute mean. Table 5 results indicate that African firms' investment levels are sensitive to operating cash flow volatility, and the sensitivity degree

is a function of operating cash flow levels. Including a continuous measure of operating cash flow into the model,it was found that cash flow volatility (for both the two measures of volatility CFV and CFV2) has a negative association with investment. This negative relation is a function of cash flow levels as shown by the positive coefficient of cash flow levels ($OPCF_{i,c,t}$) that firms with high cash flow have higher investment levels. The interaction of operating cash flows and cash flow volatility (CFXCVF and CFXCFV2) a measure of the sensitivity of investment to operating cash flows is negative and significant at 1% level indicating that the sensitivity of investment to cash flow volatility is stronger as cash flows increase. These results are consistent with Minton and Schrand prediction that the influence of volatility is second order relative to the effect of cash flow levels. The negative impact of cash flows volatility on investment is maintained with a regression that controls for the relation between cash flow levels and investment.

Cash Flow Levels and Investment: To establish how African firms respond to cash flow shortages and excess, firstly, capital expenditures of low cash flow firms were examined. In accordance with B. A. Minton and C. Schrand (1999), low cash flow firms were considered based on the difference between a firm's operating cash flows and its average historical cash flows. A negative figure indicates a shortfall position and a positive one will be an excess position. The results in Table 6 indicate that firms experiencing cash flow shortfalls relative to their historical levels are highly sensitive and they have lower levels of investment. Controlling for cash flow shortages in this estimation it was also found that a negative relationship existed between investment and cash flow volatility as shown by the negative coefficients of $CFV2_{i,c,t}$ (EWMA) and $CFV_{i,c,t}$ (coefficient of variation of cash flows) for models 1 to 4. Cash flows are a key determinant of investment. Over and above attending to the improvement of cash flows, decision makers should also focus more on cash flow stabilisation. The results provided evidence that cash flow shortages are usually associated with lower investment. As a result, firms experiencing excess cash flows should invest more. Secondly, capital expenditures for firms with excess cash flows were examined. Firms with excess cash flows are those with higher cash flows relative to their historical averages. The coefficient of CFEXCESS is positive and significant at 1% level.

"As expected, African firms with excess cash flows have higher investment levels. Controlling for firms with excess cash flows the coefficient of the measures of cash flow volatility is significant and negative. These results also indicate that firms with more volatile cash flows have low investment levels even when cash flow shortages and excess are controlled for as shown by the analysis in Table 6. The negative relationship is robust for the two measures of volatility ($CFV2_{i,c,t}$ *and* $CFV_{i,c,t}$) and the two estimation methodologies used. The research found a positive relationship between cash flows and investment. Firms with excess cash flows invest more and those with cash flow shortages reduce their investment. There is a negative relationship between cash flow volatility and investment. The implication of these findings is that even for firms with excess cash flows, the variability of the cash flows has a constraining effect on investment.

Firms generating high cash flows will also reduce investment if those cash flows are not stable implying that although African firms may aim at generating high cash flows they should pay attention to minimise uncertainty in the cash flows. Not only cash flows but its stability is key to firm investment in African firms. A sensitivity analysis was conducted to determine whether our results are not affected by financial distress. Three different proxies were used for financial distress; financial leverage, interest coverage ratio and fixed assets growth. Firms with a negative average assets growth are considered financially distressed KZ (1997). Consistent with studies of Chikan, Kovacs, and Tátrai (2005), Almeidia et al. (2004) and Acharya and Schaefer (2006), controlling for the possibilities of financial distress, the significance of the association between investment and cash flow volatility holds. The possibility of financial distress cannot explain away the negative relationship between cash flow volatility and investment.

Table 6: Dynamic Panel Estimation Controlling for Cash Flow Levels

	CASHFLOW SHORTAGE				CASH FLOW EXCESS			
	VOLATILTY= EWMA		VOLATILITY=CVCF		VOLATILTY= EWMA		VOLATILITY=CVCF	
	Difference GMM	System GMM	Difference GMM	System GMM	Difference GMM	System GMM	Difference GMM	System GMM
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
L. Investment	0.0311**	0.173***	0.208***	0.224***	0.163***	0.258***	0.202***	0.308***
	(-0.04090)	(-0.04880)	(-0.00080)	(-0.04430)	(-0.000005)	(-0.00021)	(-0.00701)	(-0.000051)
CF-SHORT/EXCESS	-0.0878***	-0.0609***	-0.0574***	-0.0517***	0.0141***	0.0711***	0.0773***	0.0775***
	(-0.02018)	(-0.02270)	(-0.00050)	(-0.01250)	(-0.00014)	(-0.00033)	(-0.02870)	(-0.00032)
$OPCF_{i,c,t}/TA_{i,c}$	0.513***	0.212***	0.333***	0.244***	0.289***	0.229***	0.615***	0.259***
	(-0.09830)	(-0.04110)	(-0.00190)	(-0.03670)	(-0.00016)	(-0.000093)	(-0.02050)	(-0.000009)
$CFV2_{i,c,t}$	-0.192***	-0.0669***			-0.129***	-0.0214***		
	(-0.04408)	(-0.02380)			(-0.00006)	(-0.000049)		
$Sales_{i,c,t}/TA_{i,c}$	0.0599**	0.0820***	0.0680***	0.0650***	0.0660***	0.0820***	0.107***	0.0853***
	(-0.02790)	(-0.01140)	(-0.00050)	(-0.01070)	(-0.000054)	(-0.000021)	(-0.00652)	(-0.00003)
$Q_{i,c,t}$	0.0526***	0.0325***	0.0367***	0.0296***	0.0437***	0.0230***	0.0466***	0.00790***
	(-0.01390)	(-0.00970)	(-0.00020)	(-0.00810)	(-0.000025)	(0.00005)	(-0.00418)	(-0.0000021)
$CFV_{i,c,t}$			-0.00420***	-0.00971**			-0.00208**	-0.00124***
			(-0.00010)	(-0.00380)			(-0.00103)	(-0.000059)
Observations	3671	4267	3718	4320	3,671	4,267	3,718	4,320
Number of id	549	596	557	602	549	596	557	602
AR (2)	0.197	0.945	0.74	0.65	0.969	0.455	0.832	0.364
Hansen test	0.598	0.457	0.243	0.366	0.984	0.465	0.539	0.983

Cash Flow Volatility and Growth Opportunities: The comprehensive analysis shows that there is a negative relationship between cash flow volatility and investment decisions for African firms. High growth firms are theoretically known for high retention levels associated with high investment levels. Cash flows of these firms are expected to vary more, since they are still in the growth phase and they have higher risks from numerous investment opportunities that they may undertake. The researchers also examined the impact of cash flow volatility on high growth firms. To examine the variances on the impact of cash flow volatility on high- and low-growth opportunity firms, the researchers followed Aivazian et al. (2005). Extending from Equation 10 to include a dummy variable for high- and low-growth firms to interacts with cash flow volatility. Following financial literature, high growth firms were measured as those firms with Tobin's Q greater than 1.

Table 7: High Growth Firms and Cash Flow Volatility

	VOLATILTY= EWMA		VOLATILITY=COEFFICIENT OF VAR	
	Difference GMM	System GMM	Difference GMM	System GMM
L. Investment	0.0709***	0.214***	0.153***	0.222***
	-2.16E-05	-9.14E-05	-0.000113	-8.26E-05
Q*EWMA	-0.306***	-0.027***		
	-0.000276	-0.000151		
OPCF	0.345***	0.372***	0.528***	0.368***

	-0.000388	-0.000349	-0.000141	-0.000286
Sales	0.0845***	0.108***	0.0924***	0.105***
	-9.06E-05	-5.76E-05	-5.05E-05	-6.06E-05
Q	0.0236***	0.0032***	0.00461***	-0.0075***
	-3.67E-05	-2.01E-05	-3.63E-05	-2.74E-05
Q*CVCF			-0.00308***	-0.001***
			-5.58E-06	-8.73E-06
Observations	2,432	2,942	2,455	2,971
Number of id	431	510	436	516
Instruments	402	473	402	365
AR(2)	0.284	0.975	0.533	0.942
M2 test	0.832	0.981	0.857	0.42

This table provides dynamic panel data estimation results of cash flow volatility on investment on African publicly traded high growth firms. Q*CVCF, Q*EWMA is an interaction of high growth firms and the two measures of volatility. Standard errors are provided in parenthesis below the coefficients estimates. AR (2) test for serial autocorrelation and the Hansen test, test for over-identification of the instrument. * Significant at the 10% level. ** Significant at the 5% level. *** Significant at the 1% level

The results in Table 7 indicate that the coefficient of high growth firm's cash flow volatility is negative and significant at one percent level. This shows that the negative relationship between cash flow volatility and investment decisions cannot be explained away by the growth opportunities faced by a firm. The negative relationship between cash flow volatility and investment is still evident even for high growth firms. Considering the elements of corporate cash holdings, Ferreira and Vilela (2004) found that firms with more investment opportunities hold more cash and generate higher cash flows than firms with lower investment opportunities. The implication of the results is that the volatility of cash flows leads to lower investment. This sensitivity analysis shows that the results are not affected by the cross-sectional variation in growth opportunities. Volatility remains a significant negative determinant of investment. The estimation technique used controls for the possible bi-directional relationship through the use of a lagged dependent variable and the use of a system of equations with orthogonal deviations together with an instrumental technique. The results were robust to alternative measures of volatility. The coefficient of variation captures the mechanical relationship between levels and volatility by scaling the standard deviation of the cash flows with the mean absolute value.

The other measure emphasises the importance of the current volatility in calculating average volatility and captures innovations in volatility levels. The results are qualitatively similar. A statistically significant negative relationship between cash flow volatility and investment was found for both high and low cash flow firms suggesting that firms with unstable cash flows tend to reduce their investment. This shows that firms with higher variability in cash flows face greater shortages and would become actively involved with the external financial markets. Unstable cash flows will call for issuing debt or equity in the capital markets. Too much debt will suppress the available cash flows to interest payments while subsequently suppressing investment. Similarly, if firms have unstable cash flows to conceal the shortages they may want to use the equities markets. Firms in need of cash flows can also use the stock markets to finance their investment needs. In trying to generate higher cash flows, firms should aim at maintaining the stability of cash flows and rely more on internally generated funds since debt financing commits firm cash flows to interest payments. African economies should invest in improving the liquidity of the stocks markets to stimulate investment in such economies.

Model Specification Tests: Testing the legitimacy of instruments and model specification is crucial in dynamic panel data analysis. Using dynamic estimation method controls for endogeneity and heteroscedasticity, however, the differenced equations can produce serial correlation (Baum, 2001). The AB AR (2) test was used to test for the existence of second-order autocorrelation. In all the models, the AR (2) test is above 5% reject the existence of autocorrelation of order 2 is rejected. The moment conditions should be tested for over-identification (Roodman, 2006), the Hansen-Sargan test as reported in all the models evidence correct identification of instruments. The coefficient of the lagged dependent variable is also less than one which is consistent with dynamic stability. These attest correct specification of our models."

5. Conclusion

This article provides evidence on the association between cash flow volatility and firm investment in African firms. There is structural and behavioural heterogeneity between firms in developing and developed economies while analysing African firms on their own is valuable. The analysis employed a unique approach in the form of a dynamic panel model and system GMM which controls for the problem of endogeneity which has not been used in previous studies. This analysis provides direct evidence based on African countries that the volatility of cash flows is associated with lower average investment levels in capital expenditures. The volatility of cash flows remains a significant negative determinant of investment, even after controlling for possible financial distress, the availability of internal funds and growth opportunities. Firms should consider the effects of volatility in their risk management decisions. African firms should trade off the effects of managing volatility and the resulting negative impacts of cash flow volatility on investment levels. This research shows that not only cash flows are a key determinant of investment decisions, but the variability of the cash flows also has a significant bearing on the investment levels of African firms. It was found that cash flow risk as measured by volatility, leads to lower investment even for firms with excess cash flows African firms should not only focus on those strategies to improve cash flow levels, but they should also aim to maintain the stability and reduce the volatility of the cash flows at any given level of operation.

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The Use of Social Media in Public Relations at Non-Governmental Organisations in South Africa

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Abstract: Social media can be a useful tool in public relations in non-governmental organisations (NGOs), but do NGOs make use of social media in their quest for service delivery in South Africa? Social networking sites, blogging, email, instant messaging, and online journals are some of the technological changes that changed the way interaction between people and how they gather information. Although social media is mainly used for interactive dialogue and social interaction, the private sector soon realised that the web-based technologies (especially Facebook and Twitter) could also be a competitive business tool. Non-governmental organisations (NGOs) soon followed suit however at a slower pace than the general communication growth rate of social media in South Africa. This article examines if social networking sites have any impact on public relations practices of NGOs in South Africa – an environment where both customers and employees still struggle to take full advantage of social media. The critical literature findings increase the understanding of the current and future challenges of *social media use in public relations at NGOs in South Africa.* The study explores the main differences between traditional and social media, how social media is redefining public relations role, and shed some light on defining public relations practices, identify the uses, limitations and benefits of social media by public relations practitioners in NGOs. Recommendations for future communication research are given. Based on the literature, a qualitative research design collected data using semi-structured, individual interviews. The results revealed that social media platforms such as Facebook do have an effect, and even changed the way in which NGOs communicate. The study also revealed that social media certainly has an impact on public relations relationships. This means that it has become crucial that public relations practitioners at NOGs embrace and take advantage of social media, and that they should also invest in proper electronic platforms to reap the benefits of improved communication internally and externally.

Keywords: *Public relations, social media, traditional media, excellence theory, Grunig Hunt model*

1. Introduction

In South Africa, various studies highlighted social media as a communication tool used by public relations, given that it is used appropriately and efficiently to address the challenges non-governmental organisations (NGOs) face. Primarily the service delivery challenges concern quality lack of reliability, confidentiality and privacy. The growing number of communication studies investigate and discuss the implication of innovation in social media usage (Kent & Taylor, 2002; Waters et al., 2009; Curtis et al., 2010; Khan, 2017; Medaglia & Zheng, 2017). The interpersonal mass media divide gains momentum from new media platforms that help to bridge and attract scholars who focus on examining the uses and effects of social media on various levels (Stoycheff et al., 2017). Governments around the world strategically use social media in multiple initiatives to co-produce public services, and they also incorporate external stakeholders (such as non-governmental organisations and citizens) in this service delivery exercises. Many social media characteristics have been identified. These are case blogs, microblogs (Twitter), content sharing (YouTube, Instagram), virtual communities, bookmarking sites; collectively these are known as social media platforms (Stoycheff et al., 2017). The common denominator between the characteristics is that social media is increasingly used to organising and manage tool collaboration between non-government organisations. Social media becomes increasingly integrated into several aspects of businesses. Graham and Dutton (2014), state that social media, globally, should focus on the driving forces behind the technology, and the relics of the Internet. New technologies evolved quickly as the concept of networked technologies gained value and more individuals and companies started to apply these technologies.

Global interconnectivity has rapidly increased following the rise and spread of social media. This epitomises the concept of Web 2.0, which was an adaptation of the World Wide Web. Web 2.0 saw the growth of cloud computing, wikis, crowdsourcing and most notably, social networking (Tech Target, 2017). Although social media and Web 2.0 are often confused and used interchangeably, the core of social media is embedded in the

Web 2.0 concept as an application thereof. In practice, this means that social media is realised based on the Web 2.0 concept (Khan, 2017). More specifically, Cole (2018) states that social media is an online conversation platform that replaces more conventional communication methods. It also facilitates access to many people at the same time. Although NGOs were slow to adopt these new technologies, the use of social media in NGOs has increased since the introduction of technology in 2006. Adoption of social media at NGOs, however, remains problematic. In their study, the World Wide Worx (2010) has found that NGOs do participate in social media and that they access to new technologies creatively. They do so by participating in numerous online communities, educating these communities in the process, by teaching them new skills to use and also to gather information online on relevant issues of importance to the NGOs. NGOs also use social network sites as platform social support, network with stakeholders and to share creative ideas. Participating in platforms such as Facebook provides new methods for NGOs through which individuals can learn new media skills. The interconnectivity of the world is characterised by an influx of information sharing. With 49% of the world's population connected to the internet, a growing number of people use a social media platform of some kind (Internet World Stats, 2017). South Africa alone has over 21 million internet users as of 2016 (World Wide Worx, 2017). From the findings, this study identified some shortcomings in the NGO sector towards social media use.

Most participants indicated that limited resources in NGOs are problematic, there is insufficient money, and knowledgeable staff can severely hamper an organisation's ability to create and execute an effective social media campaign. Given the significant role that social media is playing in NGO activities; the researchers are understandably concerned whether these online communities have an impact on NGOs' relationships. This concern has prompted this research to investigate the uses, benefits and limitations of social media in public relations among NGOs in South Africa. Social media is defined as: "A group of intern-based applications which build on the ideological and technological foundations of Web 2.0. These applications allow the creation and exchange of user-generated content." Seargeant and Tagg (2014) also note that "connecting, sharing, commenting and creating relationships act as building blocks of social media." Regarding electronic communication platforms, Lubua, Semlambo and Pretorius (2017) highlight that social media is a communication platform where online communities can be created by users. Here they would share information in various formats. The findings revealed that there was a noticeable improvement in levels of sharing, connecting and commenting; however, social media is still not fully integrated into NGOs. The findings revealed that the central principle of social media is its ability to share information and content with other users. The content might be status updates; others subscribe to a profile to receive regular updates about new content. However, this study adopted the social media definition of Stoycheff et al. (2017) who state that: Firstly, social media consists of deinstitutionalised online platforms. This means that media companies and organisations do not create and disseminate the content.

Instead, they rely on the internet's decentralised sharing structures to do that. Secondly, social media consists primarily of user-generated content. This means that ordinary individuals create and disseminate media. Thirdly, Stoycheff et al. (2017) mention that social media is a dynamic environment that facilitates two-way interaction with an audience that is beyond the reach of any specific recipient. This is important from a branding or public relations point of view. In this regard, Cole (2018) states in support that social media platforms enable engagement with numerous customers in real-time too, for example, determine their needs, feelings or other information at any given time. This makes social media a valuable tool in business competitiveness. The use of social media globally continues to grow; this is also true in the public relations context. More platforms develop, and users join numerous platforms at the same time. Here Rouse (2016) states that the term social media is a collective term that refers to all online communications channels that are dedicated to community-based inputs, content-sharing, interaction and collaboration. Social media incorporates participation, collective intelligence collaborative creations and has borderless distribution characteristics. The uses of social media have added new dimensions to the old press. Here Reiman (2012:82) adds that "social media platforms differ from the traditional communications tools using its dependence on direct and indirect interaction with friends, followers, and constituents".

The use of these platforms shows similarities with the broadcasting industry, while the interactivity of social media transforms media messages into local and international dialogue forums (Al-Deen and Hendricks, 2012). Reiman (2012:8) further adds that users are demanding reciprocal relationships in social media

groups they are subscribed to; therefore, they seek valuable two-way interactions. The realm of social media is a collaboration (Stokes, 2009:337); this is even more so today (ISPA, 2017). This article aims to create a landscape for a public relations communication strategy. This is important because the essential factors need to be identified when executing a social media strategy in public relations strategy in a non-governmental organisation.

2. The South African Social Media Situation

According to Statistics South Africa (2017) indicates that the total population of South Africa is 55, 21 million people; 66% are urbanised. Some 28.6 million South Africans use the Internet and 15 million of them use social media platforms. Social media platforms like Facebook, Instagram and Twitter, have experienced high growth rates; Facebook announced that it has more than 1.32 billion active daily users and over 2 billion active monthly users. The objective of South Africa's National e-Strategy is to position South Africa as a significant role-player in Information and Communications Technologies development (ICT) (SA, 2017). In support, the South Africa's National Development Plan - Vision 2030 states that a single cohesive National e-Strategy is needed to ensure ICT development in all sectors of the economy (SA, 2017). It is generally accepted that ICT development is indispensable in modern society and that it is an important growth-component of South Africa's economy. Technology is used in almost every aspect of the economy. It improves productivity using robots, efficient computer hardware and advanced software applications. The United Nations World Summit describes the information and communication technology infrastructure as key to compete in the global market and also to reduce the digital divide gap (UN, 2017). The South African Department of Communications (SA, 2018) agrees with the United Nations that South Africa is one of those countries that should roll out Internet services to its citizens because many South Africans do not have Internet access.

If they do not have the internet, they cannot use the internet, and therefore, they cannot benefit from the economic advantages it offers. An all-inclusive National Action Plan is required to position South Africa as a country that is ready to transition into a fully digital society (SA, 2017). Smartphones, according to World Wide Worx (2017), significantly expanded the South African internet space but the high cost of data remains a limitation to grow this user segment of 21 million users. In this regard, the expressed intention in The National Development Plan (NDP) to provide sustainable connectivity via a central broadband infrastructure is a priority in the quest to reduce existing inequalities in the society such as unemployment, access to services and poverty (Government Communications Information System (GCIS), 2013). The real challenge for government, however, is to ensure that the ICT goals are actually achieved (SA, 2018). One intention of the National Broadband Policy is to mobilise the capabilities, resources and energies in both the public and private sectors, and to activate the civil society to connect South Africans to the Internet so that they can communicate not only within South Africa but also across the continent and with the entire world. This policy aims to provide vision and a long-term strategy to act as a catalyst for broadband connectivity in South Africa. This policy postulates a considerable challenge to the public sector and the South African government has an important role to play to deploy the national broadband networks (SA, 2018).

The policy has to be implemented soon because, back in 2009, the need was already identified. The South African Government Gazette (SA, 2009) then identified three fundamental principles that should be addressed to establish the link between broadband access and economic growth: critical mass in broadband access in South Africa, affordable access to broadband, skills of users must be developed so that the demand for online services require optimal personal and business services. These broadband objectives would play a crucial role in promoting a South African information society. At the highest level, this policy adheres to the Constitution of South Africa by creating the digital age conditions "to improve the quality of life of all citizens and free the potential of each person". In so doing, it enables equality in the rights, privileges and benefits of citizenship, ensures freedom of speech and associates with the Bill of Rights (South Africa Broadband Policy, 2013a, SA, 2018). This also aligns with the declaration of the Human Rights Council of United Nations General Assembly who stated that access to the internet is a basic human right because it enables individuals to "exercise their right to freedom of expression" (SA, 2013b:2). The South Africa Broadband Policy reflects the commitment of the South African Government to constitute an enabling environment.

The Current Status of Social Media and NGOs in South Africa: A study by the South African Social Media Landscape (2018) indicates that South African Facebook users grew by 14% since 2016 (from 14 to 16 million). Of these, 14 million access social networks on their mobile devices. More recently, World Wide Worx (2017) reports that South African Internet users grew to 21 million by the end of 2016, and approximately 22.5 million in 2017. Pillay (2017) writes that Facebook remained the most popular social network in South Africa. One in five South Africans uses Facebook. However, new statistics show that there are now more than one in five Facebook's users in the country (SA, 2018), and share this view by stating that Facebook is the social media of choice and has 1.9 billion users monthly with millions more joining every month Facebook has evolved from a small student age group network to a global site. Telecommunications laws are governed by the Ministry of Communications in South Africa. The minister administers, regulates and enforces the Telecommunications Act (No. 103 of 1996) (SA, 1996) and Electronic Communications Act (No. 36 of 2005) (SA, 2005) using the industry regulator ICASA (Thornton et al., 2010:101).

These acts require every service provider of a telecommunications service to be interconnected via his or her telecommunication system (except is such a request is deemed unreasonable) (SA, 1996; 2005). Other regulating bodies in the telecommunications system include the competition commission (who oversees the fairness of competition between all the industries) and the justice department who resolves disputes and legal issues within the telecommunications sector (ISPA, 2018). The telecommunication sector plays a significant role to drive and enable the new growth and development in the country. Against this background, the results show that the South African telecommunication sector is establishing rules of good practice. The business (and private individuals) are also evaluating the full impact that social media have on service delivery, and while the NGO's are still not fully transformed, there is a growing awareness of the value to use social media in service delivery. They, however, seem to still lack the knowledge and confidence to use social media effectively and efficiently for professional service delivery. Soon this knowledge will become a required essential skill for public relations in NGOs in South Africa.

Purpose: This paper reviews and brings together the key findings of the literature to increase understanding of current and future challenges *presented by social media to public relations in NGOs in South Africa.* The purpose of this article takes a broad look at the main differences between traditional and social media to give an in-depth understanding of these types of media. Some light is also shed on defining public relations and normative models of public relations practices. This article further discusses the Grunig and Hunt two-way symmetrical model and some of the impact that these new forms of communication have had on public relations practitioners, especially in South Africa. This article aimed to review current published literature on social media and to identify the uses, limitations and benefits of social media for public relations practitioners employed in NGOs. The article also aims to identify existing gaps and to identify potential areas for future research in social media communication.

3. Research Methodology

A qualitative research design was selected to investigate the perceptions and processes when social media are used by public relations professionals. The systemic grounded theory was used to determine a general explanation of the procedures and interaction among people (Field, 2009). Furthermore, the epistemological foundations employed were constructionism and constructivism. This article empirically investigated the social media guidelines for public relations in non-governmental organisations.

Research Settings and Participants: The research was performed in the Gauteng province in South Africa. It investigated participants who could contribute to building the opening and axial coding of the theory in nine non-governmental organisations (NGOs) of varying sizes. In a grounded study the researchers chose (Field, 2009). Emails were sent to the selected NGOs to gain permission to research the NGOs. By nature, the organisational settings differed from participant to participant. Two types of non-probability sampling were used, namely snowballing and purposive sampling. Salmons (2015), defines purposive sampling as intentionally selected respondents to interview based on the needs of the study. Babbie and Mouton (2011), state that the most commonly used method in qualitative research is probability sampling. Dahl (2018) characterises social media as the democratisation of information, transforming people from content readers into publishers, the shift from broadcast one to many between people.

Data Collection: Personal interviews were conducted and all the interviews were recorded. The researcher specifically observed how participants relate to their experiences on social media. Before conducting the semi-structured interviews, participants were assured of confidentiality. Permission to record the interviews were also obtained. The interview schedule was drafted and before semi-structured interviews were conducted with selected practitioners in the selected NGOs. The interview schedule allowed respondents to share a particular story if they wanted to do so without imposing some time limit. Each interview started with an initial question to prompt the participants to start explaining how they would apply social media to their public relations activities in NGOs. The interviews were held as informal conversations to create a relaxed environment where participants freely shared their experiences. As a result, the emerging stories provided useful insight into their experiences.

4. Results

The results create a fertile landscape for public relations practitioners in NGOs by providing holistic, logical and comprehensive structured central themes of social media attributes in public relations. These results were documented and classified after the interviews were conducted with the participants. The table firstly presents the identified communication categories experienced by public relation offices at NGOs then expands these categories in themes. The table also shows the notable quotes about these categories and themes to enhance better understanding of the themes' content.

Table 1: Key Social Media Attributes Experienced by the Public Relations Practitioners in Using for Communication in NGOs

Category	Theme	Significant quote
Global perspective	1. Immediate feedback 2. Two-way communication 3. Convenient 4. Easy to use	1. Social media has changed the way people communicate. 2. It has the potential to educate, inspire, and engage others. 3. Social media is informing and educating the public about issues, to publish activity information or call people's attention to the NGO. 4. Public relations practitioners participate in formal and informal communities or information and support networks where information is exchanged. 5. Participants share their experiences of NGOs to benefit other activities, thereby creating information that is discovered and used by other communities. 6. Public relations engage with information online to learn how to care for their NGOs and to deal with the practical aspects of challenges, as well as to realign their communication strategies to match the reality.
Success and understanding of social media	1. Communication enabler 2. New supporters 3. Collaboration tool 4. Organisation promotion 5. Fundraising 6. Responsiveness 7. Transparency 8. Community engagement	1. Social media provides information on a range of issues, informing and educating the public about NGO activities. 2. Social media provides information on mission, history and organisational structure. 3. Social media encourages and facilitates dialogue between PR and public on donations and fundraising. 4. Through social media, we have been able to talk with other NGO members online, collect information get experiences and opinions about a subject. 5. Social media is used to form networks, to promote, educate, and the campaign.
Purpose and Benefits	1. Enhancing Relationships 2. Knowledge sharing 3. Easy communication 4. Technology discovery	1. Social media is more available are anonymity, engagement and connectedness. 2. Increased interactions with others. 3. Social media helps promote NGOs' image, programs and services they offer to the community, such as social and emotional support.

	5. Networking 6. Peer-to-peer communication 7. Transparency 8. Organisation promotion	4. Benefits of social media for NGO increase accessibility and widening access to NGO information. 5. Social media is used to increase funds, volunteers or community engagement. 6. The benefit of social media for NGO increase content and tailored information through newsletters, images or videos potential to influence policy and increase interactions with others.
Challenges and disadvantages	1. Lack of: • understanding • resources • open communication • embracing social media • skills 2. Non-secure platforms 3. Infrequent use 4. Technological change 5. Reputational risk 6. Internet and email use policy 7. Comprehensive '*how to guide*' to set up accounts online	1. Social media is informal, and people talk freely, this way they hide behind the screen, there is no hierarchy, they are in the comfort zone to express their feelings and attitudes. 2. You lose face-to-face contact with people. 3. Social media can be a communication channel where skills and interest can be identified because people may share more about themselves, but lack reliability. 4. Threatened by new technology, fear of the unknown, risk of disclosing personal private information online. 5. Quality concerns of social media information. 6. Lack of confidentiality and privacy impact on reputation. 7. The risk associated with communicating incorrect, harmful information online. Social media is seen as a possible waste of time. 8. Too much information on social networking site NGOs can't handle the volume, not sure how to correctly apply information found online. 9. Not sure which specific social media technologies are effective to use in NGO for behaviour change.
Social media influence traditional media	Traditional media and resistance to change	1. Social media is less hampered by time and space. 2. Anyone anywhere can participate in a discussion. Social media is a more effective way to spread the message. 3. Through social media, we encourage different stakeholders to attend events and participate in campaigns.
Social media platforms used	1. Facebook 2. Google 3. Newsletter 4. Twitter 5. LinkedIn 6. WhatsApp	1. We use Facebook to stay in touch with friends, meeting new people, organising events, communicating with the internal and external publics. 2. We use Facebook to disseminate and improve communication for future project strategic planning. 3. We use Google and email often as it is friendly to use.
Impact of social media	Reach of social media	1. Social media allows the practitioner to stay up-to-date with trends and new developments in technology. 2. You can reach a large number of people at low cost via social media e.g. Facebook, email, Blogs and others. 3. The speed of communication emerged.
The role public relations play in NGOs	1. Easier to do research 2. New communication channel 3. The high speed of communication 4. Need to keep up with new technology 5. Different writing style 6. New skills needed	1. We understand the role of public relations practitioner as organising events, exhibitions, gala evenings. 2. The internet has added another communication channel to PR tools. 3. Public relations ensure that they generate publicity such as writing press/media releases 4. Writing articles for the organisation's publications (internal and external) audience. 5. We understand the role of a public relations practitioner's task as keeping media clip (articles that appeared in the media about the organisation).

6. New skills needed in managing fear and expectations of online media.
7. We also ensure we establish a positive image of the organisation.
8. Managing the implementation of corporate/NGO communication.

The following themes were derived from the research findings of this research. These themes reflect how public relations practitioners in NGOs embraced social media in their organisations and are discussed below.

Theme 1: Global Perspective: Merrian-Webster (2018) reports that social media is best understood as communication using new kinds of online media which share the following characteristics: participation, openness, conversation, community and connectedness. The search findings redefined the belief that there was no transformation in NGOs towards using social media as a public relations tool. It showed that social media tools had transformed the public relations function in NGOs. During the interviews, different viewpoints and opinions regarding global perspective were voiced. On the one hand, participants positively indicated that social media made it easier to disseminate information to the public and to do research. On the other, some participants reported that it was difficult to use and understand social media; they cited it was tough to keep up-to-date with the ever-changing online technology. Furthermore, participants were enthusiastic about social media platforms such as Facebook, had facilitated access to information and helped them prepare and conduct successful campaigns.

Theme 2: Success and Understanding of Social Media: The participants indicated that they understand social media as a tool for sharing content, insights, and news. According to the participants, social media is a tool to reach the population, in particular, the youth via mobile phone devices. As an NGO, reaching the youth is of vital importance to ensure that youth get involved in NGO activities. This research finding is confirmed by Cole (2018) who observed that social media is an extra way of talking to your customers and clients in different forums where they are hanging out. Furthermore, Cole (2018) states that networking 24/7 is helpful if your prospects or clients even if they are in another time zone. Although there is no South African time difference, crucial information such as load-shedding, for example, can be disseminated by communications even after-hours and out of normal operating hours. The role of social media is to ensure that the NGO message is understood and to provide information about the NGO mission and objectives and to communicate and engage with diverse stakeholders.

Theme 3: Purpose and Benefits of Social Media: Social media is less restrained by space and time (Stokes, 2009). The interviews revealed that the biggest advantage of new media technologies is that it offers people the ability to assemble and to communicate with various individuals over a distance. They do so inexpensively. The participants indicated connecting and communicating with another person over distance gives the NGO an opportunity to be in contact with different stakeholders and enable them to deliver services without physical contact. The results also showed that the participatory value is a huge benefit of using social media and that it can easily reach different stakeholders. These benefits of social media are confirmed by Cole (2018) who indicates that if a service is free, once can easily attract large audiences; social media as a communication tool is basically free, easily accessible and it can be used alongside the traditional methods of public relations and communication. One can quickly engage with one's customers and have a visible web presence where real-time feedback can be generated.

Theme 4: Challenges and Disadvantages of Social Media: According to Fitch (2009), the Internet is a Wild West scenario, where anything goes, there are no rules, emphasising the unregulated and largely unmanaged practices of social media. The research showed the disadvantages have occurred in the form of negative or defamatory comments on the social media NGO site since it is open to everyone, it is easy to post and comment on online. The NGO has no control over what is said on social media pages. The problem is that anyone can join these sites and anyone can comment and partake in a discussion. For South Africa, many rural areas do not have social media access for example, and although the government through the National Development Plan (NDP) project is trying to address the ICT situation, the NGO sector cannot truly measure the impact of how people use social media and participate in campaigns. Another challenge indicated by the

participants is that social media was making public relations roles more time-consuming. Participants admitted that it is difficult to manage the online activities along with their PR responsibilities. From the interviews, participants indicated the older practitioners were not as comfortable with using technology as the younger generation. Challenges they have were identified as uneasiness and feeling threatened by technology.

Theme 5: Social Media Influence Traditional Media: Numerous studies (Scott, 2010; Rajendran & Thesinghraja, 2014; Azimi, 2016) indicate that the use of social media as a communication tool has not only provided an additional channel to traditional media but also strongly influences and complements traditional communication media. These observations were supported by the research participants indicating that social media provided public relations with new communication tools. Here Scott's (2010) view is that social media has revolutionised public relations communications by reducing dependence on print communications. Social media is also quicker and less expensive than print media because it eliminates the printing process. Also using a social media platform in conjunction with traditional media gives the organisation exposure and increases more chances to get a message out and impact on how the public receives it. According to the participants, the most important benefit for NGOs for using social media is that they now have access to more people, especially to people who previously might not have been reached by traditional media.

Theme 6: Social Media Platforms Used in NGOs: From the research findings, it was evident that the Internet had changed public relations functions at NGOs. During the interviews, the different views and opinions regarding the preferred platforms were voiced. On the one hand, participants positively indicated that social media platforms made it easier to do research and surveys among the customer base. They also acknowledged the ease of accessing information on websites. On the other hand, some participants were sceptic about the idea of loss of control over information.

Theme 7: The Impact of Social Media: The impact of social media had surpassed traditional media and easy access via mobile phones further supports social media as modern communication platform (Rajendran & Thesinghraja, 2014:612). From the research, it was evident that the impact of social media was that the Internet had changed the practice of public relations, increased opportunities and had given rise to new skills and ethics. The participants also indicated that the impact of using social media lies in its participatory value and its ability to reach individuals. Although public relations are not always using it to its full potential, the opportunity still exists (Breakenridge, 2012). The speed of communication emerged as one of the most dominant themes with eight participants in NGOs agreeing that the most significant impact of social media was that it made communication instantaneous. Furthermore, social media immensely facilitate bringing together geographically dispersed individuals who share common interest or opinion.

Theme 8: The Role of Public Relations: Public relations are the two-way communication used by public relations practitioners to interact directly with key publics, to relay information to the community and also to members of the management team (Agile PR Solutions, 2018). This view is also supported by Kotler and Armstrong (2017) who further suggest that public relations are a management function that seeks to establish and maintain mutually beneficial relationships between an organisation and the public on which the success depends. As a result, public relation is a valuable marketing tool to manage noteworthy information for any organisation. The search findings revealed that public relations need to adapt their writing style and have technical skills to implement online plans.

Discussion of Results: The primary characteristics of social media, as mentioned in Table 1, are Global perspective, Success and understanding of social media, Purpose and benefits of social media, Challenges and disadvantages of social media, Social media influences traditional media, Social media platforms used in NGOs, Impact of social media and the Role of public relations. The characteristics are discussed next. From the global perspective, the research findings in this study found that social media is a unique communication tool. Social media is a powerful tool which offers collaboration between users and is a social interaction channel for a range of individuals. Studies (Chawinga, 2017; Khan, 2017, Lumbua, Semlambo and Pretorius, 2017) acknowledge an increase in social media as a powerful tool in human activities. A Botha, (2017) study confirms social media, Facebook and similar sites are becoming a communication tool used by businesses.

Uyenco (2017) concurs and indicate that social media has become an effective tool for customer service, engagement, content creation, marketing and market research.

The study by Zang, Feng and Chen (2018) adds to this view by stating that social media is, in addition to providing content to an audience, also an interactive platform to facilitate dialogue. This supportive view is confirmed by Uyenco (2017) who stated that social media as a tool and as a platform is no longer isolated to the marketing or public relations team as social media affects several sectors. Cole (2018) states that social media also affects brand awareness (personal or business brand awareness) and facilitates networking or building online relationships. Networking and brand building are synergetic because, by networking, the brand is also becoming more visible. However, the study acknowledges the need to integrate social media in their day-to-day operations. From a managerial perspective (understanding, purpose and benefits), the research findings identified social media is becoming increasingly more important to disseminate information and to engage with customers. Social media provides the opportunity for practitioners in NGOs to engage the public in online platforms. This observation agrees with other studies, Botha (2017); Khan (2017) who highlighted the following factors to be important characteristics in enabling users to use social media in the companies comfortably. Social media can increase awareness, to advertise product or services, for business to business purposes, to gain feedback from customers, to analyse the competition in the industry and offer promotional offers or items on social media. Khan (2017) emphasises that understanding social media critically means, among other things to engage with the different forms of sociality on the Internet in the context of society.

On the contrary, regardless of the negative experience that users of social media may have experienced, a well-planned use brings positive benefits to social society and the NGOs (Lubua et al., 2017). The research findings in this study indicate that because the social media landscape is continually changing through innovation, Internet users are increasing on a daily basis, and new users are more vulnerable to security concerns because they have less experience and low knowledge. This observation agrees with other studies which concluded that security was a concern, but it is important to educate users about important security issues to build confidence on these platforms (Lubua et al., 2017). Unforeseeable trends, businesses and NGOs will need a devoted social media department to succeed on these platforms. The research finding is confirmed by Uyenco (2017) who observed that a department devoted to the discipline of social media would actively watch for these changes, anticipate them and even capitalise on them. These two studies emphasise that to control or guide the image online, in general, the strategies people use to achieve this are updating their status, sharing special events, posting comments, and or retweeting other posts frequently. The research findings stressed the challenge of NGO accessibility to social media, internet or technology and sometimes the origin information on social media. This finding is in line with the findings obtained by Botha (2017), namely that there is a challenge especially with customers who stay in rural areas. The Botha (2017) study also concluded that there is a challenge with unauthentic posts on social media platforms which can cause harm to the company's reputation.

Furthermore, another challenge that was mentioned was the fact that companies do not have face-to-face encounters with customers when using social media. The study discussed above confirms that social media can be utilised effectively and to the benefit of companies, depending on the techniques, strategies and frameworks that a company chooses to apply. Research findings suggest the need for understanding social responsibility and ethics of social media as a set of well-defined principles which govern the ways of communication taking place between the practitioner and the public. The principles are moral values that are important to a business. It is important that the practitioners present themselves truthfully on social media platforms. The research findings are confirmed by Stoycheff et al. (2017) who observed that personal integrity is part of a practitioner's professionalism. This implies that practitioners should never misrepresent, falsely promise or lie about products or services online as they are judged by the way they act. The principle of ethics is also confirmed by Uyenco (2017) highlighting that a social media practitioner that embraces ethical principles will be an asset to any business. This observation agrees with other studies (Botha, 2017) which concluded that there are general problems that a company encounter when using social networks. Botha (2017) further highlights reputation damage, when the wrong content which can be placed unintentionally on social media can damage a company's reputation. Ownership of user-generated content, employees are usually appointed and responsible for creating content. This will then carry the responsibility

of approving content created before it is published on a social network site. The research findings also identified that most NGOs interviewed for this study do not have a technology plan in place.

Social media has an impact on behaviour change, and currently, NGOs struggle to find a balance based on the consequences of not employing technology effectively in the organisation. The research finding is also confirmed by the Han and Myers (2018) study indicating that these business applications of social media are considered innovative from a technology commercialisation perspective, but they can be very confusing to users who just want to use an SMS or social media to keep in touch with friends and families. The study also observed that social media might provide highly interactive platforms for users, so the needs of users are changing. On the contrary, other reasons why the company does not make use of social media platforms. What response was keeping up with social media trends can often distract a company from the core function of the business. Still, following traditional ways and return on investment is too little in the NGO sector. This observation is supported by the Botha (2017) study which concludes that if social media is not used efficiently, security is not efficient enough, which can lead to being hacked and cause reputational damage on the perceived relevance or usefulness of social media.

This study also determined the perception of respondents on how relevant social media in NGOs is in South Africa. The results in table 1 revealed that 70% of respondents are positive that social media is relevant in promoting the NGO activities. Specifically, the connectivity of social media plays a role in this positive view. Social media is readily available and affordable to many NGO practitioners. This observation agrees with other studies which concluded that social media could facilitate and reach specific audiences internationally on specific issues, and improve long-term, cost-effective relationships with supporters, volunteers, sponsors and donors regarding NGO activities (Chawinga, 2017, Lubua et al., Zoonen, Veerhoeven and Vleigenthart, 2017).

5. Conclusion and Recommendations

This study has concluded some shortcomings of social media use in public relations efforts of NGOs; hence the followings recommendations are made: Research should be conducted as there is a need to determine the relative effectiveness of the different types of social media platforms as networking sites for public relations communication. Research review is required to establish whether social media improves public relations communication practices in the short- and long-term. Further research would allow a better understanding of new public relations information experience and would particularly be useful to practitioners in NGOs who work with diverse publics regarding understanding how to connect with and inform public in social media. Research should be conducted to determine the impact that social media has on public relations in NGOs with large sample sizes. Furthermore, research should be undertaken to determine the longer-term impact on the effectiveness of social media for public relations using a mixed motive model or longitudinal studies. Geyer and Krumay (2015) mention that more research is needed about social media use in organisations and how companies can evolve their communication on social platforms, what are the standard best practices (for example successful applications), and how do organisation structures have to adapt. The findings showed that each of the studied variables existed in different levels among public relations in NGOs.

Continued research should be conducted by relevant communication departments (Public relations, Marketing, Government Communication Information Systems) to increase awareness and understanding of the current and future challenges of social media that the country still experiences. Further research in this area of social media would allow a complete understanding of new users' experiences and would be particularly useful to practitioners who work in NGOs in understanding how to connect and inform stakeholders in social networks. Public relations and NGOs management should develop and implement strategies and plans to effectively make sure that government should investigate the risks arising from using social media networks, such as sharing information online and the consequences for confidentiality and privacy. The government should strive to become a world leader in ICT. The government should develop mechanisms to educate the risk to assure users of their confidentiality and privacy effectively. The government should effectively address social media regulation, fake news into mainstream media. The benefits of social media should be promoted instead of making irresponsible threats to media and disturb internet freedom in South Africa. The necessary support system for the NGOs should be designed, developed

and sustained by the government. NGOs should understand social media have the knowledge and confidence to use it appropriately and effectively in public relations, while their practitioners should become skilled so that they can include social media in their communications skills toolkit.

Summary: For the foreseeable future, social media is here to stay, and it will continue to evolve and grow in unprecedented ways. If an NGO business hopes to create and maintain a social media presence and increase their brand awareness and return on investment, public relations practitioners will need capable staff. Practitioners not only need the skills in NGOs, but also a level of insight that will ensure that they recognise opportunities and avoid challenges before they arise on social media platforms. Moreover, the variables resulted in a significant difference in the adoption, uses, purpose, benefits, impact and role of applying social media among public relations in NGOs. The study concludes that NGOs have the opportunity to improve their use of social media, through offering easy ways to use platforms, encourage sharing of the information useful in the NGOs and safeguard the security of the online platforms. The extended use of social media will enable practitioners to overcome challenges in NGOs with the possibility of improving NGO activities. Proper guidelines and policies should add to awareness, adoption, social responsibility and a positive organisational culture of social media as a valuable public relations tool in South African NGOs.

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Contrasting Contemporary Advertising Media Strategies of Small Retail Firms: The Mediating Role of Media Effectiveness on Firm Performance

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Abstract: This paper is an investigation contrasting modern and traditional advertising media from the perspective of small retail firms in Limpopo province of South Africa. Prior studies established juxtaposition in terms of media choices which continuously challenges businesses at large, per se, small retail businesses. A cross-sectional survey, through a purposive sampling technique of a subsequent sample size of 236 owners and managers of small retail firms was utilised in this research. Descriptive statistics, correlation and exploratory factor analysis (EFA) were used in data analysis. Furthermore, structural equation modelling (SEM) was used in hypotheses testing. The findings of the study posit that traditional advertising media have no significant influence on communication effectiveness and the performance of small retail SMEs. Contrarily, modern advertising media was found to positively and significantly influence the performance of retail SMEs. The practical implications of this study primarily pertain to the demise of traditional advertising media in the contemporary environments which business people need to consider. Theoretically, the study posits a review of the theory that pertains to the use of traditional media juxtaposed to modern media in contemporary advertising.

Keywords: *Modern Media, Traditional Media; Media Effectiveness; Firm Performance; SEM*

1. Introduction

Contemporarily, there are two broad categories of advertising, namely, traditional and modern advertising which are defined by the typologies of media. Noticeably, traditional media forms are continuously being transformed to be consistent with recent tastes and trends (Shivarudrappa, 2014). Eventually, this creates a juxtaposition in the contemporary world whereby the new media and traditional media are prevalent. Advertising is regarded as a non-personal communication conveyed and paid for by the marketer pertaining to a product or idea (Bachnik, Nowacki, & Szopinski, 2018; Du Plessis, Van Heerden, & Cook, 2012). Traditionally, advertising messages or commercials were communicated utilising conventional media such as television, radio, newspapers, magazines, outdoor displays, car cards, fliers, directories and direct mails (Kotler, & Amstrong, 2010). Thus, the advent of online communities has resulted in the disappearance of the chasm between brands and consumers by crafting a dyadic communication platform leading to sprouting of an innovative plethora of advertising media (Thornhill, Xie, & Lee, 2017). The definition of advertising is expanding to encapsulate the potency to convey marketing communication messages about an organisation offered by the generality of mass mediums such as television, radio, print media, internet and social networks (Russo, & Simione, 2017; Peter, & Donnelly, 2009). Consequently, the contemporary milieus of advertising media include both traditional and new forms of media. New media advertising encapsulates numerous benefits, such as rapid customisation (Bachnik et al., 2018), decreased cost (Russo, & Simeone, 2017; Woerndl, Papagiannidis, Bourlakis, & Li, 2008), high flexibility (Okazaki & Taylor, 2013).

With the acquisition of traffic, ease measuring and user tracking, ability to effectively manage access and frequency, modern advertising media potentially reach large audiences relatively quicker through social contacts (Okazaki, & Taylor, 2013; Hanafizadeh, & Behboudi, 2012; Woerndl et al., 2008). Furthermore, the credibility of messages delivered to customers on social networks is deemed very high (Evans, & McKee, 2010). With this wide spectrum of benefits encapsulated in modern media advertising, the question of where to invest communication budgets has baffled researchers and marketing practitioners contemporarily, especially within the retailing industry. Undeniably, modern media has radically transformed the communication platforms in terms of speed, composition, and information accessibility by customers, now and in the future (Thornhill et al., 2017; Zhang, & Peng, 2015; Shivarudrappa, 2014). Even small businesses are utilising social media to enhance their visibility and sustainability in the contemporary competitive business environments. Howbeit, brand building on the internet has proven to be a daunting task for retailers. A challenging issue for many retailers is bridging the gap between marketers and consumers on

these social media (Campbell, & Bickle, 2017). Brand building on the internet should be clear, consistent and reflecting leadership not only in the implementation of online advertising, but also in respect of the overall construction of the brand (Campbell, & Bickle, 2017).

The common challenge expressed by both experts and management is that plausible ramifications on brands image exist in the absence of clear strategies and policies to effectively manage contemporary media (Hutter, Hautz, Dennhardt, & Füller, 2013). As such, the threats of new age advertising media can potentially lead retailers to prefer traditional media. Therefore, this study engages a holistic approach and examines the effectiveness of modern and traditional advertising media amongst retail shops. This study aims to establish the effectiveness of traditional and modern advertising on firm performance in retail SMEs. The study contributes to the theory and practice of advertising by investigating the existing premises that traditional media can be integrated with modern media in contemporary advertising strategies. The study utilises small retail SMEs to discover the extent to which the two categories of media are compatible in contemporary environments.

Objectives: The following were the objectives of the study:

- To compare the effectiveness of modern and traditional advertising media amongst retail SMEs.
- To identify challenges which retail shops encounter in using modern and traditional advertising media.
- To assess advertising strategies which retail shops implement.
- To ascertain the relationship between modern and traditional advertising media and the subsequent impact on firm performance.

2. Review of Related Literature

Retailing in South Africa: Retailers inhabit a crucial position in South Africa and shopping centres are increasingly being central in the nation's economic activity resulting in numerous progressive consequences in the wider economy (Nelson-field, Riebe, & Sharp, 2013). The South African retail sector is encapsulated by major organisations, namely; Edcon, Pick n Pay, Shoprite, Spar, Woolworths as well as Massmart (Prinsloo, 2010). According to the Global Retail Development Index (GRDI, 2017), South Africa is considered as 26th amongst 30 developing nations scoring 40.2, a drop from the year 2010 where it ranked 24th with a score 41.7. The GRDI annually publishes statistics ranking developing nations pertaining to international retail growth where nations are rated utilizing a 100-point scale. A higher rating entails that there is a superior urgency for retailers to consider investing in that particular country. The retail industry's contribution has been growing. For instance, 2017, together with accommodation and wholesaling, retailing contributed R627 billion to the total GDP value of R4.7 trillion. Noticeably, if the unregistered informal retail trading transpiring in the streets could be accounted for, the retail industry's economic contribution is extremely substantial (StatsSA, 2017). On the other hand, the retail industry in South Africa is deemed to contribute significantly towards employment creation particularly for the youth. Despite the lack of skills amongst the South African youth, the retail industry has contributed immensely by creating employment and training as salespersons, cashiers and other lines of work.

With the continuous sprouting and growth in the retail businesses, the contribution in employment is expected to continuously rise. The South African retail sector is regarded as highly vigorous and participants relentlessly seek sustainable methodologies. Firstly, one of the challenges facing the organised retail sector in South Africa is the competition from the unorganised sector. Similarly, in South America, huge retailers experience heightened competition from small retail participants (Hanafizadeh, & Behboudi, 2012). Alternatively, small retailers are faced with poor infrastructure and lack of basic amenities as they are located in less developed locations (Nelson-field et al., 2013). Overall, retailers also experience heightened competitive activities from retailers in electronic marketing spaces from firms like Amazon.com with online applications that enable shoppers to access product images and videos and make comparisons. Subsequently, such comparisons enable consumers to make orders from online competitors through mobile devices. Thus, intermittent demand, new products, erratic prices and changes in competitive promotions are continuously confronting retail SMEs (Du Plessis et al., 2012).

Modern Advertising Media: This phenomenon has emanated as a result of businesses interacting with their customers through social media conversations. Jones, Borgman, and Ulusoy (2015) posit that social media marketing constitutes online advertisements shared through social media communities or networks. Through the rapid growth of social media patronage by customers, marketers increasingly realise the potentials of utilising social media marketing in communicating with large consumer audiences. Shivarudrappa (2014) indicates that the conventional approach which follows the one-to-many approach in conveying marketing messages to latent customers has ceased to be collaborative, effective and competitive in communication. Zimmerman, and Sahlin (2010), opine that new media communication utilises social networks in achieving communications goals that can reach all sorts of customers who are active on social media. Thus, modern media has enabled more ordinary customers to relay experiences and opinions pertaining to products at reduced or no cost on a global platform (Okazaki, & Taylor, 2013). Consequently, marketers that have embraced and began trialling with these new channels have enhanced future prospects of success (Gillin, 2009). According to Corstjens, & Umblijs, (2012) retailers that positioned themselves early on social media in reaching out to their customers relatively performed better pertaining to market share, profitability as well as market leadership.

Besides the noticeable success, cluttering on social networks is affecting new media advertisements (Thornhill et al., 2017). For instance, Nelson-Field et al. (2013) empirically established how cluttering on social networks demises the ability of Facebook users to recall advertisements. Besides Facebook, defined as website pages published and updated by an individual or more people, blogs are another famous social media (Zhang, & Peng, 2015). For firms, blogs are linked to the business's main website for easy accessibility by visitors. Customers can subscribe to firms' blogs via Really Simple Syndication (RSS) feed and keep abreast of marketing information from the business. A blog enables firms to establish credibility with contemporary consumers who are highly participative in the blogosphere (Kilian et al., 2012) by posting comprehensive information about the firm (Okazaki, & Taylor, 2013). Other social media tools common today include, LinkedIn, Twitter, my space etc. Established in 2002 and unveiled the following year, LinkedIn is a networking platform primarily for linking up people for professional purposes (e.g. employment and business prospects) (Shaltoni, 2017). Peter, and Donnelly (2009) categories LinkedIn as a modern media networking site specifically designed to build professional networks. Nowadays, firms utilise Twitter in order to directly connect with their clients and broadcast noteworthy information (Shaltoni, 2017). Twitter involves real-time information sharing through the so-called tweets and gives firms opportunities to go viral.

Regardless of the characters in Twitter posts being only a maximum of 140, it is a highly versatile and crucial platform to link the brand with masses of consumers (Neff, 2013). Many firms have incorporated social media advertising and experienced substantive decreases in advertisement expenditure. Overall, Childers, Peck, and Carson (2001) assert that with fascinating nature of modern shopping and the essence of social media, the value accruing towards firms because of these new media is on the rise. The prowess of social media results in high levels of joy as customers has the opportunity to individually examine the products being procured (Okazaki, & Taylor, 2013). However, social media still comes short of the tangible experience that comes with classical marketing. For instance, most items sold are comprised of vital characteristics which influence the entire purchasing process. The features include weight, texture, and firmness that need integration of senses prior to concluding on a purchase. Nonetheless, it is imperative that the role of modern media in facilitating purchases of products is increasingly proliferated in the markets since the new media enables consumers to view and interact with their suppliers online (Nelson-Field et al., 2013). Thus, the study postulated the following hypotheses to investigate the effect of modern media on retail SMEs:

H1: Modern advertising media influences the communication effectiveness of retail SMEs in South Africa.
H2: Modern advertising media have an impact on the performance of retail SMEs in South Africa.

Traditional Advertising Media: Regardless of online and social media marketing having occupied an uttermost position contemporarily, this seldom implies the automatic demise of traditional advertising (Shivarudrappa, 2014). Latent literature outlines that television advertising is still a pertinent technique in traditional marketing. Evidently, customers are still influenced to make decisions based on an advertisement from traditional media. As such, there is no doubt that in many industries marketers still rely on the television, newspapers, magazine etc. in achieving marketing communication objectives. This means that

these traditional marketing methods are still relevant and acceptable approaches. Interestingly, even young people consider print media sources as conveying essential information and appropriate in guiding buying decisions (Kilian et al., 2012). With the advent of online formats of traditional media offering more opportunities to interact more effectively with consumers, trust in traditional advertising is revitalised and becoming more pervasive and persuasive (Nielsen et al., 2013). Traditional advertising is associated with high costs and this maybe a major hindering factor for small business (McCann, & Barlow, 2015). The costs associated with traditional media are primarily on advertisement creation, regardless of it being done in-house or outsourced. Also, it is costly to obtain the appropriate advertisement spot on traditional media such as the radio, television or in the newspapers (Neff, 2013).

Furthermore, Russo, & Simione, (2017) argue that the reliability of traditional media is subject to scrutiny as customers regard them as less reliable sources. However, due to many people obtaining their news from online sources, there is a huge potential for online advertising revenue of these media to continuously increase (Buchwitz, 2018; Graham, & Greenhill, 2013). Thus, Graham, & Greenhill (2013) argue that there is a need to improvise on innovative strategies if traditional advertising strategies are to remain pertinent in the eyes of contemporary consumers. For, it is detrimental to continue with the same traditional approaches without considering modifications to be apt in the digital age. As Jones et al. (2014) cite, for small business there is need to include traditional media and not totally disregard them by considering 'a middle-the-road" approach that incorporates marketing opportunities emanating from both media. To investigate the influence of traditional media in the contemporary context, the study proposed the following hypotheses:

H3: Traditional advertising media influences the communication effectiveness of retail SMEs in South Africa.
H4: Traditional advertising media have an impact on the performance of retail SMEs in South Africa.

Media Effectiveness and Firm Performance: The effectiveness of advertising media should be examined in the context of how contemporary media contributes to firms attaining their positive firm performance (Bannor, Asare, & Bawole, 2017). Due to the escalating quest for marketers' feedback, it is imperative to emphasis measuring short and long-term effectiveness of media against marketing communication goals (McCann & Barlow, 2015). The efficacy and utilisation of communication media have transformed throughout the years, positing that the effectiveness of media is bound to change with time. For instance, there is a noticeable decline in the effectiveness of traditional media which seems to emanate from the arrival of new media (Bannor et al., 2017). Accordingly, the effectiveness of marketing communications is determined by preciseness in targeting specific behavioural classifications or objectives. New advertising media enables retailers to decrease costs, not only by providing brand awareness for relatively low expenses, but also allowing them to globalise from online platforms. Through the internet, retailers will not only offer their products and services locally, but globally. As a result, this will increase economic growth as customers from across the world will buy the products using e-commerce (Du Plessis, Strydom, & Jooste, 2012). Social networks present various superior opportunities for marketers than traditional media (Russo & Simione, 2017).

Kilian et al. (2012) established that social media is more operative than traditional media in brand and product positioning within the contemporary environments. Hutter et al. (2013) argue that social media exposure of customers to the products has reflected more positive assertiveness toward the brand compared to exposure through online magazines or newspapers. Advertising effectiveness should contribute towards the various firm performance metrics, regarded as financial and non-financial. Ascertaining advertising performance is a procedure that affords feedback on the outcomes of marketing undertakings. From the financial point of view, advertising effectiveness could be defined as a return on investment in marketing activities in the firm (McCann, & Barlow, 2015). Over and above, it is imperative that firms need to carefully consider the purposes their assets will be spent on. In the context of advertising, business performance is essential for corporate budgeting and compensation as well as promotional decisions. Due to the growing demand for marketer's knowledge, it is necessary to focus on the framework where it is possible to measure both short-and long-term financial impacts on enterprise marketing investment (McCann, & Barlow, 2015). On this background, the following hypothesis was postulated:

H5: Communication effectiveness has an impact on the performance of retail SMEs in South Africa.

3. Methodology

Purposive sampling technique was utilised in this research due to the fact that the majority of SMEs in the study area are unregistered rendering it difficult to establish a reliable sampling frame. The research was conducted using the survey technique at the hand of a self-administered questionnaire which was disseminated through the door to door mechanism. Most questionnaire items were developed for this study and to ascertain the reliability of the instrument and internal consistency of the scale utilised, a Cronbach's alpha reliability coefficient (CRA) of 0.70 or higher was acceptable for the utilised instrument (Nunnally, 1978). For hypothesis testing, the study utilised the structural equation modelling (SEM) approach using AMOS version 24. The SEM statistical technique is utilised in this study for ascertaining the research model and the interrelationships between the variables. SEM is a second generational statistical tool constituting two primary models. Firstly, the measurement model also called the outside model investigates each latent variable utilised and the associated items used to measure the variable. Secondly, the structural model constitutes the analysis of relationships between latent variables (exogenous or independent variables and endogenous or dependent variables). SEM is also deemed as a versatile and highly effective estimation approach pertaining to a set of different multiple-regression equations estimated concurrently (Hair et al., 1998).

4. Results & Data Analysis

Sample Characteristics: The research sample in this study comprised of 236 owners and managers of SMEs in the Capricorn District Municipality of the Limpopo province. Initially, a total of 450 questionnaires were distributed. Thus, the response rate in the study was 52%. As illustrated in Table 1, most of the participants were male (55.5%), within the ages of 31-40 years (38.6%) and were mainly owners (69.5%) and not managers. Additionally, of the small retail firms represented in the study, the majority employed 5 workers and below (41.5%) and found in urban areas (79.7%).

Table 1: Sample Characteristics

Variables	Category	Freq	%	Variables	Category	Freq	%
Gender	Male	131	55.5	Position in business	Owner	164	69.5
	Female	105	44.5		Manager	72	30.5
Age	Below 20 years	22	9.3	Number of employees	5 and Below	98	41.5
	20-30 years	52	22.1		6-20	77	32.6
	31-40 years	91	38.6		21-50	35	14.8
	41-50 years	48	20.3		51-200	26	11.1
	Above 50	23	9.7	Location of business	Rural	48	20.3
					Urban	188	79.7

Structural Equation Modelling: Firstly, factor analysis was conducted through principal component analysis (PCA) and varimax rotation to determine to determine the possibility of reducing the data into a few crucial factors. Prior to conducting PCA, data was first checked for sample adequacy through Kaiser-Meyer-Olkin (KMO) test, of which all the items had KMO values above 0.5 which is considered as suitable for factor analysis (Tabachnick, & Fidell, 2007). The Bartlett's Test of Sphericity (BTS) was used together with KMO and BTS ought to be significant ($p<.05$) for the applicability of factor analysis (See Table 2).

Table 2: Descriptive Statistics

Measures	MEAN	SD	EIGEN	TVE (%)	KMO	BTS
Modern Media	4.18	1.244	3.913	84.306	0.905	0.000
Traditional Media	2.68	0.717	2.825	70.283	0.879	0.000
Effectiveness	3.56	1.330	2.647	83.424	0.897	0.000
Performance	3.98	1.248	2.821	16.343	0.680	0.000

Measurement Model: The results of CFA under measurement model portrayed acceptable fitness (chi-square = 43.340; DF = 21; p = 0.000; NFI= 0.950; CFI = 0.958; TLI = 0.936; chi-square/DF=2.064 and RMSEA=0.054). Furthermore, reliability and validity were tested using composite reliability (CR) and average variance extracted (AVE) were calculated, respectively. The results indicated satisfactory consistency as all CR values were above 0.70 and most SFLs were above 0.50. Data was assessed for reliability and validity. The results of SFLs show satisfactory internal consistency as all the values were above the recommended value of 0.45 (Hair et al, 2010). Also, the figures for Cronbach's alpha consistently show acceptable reliability of the constructs.

Table 3: Measurement Model, Validity and Reliability Assessments

Constructs	Items	SFLs	CRA	CR	AVE
Modern Media	MM1	.772	.845	0.895	0.681
	MM2	.839			
	MM3	.861			
	MM4	.827			
Traditional Media	TM1	.728	.786	0.863	0.612
	TM2	.788			
	TM3	.782			
	TM4	.829			
Effectiveness	Eff1	.702	.787	0.814	0.523
	Eff2	.726			
	Eff3	.753			
	Eff4	.709			
Performance	FP1	.768	0.759	0.763	0.617
	FP2	.802			

Furthermore, the tests for validity were determined through inter-construct correlation analysis and as shown in Table 4, the correlation values were not above 0.80 indicating divergent validity. The correlation coefficients ranged between -0.084 and 0.416 which is all satisfactory. Divergent validity as ascertained through inter-construct correlation coefficients contrasted to square roots of AVE. All the square roots of AVE figures, as presented along with the diagonal in bold (See Table 4), exceeded their respective correlation coefficients. For convergent validity, all the SFLs exceeded the threshold of 0.50, thereby signifying excellent convergent validity (See Table 3).

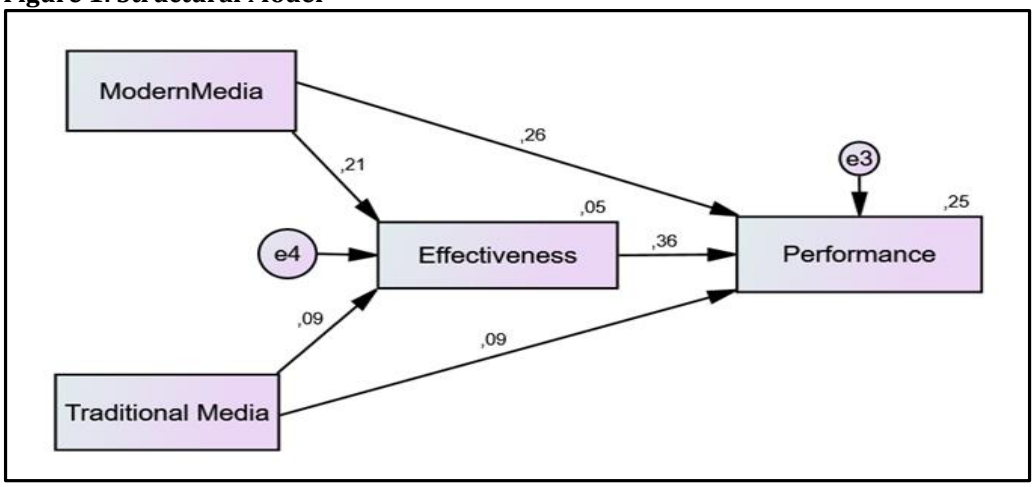
Table 4: Inter-Construct Correlations and Square Root of AVE

	Modern Media	Traditional Media	Effectiveness	Performance
Modern Media	**0.825**			
Traditional Media	-0.084	**0.783**		
Effectiveness	0.198	0.076	**0.723**	
Performance	0.324	0.091	0.416	**0.785**

Note: Square root of Ave is presented in bold

Structural Model: Prior to conducting SEM analysis, the preliminary evaluations for normality, outliers and missing values in the data which often affect model fitness were conducted and no anomalies were established. Thus, after satisfying measurement model requirements, SEM was conducted. The outcomes of SEM model fitness consistently depicted acceptable model fit (chi-square = 1,426; DF = 1; p = 0.232; NFI= 0.979; CFI = 0.993; TLI = 0.958; chi-square/DF=1.426 and RMSEA=0.046). According to Figure 1, the R-squared value for the endogenous latent variables effectiveness (0.05) and performance (0.25) reflects acceptable model adequacy. Precisely, the results review that the structural model explains better (25%) variance in the performance variable compared to the effectiveness variable (5%).

Figure 1: Structural Model



The results of path analysis through SEM are illustrated in Table 5. Results review that, of the five hypotheses studied, three were significant (Also see Figure 1). Thus, hypotheses H1, H2 and H5 where significant whereas H3 and H4 were not significant. Precisely, the path analysis reviewed that modern advertising media positively and significantly influences communication effectiveness (β=.206; p=0.003) as well as firm performance (β=.260; p<0.0001). The positive and significant relationship was also established between communication effectiveness and firm performance (β=.357; p<0.0001). On the contrary, even though positive the influence of traditional advertising media on communication effectiveness (β=.093; p=0.176) as well as firm performance (β=.086; p=0.161) was insignificant.

Table 5: Hypotheses Results Direct Path Analysis

Hypothesised Relationships				β	S.E.	C.R.	P	Reject H^0
H^1	Modern Media	→	Effectiveness	,206	,062	3,005	,003	Yes
H^2	Modern Media	→	Performance	,260	,055	4,158	***	Yes
H^3	Traditional Media	→	Effectiveness	,093	,111	1,353	,176	No
H^4	Traditional Media	→	Performance	,086	,097	1,400	,161	No
H^5	Effectiveness	→	Performance	,357	,061	5,688	***	Yes

Furthermore, post hoc mediation analysis was conducted to ascertain the mediating effects of media effectiveness on the paths between the types of media (modern and traditional) with firm performance. The software Amos Ver. 24 was utilised to measure the mediating effects in the model. Utilising the Baron and Kenny (1986) approach the results indicated that the mediator variable (media effectiveness) had partial mediation between modern media and firm performance whereas there was no mediation between traditional media and firm performance. Firstly, the link between modern media and firm performance was found to be significant and positive (β=.282; p<0.0001) before the introduction of the moderator variable and still remained significant and positive (β=.260; p<0.0001). However, the slight decrease in the regression weight implies partial mediation. Secondly, the link between traditional media and firm performance was insignificant even though positive (β=.104; p=0.150) prior to the mediator variable inclusion. The path remained insignificant and positive (β=.086; p=0.161) when mediated by media effectiveness implying that there was no mediation.

5. Conclusion

The results of this study clearly indicate that there are significant differences regarding the two typologies of media that were being investigated. The study substantiated that the effectiveness of modern media and the subsequent impact on firm performance is very high amongst retail SMEs in South Africa. Contrastingly, traditional media in the contemporary environments was posited as of a lesser influence and value towards

media effectiveness and firm performance of small retail SMEs. Although these establishments contradict findings from other past researches (Kilian et al., 2012; Nielsen, 2009) which established no substitution of traditional media by new media, the results established posit precautionary implications towards the future in this regard. However, the study's findings are consistent with establishments in more recent studies (Ahmad, Bakar, & Ahmad, 2018; Bannor et al., 2017) which indicated a replacement of traditional media by new forms of media and a shift in the audience attention towards online channels. This substantiates assertions that have become prevalent that considerable scores of internet users are watching less television, as well as reducing their newspaper reading and listening to the radio (Palmer, & Koenig-Lewis, 2009).

Thus, challenges pertaining to conventional media are poised to grow towards facing utter demise and loss of revenue. The above results are substantiated by the finding of a negative relationship between overall communication effectiveness and the use of traditional media. Thus, there is no communication effectiveness that could be derived from using conventional media by retail SMEs. Furthermore, post hoc mediation analysis that was conducted indicated that media effectiveness played a role as pertains to the relationship between modern media and firm performance. Although there was no full mediation, the media effectiveness positively contributed to firm performance in modern media. Thus, a positive relationship implies that there are positive connotations within the link. However, this mediation was not established as pertains to the link between traditional media, media effectiveness and firm performance. Thus, there is no positive and strong link between media effectiveness and firm performance that can be traced to traditional media.

The implications of this study are primarily in signalling the demise of traditional advertising media in contemporary environments. For some time, it has been argued that new media could be integrated with traditional media. However, this study revealed that marketing communication practitioners need to prepare for upheaval and transformation in terms of communication. The results unearthed that there is an outright incompatibility between traditional media and new media from the perspective of retail SMEs. Coupled with an increase in the insatiable adoption of mobile technologies by the populace, there is a need to increase focus on new media. The increase in the prominence of new media is in line with the pervasiveness of technology and the dependence of new media in the technological era. With the exponential global growth in electronic communications, small retail businesses should endeavor to gain a competitive advantage by utilising technologically compliant communication media to interact with customers.

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Uptake of Efficient Marketing Strategies among Footwear and Textile Entrepreneurs in Alexandra Township

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Abstract: One of the priority needs of Small, Micro and Medium-Sized Enterprises (SMMEs) that operate in Alexandra Township is to adopt effective marketing strategies that are recommended by Mooradian, Matzler and Ring (2012) and Kotler and Keller (2012), in which emphasis is placed on setting the right selling price of products, offering the right product, utilising the right promotion strategies for products, and rendering services to customers at the right place. Information needed for the survey was gathered from 108 operators of SMMEs in Alexandra Township. Ordered logit and Bayesian methods were used for estimating predictors of effective marketing. The study found that 63 of the 108 respondents who were selected for the study (58%) possessed adequate marketing skills and capabilities, whereas the remaining 45 respondents (42.23%) were incapable of marketing their goods and services effectively. Results obtained from logit and Bayesian analysis showed that 3 factors affected the ability to market goods and services effectively (access to credit facility for ordering stock, access to loan from money-lending institutions, and ability to network with wholesale suppliers and retailers).

Keywords: *Alexandra Township, Footwear and textile, SMMEs, Marketing, Logit analysis*

1. Introduction and Background to Study

According to Statistics South Africa (2012), Alexandra Township was established in 1912, and is one of the oldest South African townships in Gauteng Province. In addition to fairly well-built dwelling units, Alexandra consists of more than 20, 000 informal dwellings. Alexandra shares boundary with Wynberg, Marlboro, Kelvin, Kew, Lombardy West and Lombardy East. Alexandra Township is situated on the banks the Jukskei River, and is home to mostly low-income households. Since the early 1990s, Alexandra Township has been growing rapidly in terms of entrepreneurial activities, and has attracted a large number of viable small, micro and medium-sized enterprises (SMMEs) in all sectors of the economy. Based on the 2011 census carried out by Statistics South Africa (2012) in 2011, the total population of Alexandra Township is about 180, 000. Most of the residents of Alexandra Township are Black African (99%). The most commonly spoken languages at Alexandra Township are Zulu (26.3%), Northern Sotho (23.1%), Tsonga (11.3%), Xhosa (9.8%) and English (29.6%). Alexandra Township is home to a large number of textile and footwear enterprises that are owned and operated by local as well as migrant entrepreneurs. The rate of unemployment among the inhabitants of Alexandra Township is about 55% (Gauteng Provincial Legislature, 2017). The main purpose of the study was to assess and evaluate the suitability of marketing tactics and strategies used by entrepreneurs in the footwear and textile sector of Alexandra Township.

The assessment was made based on indicators defined by Mooradian, Matzler and Ring (2012: 21-23) and Kotler and Keller (2012: 49-50) in which the authors have recommended the use of the principle of the four Ps in marketing (Price, Product, Promotion and Place). A good number of research studies have attempted to find answers that revolve around the kind of Business-Marketing tactics or short-term strategies that SMMEs have utilised to survive and be successful as Businesses. The key mandate of the South African National Department of Small Enterprises Development Agency (2012) is to equip South African youth with basic entrepreneurial skills with a particular emphasis on poorly skilled unemployed youth and low-income households in all nine South African provinces. Worku (2016) has reported that inappropriate marketing and entrepreneurial tactics are underlying causes of failure in South African start-up businesses. The author has identified grossly inappropriate and inadequate entrepreneurial skills as well as an inability to raise loans that are needed for business operations as key causes of failure. Marivate (2014) has reported that the educational curriculum used by South African academic institutions is not suitable for producing competent entrepreneurs. The author has pointed out that operators often do not know how to market their goods, products and services effectively. The study conducted by Ogunnaike and Olaleke (2010) has shown that the

ability of entrepreneurs to market their products, goods and services effectively is essential for realising long-term survival and profitability.

The SMME sector contributes about 35% to Gross Domestic Product (South African National Department of Small Enterprises Development Agency, 2012) by creating employment opportunities and livelihood for unemployed South Africans. Moraru (2012) has listed down the numerous positive contributions made by small businesses to local communities in Sub-Saharan African countries. One of the key contributions made by operators of SMMEs is the reduction of costs of goods, products and services. The other benefit is the provision of retail services over extended hours including long weekends and holidays. Narang (2012) has suggested that entrepreneurial skills can be promoted by way of amending the educational curriculum used at the high school level. Based on research conducted in the USSR, Racela (2014) has shown that SMMEs are vital for promoting the culture of fair competition and service quality at the marketplace. Akos-Rona and Sagi (2015) have shown that SMMEs play a critical role in building national economies and alleviating abject poverty among the masses, especially in Sub-Saharan African countries. Dagut (2017), Bernier (2015) and Jamali, Lund-Thomsen and Jeppesen (2017) have shown a host of developmental challenges faced routinely by SMMEs in all parts of Sub-Saharan Africa.

The major obstacles highlighted by the authors include chronic problems of underdevelopment, lack of infrastructure, lack of support from local municipalities, poor quality water, light and waste management services. Martinez and Martinez (2010) have pointed out that unfair tax assessment and unnecessary bureaucracy are two key causes of failure in start-up enterprises. Jurgens and Donaldson (2012) have found that South African townships such as Alexandra are characterised by poor municipal services, red tape and cumbersome bureaucracy. According to Akos-Rona and Sagi (2015), not enough is known about the ability of operators of textile and footwear operators in South African townships to market their products, goods and services efficiently to potential customers. Jutla, Bodorick and Dhaliwal (2012) have highlighted the numerous benefits of using modern methods of marketing by operators of SMMEs in developing nations. The goal of the survey was to make an original contribution to the literature on SMMEs in Alexandra Township by collecting fresh data from SMMEs in the footwear and textile sector of Alexandra Township.

2. Literature Review

Alexandra Township is one of the oldest South African townships in which black indigenous South African entrepreneurs operate footwear and textile SMMEs. The township provides livelihood to aspiring black South Africans in various economic sectors. The 2011 household survey conducted by Statistics South Africa (2012) indicates that Alexandra Township is characterised by low to middle-level income, unemployment, and poor municipal service delivery in comparison with other suburbs of Johannesburg. Stam (2015) has reported that failure in marketing strategies is a principal cause of failure and bankruptcy in start-up enterprises globally. Zineldine and Phillipson (2012) have pointed out that failure in implementing the 4P principle of marketing (Price, Product, Promotion and Place) is the key underlying cause of bankruptcy and loss of income in start-up enterprises, especially in poorly developed communities such as Alexandra Township. A technical report published by Thompson (2016) indicates that poor marketing skills by entrepreneurs account for failure and bankruptcy in more than a third of all newly established South African SMMEs. Since the mid-1990s, cheap foreign textile and footwear products have been flooding the South African footwear and textile industry. This phenomenon has affected local footwear and textile producers in townships such as Alexandra.

Although there has been a call for protection by local producers, no significant restriction has been put in place in favour of local producers. South African producers have been calling for tangible protection and rescue measures from the South African Government since the early 1990s. However, local operators have not yet recovered from their losses. In this regard, South African trade unions in the textile and footwear industry have asked for Government protection in the form of quotas, levies, high duties, import tax and restriction. Callaghan and Venter (2011) have identified predictors of performance by local operators of SMMEs. The authors have found that poor marketing and networking skills are two key obstacles faced by local operators of SMMEs. Charman, Petersen, Piper, Liedeman and Legg (2017) have pointed out that inability to market effectively is a key cause of loss of income and profit in start-up SMMEs. Fatoki (2014) has reported that South African start-up SMMEs fail due to lack of entrepreneurial and marketing skills, poor

networking skills, and difficulty in obtaining finance from formal money lending institutions. The author has recommended the roll out of tailor-made training and mentorship programmes.

Chimucheka (2014) has found that start-up SMMEs in the footwear and textile sector often struggle to secure loans that are needed for business operation. The author has pointed out that start-up SMMEs in the footwear and textile industry often fail to order large quantities of merchandise from wholesale suppliers due to difficulty in borrowing money from loan providers. SMMEs in the footwear and textile industry often fail due to the inability to order merchandise in bulk and poor entrepreneurial and networking skills (Worku, 2016). Marivate (2014) has recommended the provision of tailor-made training programmes to operators of start-up SMMEs along with monitoring and evaluation programmes. According to Dagut (2017), intervention programmes undertaken by the South African Government have failed to result in tangible results. According to George, Corbishley, Khayesi, Haas and Tihanyi (2016), the failure rate among newly established SMMEs in Sub-Saharan African countries including South Africa is still high. Aparicio, Urbano and Audretsch (2016) have found that more than 50% of all newly established SMMEs fail before operating for three consecutive years.

Leigh and Blakely (2016) have recommended improved access to finance and the provision of tailor-made training programmes and monitoring and evaluation programmes to start-up SMMEs in Sub-Saharan African countries including South Africa. Although the South African Government has launched initiatives for supporting local SMMEs in the footwear and textile sector since the mid-1990s, the local sector has failed to compete favourably with foreign competitors due to a host of factors. Examples of such factors are inadequate marketing skills, lack of technical skills in manufacturing, lack of entrepreneurial skills, the high cost of labour, the high cost of production, lack of access to finance, poor infrastructure, lack of relevant skills-based training programmes, and lack of monitoring and evaluation programmes. Kotler and Keller (2012) have outlined the importance of the four Ps for effective marketing. The four Ps entail efficiency in setting a selling price, offering the correct product to customers, the ability to promote the correct product by using appropriate means, and the ability of entrepreneurs to offer products and services at the correct place to customers. The study assesses and evaluates that ability of footwear and textile operators in Alexandra Township to apply the four Ps as recommended by Kotler and Keller (2012).

Training programmes that are offered to operators of SMMEs by the South African Government do not place emphasis on the merits of using the Four-P principle (the right product, the right selling price, the right promotion strategy, and the right place) of marketing goods and services to customers (Marivate, 2014). Very few studies have been conducted so far to assess and evaluate the degree to which marketing tactics and strategies used by operators of footwear and textile businesses in Alexandra Township are effective by the standards of Mooradian, Matzler and Ring (2012) and that of Kotler and Keller (2012). Reports published by Akos-Rona (2015) recommend appropriate remedial actions that are suitable for reducing failure rates in newly established SMMEs that are operated by entrepreneurs who lack entrepreneurial, marketing and managerial skills. The paper is a result of an original survey conducted by gathering valuable information from businesses in Alexandra Township. The available literature, by and large, dwells on the lack of entrepreneurial skills and challenges related to raising loans. This study aims to shed light on the importance of marketing skills to SMMEs in the footwear and textile industry of Alexandra Township.

Objectives of Study: The suitability of marketing tactics and strategies used by SMMEs in the footwear and textile sector of Alexandra Township is assessed as part of the study by the standards of Mooradian, Matzler and Ring (2012). The two secondary aims of the study are the following: To identify and quantify key predictors of effective marketing; and to identify key obstacles to sustained viability in the footwear and textile industry of Alexandra Township.

3. Method

Sample Size of Study and Data Analyses: An exploratory research design was utilised in which business related information was obtained from 108 operators of footwear and textile businesses conducting business in Alexandra Township. The level of significance of the study was 5%. The margin of error was 0.048. The percentage of businesses that utilise appropriate marketing techniques and strategies in the course of

conducting business operation was 55%. Using these figures, a sample of size 108 was determined for the study. According to Chow, Shao, Wang and Lokhnygina (2017), both the sampling technique and sample size of the study are appropriate for the study. Data was collected from eligible respondents by using a structured, pretested and validated questionnaire of study. Validity was ensured by conducting a pilot study of size 5 business operators at Alexandra Township. Cronbach's Alpha test was used for ensuring reliability and internal consistency in measurement tools.

The outcome variable of study assesses how effectively SMMEs market their goods and services to potential customers and clients. Criteria developed by Mooradian, Matzler and Ring (2012:45) were used for measuring values of the dependent variable of study. The explanatory variables were various indicators of efficiency in marketing goods and services. The purpose of data analyses was to identify and quantify key predictors of effective marketing by operators of SMMEs. The main methods of data analyses were cross-tab analyses, logit analysis (Agresti, 2016) and Bayesian analysis (Kulkarni, 2016). Face validity (Lewis and Loewenthal, 2015) was used for ensuring validity. The Cronbach Alpha test (Kline (2015) was used for ensuring reliability and internal consistency. All estimated Cronbach Alpha coefficients had magnitudes of 75% or above.

4. Results of Data Analyses

Frequency tables were used for obtaining frequency counts and percentages for the various attributes of participants in the survey. One major finding of the research is that 62% of businesses were viable. The percentage of businesses that were not viable was 38%. Eighty-five percent of entrepreneurs owned their businesses. Eighty-two percent of entrepreneurs were male, whereas the remaining 18% were female. Less than 2% of entrepreneurs had ages 25 years or less. About 25% of entrepreneurs had ages of 26 to 36 years. About 70% of entrepreneurs had ages of 37 to 57 years. Less than 3% of entrepreneurs had ages of 58 years or more. At the time of the study, about 16% of entrepreneurs had been in business for a period of three years or less. About 35% of them had been in business for four to seven years. About 49% of them were in business for five years or more. About 17% of entrepreneurs had Grade 12 level education or less.

About 27% of them had post-matric certificates. About 21% of them had diplomas. About 35% of them had a Bachelor's degree or better academic qualifications. About 10% of entrepreneurs owned their business premises, whereas about 90% of them rented their business premises. The percentage of entrepreneurs who had taken one or more training sessions on how to operate businesses was 36%, whereas 64% of entrepreneurs had never had such an opportunity. In the past, 36% of entrepreneurs had succeeded in obtaining one or more loans, whereas 64% of them have had no such luck in the past. At the time of the study, about 10% of entrepreneurs had business plans, whereas the remaining 90% had no business plans. These results are fairly similar to those reported by Fatoki (2014), Marivate (2014) and Worku (2016) about start-up SMMEs conducting business in South African townships and cities.

Table 1: Profile of Entrepreneurs (n=108)

Characteristic	Number of respondents and
Viability of businesses	Viable: 67 (62.04%)
	Not viable: 41 (37.96%)
Ownership status of business operator	Owner: 92 (85.19%)
	Employee: 16 (14.81%)
Gender of business operator	Male: 89 (82.41%)
	Female: 19 (17.59%)

Age category in years	25 years or less: 2 (1.85%)
	26 to 36 years: 27 (25.00%)
	37 to 57 years: 76 (70.37%)
	58 years or more: 3 (2.78%)
Duration of operation of business	Three years or less: 17 (15.74%)
	Four to seven years: 38 (35.19%)
	Five years or more: 53 (49.07%)
Highest level of education	Grade 12 or less: 18 (16.67%)
	Post-matric certificate: 29 (26.85%)
	Diploma: 23 (21.30%)
	Bachelor's degree or more: 38 (35.19%)
Renting business premises	Yes: 97 (89.81%)
	No: 11 (10.19%)
One or more training opportunity	Yes: 39 (36.11%)
	No: 69 (63.89%)
Past experience of at least one successful application for a loan	Yes: 39 (36.11%)
	No: 69 (63.89%)
Business plan available	Yes: 11 (10.19%)
	No: 97 (89.81%)
Average monthly income of the business in Rand	R25, 000 or less: 54 (45.00%)
	R25, 001 to R50, 000: 39 (32.50%)
	R50, 001 to R100, 000: 15 (12.50%)
	R100, 001 or more: 12 (10.00%)

Table 2 shows frequency counts and percentages for the source of start-up capital and average monthly income of the 108 entrepreneurs in the survey. Seventy-three percent of entrepreneurs raised their start-up capital from family members or their own personal savings, whereas about 27% of them raised their start-up capital from formal money-lending institutions such as commercial banks or microfinance institutions by taking loans. About 31% of entrepreneurs had a monthly average income of R25, 001 to R50, 000. About 35% of entrepreneurs promoted items on sale by using word-of-mouth. The results reported in Table 1 are fairly similar to results that have been reported by Fatoki (2014) and Akos-Rona and Sagi (2015) about start-up enterprises in Sub-Saharan African countries including South Africa.

Table 2: Source of Start-Up Capital and Marketing Strategies (n=108)

Characteristic	Number of respondents and percentage
Source of start-up capital	Family or personal savings: 79 (73.15%)
	Loan: 29 (26.85%)
Average monthly income of business in Rand	R25, 000 or less: 49 (45.37%)
	R25, 001 to R50, 000: 34 (31.48%)
	R50, 001 to R100, 000: 17 (15.74%)
	R100, 001 or more: 8 (7.41%)
Marketing strategies used for selling or promoting items on promotion or sale	Word of mouth: 38 (35.19%)
	Leaflets: 34 (31.48%)
	Posters: 21 (19.44%)
	Newspaper adverts: 7 (6.48%)
	Radio adverts: 2 (1.85%)
	TV adverts: 1 (0.93%)
	Others: 5 (4.63%)

Marketing skills are assessed in Table 3. The assessment was done by using standards set out by Mooradian, Matzler and Ring (2012:45). It can be seen from the table that 63 of the 108 respondents (58.33%) were capable of marketing goods and services adequately by the standards of Mooradian, Matzler and Ring (2012), whereas the remaining 45 respondents (41.67%) were incapable of doing the same by the same standards. According to Kotler and Keller (2012), effective marketing consists of the set of actions or tactics that are used by entrepreneurs in order to promote products, goods and services in the marketplace by using the four Ps (Price, Product, Promotion and Place). About 88% of entrepreneurs were capable of setting the right price of goods to customers (First P). About 87% of entrepreneurs were capable of offering the right product to customers (Second P). About 79% of entrepreneurs were capable of promoting the right product to customers (Third P). About 81% of entrepreneurs were capable of selling goods at the right place to customers (Fourth P). Results reported in Table 2 are fairly similar to results reported by Charman, Petersen, Piper, Lindeman and Legg (2017).

Table 3: Assessment of Marketing Ability of Entrepreneurs (n=108)

Variable of study	Percentage
Overall ability to market goods	Adequate: 63 (58.33%)
	Inadequate: 45 (41.67%)
Ability in setting the right price of goods to customers (First P)	Good: 15 (13.89%)
	Above average: 48 (44.44%)
	Average: 32 (29.63%)
	Below average: 9 (8.33%)
Ability in offering the right product to customers (Second P)	Good: 14 (12.96%)
	Above average: 47 (43.52%)
	Average: 33 (30.56%)
	Below average: 7 (6.48%)

Ability in promoting the right product (Third P)	Good: 18 (16.67%) Above average: 41 (37.96%) Average: 27 (25.00%) Below average: 5 (4.63%)
Ability in selling goods at the right place (Fourth P)	Good: 16 (14.81%) Above average: 43 (39.81%) Average: 28 (25.93%) Below average: 7 (6.48%) Poor: 14 (12.96%)

Table 4 shows frequency counts and percentages for factors that are taken into consideration for setting the selling price of discounted items by the 108 entrepreneurs who were selected for the study. The table shows that the demand for products, goods and services accounts for about 25% of all such considerations. The second key factor is the need for enough cash flow (22%). Charman, Petersen, Piper, Lindeman and Legg (2017) have found similar results about start-up SMMEs in developing nations.

Table 4: Factors that Affect the Selling Price of Discounted Items (n=108)

Factors considered for setting the selling price of discounted items	Frequency (Percentage)
Demand for products, goods and services	27 (25.00%)
Need for enough cash flow	24 (22.22%)
Pressure from business rivals at the marketplace	13 (12.04%)
The quality of products, goods and services	11 (10.19%)
The purchase price and the cost of goods and services	10 (9.26%)
Bulk price	8 (7.41%)
Need to clear up stock and free up space	6 (5.56%)
Need to place fresh order	4 (3.70%)
Affordability of products, goods and services	3 (2.78%)
Other reasons	2 (1.85%)

Factors that were significantly associated with the ability of entrepreneurs to market their products effectively were identified by using two-by-two crosstab associations (Mertler and Reinhart, 2016). Values of the dependent variable of study, Y (Ability to market products effectively) were defined as follows:

$$\text{Ability to market products effectively} = \begin{cases} 1 \ if \ \ adequate \\ 2 \ \ if \ \ inadequate \end{cases}$$

It can be seen from Table 5 that all 6 variables listed in the table are significantly associated with the dependent variable of study at the 5% level of significance. These predictor variables were the ability to order goods and merchandise in bulk on credit, the ability to order goods and merchandise in bulk on credit, the ability to raise loan from money-lending institutions, the ability to network with wholesale suppliers and retailers, the ability to raise start-up capital from family or personal savings, the duration of business operation, and access to training opportunities, in a decreasing order of strength.

Table 5: Significant Two-By-Two Associations (n=108)

Factors Significantly Associated with Ability to market products Effectively	Pearson's chi-Square Statistic	P
Access to credit facility for ordering stock	9.5588	0.000
Access to loan facility from money lenders	9.1204	0.000
Ability to network with wholesale suppliers and retailers	8.7455	0.000
Ability to raise start-up capital from family or personal savings	6.2286	0.001
Lengthy experience in entrepreneurship	4.6723	0.002
Training opportunities	3.8212	0.003

Table 6 shows a comparison between 2 categories of entrepreneurs with regards to the ability to market products effectively by the standards Mooradian, Matzler and Ring (2012) and Kotler and Keller (2012). Category 1 consists of 63 entrepreneurs (58.33%) who possess adequate marketing skills, whereas Category 2 consists of 45 entrepreneurs (41.67%) who lack marketing skills. In light of research findings reported above, it could be concluded that there is a pressing need for promoting awareness about basic marketing skills and strategies in South African townships. Start-up SMMEs in Alexandra Township is characterised by an inability to effectively utilise and benefit from valuable marketing strategies that have produced tangible results elsewhere in South Africa. As such, it would be prudent and strategically beneficial for the South African Small Enterprise Development Agency (SEDA) to educate novice entrepreneurs in South African townships on areas such as basic marketing strategies, the preparation of business plans, networking auditing and basic accounting skills.

Table 6: Comparison with Regards to Marketing Skills (n=108)

Factors Significantly Associated with Marketing Skills	Adequate (n1=63)	Inadequate (n2=45)
Access to credit facility for ordering stock	Yes: 72%	Yes: 8%
	No: 5%	No: 15%
Access to loan facility from money lenders	Yes: 72%	Yes: 8%
	No: 5%	No: 15%
Ability to network with wholesale suppliers and retailers	Yes: 73%	Yes: 15%
	No: 4%	No: 8%
Ability to raise start-up capital from family members or personal savings	Yes: 70%	Yes: 16%
	No: 7%	No: 7%
Long duration of business operation	Yes: 70%	Yes: 16%
	No: 7%	No: 7%
Access to training opportunities	Yes: 57%	Yes: 11%
	No: 20%	No: 12%

As has been reported by Fatoki (2014) and Chimucheka (2014), entrepreneurs with adequate marketing skills differ significantly from those with inadequate marketing skills on the basis of all six variables of comparison. Table 7 shows estimates obtained from ordered logit analysis (Agresti, 2016).

Table 7: Estimates from Ordered Logit Analysis (n=108)

Variable	P-value	Odds Ratio	95% Confidence Intervals of Odds Ratio
Access to credit facility for ordering stock	0.000	3.74	(1.73, 7.11)
Ability to raise loan from money-lending institutions	0.000	3.27	(1.57, 6.68)
Ability to network with wholesale suppliers and retailers	0.000	2.88	(1.43, 5.36)

Table 7 shows that marketing ability is significantly influenced by 3 predictor variables. These 3 predictor variables of the study were the ability to order goods and merchandise in bulk on credit, ability to raise a loan from money-lending institutions, and ability to network with wholesale suppliers and retailers, in decreasing order of strength. These findings are quite similar to similar findings that have been reported about start-up SMMEs in South African townships and cities by Fatoki (2014), Chimucheka (2014), Akos-Rona and Sagi (2015) and Charman, Petersen, Piper, Lindeman and Legg (2017).

Table 8 shows estimates obtained from the Bayesian analysis. Logit analysis produced estimates based on odds ratios or $\exp\left(\beta\right)$. By contrast, MCMC algorithms produced estimates based on the regression coefficient β. Both methods of estimation (logit and Bayesian analysis) produced similar findings.

Table 8: Estimates from MCMC Algorithms

Marketing Ability	$\hat{\beta}$	P-value	95% C. I. for $\hat{\beta}$
Access to credit facility for ordering stock	1.32	0.000	(0.55, 1.96)
Ability to raise loan from money-lending institutions	1.18	0.000	(0.45, 1.90)
Ability to network with wholesale suppliers and retailers	1.06	0.000	(0.36, 1.68)

5. Conclusion and Recommendations

The research was aimed at determining the suitability and adequacy of marketing tactics and strategies used by SMMEs that operate in the Alexandra Township based on standards set out by Mooradian, Matzler and Ring (2012) and Kotler and Keller (2012). The study has assessed the extent to which entrepreneurs who conducted footwear and textile businesses at Alexandra Township used the four Ps of marketing (Price, Product, Promotion, and Place) in the course of marketing their products to customers. The study found that about 58% of entrepreneurs were capable of marketing their goods and services effectively, whereas the remaining 42% were incapable of marketing their products effectively. The ability of entrepreneurs to market goods and services effectively was significantly influenced by access to credit facility for ordering stock in large quantity from wholesale distributors, the ability to raise loan from money-lending institutions, and the ability to network with wholesale suppliers and retailers. This recommendation is in line with the key mandate of the South African National Department of Small Enterprise Development Agency (Thompson, 2016).

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Service Quality of Public Technical Vocational Education and Training Colleges in South Africa: Customer Expectations and Perceptions

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Abstract: The focus of this survey is to seek the amount of the customers' expectations levels of service quality in the public Technical Vocational Education and Training (PTVET) sector. The aim of this study was to examine and determine the expectations and perceptions levels of service quality provided by PTVET colleges, in order to achieve desired outcomes, and the survey followed SERQUAL model. Questionnaires were distributed to the 403 participants from selected PTVET in the Kwa-Zulu- Natal province. The study used a mix approach of systematic and quota sampling techniques. SPSS (25.0) version was employed for data analysis. The results of this study discovered that customers had higher service quality expectations (0,908 Cronbach's Alpha) compared to the service quality perceptions (0,923 Cronbach's Alpha) at the selected PTVET colleges, on all five service quality dimensions that were used to evaluate the expectations of service quality. This survey will benefit Rectors/Campus Managers for TVET colleges and to those who want to open their TVET colleges, because it will be used as a guide tool for them on how they can improve service quality strategy to differentiate themselves from their competitors. The findings are limited by the study's exploratory, quantitative nature and small sample. Generalisation should be done with care and further research, with a large sample and consideration of other provinces, it therefore recommended.

Keywords: *Service Quality, Customers Perceptions, Customer Expectations, PTVET, SERVQUAL, GAP, South Africa*

1. Introduction

In South Africa, Public Technical Vocational Education and Training (PTVET) colleges were recognized and functioned with regard to South African Education Act 16 of 2006 and further it was amended under Act (No. 3 of 2012) where these colleges were called Further Education and Training (FET) Colleges then they became to be under the Department of education and training and they were supported and mandated to provide vocational skills. These colleges provide broader knowledge in various areas such as artisans and many other vocational skills need by South African society as well as modern business and industries of nowadays. This premise supported by Shirley, Chijioke and Chukwumaijem (2015) that PTVET empowers society with a much required technical and vocational skill for the modern business in today's extremely complex turbulent environment. Mohd, Mohd & Ruhizan (2012) believe that in recent times, entities must have well prepared human capital in order for them to deliver the quality of services that meet customers' expectations. Therefore, this study intends to look into different factors contributing to the perceptions and expectations of PTVET colleges customers.

Problem Statement: The high numbers of students who finished and qualified for tertiary degree and diplomas in the province of KwaZulu-Natal has demonstrated that traditional and universities of technologies cannot able to provide space for all of them (Wolhuter, 2017). This is the major problem facing South African government, therefore, South African government was forced to look of the alternative for the after matric students, hence the PTVET was found to be the option, however, local communities have raises many doubts about the service quality in PTVET colleges. The intention of this study was to establish understand and knowledge of service quality in PTVET colleges. Pillay, Mbambo, & Mason, (2017) indicated that quality perceived to be a concern for many the in PTVET.

Aims and Objectives: The aim of this study was to examine and determine the expectations and perceptions levels of service quality provided by PTVET, in order to achieve desired outcomes, and the survey followed SERQUAL model.

Objectives: To identify expectations and perceptions of customers towards service quality at the PTVET colleges in KZN; and evaluating extent of the existing gaps on expectations and perceptions of customers in

the selected PTVET colleges in KZN. Hence, PTVET colleges must first understand students' expectations as the basis for developing and delivering quality service.

2. Literature Review

South African PTVET Colleges: There is a total of 260 campuses for PTVET colleges which are made of 50 multi-campuses operating according to the continuing education Act of 16 of 2006 which categorized under South African department of higher education and training. The main purpose of these institutions (PTVET) is to prepare South African Youth with the relevant practical and occupational skill that is needed by the industry. Shirley, Chijioke and Chukwumaijen (2015) believe that TVET provided much-needed knowledge on the changing technological environment and workforces' skills needed by the current economy. According to Bünning & Zhao, 2006), vocational skills can bring effectiveness and relevance to the South African citizens and enhance the quality and employability in particular KwaZulu-Natal province.

Service Quality Concept: PTVET needs to improve and engage much on the service quality concept and use it as a positioning and competitive tool to compete with other institutions of higher learning. Before PTVET college personnel uses service quality as a tool, it is very important to start by taking getting understanding of service quality concept. Based on that conceptualization of service quality the concept of service quality is all about the perception of the customer towards service (Wilson, Zeithaml, Bitner & Gremler (2013). However, Hult, Pride and Ferrell (2012), Weitz & Wessley cited in Phiri & Mcwabe (2013) mentioned service quality concept as for how well the service provider meets or exceeds their customer expectations. Machado & Diggines (2012), and Boshoff & du Plessis, 2010) supported this statement by indicating that, quality of service is being assessed by customer's decision about the level of service performance. What is noted about these aforementioned definitions of service quality concept is that, researchers, academics and authors uses diverse ways to define service quality concept, but all definitions of service quality concept are grounded on exceeding customer expectations. Furthermore, inferring from the above definitions, service quality in education could be defined as students' measurement or evaluation of how service delivered by PTVET college matches with the expectations of the students. This indicates that the quality of service delivered is defined by the students and not by Technical and Vocational Education and Training colleges.

Customer Expectations of Service Quality: Zeithaml, Bitner & Grender (2006) well-defined customer expectations as viewpoints around service delivery that function as criteria against which performance is tried by customers. Whereas, Zeithaml, Bitner, Grender & Dwayne, (2008) pointed out that expectations of customers are viewpoints about service superiority, serving as principles compared to which performance of the organisations is judged by their customers. This will also useful to public PTVET college's customers. It is very imperative for public PTVET colleges also to note that, customers do not have same desires regarding their model quality level and they differ in the extent on which they tolerate a certain lack of quality. The market-oriented service provider (including PTVET College). However, endeavours to meet the individual expectations of their customers (Boshoff, 2014). The levels of service quality expectations and perceptions were quantified by calculating the average scores on each statement.

Customer Perceptions of Service Quality: The challenge facing the service providers is that**,** if customers have excellent knowledge on quality that exceeded their expectations by far, they may raise their expectations to new levels. The expectations of customers can be influenced by factors such as word-of-mouth, communication experience and TVET colleges' charges. Meeting customer expectations and satisfying their needs are important elements in the PTVET college effort to retain its customers and gain a competitive advantage over their competitors. Many Academics, Researchers, as well as Scholars conducted research on customer perception concept, those include Schiffman & Kanuk (2000); Strydom, Jooste & Cant (2000); Sheth & Mittal (2004); Cant, Brink & Brijball 2002); Hult, Pride & Ferrell (2013) defined perception as a process of selecting, organizing, and interpreting information inputs to produce meaning and coherent picture of the world. Whereas, Zimmerman & Blythe (2014) describe perception as a process of converting sensory input into an understanding of how the world works. Customers' perception regarding service quality depends upon the gap that exists between what the customers expect and what they receive in the service (Parauraman cited in Khare, 2011). It becomes imperative for PTVET colleges in KwaZulu-Natal to understand the expectation levels of the customers, and design service delivery according to their

expectations. Delivering a service according to customer expectations and superior quality of service enhances the competitive advantage of PTVET colleges with other private TVET colleges and help in retaining customers. Perceptions of customers become an influential factor when comparing customers' satisfaction with the service that is provided to them Khare, (2011).

3. Research Methodology

A questionnaire survey was employed to identify customer expectations and customer perception of the selected PTVET colleges: Case KwaZulu-Natal, South Africa, with specific emphasis on factors contributing to the customer expectations and contributing to the customer perception; to examine to what extent are these factors affecting expectations and perceptions and provide suggestions for the solution.

Sample Design: The below table 1, clearly shows that, a sample size of 403 customers was selected from the selected PTVET colleges campuses in KwaZulu-Natal. The survey followed a mixed method approach. Quota sampling technique was employed in order to, allowed the flow of data representatives. The students on the campuses and employees were identified respondents for this study as presented in Table 1.

Table 1: Sample Size per PTVET College Campus

PTVET College	Sample size per campus
PTVET College Campus A	67
PTVET College Campus B	67
PTVET College Campus C	67
PTVET College Campus D	67
PTVET College Campus E	67
TOTALS	403

Survey Instrument Design: A questionnaire was developed from the literature reviewed followed the standard SERVQUAL questionnaire format, and this survey questionnaire consisted of two sections, covering service quality expectations and service quality perceptions statements. Then, questionnaire consisted of twenty-two statements of service elements groups into five service quality dimensions which include tangible of service quality dimension, assurance of service quality dimension, the reliability of service quality dimension, the responsiveness of service quality dimension, and empath of service quality dimension. The respondents were asked to provide the ratings of both expectations and perceptions on the provided statements related to service quality. Thus the difference obtained from the service quality perception scores discovered the gap between customers' expectations and their perceptions of the service quality of the selected PTVET colleges.

4. Discussion of the Findings

The analysis of empirical data was done by assessing PTVET customers' responses of their levels of agreement with regards service quality statements that were used to assess customers' expectations of service quality at an excellent PTVET college and perceptions of service quality at the selected PTVET colleges in KwaZulu-Natal, South Africa. The levels of service quality expectations and perceptions were measured by calculating the average mean score on each service quality statement. Mean scores were obtained from calculating the averages for expectations were subtracted from customers' perceptions of each service quality statement. All these were done by the use of SPSS (25.0) version. The findings of this study discovered that PTVET customers had a higher level of expectations compared to their perceptions of the service quality at the selected PTVET colleges on all five service quality dimensions that were used to assess customers' expectations and perception of service quality.

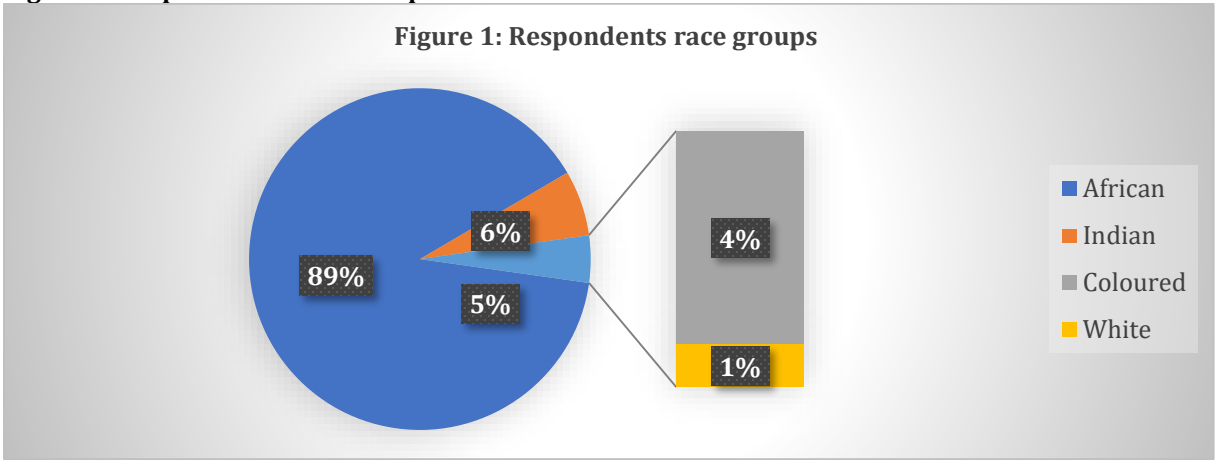
Samples Profile

Table 2: Respondents' Race Groups

Race group	Frequency	%
Black African	360	89,3
Indian	25	6,2
Coloured	15	3,7
White	3	0,7
Total	**403**	**100**

As shown in Table 2 that PTVET colleges in KwaZulu-Natal are dominated by black African. Out of 403 of respondents, 360 (89, 3 %); followed by Indian with 6, 2 % (25 respondents); and 3, 7 % (15 respondents) are Coloured. Only 0, 7 % (3 respondents) were representing White respondents. The results are the true reflection of the KwaZulu-Natal population.

Figure 1: Respondents Race Groups



The researcher decided to use the above chart to show the proportions of a whole, by taking some values from the first pie and combined them in a stacked bar to highlight the values in the stacked bar. The results of this study also confirm that, 89 % of the participants are Black African, followed by Indian with 6 % and 5 % for Coloured (4 %) and White (1 %), as shown in figure 1. Even though other race groups have a small number of respondents but, it is also very imperative to know their views about how they feel about the service provided to them. Furthermore, their input or views can assist PTVET colleges to improve the way they provide service to them and they will able to know what are their expectations. Scores obtained from calculating the averages for expectations were subtracted from the scores from customers' perceptions on each statement of each service quality dimension. Perceptions and Expectations of Service Quality Dimensions Analysis PTVET Colleges were done on and presented in the following sections.

Reliability Statistics

Table 3: Cronbach's Alpha Analysis for Respondents' Expectations

Service Quality Dimension	Expectations N of Items	Cronbach's Alpha
Tangibles	4	0,639
Assurance	4	0,717
Reliability	5	0,833
Responsiveness	4	0,794
Empathy	5	0,783
Overall	22	0,908

The reliability score in terms of expectation of service quality dimensions (Assurance, Reliability, Responsiveness and Empathy), record 0.717, 0.833, 0.794 and 0.783 respectively (as shown in table 3), which values for expectations exceeded the 0.70 reliability threshold for exploratory research. However, the reliability score of service quality dimension will be considered as good because its score is over 0.80 as recommended by Islam, et al. (2011).

Table 4: Cronbach's Alpha Analysis for Respondents' Perceptions

Service Quality Dimension	Perceptions N of Items	Cronbach's Alpha
Tangibles	4	0,697
Assurance	4	0,766
Reliability	5	0,838
Responsiveness	4	0,782
Empathy	5	0,784
Overall	**22**	**0,923**

However, the reliability score in terms of perceptions of service quality dimension (Tangibles) was 0.697. This means reliability service quality dimension, did not meet the recommended Cronbach's alpha value of 0.70 reliability threshold. This does not mean it is poor, for the fact that, Cronbach's alpha value is considered to be poor, if it is less than 0.60 (Islam, et al., 2011). The overall reliability scores for both expectations (0.908 as shown in table 4) and perceptions of service quality (0.923 for perceptions as shown in table 9) exceeded the recommended Cronbach's alpha value of 0.70 reliability thresholds.

Factor Analysis: Is a statistical technique whose main goal is data reduction. A typical use of factor analysis is in survey research, where a researcher wishes to represent a number of questions with a small number of hypothetical factors. Factor analysis/loading show inter-correlations between variables the statements that constituted each dimension loaded perfectly along a single component for expectations and perceptions. This implies that the statements that constituted these sections perfectly measured what it set out to measure.

Table 5: Rotated Component Matrix

	Research area	Expectations	Perceptions
TAN 1	PTVET equipment excellency	0,734	0,795
TAN 2	PTVET Facilities excellency	0,759	0,83
TAN 3	PTVET materials availability	0,709	0,741
TAN 4	PTVET workforce performance	0,56	0,503
Assur 5	PTVET workforce behavioural conduct	0,767	0,792
Assur 6	PTVET customers safety	0,724	0,748
Assur 7	PTVET workforce customers treatment	0,813	0,791

Assur 8	PTVET workers approach customers questions	0,635			0,734			
REL 9	PTVET feedback excellence		0,707			0,752		
REL 10	PTVET workforce interest on customers problems.		0,801			0,789		
REL 11	PTVET service quality		0,821			0,813		
REL 12	PTVET service provision		0,813			0,804		
REL 13	PTVET excellence records		0,73			0,737		
RESP 14	PTVET promise of service delivery			0,829			0,787	
RESP 15	PTVET workforce deliver quality service to customers			0,797			0,793	
RESP 16	PTVET Workforce college helps their customers.			0,811			0,81	
RESP 17	PTVET Workforce responds to customer request.			0,712			0,724	
EMP 18	PTVET college attention individual customers				0,751			0,764
EMP 19	PTVET college schedule convenient hours for customers.				0,741			0,720

The conducted factors analysis results revealed that, 0.734 (expectations) and 0,795 (perceptions) the presented the strong value for the customer service quality choice. This means that, these variables (expectations and perceptions) has sufficient influence on how customer perceived PTVET quality service. With regards to the results based on PTVET facilities Excellency show that, 0.734 (expectations) and 0, 83 (perceptions), this means that, these variables have a strong influence for the PTVET customer service quality. Responses on PTVET materials availability, 0,709 (expectations) and 0,741 (perceptions) as shown in Table 5). This indicates materials availability as an important variable on judging quality service at PTVET colleges. However, 0, 56 (expectations) and 0,503, revealed that, this variable does not have much influence in judging service quality provided by PTVET. The results show 0,767 (expectations) and 0,792 (perceptions) on PTVET workforce behavioural conduct.

This result suggests that; this variable has a strong significance for the PTVET customers to judge service quality provided by PTVET colleges. With regards to PTVET customers' safety, results (expectations: 0,724 and perceptions: 0,748) also has a strong impact on customer service quality judgement. On the other hand, PTVET workforce customer treatment has 0,813 (expectations) and 0,791 (perceptions). This presents the strong value for customer service quality choice. Responses regarding PTVET workers approach customer's questions showed that 0,635 (expectations) and 0,734 (perceptions). Expectations value (0,635) is not too strong, yet, showing strong significance in PTVET college quality service. On the other hand, perception value has a strong significance in customer service quality. The results based on PTVET feedback excellence showed that, 0,707 (expectations) and 0,752 (perceptions), the presented the strong value for the customer service quality choice. This means that, these variables (expectations and perceptions) has sufficient influence on how customer perceived PTVET quality service.

On the other hand, PTVET workforce interest on customer's problems has value 0,801(expectations) and 0,789 (perceptions). This result showed a strong value for the customer service quality choice. The feedback on PTVET service quality showed that 0,821 (expectations) and 0,813 (perceptions) displayed the strong value for the customer service quality choice. This means that, these variables have sufficient influence on how customer judge service provided by PTVET colleges. However, the responses on PTVET service provision showed the value of 0,813 (expectations) and 0,804 (perceptions), this also presents the strong sufficient influence on customer service quality judgement. With regards to PTVET excellence records, 0,73 (expectations) and 0,737 (perceptions), this results indicate that, this variable has a positive impact on how PTVET customer's judgement. Whereas, the results with regards to PTVET promise of service delivery has a value of 0,829 (expectations) and 0,787 (perceptions). This result also shows the strong sufficient impact on customer's service quality judgment.

PTVET workforce delivers quality service to customers has 0,797 (expectations) and 0,793 (perceptions) value, signifying that this value does have a strong significance on customer's service quality judgement. However, PTVET Workforce college helps their customers have 0,811 (expectations) and 0, 81 (perceptions), also shows a strong significant variable on PTVET customer service quality. In other hand, PTVET Workforce college helps their customers have 0,811 (expectations) and 0,81 (perceptions), these results indicate the positive impact of these variables for the customer service quality. With regards PTVET Workforce respond to customer request has 0,712 (expectations) and 0,724 (perceptions) value, this results also indicates strong significance on PTVET customers judging service quality at PTVET colleges. Feedback regarding PTVET college attention individual customers showed 0,751 (expectations) and 0,764 (perceptions), these variables present the strong significance of customer's service quality choice. However, value for PTVET college schedule convenient hours for customers were 0,741 (expectations) and 0,720, these variables are also strong.

Table 6: Kaiser-Meyer-Olkin (KMO) and Bartlett's Test

Service Quality Dimensions	Expectations				Perceptions			
	Kaiser-Meyer-Olkin Measure of Sampling Adequacy	Bartlett's Test of Sphericity			Kaiser-Meyer-Olkin Measure of Sampling Adequacy	Bartlett's Test of Sphericity		
		Approx. Chi-Square	DF	Sig.		Approx. Chi-Square	DF	Sig.
Tangibles	0.705	195.789	6	0.000	0.705	312.955	6	0.000
Assurance	0.731	312.404	6	0.000	0.774	383.874	6	0.000
Reliability	0.845	709.126	10	0.000	0.851	716.212	10	0.000
Responsiveness	0.782	477.254	6	0.000	0.785	429.559	6	0.000
Empathy	0.791	522.587	10	0.000	0.783	534.280	10	0.000

The above-mentioned variables presented Table 6, identified as most critical factors contributing to the expectations and perceptions of PTVET college customers. The finding of this study revealed that tangibles in terms of the expectations and perceptions 0.705 and 0.705. This means this service quality dimension has a positive impact on customer expectations as well as on the customer perceptions. With regards to the

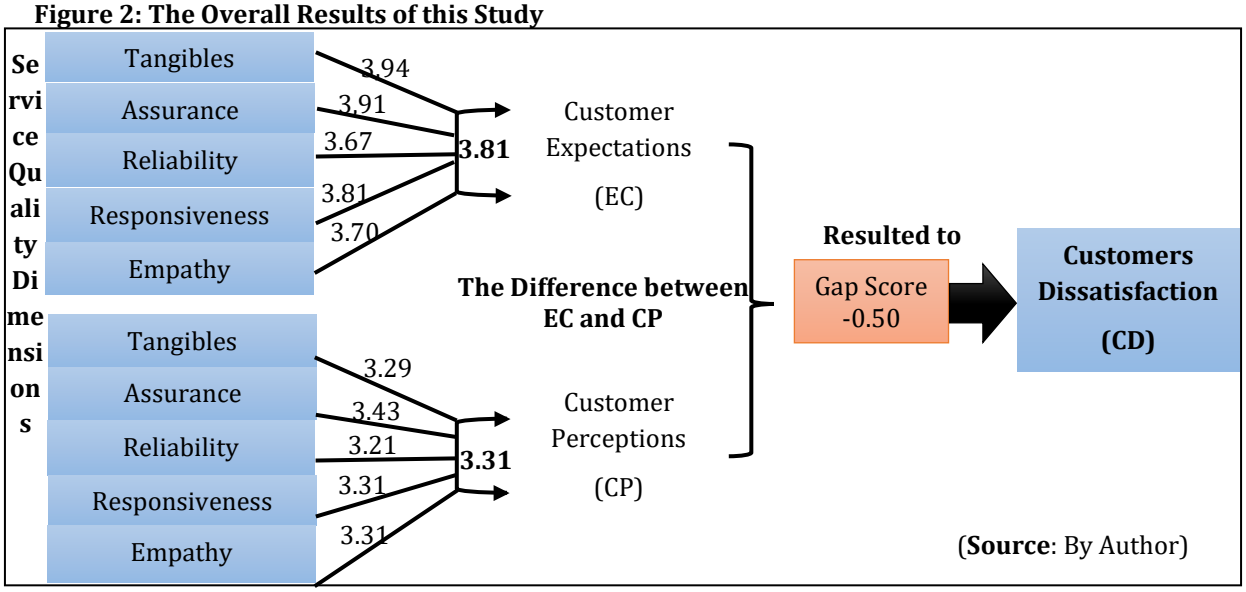
assurance dimension results indicated that 0.731 and 0.774 have positive influencing on the service quality of PTVET colleges as perceived by customers. On the other hand, results indicated 0.845 and 0.716 as reliability dimension significance to the service quality. While 0.782 and 0.785 shown the significance responsiveness to the service quality. The last dimension of quality service known an empathy, Table 6 shows that expectations and perceptions have 0.791 and 0.783 KMO measure of sampling adequacy in respectively.

The Limitations of this Study: The study was only confined to KwaZulu- Natal province. 403 hard copies of questionnaires were distributed to the selected PTVET Colleges operating in KZN. The findings of this study can only be used with care, therefore, it is very important to note that PTVET Colleges from other provinces are not included then generalizations of this finding should be made with utmost care. The implications of this study are of twofold: Theoretical implications and practical implications. The detailed discussion of these concepts presented in the following sections.

Implications on Customer Expectations toward PTVET: Having established a considerate of customer expectations in describing its contextual, it clears why customer expectation is an important subject in the TVET sector. Failure for PTVET colleges to understand the level of service their customers (which are students, parents, and employers) expects will lead to losing customers to their competitions who can meet their expectations. According to the findings for this study shows that, customers (who are students) they expect more from the PTVET.

Implications of Customer Perceptions toward PTVET: According to Khare (2011) perceptions of customers becomes a powerful feature concerning customers' satisfaction. When PTVET colleges rendered service that is below their customers' expectations, this resulted in dissatisfaction. The findings of the study indicate that, customer perceptions (which are students) are low, which means, the selected PTVET colleges they fail to satisfy the need of their customers. The following figure 2 shows the overall outcome of this study, in terms of service quality of customer expectations and perceptions gaps as Hudson & Hudson (2012) revealed that, if their customer expectations are met or exceed then customers will usually believe that they received high-quality service. The overall results based on customer expectations and perception of all five service quality dimensions shows that, customer expectations (average mean of 3.81) were higher than customer perceptions (average mean of 3.22) resulted to a gap of -0,50. Customers' expectations were higher than what was perceived from the selected PTVET Colleges. This resulted in customers' dissatisfaction. However, dissatisfied customers will spread bad marketing through words of mouth to their friends and family members (Zungu, 2013).

Figure 2: The Overall Results of this Study



5. Conclusion

From the research findings, this article can conclude that customers' expectations of service quality in an excellent PTVET college are higher than their perceptions of service quality at the selected PTVET college campuses therefore this proves that the customer expectations of service quality are not in line with the acceptance levels of service quality in the PTVET sector. Customers have higher service quality expectations that if not me by the PTVET can result in customer dissatisfaction and losing customers to their competitors.

Recommendations: There is a clear indication from the findings that much still needs to be done by PTVET colleges and some negative implications have been identified. The results of the study have revealed that customers have high expectations of service quality in PTVET sector.

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Promotional Tools Employed by Medical Insurance Companies to Attract International University Students

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Abstract: The South African Immigration Act 19 of 2004 requires that all international students have proof of medical insurance cover for the academic year of study. The medical insurance cover must be from a registered provider with the South African Council for Medical Schemes. Some medical insurance companies provide gifts to students to gain a larger market share within the educational institutions. Health insurance products are very crucial in the lives of university students and therefore the students must be familiar with medical product benefits and exclusions. It seems that many students lack relevant knowledge of health insurance products. Students seem to have a perception that medical insurance products cover all healthcare expenses. Dissatisfied customers may tarnish the image of the respective medical insurance company and result in customers seeking alternate products. The purpose of this paper is to determine the influence of promotional tools in creating awareness amongst international university students' selection of medical insurance products. The study was descriptive and quantitative in nature. Four hundred international students studying at two state universities in Durban, South Africa completed a structured questionnaire. The results indicate that the respondents are very sensitive to price and the majority of them are influenced by advertising and word of mouth. The results of the study indicated that medical insurance companies should consider the quality of service and price as being very important factors when designing a promotional mix. Awareness creation is the backbone of sales growth and market share.

Keywords: *Communication, Promotional tools, Awareness and Medical Insurance.*

1. Introduction

According to the Immigration Amendment Act 19 of 2004, all higher education institutions require proof of medical aid cover from international students before enrolment to any academic programme. Ingwe health medical facility from Momentum is the preferred by higher educational institutions. In addition, students are also free to buy any other medical product offerings for the complete calendar year. Most medical insurance companies are competing to gain market share in educational institutions. A variety of promotional tools may be used to create awareness, in the competitive medical insurance sector. Medical insurance products are very crucial to the lives of each student; therefore, the target market needs to be aware of the medical benefits and exclusions when obtaining medical insurance products. Singh (2011) stipulates that diffusion of innovation theory is very important when selecting a particular group of the target audience or a particular community. The theory of diffusion of innovation states that the concept is to be communicated and given enough time to cement in the long term. In support of this theory, social influence theory and social network theory state that the social norms of a group are considered. To sum up, the Medical Insurance companies should consider the diffusion of innovation theory so that promotional tools are implemented effectively.

An evaluation of the influence of the promotional tools employed by medical insurance companies at higher educational institutions is paramount to identify if they can create customer awareness. Research on the use of promotional tools at universities is very scanty at best, hence little is understood about the international students and their purchase behaviours, mostly with regards to the way they respond to promotional tools used by medical insurance companies (Chibvura, 2017). The questions are; is it the customer's ignorance of not searching for further information about available medical insurance products or it is the medical insurance providers' responsibility to design effective promotional tools to communicate information about what they offer? In this regard, the company may be able to maximize on retaining existing customers and gain positive publicity. Moreover, Medical Insurance Companies have experienced sales inconsistencies as the customers are not aware of the full benefits and limitations which result in over customer expectation and dissatisfaction when the actual service is delivered (Wright, Khanfar, Harrington, & Kizer, 2010). University students seem to be lacking enough knowledge of the available medical insurance offerings. This leads to

misinterpretation of information. Hence, dissatisfied members will tarnish the images of the respective medical insurance providers, hence customer attrition (Chibvura, 2017).

Many students have the perception that medical insurance cover all healthcare expenses. The purpose of this paper is to determine the influence of promotional tools in awareness creation amongst international university student's selection of medical insurance products. The study also explores the relationship between demographics and perception of promotional tools in creating awareness amongst international university students. Marketing to international students requires a sound understanding of demographics. This will allow for shared meaning and customised message. The following are the proposed hypotheses:

H1: There is no significant relationship between age and perception on promotional tools used in creating awareness.
H2: There is no significant relationship between gender and perception on promotional tools used in creating awareness.
H3: There is no significant relationship between race and perception on promotional tools used in creating awareness.
H4: There is no significant relationship between country of origin and perception on promotional tools used in creating awareness.

2. Literature Review

Various academics explain communication from the perspective of their discipline. Hu, Lu, Khan, and Bai (2012) explain that sharing of information reminds prospects of a need that they may have or remind them of the benefits of the transactions. Communication can always explain and create awareness of a market offering to customers. Communication is the backbone of an organization as almost everything revolves around communication. Organizations give the highest significance to communication and ensure that the promotional tools frankly aim for the needs and wants of the targeted market. Brand and product awareness depend on the efficiency and effectiveness of the communication strategy of an organization and customer retention is heavily dependent on knowledge and loyalty. According to "Henry" Jin, Fawcett, and Fawcett (2013) awareness is part of the human development and as such, is necessary for a human to be aware of the situations around them. The outcome includes behaviour, inspirations, judgments and emotions. (Rajagopal, 2008) refers to customer awareness as the understandings by an individual referring to the available products marketed and sold by a firm. This avenue makes customers very much aware of their choice of the product when they are fully equipped with the product knowledge and advantages from knowing their privileges and civil liberties.

There is a need to understand the various marketing communication models that have been put forward by scholars to understand the importance of customer awareness. Thorson and Moore (2013) opine that promotional tools focus on the ways in which organizations use in notifying, convincing and reminding customers of its products and brands. Promotional tools represent the company's "voice" and their brand adds to the introduction of a channel of communication and creates long-term customer relationships. There are different promotional tools used by companies to expand and advance their communication processes and patterns. Shimp (2010) acknowledges that promotional tools stand for the compilation of all basics in a product's marketing mix, with the development of exchange by formulating mutual meaning with customers. In addition, the meaning suggests that promotional tools can either be purposeful, referring to advertising and personal selling or not purposeful as when a product attributes represent something to customers that the sales representative may not have predicted. Promotional tool communication is arguably the process of passing on information to a target market to create proposed awareness.

A promotional tool communicates different messages to consumers (Mughal, Mehmood, & Ahmad, 2014). Hence, the lack of proper promotional tools can result in poor awareness of the product. Klink and Athaide (2014) affirm that promotional tools include advertising, personal selling, sales promotions, public relations and direct marketing elements. An organization implements a promotional mix to follow its promotional tool objectives. Armstrong, Adam, Denize, and Kotler (2014) support that the marketing purpose includes identifying consumers' needs as well as creating customer awareness, meeting and fulfilling customer needs

and profitably. In addition to these promotional tools, a new emerging promotional tool is social media. The elasticity of the advertising tool is excellent as it implemented to formulate the message for a national segment or certain specialized market segment. Personal selling provides face-to-face interaction, which allows the sales team to get feedback and assurance of the customers' understanding.

Sales promotions involve a wide variety of tools, which includes point of purchase displays, premiums, discounts, the area of expertise advertising and demonstrations. The objective is therefore to enlarge utilization for recognized products and to motivate trial by persuading new customers to use the product. Wang, Wu, and Wang (2009) contend that direct marketing is an interactive method of marketing and which utilizes one or more advertising medium to root an assessable response and/or transaction. Mamuti (2013) rightly suggests that straight marketing seeks to target individual consumers with the purpose of providing individualized messages. According to Shimp (2010), public relations is a management function that provides visibility for an organization and thus allows it to be properly identified, positioned and understood by all its targets. Decision-making process refers to when consumers assess and evaluate many products to select the best alternative to satisfy their need (Fill, 2011). To sum up the consumer decisions making process is also very important in this study as it also influences the communication strategy and promotional tools used. There are many sources of information available to consumers such as the internet, advertising, print media and referrals. The decision to purchase originates from the evaluation of the available options. Moreover, another dimension such as product availability can also be considered.

3. Methodology

According to Yin (2015) research design gives a logical sequence to a researcher, which will in turn create a connection between the aim and objectives, questions of research to eventually lead to the conclusion. The data for the study was collected from international students at two public universities in South Africa using a quantitative research approach through a structured questionnaire. The questionnaire developed from the aim of the study, which was guided by the literature review.

Sample: The sample comprised full-time international university students of KwaZulu-Natal (UKZN) and Durban University of Technology (DUT). The sampling strategy for the study was largely influenced by the population representation of international students in the province of KwaZulu-Natal, South Africa. A non-probability convenient sampling technique using a cross-sectional survey was used to select respondents. Four hundred international students studying at two state universities in Durban, South Africa completed a structured questionnaire.

Measuring Instrument: A Likert-scale structured questionnaire was used to measure the latent constructs, in this case, consumer behaviour. The questionnaire was designed in a manner that addressed the study, hence the measuring instrument managed to measure what had to be measured. These ordinal scales measure the levels of agreement/disagreement on a continuum from strongly disagree to strongly agree, thus making assumptions that behaviour can be measured. This is necessary to uncover degrees of the opinion of the respondents. A pre-test was done on a small group of university students to eliminate discrepancy and lack of clarity in some questions that affect efficiency and effectiveness. Table 1 reflects the reliability of each construct.

Data Collection Procedure: A questionnaire was distributed to a convenient sample. An enclosed letter, clearly indicating the purpose of the study, was attached to the questionnaire. A sample size of 400 international students (200 each from the two universities) was selected. A sample size of 384 should be enough to support the research results (Sekaran, 2003). Ethical considerations were adhered to in administering the questionnaire. The students' rights to anonymity, confidentiality and privacy were respected.

Reliability Statistics: The two most important aspects of precision are reliability and validity. Reliability computed by taking several measurements on the same subjects. A reliability coefficient of 0.70 or higher is considered as "acceptable".

Table 1: Cronbach's Alpha

	Number of Items	Cronbach's Alpha
Effectiveness of promotional tools	9	0.817
Perception on promotional tools in creating awareness	7	0.737
Information source	8	0.804

The reliability scores for all sections exceed the recommended Cronbach's alpha value. This indicates a degree of acceptable, consistent scoring for these sections of the research.

Factor Analysis: Factor analysis is used to find latent variables or factors among observed (Tustin & Martins). Table 2 reflects the summarized results of KMO and Bartlett's Test. The requirement is that Kaiser-Meyer-Olkin Measure of Sampling Adequacy should be greater than 0.50 and Bartlett's Test of Sphericity less than 0.05. In all instances, the conditions are satisfied which allows for the factor analysis procedure.

Table 2: KMO and Bartlett's Test

Description	Kaiser-Meyer-Olkin Measure of sampling Adequacy	Bartlett's Test of Sphericity Approx. Chi-square	DF	Sig
Decision Making Process	0.826	640.438	21	0.000
Effectiveness of promotional tools	0.807	1053.212	36	0.000
Perception of promotional tools used in creating awareness	0.746	554.674	21	0.000

All of the conditions are satisfied for factor analysis. This means that the variables that constituted the research instrument were perfect measures of the component. Overall, it can be concluded that the sections on the research instrument measured exactly what they were intended to measure.

4. Results and Discussion

There were 400 responses from the target university students. The biographical dimensions in this study include gender, age, country of origin and religion. Biographical data provides an understanding of the respondents' groups. The analysis of respondent's characteristic reflected in Table 3.

Table 3: Demographic Statistics of Respondents

Age	%	Religion	%	Origin	%	Gender	%
18-21	27.5	Christianity	76,3	Botswana	8.5	Male	62
22-25	42.5	Islamic	13.5	Zimbabwe	34.3	Female	37
26-36	22.5	Traditional	5.5	Congo	7		
31+	7.5	Hinduism	4.8	Nigeria	11		
				Uganda	11.3		
				Germany	10.8		
				Swaziland	5.8		
				Namibia	5		
				Zambia	3.8		
				India	0.8		
				Sweden	0.8		
				Burundi	0.3		
				Lesotho	0.3		
				Angola	0.3		
				Sierra Leone	0.3		
				Mali	0.3		

Most of the respondents fall within the 22-25 age range. In addition, the male students participated more in the research project as compared to females. Three-quarters of the population belongs to the Christianity religion. Most of the international students come from neighbouring African countries such as Zimbabwe and Nigeria. The age group of 30+ has shown no significant contribution to the study as compared to other age groups. According to Guo, Hu, and Wan (2008), the university population, which is in the age of 31+, is very small as there are very few students doing their masters and doctorate degrees as compared to undergraduate students. The following patterns are observed. Some statements show (significantly) higher levels of importance whilst other levels of agreement are lower (but still greater than levels of importance). There are no statements indicating higher levels of little importance. The respondents regard the quality of service as the most important factor they consider when selecting medical insurance. This means the majority of the students consider the quality of service when it comes to medical insurance. Availability of adequate information was rated as the second important factor to consider when selecting medical insurance.

Table 4: Effectiveness of Promotional Tools

		Of little importance		**Neutral**		**Important**	
		Count	Row N %	Count	Row N %	Count	Row N %
The use of university broadcast email	C13	38	9.5%	89	22.3%	273	68.3%
Advertising on University websites	C14	30	7.5%	59	14.8%	311	77.8%
Exhibitions by medical insurance companies during university opening days	C15	28	7.0%	38	9.5%	334	83.5%
Internet (social media , for instance Facebook and YouTube)	C16	38	9.5%	59	14.8%	303	75.8%
Newspaper and magazines adverts	C17	44	11.0%	61	15.3%	295	73.8%
Advertising on University radio slots	C18	47	11.8%	71	17.8%	281	70.4%
Events sponsorship	C19	37	9.3%	79	19.8%	284	71.0%
Sales promotions (gifts with company name printed on it)	C20	43	10.8%	51	12.8%	306	76.5%
Personal selling around university campuses	C21	30	7.5%	64	16.0%	306	76.5%

83.5% of the respondents consider the exhibitions by medical insurance companies during university open days to be the most important promotion tool. Moreover, according to Coetzee and Liebenberg (2004) open days' exhibitions are the most used sources of information at universities. Respondents also consider almost all promotional tools equally important. In addition, the findings of this study are supported with the results, (Jones, 2002) where respondents perceived open days' exhibitions as a vital source of information and effective promotional tool. The average level of high importance is 74.83%, which reflects that all the promotional tools are also regarded as highly important as well. Thorson and Moore (2013) confirm that a promotional mix is needed to notify, convince and remind customers of the market offerings. 75.8% of the respondents concurred that internet (social media) contributes to a greater extent a promotional tool for medical insurance.

Overall, it can be deduced that the respondents are very active on the social networks, which makes them receive, access and decode the information easily. Moreover, at Durban University of Technology and the University of KwaZulu-Natal every international student is a member of the international student Facebook page, which makes it very easy to disseminate information to everyone involved. Recommended medical insurance companies have made use of the international students' Facebook page platform to advertise.

Social networks connect students from different faculties together (Hu et al., 2012). According to ("Henry" Jin et al., 2013) internet (social media) is a considerable marketing advance to which many tertiary institutions use as a promotional tool. Loda (2014) who states that the digital revolution has already changed almost everything about how business is conducted in the medical insurance industry and it has greatly benefited from the new emerging opportunities offered by the Internet.

Laranjo et al. (2014), state that the Internet especially through the social media platform has changed how marketers and consumers communicate. Al Kailani and Kumar (2011) rightly suggest that one of the main advantages of the Internet is that it enables marketing practitioners to reach a worldwide customer segment, so that prospective customers and actual customers can search, select, and purchase products from suppliers around the world. Sales promotions and personal selling are regarded as equally important as promotional tools for medical insurance with a percentage of 76.5%. Most of the respondents also rate these promotional tools as highly important as well. Fandos Roig, García, and Moliner Tena (2009) argue that, when it comes to services, customers believe so much in personal selling as compared to other promotional tools which do not provide personal contact with the customer which ensure understanding of the provided information. The results also indicate that the respondents believe that university website, broadcast email and radio slots are also important promotional tools for medical insurance with the respondents' percentages of 77.8, 68.3 and 70.4 respectively

Table 5: Perception of Promotion Tools Used in Creating Awareness

		Disagree		Neutral		Agree	
		Count	Row N %	Count	Row N %	Count	Row N %
TV adverts reinforces brand awareness for medical insurance companies	D22	23	5.8%	50	12.5 %	327	81.8 %
Giving branded gifts creates awareness for medical insurance companies	D23	40	10.0 %	59	14.8 %	301	75.3 %
Sponsorships towards international students' events creates awareness	D24	40	10.0 %	53	13.3 %	307	76.8 %
Personal selling through direct contact with the students provides information on the available medical insurance companies.	D25	25	6.3%	42	10.5 %	333	83.3 %
Internet Adverts keep on reminding students about available medical insurance companies.	D26	32	8.0%	48	12.0 %	320	80.0 %
Facebook and all other social networks contribute to a greater extent in creating awareness for students	D27	28	7.0%	50	12.5 %	322	80.5 %
Word of mouth creates awareness to a greater extent to students.	D28	25	6.3%	43	10.8 %	332	83.0 %

Medical insurance companies usually sponsor international students' sports day every year through the International office of the University. The significance of assessing the effectiveness of each promotional tool used by medical insurance was to analyse if the promotional tools are creating awareness and the results reflect that exhibitions during university open days are the most effective. The highest percentage of 83.3% of the respondents have the perception that personal selling through direct contact with the students provides information on the available medical insurance companies. Fill (2011) supports that personal selling provides face-to-face interaction with customers, which allows the sales team to get feedback and assurance of the customers' understanding. This is followed by the perception that word of mouth creates awareness to a greater extent to students. From the previous research by Jones (2002) word of mouth was ranked as the most effective promotional tool for the students. In the medical insurance industry, word of mouth is very important as students make decisions through referrals from parents or family. According to Shrivastava,

Londhe, Sonawane, and Suri (2016) many students believe that word of mouth is effective in creating awareness as students share their knowledge about medical insurance.

TV adverts reinforce brand awareness with 81.8%. From the above results, it is worth mentioning that the majority of the students agreed that TV advertising, advertising through social networks and personal selling creates awareness and provides information on the available medical insurance. Soba and Aydin (2013) state that advertising can make 70% of the target market aware of the new product, achieving 50% understanding of a proposition, with 40% convinced and 20% will purchase in the first period. Overall, it can be concluded that the majority of international students are active in the sport, which makes it successful for the medical insurance companies to sponsor sports events giving away branded gifts. It can also be concluded that most students had access to the internet at the institutions as they have agreed that internet adverts revive brand awareness Gifts offered when joining are also considered important when selecting medical insurance. Petruzzellis and Romanazzi (2010) believe factors considered depend on the type of product offered, functional value, emotional value, social value, price and quality.

Table 6: Information Source

		Disagree		**Neutral**		**Agree**	
		Count	Row N %	Count	Row N %	Count	Row N %
Word of mouth from other students	E29	32	8.0%	56	14.0%	312	78.0%
Sales presentation by a company representative around campus	E30	35	8.8%	53	13.3%	312	78.0%
Internet browsing	E31	45	11.3%	74	18.5%	281	70.3%
University pamphlets	E32	42	10.5%	87	21.8%	271	67.8%
University websites	E33	56	14.0%	68	17.0%	276	69.0%
TV adverts	E34	58	14.5%	69	17.3%	273	68.3%
Radio Advert	E35	77	19.3%	79	19.8%	244	61.0%
Received branded gifts	E36	61	15.3%	62	15.5%	277	69.3%

The majority of the respondents got information from word of mouth and sales presentations, followed by internet browsing and all the other sources of information with the average level of agreement of 70.19%. Word of mouth is ranked as the first used source of information that influenced the student's decision making on medical insurance because students rely on advice from parents, family members and friends. According to the study by (Konyana, 2013) word of mouth was rated the third while in the study done by Jones (2002) word of mouth was ranked as the most effective source of information by the respondents. In addition, Klink and Athaide (2014) state that when it comes to medical insurance and any other services reference group influence through word of mouth is very crucial. Furthermore, personal selling has the highest percentage of agreement. This indicates that the majority of the respondents have received information through personal selling. Kotler and Keller (2012) support that personal selling is the most effective tool at particular steps of the customer buying process particularly in creating up buyer's awareness, tastes, conviction and activities. A similar study by Fandos Roig et al. (2009) highlight that through personal selling, the consumer usually feels a bigger need to pay more attention, listen and act in response.

Hypothesis Testing: The traditional approach to reporting a result requires a statement of statistical significance. A p-value is generated from a test statistic. A significant result is indicated with "$p < 0.05$". A second Chi-square test was performed to determine whether there was a statistically significant relationship between the variables (rows vs. columns). The null hypothesis states that there is no association between the two. The alternate hypothesis indicates that there is an association. The tables below summarize the results

of the chi-square tests. The results of this study indicated that medical insurance companies should consider the quality of service and price as being very important factors when designing a promotional mix.

Table 7: Relationship between Age and Perception on Promotional Tools Used in Creating Awareness

Item	X^2	P
TV adverts reinforce brand awareness for medical insurance companies.	29.056	0.040
Giving branded gifts creates awareness for medical insurance companies.	10.387	0.582
Sponsorship towards international students' events creates awareness.	17.124	0.145
Personal selling through direct contact with the students provides information on the available medical insurance companies.	15.982	0.192
Internet adverts keep on reminding students about available medical insurance companies.	18.607	0.098
Facebook and all other social networks contribute largely to creating awareness to students.	16.888	0.154
Word of mouth creates awareness to a greater extent to students	14.284	0.283

As indicated in Table 7, it emerged that there was no significant relationship between age groups and most of the seven items that measure respondent perception on promotional tools used in creating awareness (p is greater than 0.05). However, the results also show that there is a relationship between age and one item saying that TV adverts reinforce brand awareness for medical insurance companies (p is less than 0.05). Therefore, the hypothesis that there is no significant relationship between age and perception on promotional tools used to create awareness is highly accepted.

Table 8: Relationship between Gender and Perception on Promotional Tools Used in Creating Awareness

Item	X^2	P
TV adverts reinforce brand awareness for medical insurance companies.	2.752	0.600
Giving branded gifts creates awareness for medical insurance companies.	12.697	0.013
Sponsorship towards international students' events creates awareness.	7,217	0.125
Personal selling through direct contact with the students provides information on the available medical insurance companies.	5.120	0.275
Internet adverts keep on reminding students about available medical insurance companies.	2.025	0.731
Facebook and all other social networks contribute largely to creating awareness to students.	1.457	0.834
Word of mouth creates awareness to a greater extent to students	7.140	0.129

As reflected in Table 8, there is no significant relationship between gender and perception on promotional tools used in creating awareness for the medical product as the p values of six out of seven items are greater than 0.05 except only one item with a p-value of 0.013. Therefore, there is only a significant relationship between gender and giving branded gifts as a way of creating awareness for medical insurance companies. The hypothesis that there is no significant relationship between gender and perception on promotional tools used in creating awareness is accepted.

Table 9: Relationship between Race and Perception on Promotional Tools Used in Creating Awareness

Item	X^2	P
TV adverts reinforce brand awareness for medical insurance companies.	11.887	0.455
Giving branded gifts creates awareness for medical insurance companies.	19.237	0.083
Sponsorship towards international students' events creates awareness.	24.778	0.016
Personal selling through direct contact with the students provides information on the available medical insurance companies.	12.170	0.432
Internet adverts keep on reminding students about available medical insurance companies.	13.026	0.367
Facebook and all other social networks contribute largely to creating awareness to students.	12.277	0.424
Word of mouth creates awareness to a greater extent to students	24.457	0.018

From the above results in Table 9, it indicates that there is no significant relationship between race and perception on promotional tools used in creating awareness for the medical product as the p values of five items out of seven items are greater than 0.05 except only two items with a p-value of 0.016 and 0.018. The hypothesis that there is no significant relationship between race and perception on promotional tools used in creating awareness is therefore accepted.

Table 10: Relationship between Country of Original and Perception on Promotional Tools used in Creating Awareness

Item	X^2	P
TV adverts reinforce brand awareness for medical insurance companies.	91.594	0.005
Giving branded gifts creates awareness for medical insurance companies.	75.421	0.087
Sponsorship towards international students' events creates awareness.	63.923	0.340
Personal selling through direct contact with the students provides information on the available medical insurance companies.	33.914	0.997
Internet adverts keep on reminding students about available medical insurance companies.	31.217	0.999
Facebook and all other social networks contribute largely to creating awareness to students.	43.542	0.946
Word of mouth creates awareness to a greater extent to students	64.664	0.317

As reflected in Table 10, there is no significant relationship between country of origin and perception on promotional tools used in creating awareness for the medical product as the p values of six items out of seven items are greater than 0.05 except only one item with a p-value of 0.005. Therefore, there is only a significant relationship between country of origin and the item, which says that TV adverts reinforce brand awareness for medical insurance companies. The hypothesis that there is no significant relationship between country of origin and perception on promotional tools used in creating awareness is accepted. The inferential statistics are reflected in Table 1 and Table 2.

5. Conclusion

Students consider price, how popular the medical insurance company is, company's reputation, incentives offered when joining, benefits and limitations of insurance packages, quality of service and availability of adequate information prior to making their selection. All these factors influence the decision-making process of the students and they carry different weights of importance towards the final decision, despite that some are being ignored. The findings indicate that the source of information is very important in assessing awareness creation. The majority of the students agree that word of mouth creates awareness largely, yet some of the students are not satisfied. All promotional tools are considered very effective despite the infrequent use of some of them such as, printed media, university radio slots, and university broadcast email. Most of the respondents perceive that word of mouth and personal selling creates awareness.

Promotional tools, which involve two-way communication, regarded as the most effective. Two-way communication was possible when feedback was obtained from the customers and when there was personal interaction between the marketer and the customers. Students reacted differently towards various promotional tools; therefore, an effective promotional mix was required. Positive information on products should be available and accessible on all credible sources of information. Understanding the nature of the target market and the nature of the product was regarded as vital when designing a promotional tool. Awareness creation is the backbone of sales growth and market share. An understanding and correct implementation of the customer-oriented promotional mix was regarded as paramount for medical insurance. This shows that medical insurance companies should make use of promotional tools effectively to create awareness and provide adequate information.

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Treasury Single Account: A Nudge towards Public Sector Accountability in Nigeria

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Abstract: This study examined treasury single account, as a nudge towards public sector accountability in Nigeria. Specifically, the study analyzed the influence of adoption of treasury single account on the effectiveness of cash management, reduction of fraudulent activities and improvement in the level of accountability in the Nigerian public sector. The study made use of primary data collected through the use of a questionnaire, based on a sample of 400 respondents randomly selected from government parastatals, departments, institutions and ministries, across the six southwest states in Nigeria. Data collected were analyzed with frequency and percentage response analysis. The result showed that adoption of treasury single account provoked effective management of cash, sustained a considerable reduction in the level of fraudulent activities and aided improved level of accountability in the Nigerian public sector. Thus, there is no doubt that treasury single account is a nudge towards public sector accountability in Nigeria. Therefore, the government can further harness the potency of centralize control of public resources to birth a corrupt free society, where utmost accountability and transparency of resources mobilization and management can be attained.

Keywords: *Treasury Single Account, Nudge, Public Sector Accountability, Nigeria*

1. Introduction

Resources management among government ministries, departments and agencies are fundamental towards maintaining effective and efficient resources mobilization, and disbursement. At one time or the other, the means of ensuring that resources are managed and controlled effectively are being devised by government around the world to foster effective and efficient funding of projects and programmes in public sectors. This is because ensuring that all cash is collected in the right unit and the time frame is fundamental towards maintaining effective cash management among government ministries, departments and agencies (Helen, Amenawo & Bassey, 2017). Maintaining unified and centralized control of government resources is fundamental to ensuring appropriate mobilization, allocation and management of government resources in any country of the world. Most developing countries (Nigeria inclusive), often lag behind in management of government resources for efficient public service delivery, due to the adoption of a fragmented system for resources mobilization, which is often devoid of centralized control. Inability to maintain centralized control of public resources mobilization has continued to impede accountability in most public sectors across the world. The need for the improved level of accountability and transparency in the management of government resources cannot be overemphasized in any country of the world. Without mincing words, the exigency of maintaining organized resources mobilization and management framework is on the increase.

In most developing countries including Nigeria thus provoking consideration for the adoption of single treasury account (Igbokwe-Ibeto, Nkomah, Osakede, & Kinge, 2017; Ekubiat, & Ime, 2016), Treasury single account (TSA) is a public accounting system under which all government revenue, receipts, income are collected into one single account. It is usually maintained by the country's Central Bank and all payments are made through this account. Treasury single account primarily ensures accountability of government revenue, enhance transparency and help avoid misappropriation of the fund (Nwaorgu, Ezenwaka, & Onuorah, 2017). Essentially the need for the adoption of a treasury single account is often heralded by the existence of a lack of effective management of public resources, reflected in terms of fund misappropriation, lack of optimum transparency and accountability. Treasury single account (TSA) is an accounting policy that ensures adequate and efficient mobilization of public resources across all departments, ministries and agencies. Treasury single account tends to spur transparency and accountability in a government department, agencies and ministries, if well-structured and implemented (Igbokwe-Ibeto et al., 2016). As pointed out by Helen, Amenawo and Bassey (2017), Nigeria as a developing nation had over time struggled with the burgeoning rate of fund embezzlements in several quarters of the public sector, which ultimate was the sine-qua-non for the establishment of several control agencies including Code.

Conduct Bureau, Independent Corrupt Practices Commission (ICPC), and Economic and Financial Crimes Commission (EFCC) to mention but few. Observably, activities of these agencies over time had little or no effect on the rate of financial crime in the country, with spiralling corrupt practices among public officers in recent times. In response to the perennial menace of poor public sector accountability and transparency in the country, it became necessary for government led by President Buhari to instigate the full adoption of treasury single account in the country, in an attempt to occasion substantial abatement of the inherent leakages in the mobilization process of public resources in the country. This study set out to assess treasury single account, as a nudge towards public sector accountability in Nigeria. This study specifically set out to investigate the efficacy of treasury single account towards sustaining public sector accountability in Nigeria, looking at how it adoption contributed to:

- Effective cash management in Nigerian public sector;
- Reduction in fraudulent activities in the Nigerian public sector;
- Improvement in the level of accountability in the Nigerian public sector;

2. Literature Review

The concept of Treasury Single Account: Treasury single account (TSA) can be defined as an allied structure of government bank accounts ensuring a combination of government funds and the best use of government possessions. TSA possess three crucial fundamentals, first a combined arrangement of government bank accounts that permits total control of all cash reserves, secondly an option suitable for accessing and working with TSA based on institutional arrangement and payment settlement method and Thirdly, the combination of government receipts not lacking anything that it needs to be complete as it should include all receipts including budgetary and extra-budgetary (Pattanayak & Fainborn, 2010). This implies that every public receipt regardless of whether the matching cash flows are dependent on budgetary control or not (e.g. situations of earmarked funds, reserve funds and other off-budget or extra-budget funds) should be controlled by the TSA (Oguntodu, Alalade, Adekunle & Adegbile, 2016; Shah, 2007). Treasury single account was perceived by Nelson, Adeoye & Ogah, (2015). As an account that collates the balances of all the ministries, departments and agencies of the government, but there is an intermediate account for every MDAs that holds the total of the expenditures and receipts. In this way, the complete amount will be transferred in the end to the treasury single account.

The treasury single account can also be seen as a unified arrangement of government bank accounts enabling a combination of revenues from all MDAs and advantageous use of government monetary resources (Onyekpere, 2015). As posited by Oguntodu et al. (2016) treasury single account is a set of connected bank accounts that control the receipts and payments of the government and ensures a consolidated view of government monetary worth at any point in time. The merits of this account are many. The collection of revenues into a single treasury account makes it possible for prompt capture and payment of all revenues received into the government's account without the multiple banking structures impeding a smooth-operation. This merit in this way limits revenue leakages that results into revenue loss and lack of accountability and transparency in public sectors (Oguntodu et al., 2016). The broad objective of treasury single account is to enhance successful control of government monetary balances. Specifically, treasury single account fulfils the following objectives:

- Reduces transaction expenses during budget execution;
- Limits the delay in dispense of revenue to the government;
- Enhance quick payments of government expenditures;
- Effective control and monitoring of the sharing of funds to different government agencies;
- Enhances easy coordination with the monetary policy operation;

Public Sector Accountability: Accountability is connected with being responsible to the owners who put some trust, faith and resources in charge of someone (Nwaorgu, Ezenwaka & Onuorah, 2017). Accountability is ensuring that assigned duties or obligations are carried out, in accordance with stated rules, standards and regulations that can guaranty expected outcome or overall performance. It implies doing things clearly in line

with the due process, sense of feedback accuracy. In ethics and governance, accountability is the act of being responsible and worthy of recognition for the successful discharge of an obligation. Accountability is the acceptance of answerability for actions, decisions taken in the process discharging delegated tasks (Nwaorgu, Ezenwaka & Onuorah, 2017).

Treasury Single Account and Public Sector Accountability in Nigeria: A Central system of banking according to Stephen, (2016) is crucial for sustaining effective control and management of public resources in developing country like Nigeria. Success of treasury single account in its achievement of efficient management of fund primarily in the public sector necessitated the need for a total collaboration of the stakeholders (Central Bank of Nigeria (CBN), Federal and State Accountants-General, Ministries, Departments and Agencies (MDAs), and the Deposit Money Banks) during the pre-implementation, implementation and post-implementation stages of the development (CBN, 2015). As relayed by Igbokwe-Ibeto, Nkomah, Osakede & Kinge (2017), adoption of treasury single account in Nigeria had hither-to aided Nigerian government in maintaining effective management of resources across public establishments. The introduction of the TSA has enhanced fiscal discipline, efficiency and accountability of the government. This restricted access to public funds has led to efficient use of public funds coupled with innovative and profit-yielding public investment in the important development sectors of the country (Mboto, Offiong & Ibor, 2017).

Empirical Evidence: Helen, Amenawo and Bassey (2017) investigated the public perception of the treasury single account in Nigeria. Specifically, the study focused on the degree of public perception and acceptance of the policy treasury single account in MDAs. The study collected data from 190 respondents in Calabar, Cross River. The study analysed data using Chi-square technique. The study revealed a significant acceptance of Treasury Single Accounts in Calabar. Also, the study discovered the negative and significant impact of public perception on treasury single account. The study therefore concluded that there are acceptance and well perception of treasury single account in Nigeria. However, the study viewed ill-timed and lack of pre-launch preparation of operation modus which lead to hardship and gross systematic inefficiency. Thus, the study recommended that the government should organize seminars and workshops for account-holding MDA's on the advantages of treasury single Account. Ekubiat and Ime (2016) examined the adoption of Treasury Single Account (TSA) by the state government of Nigeria the study specifically investigated benefits, challenges and prospects of Treasury Single accounts by the state government. The study collected data from 133 ICAN and ANAN members in different sectors of Akwa Ibom state. The study analysed data using descriptive analysis and t-test statistics. The study found a significant benefit of formulation and execution of treasury single account by the state government. However, the study discovered that adoption of Treasury Single Account is minimal in Nigerian states. Thus, the study recommended the need for state government to enlightened stakeholders on the benefit of TSA adoption. Igbokwe-Ibeto, Nkoma, Osakede and Kinge (2017) assessed treasury Single Account in Nigeria. Specifically, the study evaluated the significance of treasury single account in promoting transparency and accountability of public sectors finance.

The study employed the discursive method. The study revealed, among others, improved appropriation control, improved operational control during budget execution, efficient cash management and improved bank reconciliation and quality of fiscal data as benefits of TSA adoption. However, the study discovered that TSA adoption led to the loss of a job in commercial banks that rely on government accounts. Therefore, the study concluded that the significance of the adoption of TSA in Nigeria mixture of good, bad and ugly. Thus, the study recommended the legal framework on TSA should be reviewed and amended; organize training for relevant CBN and MDAs staff; and adoption of TSA should progress slowly and wisely. Igbekoyi and Agbaje (2017) assessed the implication of treasury single account adoption on the public sector accountability and transparency. Specifically, the study examined the effect of TSA on financial leakages, transparency in the administration of public funds and financial appropriation. The study extracted data on 100 respondents from10 MDAs in Nigeria. The study analysed data using ANOVA. The study discovered that TSA possessed a significant effect on financial leakages and financial misappropriation. Also, the study found that TSA has a significant impact on accountability and transparency through consolidated revenue received and centralized revenue pool whereas TSA has an insignificant impact on budgetary control. Nwarorgu, Ezenwaka and Onuorah (2017) examined treasury single accounting and public sector in Nigeria. The study specifically, assessed the degree of influence of regular monitoring of government cash balances and unexpected fiscal

volatility on accountability in the Public sector. The study collected data from 250 staff in the accounting department of four federal government health institutions.

The study analyzed data using the ordinary least square technique. The study discovered that regular monitoring of government cash balance influence greatly accountability in the public sector, given the coefficient of determination of 0.82. Also, the study revealed that the impact of unexpected fiscal volatility on accountability is on the average, given the coefficient of determination of 0.49. Therefore, the study concluded that TSA reduces financial leakages in revenue generation and promotes transparency and accountability in Public sectors. Thus, the study recommended that the government should enlighten the public on the benefit of the policy of TSA. Ndubuaku, Ohaegbu, and Nina (2017) analyzed the impact of treasury single account on the performance of the banking sector in Nigeria. Specifically, the study examined the impact of Federal Government deposit on credit to the private sector; on deposit mobilization; and loans and advances. The study collated data over the period of 2002-2014 for 24 banks in Nigeria. The study analysed data using least square regression method. The study discovered the positive and significant impact of federal government deposit on credit to the private sector, deposit mobilization and loan and advances. Therefore, the study concluded that TSA has a significant influence on the performance of banking sectors in Nigeria. Thus, the study recommended that banks should avoid over-reliance on government deposit and seek funds from other sectors of the economy. Onuorah (2016) assessed federal government treasury single account deposit and commercial bank performance. The study specifically, analysed the impact of federal government treasury single account deposit on bank performance.

The study employed return on equity and return on investment as proxies for the dependent variable, bank performance. Federal government demand deposit, federal government time deposit and federal government savings deposit were used as a measure for an explanatory variable, federal government treasury single deposit account. The study collated data over the period 2012-2016. The study analysed data using the least square technique. The study found that federal government demand deposit has a negative impact on bank performance whereas federal government time and savings deposit have a positive impact on bank performance. Also, the study revealed that the impact of these deposits is less effective on bank performance as shown by the coefficient of determination of 0.23. Therefore, the study recommended that the government should ensure an adequate working system of TSA for effective performance in the banking sector. Yusuf (2016) evaluated the effects of treasury single account on public management in Nigeria. Specifically, the study analysed the degree of influence of treasury single account on financial leakage reduction and the promotion of accountability and transparency in public sector financial management. The study extracted data from 72 respondents in MDAs within Bauchi metropolis. The study analysed data using Pearson Moment Correlation Coefficient. The study revealed that a positive and significant relationship between treasury single account and financial leakages, accountability and transparency. Okerekeoti and Okoye (2017) studied treasury single account in Nigeria: The study specifically, examined the workings of treasury single account in Nigeria. The study employed a discursive approach. The study showed that treasury single account reduces financial leakages, promotes accountability and transparency. Also, the study explained that treasury single account encourages timely payment and capturing of revenues that enter government treasury.

Akujuru and Eyioku (2017) analyzed the effect of treasury single account policy on corruption in Nigeria. Specifically, the study examined the extent of the impact of TSA on corruption, financial leakages, accountability and transparency in the public sector financial management. The study employed data collected on 366 respondents from MDAs in Port Harcourt. The study analyzed data using the percentage method. The study revealed that treasury single account has reduced corruption, blocked financial leakages and promote accountability and transparency in public sector financial management to a large extent. However, the study revealed that effectiveness and efficiency of TSA have been limited by bureaucracy, government inaction and actions, internet platform delay among others. Thus, the study recommended, among others, that government should secure appropriate legislative support to facilitate the relevant regulatory environment. Oguntolu, Alalade, Adekunle and Adeigbe (2016) assessed treasury single account and Nigeria's economy. Specifically, the study analyzed the benefit of TSA government revenue, TSA government expenditure and TSA commercial banks on gross domestic product. TSA government revenue was captured by deposit with CBN, TSA government expenditure was measured by credit with CBN and TSA commercial bank was proxied by money supply. The study employed data covering the period of 199-2015.

The study analyzed data using the ordinary least square technique. The study revealed that credit and deposit with CBN as well as money supply have a positive impact on the gross domestic product. However, the study discovered that the effect of deposit with CBN on the gross domestic product was insignificant.

3. Methodology

This study made use of primary data sourced from 400 randomly selected respondents from government parastatals, agencies and ministries across six southwest states in Nigeria. The study made use of structured questionnaire designed in two sections, which captures respondent's details, and responses to questions related to the contribution of TSA adoption to effective cash management, reduction of fraudulent activities and improvement in the level of accountability in selected parastatals, agencies and ministries. Data collected in the study were analyzed with the use of percentage and frequency count.

4. Result and Discussion

Table 1: Respondents Details (Distribution of Respondents by Sex, Length of Service, Management Level and Category of Establishment)

Variable	Detail	Frequency	Percentage
Sex	Male	216	54.0
	Female	184	46.0
	Total	**400**	**100.0**
Length of Service	Below 5 Years	168	42.0
	6-10 Years	144	36.0
	11-15 Years	24	6.0
	Above 15 Years	64	16.0
	Total	**400**	**100.0**
Management level	Top Level Management staff	72	18.0
	Middle Level Management staff	272	68.0
	Low Level Management staff	56	14.0
	Total	**400**	**100.0**
Establishment category	Ministries	48	12.0
	Departments	16	4.0
	Agencies	48	12.0
	Institutions	240	60.0
	Others	48	12.0
	Total	**400**	**100.0**

Source: Authors' Computation, (2018).

Table 1 revealed that 216(54%) of the respondents sampled in the study are male, 184(46%) are female, length of service 168(42%) of the respondents is less than 5 years, that of 144(36%) is between 6-10 years, that of 24(6%) is between 11-15 years, while that of 64(16%) is above 15 years. The table also reported distribution of the respondents by management level, showing that 72(18%) are top-level management staff, 272(68%) are middle level management staff, while 56(14%) are low-level management staff, with distribution by categories of establishment showing 48(12%) for ministries, 16(4%) for departments, 48(12%) for agency, 240(60%) for institutions, and 48(12%) for others.

Treasury Single Account Adoption and Effective Cash Management in Nigeria Public Sector: This section presents perception analysis of the contribution of TSA adoption to effective cash management in Nigerian public sector, based on the perception of stakeholders sampled from the public office across Nigeria. The analysis is presented in table 2 and figure 1 below

Table 2: Analysis of TSA Adoption and Effective Cash Management in Nigeria Public Sector

S/N	QUESTIONS	SA	A	UD	D	SD
1	Treasury Single Account (TSA) is an effective strategy for sustaining efficient cash management in Nigeria public sector	232 (58%)	152 (38%)	0 (0%)	0 (0%)	16 (4%)
2	Treasury Single Account (TSA) is useful for reducing cash management competition in Nigeria Public sector	96 (24%)	200 (50%)	72 (18%)	32 (8%)	0 (0%)
3	Receipt and disbursement of government resources has been effective since the adoption of Treasury Single Account (TSA)	112 (28%)	160 (40%)	88 (22%)	32 (8%)	8 (2%)
4	There is high level of efficiency in fund mobilization in public sector since the adoption of Treasury Single Account (TSA)	96 (24%)	128 (32%)	96 (24%)	64 (16%)	16 (4%)
5	Adoption of Treasury Single Account (TSA) has significantly reduce bank's fees and transaction cost in Nigeria public sector	80 (20%)	112 (28%)	128 (32%)	64 (16%)	16 (4%)

Source: Authors' Computation, (2018).

Figure 1: Analysis of TSA Adoption and Effective Cash Management in Nigeria Public Sector

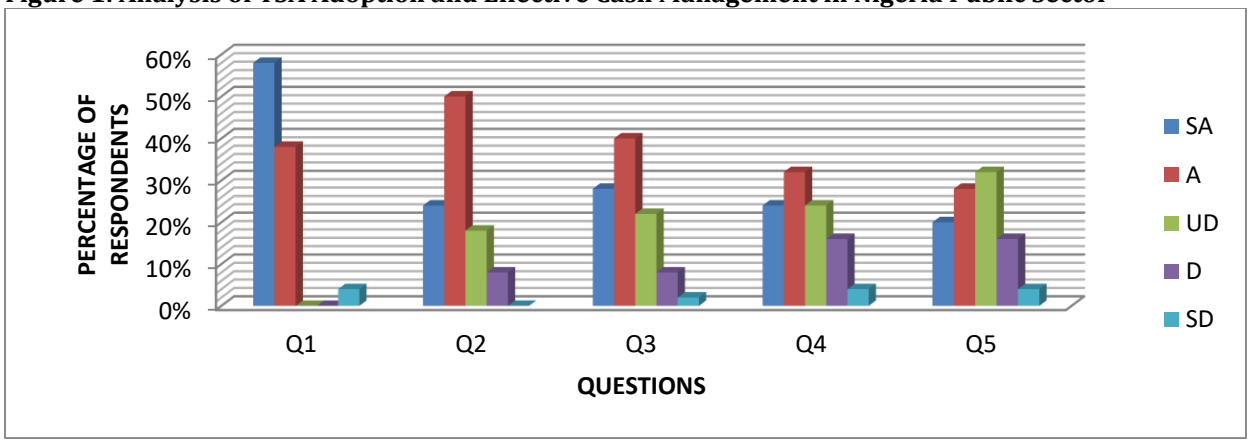

Table 2 and figure1 revealed the contribution of treasury single account adoption to effective cash management in Nigeria public sector. As reported in the table, 96% (58% strongly agreed and 38% agreed) of the respondent support the claim that Treasury Single Account (TSA) is an effective strategy for sustaining efficient cash management in Nigeria public sector, 74% (24% strongly agreed and 50% agreed) acclaimed that Treasury Single Account (TSA) is useful for reducing cash management competition in Nigeria Public sector, in the opinion of 68% (28% strongly agreed and 40% agreed) of the respondents, Receipt and disbursement of government resources has been effective since the adoption of Treasury Single Account (TSA), while 56% (24% strongly agreed and 32% agreed) of the respondents consent to the claim that there is high level of efficiency in fund mobilization in the public sector since the adoption of the Treasury Single Account (TSA), and finally about 48% (20% strongly agreed and 28% agreed) of the respondents agreed that Adoption of Treasury Single Account (TSA) has significantly reduced bank's fees and transaction cost in Nigeria public sector, as against 20% that disagreed. Hence this analysis reflects that to a large extent, the adoption of treasury single account as culminated into effective cash management in Nigerian public sector.

Treasury Single Account (TSA) Adoption and Reduction of Fraudulent Activities in Nigeria Public Sector: This section presents perception analysis of the contribution of TSA adoption to a reduction in fraudulent activities in Nigerian public sector, based on the perception of stakeholders sampled from the public office across Nigeria. The analysis is presented in table 3 and figure 2 below

Table 3: Analysis of TSA Adoption and Reduction of Fraudulent Activities in Nigeria Public Sector

S/N	QUESTIONS	SA	A	UD	D	SD
1	Treasury Single Account (TSA) had hither-to enhanced oversight and control of government resources	96 (24%)	168 (42%)	80 (20%)	48 (12%)	8 (2%)
2	Adoption of Treasury Single Account (TSA) has significantly improved operational control during budget execution in Nigeria public sector	112 (28%)	168 (42%)	64 (16%)	48 (12%)	8 (2%)
3	Adoption of Treasury Single Account (TSA) has substantially reduce the liquidity reserve need in Nigeria publics sector	72 (18%)	200 (50%)	64 (16%)	56 (14%)	8 (2%)
4	Adoption of Treasury Single Account (TSA) has significantly reduce misappropriation and diversion of public funds	144 (36%)	192 (48%)	40 (10%)	16 (4%)	8 (2%)
5	Adoption of Treasury Single Account (TSA) position Nigeria public sector for better performance and operational efficiency	152 (38%)	176 (44%)	40 (10%)	24 (6%)	8 (2%)

Source: Authors' Computation, (2018).

Figure 2: Analysis of TSA Adoption and Reduction of Fraudulent Activities in Nigeria Public Sector

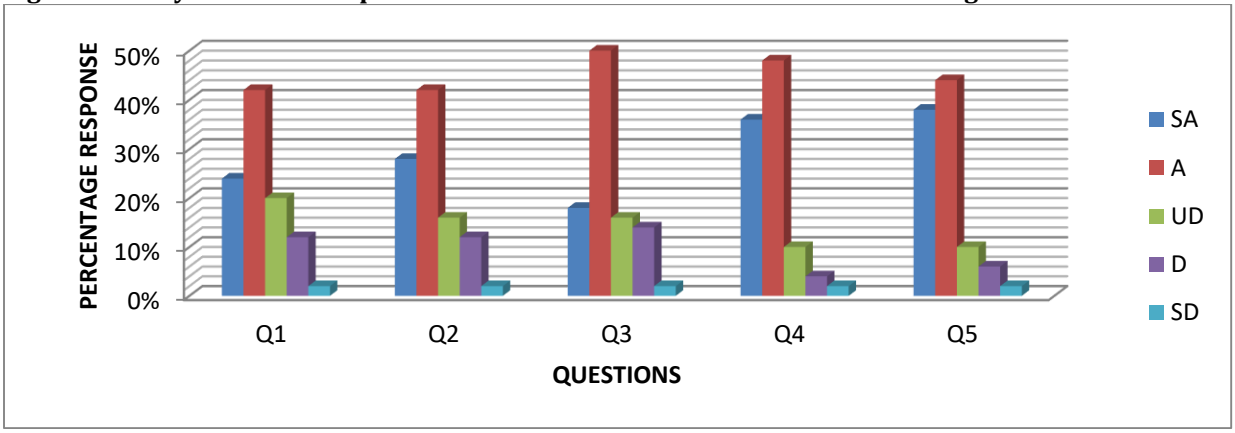

Table 3 and figure 2 showed the contribution of treasury single account adoption to the reduction of fraudulent activities in Nigeria public sector, as acclaimed by 66% (24% strongly agreed and 42% agreed) of the respondents Treasury Single Account (TSA) had hither-to enhanced oversight and control of government resources, 70% (28% strongly agreed and 42% agreed)of the respondent confirmed that adoption of Treasury Single Account (TSA) has significantly improved operational control during budget execution in Nigeria public sector, in the opinion of 68% (18% strongly agreed and 50% agreed) of the respondents adoption of Treasury Single Account (TSA) has substantially reduce the liquidity reserve need in Nigeria publics sector, 84% (36% strongly agreed and 48% agreed) of the respondents submitted that adoption of Treasury Single Account (TSA) has significantly reduced misappropriation and diversion of public funds, and

82% (38% strongly agreed and 44% agreed) agreed that adoption of Treasury Single Account (TSA) position Nigeria public sector for better performance and operational efficiency. In a nutshell, the analysis presented in table 3 and figure 2 reflects that adoption of treasury single account has led to considerable reduction of fraudulent activities in Nigeria public sector.

Treasury Single Account (TSA) Adoption and Improvement in the Level of Accountability in Nigeria Public Sector: This section presents perception analysis of the contribution of TSA adoption to improvement in the level of accountability in Nigerian public sector, based on the perception of stakeholders sampled from public offices across Nigeria. The analysis is presented in table 4 and figure 3 below:

Table 4: Analysis of TSA Adoption and Improvement in the Level of Accountability in Nigeria Public Sector

S/N	QUESTIONS	SA	A	UD	D	SD
1	Treasury Single Account (TSA) is a potent tool for reducing excessive spending in Nigeria public sector	152 (38%)	184 (46%)	32 (8%)	24 (6%)	8 (2%)
2	Introduction of Treasury Single Account (TSA) has significantly help in checking institutional leakages in Nigerian public sector	184 (46%)	184 (46%)	8 (2%)	16 (4%)	8 (2%)
3	Adoption of Treasury Single Account (TSA) contribute significantly to smooth accounting practices in Nigeria public sector	128 (32%)	176 (44%)	56 (14%)	32 (8%)	8 (2%)
4	Adoption of treasury Single Account(TSA) has hither-to foster resourceful utilization of government fund	104 (26%)	144 (36%)	88 (22%)	56 (14%)	8 (2%)
5	The level of accountability and transparency had significantly increased in Nigeria public sector since the adoption of Treasury Single Account (TSA)	80 (20%)	240 (60%)	48 (12%)	24 (6%)	8 (2%)

Source: Authors' Computation, (2018).

Figure 3: Analysis of TSA Adoption and Improvement in the Level of Accountability in Nigeria Public Sector

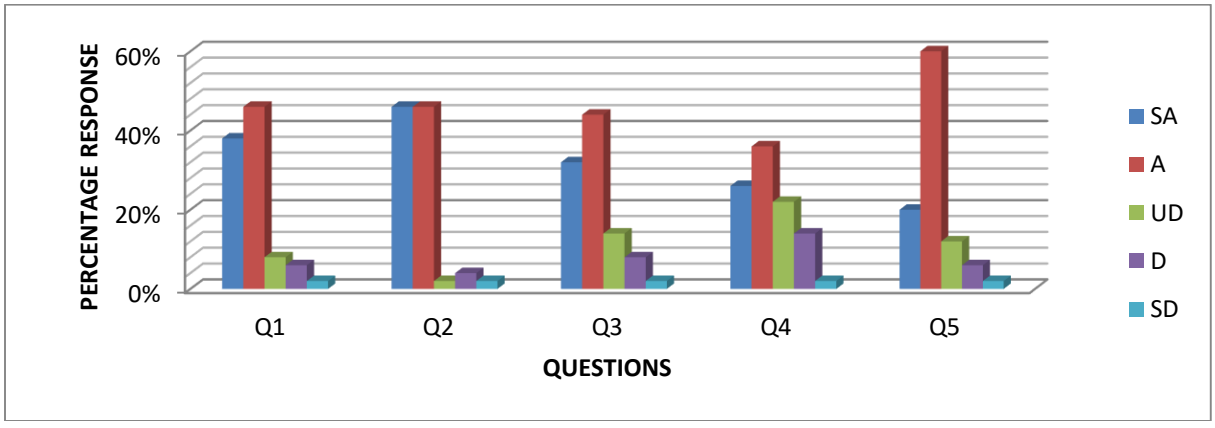

Table 4 and figure 3 contribution adoption of treasury single account to the improvement in the Level of Accountability in Nigeria Public Sector. As presented in the table 84% (38% strongly agreed and 46% agreed) of the respondent consent to that claim that Treasury Single Account (TSA) is a potent tool for reducing

excessive spending in Nigeria public sector, 92% (46% strongly agreed and 46% agreed) of the respondents submitted that introduction of Treasury Single Account (TSA) has significantly help in checking institutional leakages in Nigerian public sector, in the opinion of 76% (32% strongly agreed and 44% agreed) of the respondents adoption of Treasury Single Account (TSA) contribute significantly to smooth accounting practices in Nigeria public sector, 62% (26% strongly agreed and 36% agreed) of the respondent agreed that adoption of treasury Single Account(TSA) has hither-to foster resourceful utilization of government fund, and 80% (20% strongly agreed and 60% agreed) of the respondents submitted that the level of accountability and transparency had significantly increased in Nigeria public sector since the adoption of Treasury Single Account (TSA). Hence this analysis revealed that adoption of treasury single account had provoked improvement in the level of public sector accountability in Nigeria.

5. Conclusion and Recommendation

Based on the findings of the study, it is concluded that the adoption of treasury single account has provoked effective management of cash in Nigerian public sector, sustained a considerable reduction in the level of fraudulent activities and aid improved level of accountability. Hence, there is no doubt that treasury single account is a nudge towards public sector accountability in Nigeria. It thus stands that government can further harness the potency of central control of the public resource, to birth a corrupt free society, where utmost accountability and transparency of resources mobilization, allocation and disbursement can be sustained. Discoveries made in this study is in congruence with the submission, conclusion and/or position of previous studies such as Igbekoyi and Agbaje (2017), Nwarorgu, Ezenwaka and Onuorah (2017), Ndubuaku, Ohaegbu, and Nina (2017), Yusuf (2016), Okerekeoti and Okoye (2017), Akujuru and Eyioku (2017) on the discourse of the role of treasury single account in sustaining public sector accountability.

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Political Institutions and Macroeconomic Factors as Determinants of Credit Risk in South Africa

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Abstract: This study analyses the effects of political institutions and macroeconomic factors on credit risk in South Africa using quarterly data between 1998 and 2016. The study uses the ARDL approach to cointegration and reports on both long-run and short-run influences of credit risk. In the long-run political institutions and gold prices are found to positively impact credit risk whereas Gross domestic product has a negative influence on credit risk. In the short-run however political institutions have a negative influence on credit risk. Further, the study confirms the recent country risk downgrades by rating agencies, S & P, Moody and Fitch. Policies that grow the economy and are consistent with the government's long-term strategy needs to be followed to improve investor and lender confidence.

Keywords: *Credit risk, political risk, credit rating, cointegration*

1. Introduction

Credit risk has become an important issue in today's economies as it determines the flow of funds to meet production needs. With a huge reliance on bank credit, South African firms could find it difficult to compete at the global or regional level if the cost of debt spirals. On the other hand, the government of South Africa has been reeling under a huge stock of debt, increasingly growing as the country continues to face unprecedented trade deficits (Ayadi and Ayadi, 2008). The credit risk downgrades experienced recently[2] need to be analyzed in the context of the long-term relationship between political institutions and credit risk in the country. We ask the question whether political institutions matter for credit risk management in South Africa over both the short and long term. By so doing we contribute to the already established literature on the determinants of credit risk and proffer some policy options for the South African government. In debt markets, credit rating agencies play an important role by reducing search costs, lowering the incidence of moral hazard (Chang et al., 2017). During the past two decades rating agencies have become more popular, seemingly pointing out the bad apples from investment grade debt instruments. The South African government has not been spared by these referees, with several downgrades being assigned to the debt-burdened country as a result of several inconsistent decisions by the South African government. However, the long-term effects of such institutional factors on credit risk have not been documented. In this study we sought to establish to what extent these institutional factors are important in determining credit risk. Our results also seek to refute or validate recent public outcries over rating downgrades by credit rating agencies, Fitch, S&P and Moody's.

2. Literature Review

Credit risk is a measure of the probability of default on the principal and interest components of a debt instrument (Garr, 2013). This can arise due to the decline in the creditworthiness of the borrower or the inability on their part to fulfil their contractual obligations (Manab et al., 2015). Lenders are concerned with the level of credit risk because it determines the extent to which they will be able to receive returns on their investment. According to Manab et al. (2015) high credit risk ratings reduces investor confidence and can lead to divestment. Whilst a huge pool of literature exists on the relationship between credit risk and its associated bank-specific and macroeconomic determinants, the impact of institutional variables on financial stability cannot be dismissed (Ashraf, 2017, Roe and Siegel, 2011). Theoretically our study is founded on theories of bank risk-taking behavior and the theory of political institutions. Ashraf (2017) provides a theoretical link between bank risk-taking and political institutions in which political stability encourages high risk-taking by banks, and hence increases financial instability. According to Acemoglu and Robinson (2010) institutions can be divided into political and economic institutions. Whilst the former is equally important for

[2] South Africa experienced several credit rating downgrades during the period 2012 to 2017, during the Presidency of Jacob Zuma.

the attainment of increased welfare, the latter is argued to be directly related to economic activity. Economic institutions such as financial regulation, other laws and investor protection rules are essential in promoting financial market activity (Qi et al., 2010, Roe and Siegel, 2011).

Roe and Siegel (2011) argue that political institutions impact the financial sector through their effect on economic institutions. In another study, Liu and Zhong (2017) find that political uncertainty impact more on credit risk of firms where investor protection is low. This view suggests that it is difficult to maintain sound economic institutions in the absence of a robust political system. The present study tests both theories and provides evidence of the effect of political institutions on credit risk in both the short-run and long-run. Other stylized determinants of credit risk have been divided into macroeconomic, industry and firm-specific determinants (Manab et al., 2015, Podpiera and Ötker, 2010, Virolainen, 2003). Knoop (2008) argues that interest in the analysis of credit risk stems from the importance attached to the financial sector in achieving economic stability. It is therefore not surprising that recent studies have concentrated on the relationship between financial variables and the real economy. Due to data constraints however, fewer studies have been carried out in the sub-Saharan region (Garr, 2013, Nikolaidou and Vogiazas, 2017). The bulk of the studies have concentrated on advanced economies, which generally have large financial sectors (Chaibi and Ftiti, 2015) and Asian emerging market economies (Waemustafa and Sukri, 2015).

Studies in South Africa includes Havrylchyk (2010), Clark and Kassimatis (2015) and Nikolaidou and Vogiazas (2017) include South Africa in different panel studies. Havrylchyk (2010) identified macroeconomic influences on credit risk in South Africa and stress tests the South African banking sector using scenario analysis. In Nikolaidou and Vogiazas (2017) macroeconomic determinants of credit risk are analyzed for five sub-Saharan countries including South Africa. Both studies do not consider the effect of political institutions on credit risk, which is one of the objectives of this paper. Clark and Kassimatis (2015) add a political risk variable in a panel of 22 countries to account for credit risk. It is however not feasible to derive any country-specific policy conclusions from panel studies. Castro (2013) segments the determinants of credit risk into systematic and unsystematic factors. Unsystematic or idiosyncratic risk factors are factors relating to individual firms, such as firm management, financial position, financing sources and production processes. Idiosyncratic factors can however be controlled by the firm, although it will depend on the firm's risk management skills.

Thus at the macro level, it is a systematic risk that researchers are concerned with. Systematic risk factors are those macroeconomic and industry-wide factors that may cause a business to default on its obligations (Manab et al., 2015). According to Cosset and Roy (1991) such studies can be used to validate credit rating agencies' sovereign credit ratings. Systematic variables that have been used to explain credit risk include the gross domestic product (GDP) as a measure of overall economic activity or the size of the economy. Castro (2013) argues that the worsening of economic activity should increase credit risk as consumers are faced with a constraining environment that inhibits their debt servicing capacity. In their study GDP has a negative influence on non-performing loans. Other variables that have been used are the real effective exchange rate, the inflation rate, credit to private sector, the interest rate and government borrowing (Castro, 2013, Garr, 2013, Louzis et al., 2012, Manab et al., 2015, Liu and Zhong, 2017). We add a variable that accounts for political risk in the form of a Government Integrity (GI)[3] index from Heritage's Economic freedom index.

Empirical Literature: The first step in analysing credit risk is finding an accurate measure of credit risk itself. Different measures have been suggested in the literature, including non-performing loans, loan loss provisions and sovereign credit spreads (Garr, 2013, Podpiera and Ötker, 2010). Podpiera and Ötker (2010) describe three ratios that measure the quality of bank assets, the ratio of loan loss provisions to total loans, the ratio of Non-performing loans to Total loans and the ratio of loan loss provisions to Non-performing loans. Loan loss provisions measure credit risk in the short term whilst non-performing loans could measure risk in the long term. They argue that both measures should be positively related to credit risk. The present study uses both loan loss provisions and Non-performing loans as measures of credit risk to measure the risk

[3] Government Integrity Index derives from Transparency International's Corruption Perceptions Index. It is based on a scale of 0 to 10 where 0 represents high corruption and 10 represents little corruption. The measure is converted to percentage by multiplying it by a scale of 10.

of default in debt extended by South African banks. Several studies have undertaken to empirically analyse the underlying sources of credit risk (Garr, 2013, Jiménez and Saurina, 2004, Waemustafa and Sukri, 2015, Castro, 2013). However constraints in the form of lack of reliable data have limited such studies in developing countries, especially Africa (Nikolaidou and Vogiazas, 2017). Available studies show that a number of factors affect credit. These can be grouped into bank level characteristics, industry level factors and macroeconomic factors.

The study by Manab et al. (2015) uses four bank ratios as independent variables in a logistic regression to determine the sources of bankruptcy among Malaysian banks. The study shows that the profitability ratio was positively related to distress. Working capital ratio is negatively related to bankruptcy. Their study points to better credit risk management at the bank level. Their findings are supported by Garr (2013) who finds a positive association between credit risk and management efficiency. Garr (2013) carried out a study on Ghana using aggregated data from 33 banks. The study employs Ordinary Least Squares regression and finds that credit risk is positively related to GDP per capita and management inefficiency. Government borrowing and financial sector development negatively influence credit risk. The relationship between GDP and credit risk is supported by Castro (2013) who investigated macroeconomic determinants of credit risk in five European countries. Castro (2013) employs panel data techniques, ranging from the pooled OLS estimator, fixed effects model, random effects model and the Arrelano and Bond GMM estimator. In another study Nikolaidou and Vogiazas (2017) use the ARDL approach to cointegration to establish the relationship between credit risk and its determinants in African countries. Their study uses different explanatory variables for five Sub-Saharan African countries to explain credit risk in Africa. Of interest is the inclusion of South Africa in this study. However, whilst macroeconomic factors are found to be of statistical significance, no reference is made to institutional factors, which underlie most macroeconomic dynamics. Money supply, gold prices and the Treasury bill rate are all found to be statistically significant.

3. Econometric Modeling and Data

The study uses quarterly data from the SARB and an institutional index from Heritage that measures government integrity for the period 1998 Q1 to 2016 Q4. Whilst 1994 would be the year of choice to start at as the new regime took over, the sample choice is constrained by lack of data on government integrity for periods beyond 1998. Political stability is essential to guarantee short-term financial stability and we therefore recommend policies aimed at rooting out corruption and malfunctioning of public enterprises. The baseline model follows earlier studies by Waemustafa and Sukri (2015) and Havrylchyk (2010), and is specified below:

$$NPL = f(gdp, bank\ size, gold\ prices, reer, Political\ institutions, interest\ rate) \quad (1)$$

$$NPL_t = \beta_0 + \beta_1 GDP_t + \beta_2 INST_t + \beta_3 i_t + \beta_4 REER_t + \beta_5 SIZE\_2_t + \beta_7 GOLD_t + \mu \quad (2)$$

Data on political institutions is taken from Heritage. Whilst data on several variables used is found in shorter frequency, the data on political institutions is available on a yearly basis. We transform the data to quarterly frequency[4]. All data that is not in percentages is transformed into logarithms. This has at least two advantages; firstly, coefficients can be interpreted as elasticities. A second advantage is to avoid heteroscedasticity. Whilst growth has been sluggish in South Africa, diversification of industries and boosting the informal economy could result in higher output. Secondly we suggest that sound political institutions be accompanied by relevant regulation of financial markets for long-term financial stability.

Estimation Technique: Several techniques for estimating time series data are used in literature ranging from the single equation to techniques that can simulate a system of equations. Although most single equation techniques provide information on the relationship between a theoretically determined dependent variable and its determinants, they are limited however in cases where some variables are endogenous and where dynamic effects are important. Due to such considerations and the fact that data on NPLs is not

[4] A quadratic based interpolation is used in E views to transform the data. Alternative data generating processes do not suggest significant changes to our results.

available for a longer period of time, the study employs the ARDL technique of Pesaran and Shin (1998) as the base modelling approach. Nkoro and Uko (2016) argue that the ARDL approach is preferred to the Vector autoregression (VAR) where a single cointegration vector exists and does not require that all variables be integrated of the same order. The ARDL approach can be applied when series are either I(0) or I(1) or a combination of both (DAVIDESCU, 2015, Nikolaidou and Vogiazas, 2017). In addition Nikolaidou and Vogiazas (2017) argue the ARDL approach is robust to small samples. Single equation estimation in the form of the Fully Modified OLS will be estimated to check whether the results are robust to a change in the estimation technique. The ARDL model for the present study can be expressed as follows:

$$\Delta NPL_t = \alpha_0 + \sum_{i=1}^{n} \alpha_{1i} \Delta\, NPL_{t-1} + \sum_{i=1}^{n} \alpha_{2i} \Delta\, REER_{t-1} + \sum_{i=1}^{n} \alpha_{3i} \Delta\, LGDP_{t-1} + \sum_{i=1}^{n} \alpha_{4i} \Delta\, LGOLD_{t-1} + \sum_{i=1}^{n} \alpha_{5i} \Delta\, GI_{t-1} + \sum_{i=1}^{n} \alpha_{6i} \Delta\, SIZE\_2_{t-1} + \alpha_7 NPL_{t-1} + \alpha_8 REER_{t-1} + \alpha_9 LGDP_{t-1} + \alpha_{10} LGOLD_{t-1} + \alpha_{11} GI_{t-1} + \alpha_{12} SIZE\_2_{t-1} + \alpha_{13} CRISIS_t + \in_t \quad (3)$$

Where $\alpha_1 - \alpha_6$ are the short-run coefficients and $\alpha_7 - \alpha_{13}$ NPL is the ratio of non-performing loans to total loans and advances of banks. The data is collected from the South African Reserve Bank[5]. REER represents the real effective exchange rate and LGDP is the log of GDP at market prices. Government integrity (GI) is a measure of political institutions, taken from Heritage.org. The data for GI originates from Transparency International corruption index, which ranges from 0 to 10. We multiply each score buy 10 to convert it into a percentage. SIZE_2 is the ratio of loans to total assets expressed as a percentage. LGOLD is the logarithm of gold prices. Since South Africa is a major exporter of gold, we expect that an increase in gold prices should reduce credit risk. CRISIS is a dummy that accounts for the 2007/2008 GFC.

Unit Roots Tests: The data is tested for unit roots using the Augmented Dickey-Fuller (ADF) test and the Philips Perron test (PP). Testing for unit roots has become a standard practice in the analysis of time series data as it allows the researcher to establish the order of integration of a series. However, the aim of unit root tests in the ARDL model is not to determine if the variables are integrated of the same order but to ensure that no variables are integrated of order 2 (I2) and above. As a result of the longer period under analysis, the data may contain structural breaks, especially to reflect the Global Financial Crisis (GFC). Under such conditions, the ADF and PP tests do not have the power to reject the null hypothesis of no unit root. A structural break unit test is used as a robustness check.

Lag Length Selection Criteria: Brooks (2014), identifies two ways of selecting the optimal lag length. Firstly, the use of data frequency is a widely acknowledged method of selecting a lag length. The approach assigns a lag length of 1 for annual data, a lag length of 4 for quarterly data, and a lag length of 12 for monthly data. The second approach is the VAR lag length selection criterion, which utilizes various criterions to establish the lag length. The criterion used in the VAR approach include the Final prediction error (FPE), Akaike Information Criterion (AIC), the Hannan Quin (HQ), the Schwarz Bayesian Criterion (SBC) and the LR ratio. The study uses the VAR, which is run in differences to determine the lag length. Using the LR ratio, the number of lags chosen is four. However, when estimating the equation in E views, we find it appropriate to use a maximum of 3 lags and allow for automatic selection of lags for each variable.

Bounds Test to Cointegration: Before one can estimate the short-run and long-run coefficients of the model, the ARDL approach requires that one estimate the equation in levels and use of the Pesaran et al. (2001) Bounds test approach to test for cointegration. Nkoro and Uko (2016) show that the Bounds test for cointegration uses a Wald-type, F-test to test the joint significance of coefficients in the above-specified model, separately for the long-run and short-run sections. If the F-statistic obtained is greater than the upper bound of the critical values, cointegration between the variables exists. When the F-statistic falls inside the band, then cointegration cannot be determined. Thirdly, if the F-statistic falls below the lower bound, there is no cointegration (Pesaran et al., 2001).

Long-Run and Short-Run Effects: Having established the existence of a cointegrated relationship, the next step is to estimate the Error Correction model. Of importance however is the sign of the Error correction term (ECT). When the ECT has a negative sign, with an absolute value less than one, then it can be concluded that the deviation from equilibrium is being corrected (i.e. convergence takes place). On the other hand, if the ECT

[5]Annual Reports of the Bank Supervision Department of the SARB

is positive, there is divergence. The disequilibrium is not corrected. An ECT that is negative but greater than one in absolute terms may indicate that the model is over correcting.

4. Empirical Results

Descriptive Statistics and Unit Root Testing: Descriptive statistics are provided in Table A1 in the appendix. Agung (2011), notes that policy analysis and decision making can be enhanced by paying attention to the uni-variate characteristics of the data. These low-interest rates could result in increased credit and if coupled with lax credit requirements, lead to high non-performing loans. Measures of central tendency such as mean, median and mode are calculated and displayed in a table for each variable. Table 1 below summarizes results of the unit root tests performed on each variable. Three unit-root tests are undertaken; augmented Dicky-Fuller test, Philips Peron test and Breakpoint unit root test. Detailed results are shown in table A3 in the appendix. No trend specification is made and all but one of the variables I (1). The remaining variable (REER) is I (0).

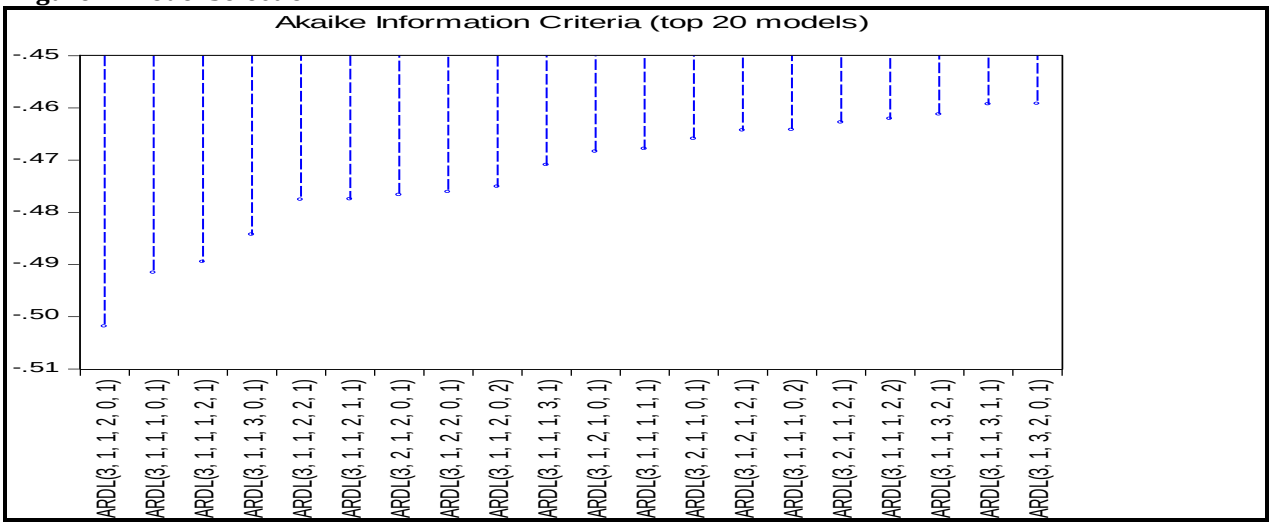
Table 1: Unit Root Tests

Variable	ADF statistic	PP Statistic	Break Test statistic	Overall Decision
NPL_1	-1.088453	-0.734371	-2.968600	Non-stationary
GI	-0.585186	-1.539981	-2.514177	Non-stationary
LGOLD	2.468720	3.466406	-3.245280	Non-stationary
SIZE_2	-0.130597	-0.154437	-1.668569	Non-stationary
REER	-8.042978***	-8.031491***	-8.609581***	Stationary
LGDP	16.91130	14.24842	-3.557097	Non-stationary
ΔNPL_1	-2.616399***	-4.007213***	-2.214896**	Stationary
ΔGI	-4.222026***	-4.831735***	-5.141911***	Stationary
$\Delta LGOLD$	-6.215590***	-6.209132***	-7.612380***	Stationary
$\Delta SIZE\_2$	-7.922491***	-8.043682***	-8.761511***	Stationary
$\Delta LGDP$	-1.162702	-2.248192**	-80782132***	Stationary

***, **, * indicates stationary at 1%, 5% and 10% levels respectively Δ indicates the first difference

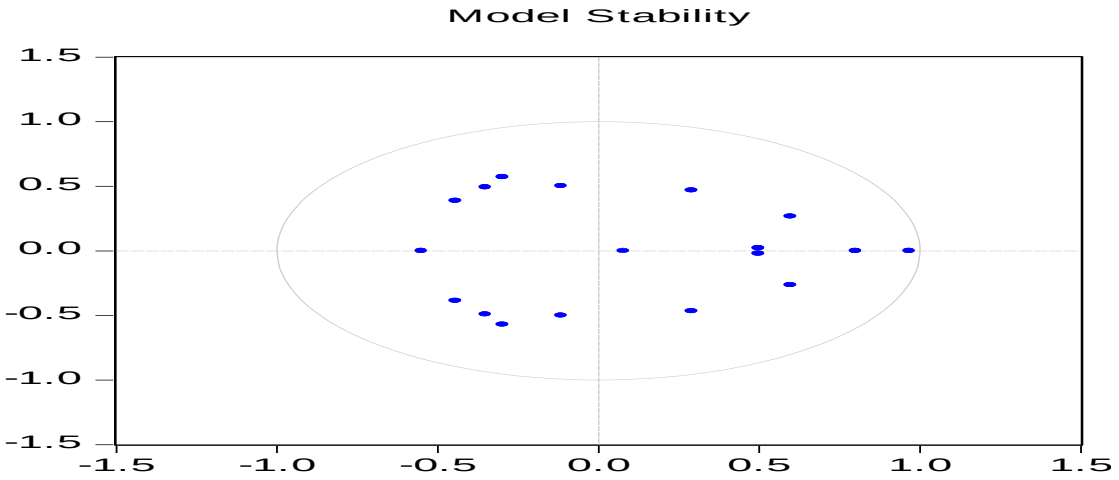
Model Selection and Lag Length Selection: The final model selected using the Akaike Information Criterion (AIC) is (3, 1, 1, 2, 0, 1) as shown in Figure 1 below. The highest lag for both the dependent and independent variables is set at 3 and we use the automatic lag selection option. Initially we follow the traditional VAR lag length selection criterion by running a VAR in differences for all save for one of the variables that is I (0). We choose 4 lags as selected by the LR ratio. During estimation however, we adjust the lags to get rid of serial correlation problem. The criterion for model selection is that we select the model with the lowest AIC value.

Figure 1: Model Selection



Model Diagnostics and Stability Tests: Two of our coefficients signs require special mention because they differ from theoretical expectations. Firstly, gold prices show a positive and significant relationship with non-performing loans. In the long run a 1% increase in gold prices results in a 1.93% increase in non-performing loans. The result differs from Nikolaidou and Vogiazas (2017) and Havrylchyk (2010). The same result is found in Dimitrios et al. (2016) and Castro (2013). This could be indicating the increase in credit taken by gold producers in order to sustain large trade volumes as prices are increasing (Gillespie et al., 2010). The selected model meets the criterion as determined by a test for serial correlation and heteroscedasticity. As shown in table A3 in the appendix both the F-statistic and the observed R-squared test statistics are not statistically significant, implying that we cannot reject the null hypothesis of no serial correlation. Table A4 shows the results from the Breusch-Pagan-Godfrey test for heteroscedasticity. We employ the Ramsey RESET test in table A5 to test whether the model is correctly specified and the results show that the model is correctly specified. Further we also use the CUSUM test as shown in Figure A1 to test model coefficients stability. The model selected is also dynamically stable as shown by the AR roots graph below.

Figure 2: Model Dynamic Stability



Bound Test Results: Cointegration results are shown in Table 2 below as shown in the table, the F-statistic of 3.63 is greater than the upper bound at 5% level of significance. Therefore, we can conclude that the variables in the model are cointegrated and a long-run relationship exists. The result resonates with existing evidence from studies such as Nikolaidou and Vogiazas (2017). This finding necessitates the use of the ARDL technique to estimate both short-run and long-run coefficients.

Table 2: Bounds Test for Cointegration

	F-statistic	Critical bounds at 5%	
		Lower bound I(0)	Upper bound I(1)
Model 1	3.63	2.14	3.34

Estimation Results and Discussion

Long-Run: Long-run estimates are shown in Table 3 below. As expected GDP and credit risk have a negative and significant relationship at the 1% level of significance. Specifically, a 1% increase in GDP results in a -1.88% decrease in non-performing loans. This is not surprising as an increase in economic activity should increase households and firm income, which in turn improves their capacity to repay loans. The coefficient of the size of the banking system as measured by total bank assets is positive at 0.24 and significant at 10% level. Non-performing loans are increasing as banks expand their operations. The REER does not significantly influence credit risk in the long-run. The dummy representing the 2007/8 crisis shows a positive and significant relationship between credit risk and the crisis. This is expected as the crisis had a negative impact on economic activity and employment leading to reduced income levels. The resultant recession decreased the capacity of borrowers to service their debt and increased the balance of overdue loans on the bank's

balance sheets. Thus as commodity buyers increase purchases, credit purchases also increase and defaulters increase, cutting on cash receipts of gold producers who turn to bank credit to sustain supply.

In turn commodity producers also default on their bank obligations, increasing NPLs in the process. Government integrity (GI) is negatively related to credit risk in the short run as expected from theory. These short-run results justify credit rating downgrades assigned to South Africa in recent years due to inconsistency in policy characterized by a change of government ministers and corruption allegations against senior government officials. Increased corruption erodes consumer and business confidence in the economy resulting in low economic activity and reduced ability to repay debt. On the contrary, it is however showing a positive and significant relationship with credit risk in the long-run. This implies political stability could be contributing to lax borrowing requirements by lenders, creating periods of stability in which credit extension is negligently done. Another reason stems from the literature on bank risk-taking behavior. As shown in Ashraf (2017) political stability encourage high risk-taking by banks, especially where competition from non-bank financial institutions is rife in loan offerings. Qi et al. (2010) demonstrate that political institutions have an important effect on the interest rate, with increased political rights resulting in low-interest rates.

Table 3: Long Run Coefficients

Sample: 1998Q1 2016Q4 Dependent variable: NPL_1			
Variable	**Coefficient**	**t-statistic**	**P-value**
REER	0.018806	0.3043	0.7668
LGDP	-1.876089***	-3.1632	0.0025
LGOLD	1.931302***	2.7564	0.0078
GI	0.248310***	3.4605	0.0010
SIZE_2	0.126198*	1.7875	0.0790
CRISIS	4.283761**	2.5526	0.0133

***, ** and * denote 1%, 5% and 10% level of significance respectively

Short-Run Results: In the short-run as evident from table 5, the error correction term is negative and highly significant at 1% level. The short-run dynamics are therefore reinforcing the model towards equilibrium in the long-run. The ECT of -0.11 implies that about 11% of the deviation from equilibrium in the previous quarter is corrected in the current quarter. The speed of adjustment is fair considering that the data is of quarterly frequency, which is relatively high. The coefficients of GDP, GI, SIZE_2 and CRISIS are all highly significant and take the expected signs. GDP is negatively related to non-performing loans. Government integrity is negatively related to non-performing loans, which may confirm the negative influence on financial stability witnessed in recent years. This finding resonates with the decision by rate agencies to downgrade South African bonds in recent years and confirms results by other studies (Havrylchyk, 2010). As captured by the size of banking assets, industry factors play a more pronounced role in determining credit risk in the short-run. SIZE_2 is highly significant at 1% level in the short-run with a positive coefficient of 0.10. Again we do find a paradox as gold prices reflect a positive and highly significant influence on non-performing loans in the short-run. We report that a 1% increase in gold prices results in a 1.3% increase in non-performing loans (worsening of credit risk).

Table 4: Cointegrating Form

Sample: 1998Q1 2016Q4	**Dependent Variable: NPL_1**		
Variable	**Coefficient**	**t-statistic**	**P-value**
D (NPL_1 (-1))	0.320704***	3.01308	0.0038
D (NPL_1 (-2))	0.260869**	2.40275	0.0195
D (REER)	0.002044	0.3085	0.7588
D (LGDP)	-4.649577**	-2.2746	0.0266
D (LGOLD)	1.285868***	2.8398	0.0062
D (GI)	-0.065215**	-2.1634	0.0346
D (SIZE_2)	0.103445***	2.9765	0.0042
D (SIZE_2 (-1))	0.052304	1.4970	0.1398
D (CRISIS)	0.465499***	3.4805	0.0010

CointEq (-1)	-0.108666***	-3.9219	0.0002

Cointeq = NPL_1 - (0.0188*REER-1.8761*LGDP + 1.9313*LGOLD +0.2483*GI + 0.1262*SIZE_2 + 4.2838*CRISIS)

***** and * denote 1%, 5% and 10% level of significance respectively

5. Conclusion and Policy Recommendations

The study investigates the macroeconomic and institutional determinants of credit risk. We use the gross domestic product, gold prices, the real effective exchange rate, government integrity and the size of the banking sector as determinants of credit risk in South Africa. Our measure of credit risk is non-performing loans. The gross domestic product has a negative influence on credit risk both in the short-run and in the long-run. The results are in line with findings from similar studies by Dimitrios et al. (2016) and Castro (2013). These results have strong implications for the role of increased economic activity in driving down the number of non-performing loans. However, these findings are unique in that they provide representations for both the short-run and long-run periods. We find that government integrity is negatively related to credit risk in the short-run but positively related to credit risk in the long-run. The short-run results resonate with a theory on political risk and credit (Liu and Zhong, 2017). Thus as argued in Knoop (2008), our results show that credit markets are important in driving the business cycle. Increased credit risk induces investors to withdraw funding or seek safe investments elsewhere.

Contrary to the preceding, we do not find evidence that government integrity is important in improving credit risk in the long-run. Instead, an improvement in government integrity seems to be exacerbating credit risk in the long-run. This finding is in line with theories of bank risk-taking behaviour and implies South African banks face stiffer competition in credit markets during periods of political stability, hence engage in high-risk lending to beat completion (Ashraf, 2017). Our results also find a positive relationship between non-performing loans and gold prices in both the short and long-run, which is contrary to the findings of Nikolaidou and Vogiazas (2017). Other studies linking gold prices to the financial sector do not find a statistically significant relationship between the two (Ziaei, 2012). The ratio of loans to total banking assets is positively related to credit risk in both the short-run and the long-run. The positive sign on SIZE_2 shows that growth in bank assets increases the vulnerability of the banking industry. The result support evidence by Nikolaidou and Vogiazas (2017) who uses the loan to asset ratio to determine the effect of the growth in loans on credit risk. In the spirit of this paper, we recommend policies that are aimed at increasing economic growth.

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Appendix

Table A1: Correlation Analysis

	NPL_1	LGOLD	LGDP	REER	GI	CRISIS	SIZE_2
NPL_1	1,0000						
LGOLD	0.2293295	1,0000					
LGDP	0.1128877	0.9797495	1,0000				
REER	0.0549836	-0.006428	0.0394582	1,0000			
GI	0.3104460	-0.690214	-0.764350	0.03302881	1,0000		
CRISIS	0.1496169	0.1104588	0.0981323	0.12248471	0.0879167	1,0000	

SIZE_2	0.2975786	-0.184045	-0.279218	-0.0816926	0.2157096	-0.239511	1,0000

*GDP and Gold prices appear highly correlated – could lead to the problem of multi-collinearity. But as argued in Madala and Lahiri (2009) highly cross correlation alone is not enough to conclude the presents of multi-collinearity.

Table A2: Descriptive Statistics

	NPL_1	LGOLD	LGDP	LSIZE	REER	GI	CRISIS
Mean	3.450921	8.581133	14.48843	14.49658	-0.140789	47.18947	0.052632
Median	3.390000	8.470188	14.54233	14.65904	0.700000	47.18750	0.000000
Maximum	5.940000	9.846258	15.29965	15.39907	13.50000	61.59375	1.000000
Minimum	1.100000	7.283874	13.53097	13.23998	-15.20000	40.50625	0.000000
Std. Dev.	1.366326	0.817003	0.545825	0.661665	5.212400	4.042852	0.224781
Skewness	0.041803	0.020947	-0.191459	-0.368113	-0.417570	0.689012	4.006938
Kurtosis	2.252180	1.505907	1.737264	1.765762	3.822847	4.110110	17.05556
Jarque-Bera	1.793044	7.074551	5.513569	6.540343	4.352693	9.915771	828.9727
Probability	0.407986	0.029092	0.063496	0.038000	0.113455	0.007028	0.000000
Sum	262.2700	652.1661	1101.121	1101.740	-10.70000	3586.400	4.000000
Sum Sq. Dev.	140.0134	50.06201	22.34438	32.83509	2037.684	1225.849	3.789474
Observations	76	76	76	76	76	76	76

Table A3: Test for Serial Correlation

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	1.595887	Prob. F(2,57)	0.2117
Obs*R-squared	3.870951	Prob. Chi-Square(2)	0.1444

Table A4: Test for Heteroskedasticity

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.854982	Prob. F(14,58)	0.6090
Obs*R-squared	12.48813	Prob. Chi-Square(14)	0.5672
Scaled explained SS	7.046238	Prob. Chi-Square(14)	0.9329

Coefficient Stability Tests

Table A5: Ramsey Reset Test

Omitted Variables: Squares of fitted values

	Value	Df	Probability
t-statistic	0.402062	58	0.6891
F-statistic	0.161654	(1, 58)	0.6891

Figure A1: Cusum Test

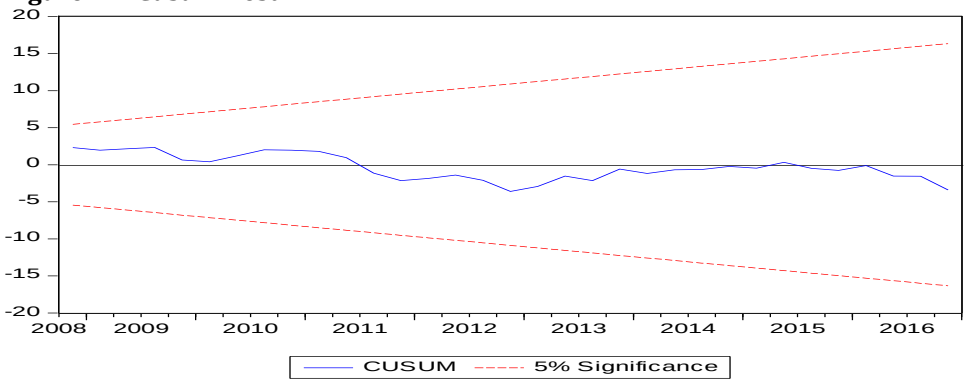
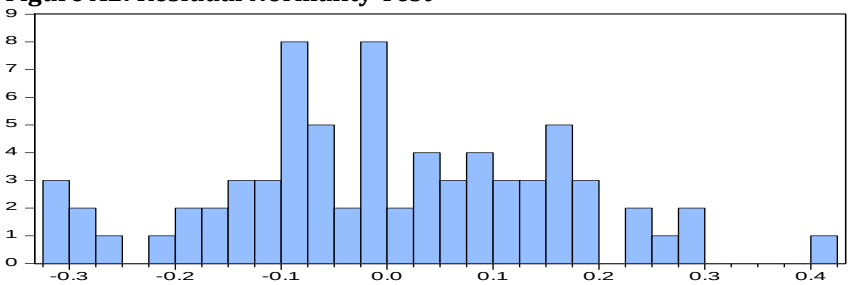


Figure A2: Residual Normality Test



Series: Residuals	
Sample 1998Q4 2016Q4	
Observations 73	
Mean	1.73e-05
Median	-0.007156
Maximum	0.411803
Minimum	-0.319435
Std. Dev.	0.156492
Skewness	0.053451
Kurtosis	2.727530
Jarque-Bera	0.260573
Probability	0.877844

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Positive and Negative Antecedents of Consumer Attitude towards Online Shopping

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Abstract: The internet has enabled businesses to make a wide range of products available for consumers to shop online, conveniently, anytime from anywhere in the world. While online shopping has shown tremendous growth over the recent past, literature indicates that consumers do cite some serious risks in transacting through the internet, and show reluctance in engaging in such activities. Therefore, the purpose of this paper is to identify positive and negative antecedents of consumer attitudes towards online shopping in an emerging economy, South Africa. Primary data through a survey method was collected from a sample of 215 consumers in Gauteng, South Africa, in early 2018. The study utilized descriptive, correlation and multivariate regression analysis to achieve its stated objective. The study identifies convenience, better deals/competitive pricing, a wider selection of products and online atmospherics as positive antecedents of consumer attitudes towards online shopping, while trust/reliability issues, financial risk, product risk, non-delivery risk and return policy issues are identified as negative antecedents of consumer attitudes towards online shopping. Online retailers are therefore encouraged to building on the positive antecedents by offering value for money (i.e. competitive pricing), offering a wide range of goods and services in their web pages, providing valuable information to customers, and designing visually appealing websites. Similarly, online retailers should try as much as possible to reduce the real and/or perceived risks related to financial risk and product risk by building trust with their customers.

Keywords: *Online shopping, consumer attitudes, positive antecedents, negative antecedents*

1. Introduction

Significant interest has been devoted to online retailing, and as a result it has shown enormous growth over the recent past, primarily because it offers benefits to buyers and sellers alike (Hunter & Mukerji, 2011). The success of online trading and shopping is of course attributed to the success of the internet and its ability to connect people and businesses alike. The internet has enabled businesses to make a wide range of products available for consumers to shop online, conveniently, anytime from anywhere in the world. Consumers are able to purchase products from anywhere in the world at competitive prices from the comfort of their homes. Globally, the e-commerce revenue amounted to US$3.3 trillion in 2018, and the trend is projected to grow to US$5.4 trillion in 2022 (Statista, 2018). A similar trend is observed in South Africa. South Africa is a member of BRICS, a grouping of major emerging markets that include Brazil, Russia, India, China and South Africa. Mitchley (2018) reports that e-commerce is exploding in South Africa, and it is estimated to amount to approximately R10bn (approximately $769m) during 2017, and this massive growth is driven by "high mobile phone penetration, rising consumer confidence in online transactions, and the expansion of brick and mortar retailers into the online sphere by adopting a multi-channel approach". South Africa's top online shopping sites include Yuppie Chef, Zando, H&M, ASOS, Woolworths, Amazon, Makro, MRP and Exclusive Books (Finder, 2018). Other popular online sites include Zana, Superbalist, Hello Pretty, Fortune, Mys Scattered Hear and Retail Box (Shesaid, 2016).

Various products are offered online, such as groceries, fashion, kitchen cookware, furniture, home decor, books and jewellery. Business is drawn into e-commerce primarily because the internet creates a great opportunity to reach a big and diverse consumer base, reduction of cost in maintaining 'brick and mortar' stores, and reduced labour costs (Chronis, 2001). While online shopping has shown tremendous growth over the recent past, the literature indicates that consumers do cite some serious risks in transacting through the internet, and show reluctance in engaging in such activities. The reasons for this exceptional growth of online shopping is attributed to convenience, 24-hour availability of service, a wider selection of products, better deals and competitive pricing. Often, the challenges or risks of online shopping are indicated to be a financial risk, product risk, non-delivery risk, return policy issues and trust and reliability issues. Research in the area of online shopping is limited in South Africa. An extensive literature search provided no empirical study that attempted to identify positive and negative antecedents of consumer attitudes towards online shopping

behaviour, apart from the numerous studies that have attempted to identify anecdotal factors or dimensions of online shopping within different contexts.

Therefore, the present study aims to identify positive and negative antecedents of consumer attitudes towards online shopping in an emerging market, South Africa. The results of the study are expected to guide marketing practitioners in their efforts to enhance customer online shopping experience. In the next section, a literature review concerning the antecedents of online shopping is presented in detail. Following this, the methodology followed in the study is described. Thereafter, the findings of the study are discussed. Finally, conclusions, recommendations and directions for future research are highlighted.

2. Literature Review

Literature shows that most of empirical researched conducted with respect to factors that influence consumer attitude towards online shopping are based on the context of traditional consumer literature (Delafrooz, Paim, Haron, Sidin & Khatibi, 2009). The most widely used theories include the theory of reasoned action (Ajzen & Fishbein, 1980), the theory of planned behaviour (Ajzen, 1991) the decomposed version of the theory of planned behaviour (Taylor & Todd, 1995) and the technology acceptance model (Davis, Bagozzi & Warshaw, 1989). However, the focus of this paper is on identifying the antecedents of consumer attitude toward online shopping. Therefore, review of the main antecedents or factors influencing consumer attitudes is pursued; not on the theories that can explain consumer behaviour per se. An indication of how each of the antecedents of influence consumer attitude towards in an online environment is also hinted.

Convenience: Convenience is cited as the main advantage of online shopping (Abramson & Hollingshead, 1999; Kotler, 2003). Travelling and waiting in lines are avoided. Consumers are able to conduct their shopping 24 hours a day conveniently from the comfort of their homes. Consumers are able to save time and are able to search in a variety of store with ease. Asadollahi (2012) concurs, and opines that compared to physical stores, online stores offer customers free and rich information about products and services all the time. In an online shopping setting, consumers are able to obtain product information, do window shopping and compare prices with convenience and without feeling any pressure to make any purchase (Al-Debi, Akroush & Ashouri, 2014; Makhita, 2014).

Better Deals/Competitive Pricing: Online shopping is also credited for creating value for customers. Better deals and/or competitive pricing are cited as one of the reasons consumers shop online (Abramson & Hollingshead, 1999; Kotler, 2003). The internet allows consumers to conduct a wider search for information to check and compare prices easily. Consumers are often able to get better deals at competitive prices online when compared to what they can get in physical stores. Perceived benefits, which are seen as a relative advantage of online stores, are believed to result in favourable consumer attitude (Al-Debi et al., 2014). Better prices are offered in online stores compared to physical stores (Delafrooz et al., 2009).

Wider Selection of Products: The ease with which consumers can search, evaluate and conduct online purchases means a wide range of products are available for consumers from numerous stores around the world. When shopping online, consumers are afforded a wider selection of products both locally and internationally. Consumers have information abundance and selection freedom when shopping online (Shwu-lng, 2003). Consumers are spoiled with a wider selection of products over the internet, which enhances their attitude toward online shopping (Delafrooz et al., 2009).

Online Atmospherics: As with 'brick and mortar' stores, a conducive, atmosphere does enhance the customer experience in online stores. The term online atmospherics can be defined as the "conscious designing of web environments to create positive affect and/or cognitions in surfers in order to develop positive consumer responses". Information such as details of products, pictures, various products and facilities, and navigation aids are regarded as the "online atmosphere" (Hunter & Mukerji, 2011). In general, online atmospherics, which refers to cues such as information that aid a consumer in the buying process, background, music, pictures, and advertisements, is said to positively enhance consumer attitude towards online shopping (Eroglu, Machleit & Davis, 2001). On the other hand, inadequate web design and technology

(Gordon & Bhowan, 2005) and difficulties in using the web (Hager, Kibler & Zack, 1999) are said negatively influence consumer attitude towards online shopping.

Trust/Reliability Issues: Questions that arise when dealing with online shopping could include: Do you trust the online store/vendor? Do you rely on the ability of the online store to deliver as promised? Given the crime reported in cyberspace, the hacking of credit cards and the risk of ghost online stores, trust and reliability issues are seen to play a significant role in shaping consumer attitudes towards online shopping (Gefen & Straub, 2003; Hassanein & Head, 2007; Lin, 2011; Al-Debi et al., 2014).

Financial Risk: Financial risk is one of the main concerns that consumers have when they engage in online shopping (Kunkel, 2003; Swinyard & Smith, 2003). Financial risk is closely linked with trust and reliability issues in that dealing with untrustworthy and unreliable online stores is likely to result in financial loss or risk. Financial risk as a result of credit card fraud, hackers and viruses are one of the main reasons some consumers are reluctant to shop online. The fear of losing money has a negative effect on consumer attitude in the case of online shopping (Asadollahi, 2012).

Product Risk: The quality and texture of the product may prove to be different from what consumers see in an online setting. The issues of getting the right product as expected are a challenge in online shopping (Forsythe & Shi, 2006). Products may not provide the desired utility to the consumer as hoped for. Lack of product sampling is said to contribute to product risk (Gordon & Bhowan, 2005).

Non-delivery Risk: Wrong product delivery, damaged product delivery and late product delivery are some of the issues that may occur when shopping online and these are likely to result in financial loss for the consumer. The time lag between conducting the transaction online and the delivery of the product is indeed a serious issue (Abramson & Hollingshead, 1999). Non-delivery risks are found to negatively affect consumer attitudes in an online environment (Forsythe & Shi, 2006; Asadollahi, 2012).

Return Policy Issues: Return policies are not typically discussed and properly understood before purchases take place, even in physical stores. The utilisation of a return policy often proves more difficult and complex in the case of online shopping, as costs in the shipping of products are involved (Lewis, 2006). The issue of non-delivery once again plays a negative role, as consumers return the unwanted product and have to wait for the new product. The section below describes the research method followed in collecting empirical data for the study.

3. Research Methodology

Data Collection: Probability sampling was not possible dues the absence of a sampling frame. Therefore, snowball sampling and convenience sampling, both examples of non-probability sampling were employed to collect the data. Quantitative data was collected through a survey self-administered questionnaire from a sample of 215 consumers in Gauteng, South Africa, in early 2018. This sample size is more than sufficient for the type of statistical analysis required in the study (Malhotra, 2010), and is in line with other similar studies that utilised a similar figure (George, 2004; Delafrooz et al., 2009; Asadollai, 2012). The questionnaire included a cover letter, a section for biographic information, and another section for the scaled constructs that measured the antecedents of consumer attitude toward online shopping. A six-point Likert scale was utilised to capture consumer responses. The scale ranged from strongly disagree (1) to strongly agree (6).

Instrument: The questionnaire was derived and/or compiled from previously tested and validated scales. The convenience construct was measured using four items adapted from Chen and Chang (2003) and McKinney (2004), three items for better deals/competitive pricing (Delafrooz et al., 2009), three items for wider selection (Gordon & Bhowan, 2005), and four items for store atmospherics (Eroglu et al., 2001; Hunter & Mukerji, 2011). Financial risk was measured using three items (Swinyard & Smith, 2003), four items for product risk (Forsythe & Shi, 2006), three items for non-delivery (Forsythe & Shi, 2006), three items for return policy issues (Lewis, 2006), and three items for trust/reliability issues (Al-Debi et al., 2014). Before collecting data for the main study, a pilot study (with a sample of 50) was conducted in order to ascertain the internal-consistency reliability of the scale as an additional measure. This step was deemed necessary as the

items for the different constructs were derived and/or compiled from various empirical research studies. All scaled constructs returned a Cronbach's alpha in excess of 0.70, beyond the recommended threshold signifying internal-consistency reliability of the scale used (Malhotra, 2010; Pallant, 2013). After ascertaining the reliability of the scale, the 30-item scale was then used to collect data for the main study.

Ethical Considerations: As a standard procedure at the North-West University, ethics clearance was obtained from the Social and Technological Sciences Research Ethics Committee of the Faculty of Economic Sciences and Information. The study conformed to high levels of ethical standards required of such research endeavours. The questionnaire, in its cover page, outlined the study's purpose, and explained that consumers' participation in the research was voluntary and that they can withdraw at any stage of the research process. No names were captured for purposes of anonymity, and results are reported in aggregate.

4. Analysis of Results and Discussion

Sample Description: Table 1 reports on the descriptive statistics of the study a total of 215 usable questionnaires were collected and analysed. The demographic data revealed that out of the 215 respondents, 55.35% (n=119) were female and 44.65% (n=96) were male. In terms of age, the majority of the respondents were between 35 and 44 years of age (25%), followed by age cohort 18 to 24 (33%) and age cohort 25 to 34 (13%). Only 11 percent were above the age of 45. As can be viewed from Table 1, the majority (above 80%) of the respondents indicated that they shop online for fashions, branded products and overseas products (products not available in local markets). A significant number (65%) of the respondents indicated they shop online for local products and athletic products.

Table 1: Descriptive Statistics

Age	**%**	**Products**	**%**
18-24	23	Fashions	93.00
25-34	41	Branded products	85.00
35-44	25	Overseas products	81.00
Above 45	11	Local products	65.00
Gender		athletic products	65.00
Male	55	Books	45.00
Female	45	Grocery	37.00
		Other	20.00

Correlation Analysis: Table 2 reports the bivariate correlation analysis between all the constructs of the study. Mean scores ($\bar{x}$), Cronbach's alpha (α), and average inter-item correlation are also contained in Table 2. The Cronbach's alphas were computed for each construct to assess the internal-consistency of the scales used (Nunnally, 1978). The results in Table 2 indicate that the coefficient for Cronbach's alpha for most of the constructs were above 0.70, with the exception for non-delivery and trust/reliability issues, indicating good internal-consistency reliability. Non-delivery risk and trust/reliability issues returned Cronbach's alphas less than 0.70, but greater than 0.60, which is regarded as acceptable (Malhotra, 2010). As an additional measure, an average inter-item correlation was also computed for all the constructs and they all fell between 0.15 and 0.50, suggesting a convergent and discriminant validity of the scale used in the study. As illustrated in Table 2, the results of the bivariate correlation coefficient between each of the constructs are significant at the $p < 0.02$ level of significance. As can be viewed from Table 2, the Cohen's D statistic ranged from small (0.22) to large effect (0.78) (Pallant, 2013). The signs of the correlation were as expected and logically pointing towards nomological validity of the measurement theory (Malhotra, 2010).

Convenience, better deals/competitive pricing and wider selection were positively correlated with consumer attitudes towards online shopping, while a financial risk, product risk, non-delivery risk, lack of atmospherics, return policy issues, and trust/reliability issues were negatively correlated with consumer attitudes towards online shopping. As can be observed from Table 2, the coefficients of the bivariate relationship between convenience, better deals and wider selection, and financial risk, product risk, non-delivery risk, lack of

atmospherics, return policy issues, and trust/reliability issues also indicated a negative sign. It can also be observed that none of the correlation coefficients were 0.90 or higher. This can be interpreted as there being no obvious multicollinearity issues between the constructs. Additional collinearity diagnostics were also calculated before further assessing the relationship through multivariate regression analysis. Tolerance values for each of the constructs were above the 0.10 threshold level, and the variance inflation factor (VIF) was below the cut-off of 10, indicating further support of the non-existence of multicollinearity between each of the constructs (Pallant, 2013). Convenience, better deals, wider selection, online atmospherics, financial risk, product risk, non-delivery risk, return policy issues, and trust/reliability issues were entered as explanatory or independent variables, and consumer attitude was entered as a dependent variable.

Table 2: Correlation Statistics, Validity and Reliability Statistics

Constructs		$\bar{x}$	α	MIIC	F1	F2	F3	F4	F5	F6	F7	F8	F9
Convenience	F	4.32	.75	.35									
Better deals	F2	5.15	.73	.29	.59								
Wider selection	F3	4.90	.76	.32	.64	.59							
Online atmospherics	F4	4.21	.71	.25	.55	.22	.25						
Financial risk	F5	4.95	.81	.41	-.75	-.73	-.69	-.19					
Product risk	F6	4.35	.78	.45	-.72	-.65	-.54	-.57	.78				
Non-delivery risk	F7	4.23	.67	.38	-.65	-.55	-.65	-.51	.62	.56			
Return policy issues	F8	4.25	.74	.42	-.39	-.41	-.45	-.45	.54	.45	.38		
Trust/reliability	F9	3.75	.65	.25	-.63	-.61	-.62	-.42	.39	.50	.43	.42	
Attitude	F10	3.85	.73	.29	.45	.65	.53	.44	-.50	-.43	-.49	-.48	-.41

Note: All bivariate correlation significant at $p < 0.05$ level of significance.
Note: **α** = Cronbach`s alpha; **CR** = Composite Reliability; **MIIC** = Mean inter-item correlation

Multivariate Regression Analysis: Table 3 reports the model summary of the proposed model and F-statistics. The R-squared ($R^2 = 0.656$) signifies that nine antecedents, viz. convenience, better deals, wider selection, online atmospherics, financial risk, product risk, non-delivery risk, return policy issues, and trust/reliability issues collectively explain approximately 66 percent of the variance in consumer attitudes towards online shopping. Having ascertained the absence of multicollinearity issues, a multivariate regression analysis was performed to determine the antecedents of consumer attitudes towards online shopping. The F-statistic ($p < 0.05$, $p < 0.01$) indicates that the proposed model is appropriate in predicting the dependent variable (consumer attitudes toward online shopping).

Table 3: Model Summary and F-Statistic

Model	R	R Square	Adjusted R square	Std. Error of the estimate	F	Sig.
Proposed model	0.810	0.656	0.645	0.511448	17.917	0.0000

Following this, an assessment of the contribution of the nine antecedents was conducted by studying the size and sign of the standardised beta (β) coefficient of each explanatory variable (see Table 4).

Table 4: Estimates of Beta Coefficients of the Model

Explanatory Variables	Standardised β	T-Values	P-Values
Better deals	0.594	10.416	0.000
Wider selection	0.289	5.267	0.000
Online atmospherics	0.138	2.377	0.018
Convenience	0.113	2.053	0.041
Trust/reliability issues	-0.229	-4.780	0.000
Financial risk	-0.149	-3.100	0.001

Product risk	-0.144	-2.991	0.003
Non-delivery risk	-0.112	-2.091	0.021
Return policy issues	-0.109	-2.065	0.045

As can be seen, of the nine explanatory variables, four variables, namely better deals/competitive pricing, wider selection of products, online atmospherics and convenience of shopping have positive signs, and are statistically significant at the $p < 0.05$ level of significance, and therefore are named positive antecedents of consumer attitudes towards online shopping. These positive antecedents can be described as factors that enhance consumer attitudes towards online shopping. The other five explanatory variables, namely financial risk, product risk, non-delivery risk, return policy issues, and trust/reliability issues have negative signs, and are statistically significant at the $p < 0.05$ level of significance, and therefore are named negative antecedents of consumer attitudes towards online shopping.

These negative antecedents can be described as factors that discourage consumers' attitudes towards online shopping. The signs of the coefficients were confirmed earlier through correlation analysis. Of the four positive antecedents, better deals/competitive pricing ($\beta = 0.594$) was found to be the strongest predictor of consumer attitudes towards online shopping, followed by wider selection ($\beta = 0.289$), online atmospherics ($\beta = 0.138$) and convenience ($\beta = 0.113$). The findings of this study corroborate previous research conducted in different parts of the world; for example, convenience and deals/competitive pricing (Delafrooz et al., 2009), wider selection (Gordon & Bhowan, 2005) and store atmospherics (Eroglu et al., 2001; Hunter & Mukerji, 2011) were identified as factors that influence online shopping behaviour. With regard to the negative antecedent, trust or reliability issues ($\beta = -0.229$) was found to be the strongest predictor of consumer attitudes towards online shopping, followed by financial risk ($\beta = -0.149$), product risk ($\beta = -0.144$), non-delivery risk ($\beta = -0.112$) and return policy issues ($\beta = -0.109$). These findings substantiate some of the findings made by previous studies within different contexts; for example, financial risk (Swinyard & Smith, 2003; Asadollahi, 2012), product risk (Forsythe & Shi, 2006; Asadollahi, 2012), non-delivery risk (Forsythe & Shi, 2006; Asadollahi, 2012), return policy issues (Lewis, 2006) and trust/reliability issues (Al-Debi et al., 2014) were identified as important factors to consider in an online shopping environment.

5. Conclusion and Recommendations

The study has attempted to deepen and enhance our understanding of the issues with regards to online shopping. It has identified what influences consumer attitudes in an online environment. In practical terms, the study has identified and classified the antecedents of consumer attitudes towards online shopping, viz., convenience, better deals/competitive pricing, a wider selection of products and online atmospherics classified as positive antecedents of consumer attitudes towards online shopping. On the other hand, trust/reliability issues, financial risk, product risk, non-delivery risk and return policy issues are identified as negative antecedents of consumer attitudes towards online shopping. In line with study`s findings, online retailers are therefore encouraged to build on the positive antecedents by offering value for money (i.e. competitive pricing), offering a wide range of goods and services in their web pages, providing valuable information to customers, and designing visually appealing websites. Similarly, online retailers should try as much as possible to reduce real and/or perceived risks related to financial risk and product risk by building trust with their customers. Furthermore, online retailers should also state their return policies (terms and conditions) clearly and ensure fast and safe product delivery to and from customers. In terms of future research direction, future researchers may consider utilising these positive and negative antecedents within different contexts to test the robustness of these antecedents in explaining consumer attitudes towards online shopping.

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Financing Smallholder Rice Farmers: A Field-Based Evidence Review of Anchor Borrowers' Programme (ABP) Model in Nigeria

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Abstract: Nigeria's spending of US$2billion annually on rice importation has been considered a major source of foreign exchange drain and a threat to domestic rice industry. One of the major reasons adduced for this high import bills is the persistent demand-supply gap arising from the country's inability to increase domestic output of paddy rice to optimize the total capacity of several integrated rice mills established across the country in the last 15 years. In 2015, the government launched the Anchor Borrowers' Programme (ABP) to make cheap funds accessible to smallholder farmers (SHFs) who produce more than 85% of total farm output in Nigeria. ABP is designed to encourage banks to lend to SHFs to boost paddy rice production. This paper presents the field experiences of SHFs, banks and rice millers who participated in the programme in 2016/2017. This paper concludes that ABP is a laudable programme that can contribute in achieving the food security objective of the government. The key challenges found to be threatening the success and sustainability of ABP included delays in timely disbursement of funds by deposit money banks (DMBs), inadequate personnel and institutional framework, side-selling of harvested paddy rice by SHFs, State government undue involvement in the ABP, and poor rural infrastructure. Policy recommendations to strengthen the ABP model for improved impact were discussed.

Keywords: *Anchor Borrowers' Programme, Smallholder farmers, Anchor, Central Bank of Nigeria, Deposit Money Banks, Nigeria*

1. Introduction

Rice (oryza sativa) is a major staple food in Nigeria; its consumption has no cultural, religious, ethnic or geographical boundary (Isa et al., 2013). According to Johnson et al. (2013), the commodity ranks first among all staple food items in terms of expenditures and second only to cassava in terms of quantity consumed. Considering the country's large population of over 170million people, high per capita annual consumption of 40kg (USDA, 2016) and general acceptability of rice, Nigeria is the largest consumer of rice in Africa. The country's estimated average annual demand for milled rice is 5.2 million tons, while the average national production of paddy is 3.8 million tons. Given the country's rice processing capacity and average recovery ratio of 62% (Ogunfowora, 2007), an annual average of 2.4 million tons of milled rice is produced domestically (USDA, 2016). This gives an average annual demand-supply gap of 1.9million tons of milled rice. To bridge this gap, milled rice worth US$2billion is being imported annually into the country (Ayanwale and Amusan, 2012) and this has made Nigeria the largest importer of rice in Africa (FAO, 2012).

Nigeria's dependency on rice imports is a huge drain on the country's foreign currency reserves, increases her vulnerability to global price shocks, threatens the growth of domestic rice industry and raises overall concerns about the country's food insecurity. Consequently, the country, like many other countries, has adopted the import substitution strategy by introducing various initiatives and programmes designed to promote domestic rice production to achieve self-sufficiency through import restrictions and investments to improve product output and quality. The total annual demand for rice in Nigeria has been consistently declining since 2013 (Table 1). This is largely due to declining consumer purchasing power and rising market prices; both caused by current price inflation and currency devaluation. Output of milled rice has remained stable at an average of 2.7million tons per annum while import has declined mainly due to stringent import restriction policy measures imposed by the government and scarcity of foreign exchange. Despite declining consumption and imports, the demand-supply gap has remained stable at an average of 2.5million tons per annum. Opeyemi et al. (2015) found that non-availability in the market all year round is one of the major factors that affect the demand for locally milled rice in Nigeria. Thus, the only way Nigeria can attain self-sufficiency in rice production is to achieve average paddy output of at least 8.4million tons per annum, which is more than twice the current average annual paddy production in Nigeria. This requires the expansion of current cultivable land of 2.3million hectares and an increasing current average yield of 1.56tons per hectare (USDA, 2016).

Table 1: Trends of Nigeria's Milled Rice Demand, Supply and Import ('000 Mt) 2000 - 2016

Year	Demand	Supply (paddy)	Supply (milled)	Import	Demand-Supply Gap
2000	3029	3298	1979	1250	1050
2001	3051	2752	1651	1906	1400
2002	3307	2928	1757	1897	1550
2003	3670	3117	1870	1448	1800
2004	3750	3333	2000	1369	1750
2005	3800	3567	2140	1650	1660
2006	4040	4041	2546	1500	1494
2007	4100	3187	2008	1800	2092
2008	4220	4178	2632	1750	1588
2009	4350	3546	2234	1750	2116
2010	4800	4473	2818	2400	1982
2011	5600	4567	2877	3200	2723
2012	5300	3762	2370	2800	2930
2013	5500	4400	2772	2800	2728
2014	5400	4500	2835	2600	2565
2015	5200	4300	2709	2100	2491
2016	5000	4286	2700	2000	2300

Source: USDA, 2016.

In the last four decades, small-scale mills have been very active; representing more than 60-70% of Nigeria's total milling capacity and producing at a milling rate of 55-60%. However, their final products tend to be of lower quality because of limited equipment (USDA, 2016). Poor quality of locally milled rice has been identified as one of the major reasons for high import volume, as consumers prefer imported rice to local rice (Adeyeye et al., 2010; Johnson et al., 2013). To reverse this situation, the government and private sector have since 2010 invested a total of over $1.7Billion in the establishment of more than 43 medium to large scale modern integrated rice mills (IRMs) (Anchors) with a total milling capacity of over 2.3million metric tons per annum (Tables 2 and 3). Locally milled rice brands being produced by IRMs have been found to be comparable to imported rice brands in terms of high quality and packaging such that consumers are indifferent between local and imported rice on the basis of physical quality attributes (Alfred and Adekayode, 2014). Previous consumer-preference studies have shown that there is still an overall acknowledgement of higher organoleptic attributes such as taste, aroma and freshness which consumers prefer in favour local rice, but it is not the most decisive attribute in many cases ((Lançon et al., 2003; Tetteh et al., 2011; Demont et al., 2012). This implies that consumers' purchase of IRM-milled rice brands is based mostly on their availability and price. But, there are evidences that more than 70% of the IRMs are operating below 30% capacity due to the inadequate domestic supply of paddy (USDA, 2016).

Table 2: List of Functioning Integrated Rice Mills (IRMS) (Anchors) in Nigeria

S/N	Name and Location	Capacity (tons/annum)	Investment Level ($US million)
1	Onyx Rice Mills Bida, Niger State	12,000	NA
2	Olam Nigeria Ltd, Doma LGA, Nasarawa State	105,000	120
3	JICA/FMARD/Nasarawa State ADP Incubation Rice Mill, Lafia	4,000	0.8
4	Conti Agro (Eko Rice Mill), Imota, Ikorodu, Lagos	13,200	5
5	Popular Foods Ltd, Lagos	210,000	22.5
6	Popular Foods and Mills Ltd, Kano	150,000	23.4
7	Mikap Nigeria Ltd, Makurdi	60,000	5
8	Al Umalau Nigeria Enterprise Ltd Jaling, Taraba State	9,000	3.5
9	Quarra Rice Mill, Tsaragi, Kwara State	24,000	NA
10	Gouria Rice Mill Ltd, Bauchi	5,000	0.75

11	Danmodi Food Processing Nig. Ltd, Jigawa State	12,000	1
12	Umza Rice Mill, Kano	75,000	10
13	Tara Agro Industry Ltd, Adani, Enugu State	42,000	12
14	Integrated Grains Processor Nig. Ltd, Enugu	12,000	0.5
15	Stine Industries Ltd, Amichi, Anambra State	132,000	40
16	Ebony Agro Industry Ltd, Ebonyi State	30,000	7
17	Modern Rice Mill, Ikwo, Ebonyi State	12,000	NA
18	Modern Rice Mill, Iboko, Ebonyi State	12,000	NA
19	Modern Rice Mill, Oso-Edda, Ebonyi State	12,000	NA
20	Labana Rice Mill, Kebbi State	100,000	36
	TOTAL	**1,031,200**	**287.6**

Source: CARD, 2015.
Note: IRMs with a capacity of less than 3,000 tons per annum were not included the Table 2.

Domestic paddy production in Nigeria is dominated by smallholder farmers (SHFs) who cultivate 1-2 hectares of farmland but account for more than 80% of the total paddy rice production, while large-scale commercial farms with mechanization account for only less than 10% of cultivated areas and less than 20% of total production (FFI, 2016; GrowAfrica, n.d.). There are various programmes the government initiated in the past such as the Agricultural Credit Guarantee Scheme (ACGS), Rural Financing (RUFIN), etc. aimed at assisting SHFs access credit from the formal sector. However, these programmes have not made expected impact in increasing farm output due to unwillingness of financial institutions in Nigeria especially the DMBs to fully participate (Adegbite, 2009). DMBs perceive lending to SHFs as high risk because their farming business is unstructured due to poor functioning of value chains (Augustine et al., 2013), relatively long gestation, seasonal and exposed to unpredictable weather conditions (Philip et al., 2009; IFC, 2012). The transaction cost of lending to SHF is high because individual loan amount is often small due low volume of business, and when cooperatives are involved, the SHFs are often many, residing in remote rural locations, and are distantly dispersed thereby making monitoring by DMBs more difficult (Okello, 2012). In addition to the high risk and transaction costs, SHFs cannot afford the type of collateral acceptable to DMBs to secure any credit extended to them (Okojie et al., 2010). These explain the reasons why in the last 10 years, DMB's lending to agriculture as a percentage of total lending in the economy has been below 5% (CBN, 2017).

Table 3: List of Newly Completed or Expanded Integrated Rice Mills

S/N	Name and Location	Installed Capacity (MT/Annum)	Investment Level ($million)
1	Klysat Foods & Beverage Ltd, Hadejia, Jigawa State	52,000	3.4
2	3-Brothers Rice Mill, Hadeja, Jigawa State	30,000	10
3	Masco Agro Allied Ind. Ltd, Makurdi, Benue	70,000	2.2
4	Masco Agro Allied Ind. Ltd, Makurdi, Benue (Expansion Planned)	190,000	57
5	Popular Farms & Mills Ltd, Kano Expansion Planned	360,000	108
6	2nd Line Conti Agro (Eko Rice Mill), Lagos Expansion Planned	52,800	30
7	Dangote Rice Mills	NA	1,000
8	Pearl Universal Impex Ltd, Bida, Niger State	144,000	53
9	Elephant Group Ltd/Veetee Rice Mill, Ofada Ogun State.	75,000	35
10	FMARD Approved Rice Mill Allocated to Elephant Group Ltd, Niger State	36,000	10
11	Elephant Grp Ltd Rice Mill (Product of Satake of Netherland), In Kebbi State.	54,000	55
12	Wacot Rice Mill, Lailaba Arugungu, Kebbi State	100,000	20
13	Pemo Farms Ltd, Aviele, Auchi LGA, Edo State	30,000	9.3
	TOTAL	**1,193,800**	**1,393**

Source: CARD, 2015

Studies have confirmed that smallholders' access to credit increases farm production efficiency and productivity leading to an increased output, income and food security (Reyes et al., 2012; Nouman et al., 2013). To boost domestic paddy rice production, the Nigerian government launched the anchor borrowers' programme (ABP) in November 2015. ABP is designed to provide cheap and partially-secured loans to

smallholder farmers (SHFs). This is to make lending attractive to DMBs and agricultural loans accessible and cheaper to SHFs. Despite the importance of ABP in supporting smallholder farmers to access credit, empirical evidence arising from field experiences, which would guide agricultural policy makers and development practitioners in their efforts to fine-tune the ABP guidelines to make the programme more successful and sustainable, is still sparse.

2. Objectives of the Study and Research Methodology

The main objective of this paper is to help SHFs, who are an important segment of Nigeria's population, to benefit from opportunities offered by the ABP. Specifically, this paper aims at: Assessing the impact of ABP in boosting paddy rice production in Nigeria; Describing the challenges threatening the success and sustainability of ABP; Identifying strategic policies for enhancing the effectiveness of ABP guidelines through the functional synergies of all the participants in the programme. This study was conducted in 2017 through purposive sampling of the rice millers (Anchors) and DMBs who participated in the 2015/2016 and 2016/2017 ABP across the major rice producing States in Nigeria, including Kebbi, Benue, Kaduna, Niger, Taraba, Enugu, Cross River and Ebonyi. Primary data collection was through focus group discussion with farmers' aggregators, DMBs, and rice millers (anchors) who participated in the programme in 2015/2016 and 2016/2017 rice farming season. Data were collected by the participatory approach in which representatives of Anchors and DMBs shared their field experiences on the challenges, opportunities, prospects and the lessons learnt against the existing provisions of ABP guidelines. Secondary data, including the ABP guidelines, was obtained from the Development Finance Department of the Central Bank of Nigeria (CBN). In addition, secondary data were obtained from the United States Department of Agriculture (USDA) and Coalition for African Rice Development (CARD). Data were analysed using descriptive statistics.

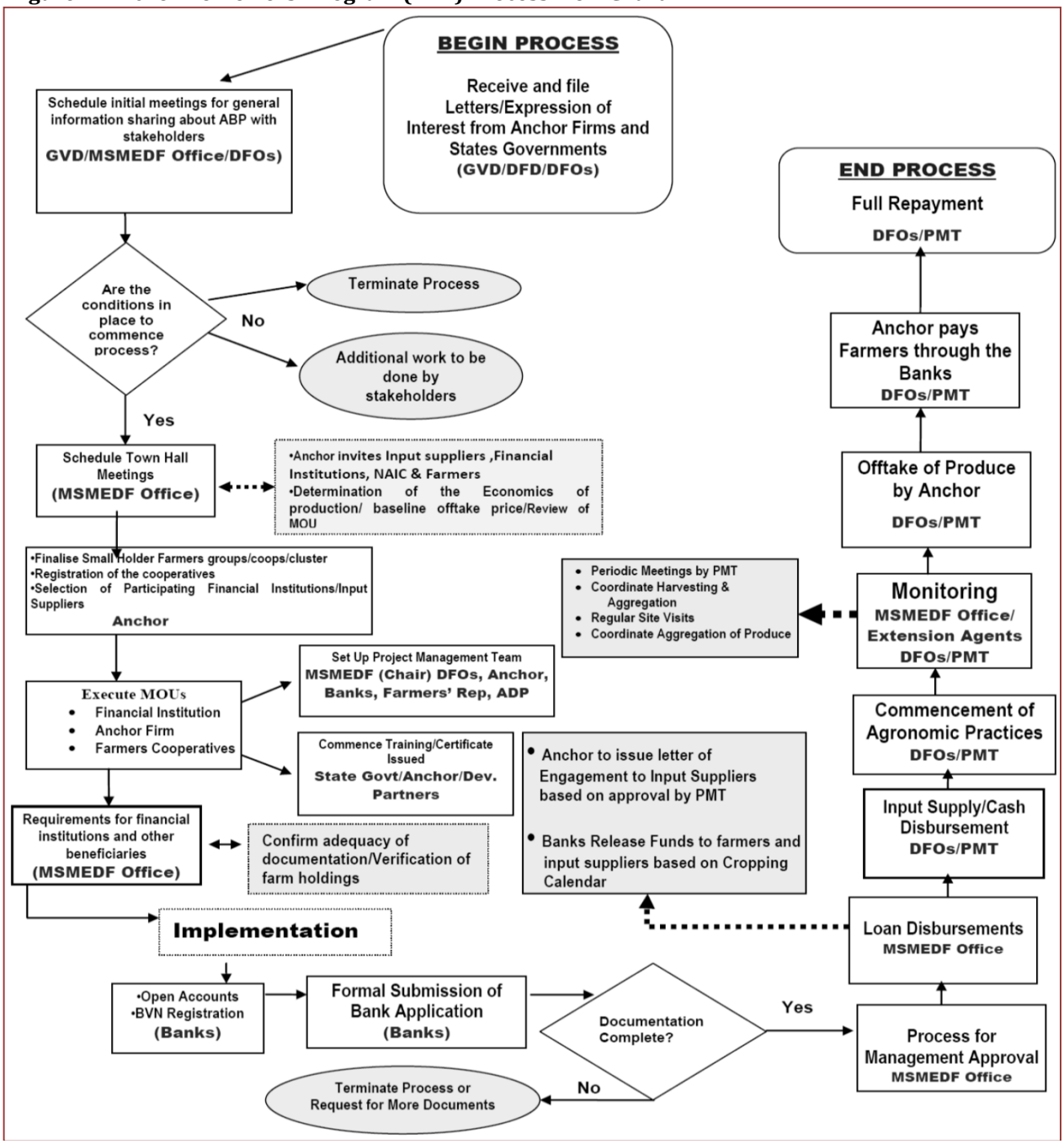
An Overview of the Anchor Borrowers' Programme (ABP) Model in Nigeria: The Central Bank of Nigeria (CBN) in line with its developmental function established the Anchor Borrowers' Programme (ABP) to create a linkage between anchor companies involved in the processing and smallholder farmers (SHFs) of the required key agricultural commodities especially rice, wheat and sugar. ABP is funded with the N220 billion Micro, Small and Medium Enterprises Development Fund (MSMEDF) of CBN through the deposit money banks (DMBs) at a cost of 2% and maximum interest rate of 9% to SHFs and tenor equivalent to be the gestation period of the identified commodities (CBN, 2016). The implementation of ABP is primarily supervised by the development finance office (DFO) in the Development Finance Department (DFD) of CBN in the various States across Nigeria. The main thrust of ABP is to provide conditions that make it attractive for DMBs to lend to SHFs. This involves ensuring: (1) cheaper credit; (2) timely and reliable supplies of farm inputs; (3) improved the capacity of SHFs through training on modern farming methods and practices; (4) guaranteed market for farm produce; and (5) provision of partial-collateral. The ABP model helps to structure the agricultural value chain to minimize the credit risk DMBs face when lending to SHFs. ABP is targeted at boosting production of key agro-enterprise (wheat, sugar, rice, maize, fish, cotton, etc.), stabilize inputs supplies to SHFs and agro-processors (Anchors) and address the country's negative balance of payments on food. At harvest, the SHF supplies his/her produce to the agro-processor (Anchor) who pays the cash equivalent to the farmer's account.

Objectives of ABP: According to CBN (2016), the broad objective of the ABP is to create an economic linkage between smallholder farmers and reputable large-scale processors with a view to increasing agricultural output and significantly improving capacity utilization of processors. Other objectives include: Increase banks' financing to the agricultural sector. Reduce agricultural commodity importation and conserve external reserves. Increase capacity utilization of agricultural firms creates a new generation of farmers/entrepreneurs and employment deepen the cashless policy and financial inclusion. Reduce the level of poverty among smallholder farmers assist rural smallholder farmers to grow from subsistence to commercial production levels.

Implementation of ABP Model: The implementation of ABP is coordinated by a project management Team (PMT) comprising of the representative of all the stakeholders including the Central Bank of Nigeria (CBN), Deposit Money Banks (DMBs), representatives of smallholder farmers (SHFs), Agricultural Development Programme (ADP), Nigeria Agricultural Insurance Corporation (NAIC) under the chairmanship of the CBN

representative (Head of Development finance officer, DFO). The implementation of the ABP is a collective responsibility of all the stakeholders involved. The ABP guideline prepared by CBN has clearly spelt out the various infractions and sanctions (CBN, 2016). Figure 1 shows the process flow of implementation activities under the ABP model. It was difficult for DMBs to conduct KYC (know-your-customer) and due diligence of the SHFs as the authenticity, accuracy and reliability of their bio and farm data, as submitted by their respective anchors, associations, ADPs, etc., could not be verified. This led to the emergence of many part-time farmers who took advantage of the cheap ADP funding and the credit risk guarantee provided under the ABP. It was observed that majority of these set of part-time farmers had limited time attending to their field crops.

Figure 1: Anchor Borrowers' Program (ABP) Process Flow Chart



Source: CBN (2016)

SHF Eligibility and Acceptable Collaterals: Smallholder farmers (SHF) must be a registered member of a recognized cooperative group who holds between 1-5 hectares of farmland and can provide at least 5% of the loan amount he/she requires. Such a farmer is issued a certificate after undergoing mandatory training covering farming as a business, improved agricultural practices and group management dynamics. Certificates issued at the end of the training constitute a requirement for farmers to access credit facility in-kind and cash under the ABP. The cost of such training is borne by the participating anchor and/or State government. According to the ABP guideline (CBN, 2016), funds disbursed by DMBs under the ABP are secured by: (a) tripartite agreement signed by SHFs, DMBs and Anchor; (b) cross and several guarantees by farmers in cooperatives registered on the National Collateral Registry (NCR); (c) SHFs' equity contribution of at least 5% of loan amount; (d) CBN credit risk guarantee (CRG) of 50%; and NAIC insurance cover.

Risks and Mitigating Measures: The various risks envisaged in the ABP as well as the measures put in place to mitigate such risks have been outlined in Table 4.

Table 4: Risks and Mitigants in ABP

Risks	Mitigants
Poor farming techniques/low crop yield	Comprehensive farmer education/technical assistance
Credit officers not skilled in agric financing	Value chain finance training for bankers
Effective monitoring of the process/project	PMT comprising all stakeholders will be put in place
Farmers have no stake in the programme	Equity contribution of 5% - 10% in place
No market for products	Off-takers in place with MOUs executed
Price variation	Guaranteed minimum Price by FMARD in place
Loss of crops due to natural incidences	NAIC Agric Insurance is compulsory
Poor quality/fake inputs leading to low yields	PMT selects recognised agro-dealers
Diversion of funds by farmers	Direct disbursement to agro-dealers
Default by farmers/Side selling	SHFs are to be selected by the miller. Cross and joint guarantees by all members of the cooperative. Miller approves all disbursement requests by farmers. Use of extension workers

Source: CBN, 2016

3. Results and Discussion

Impact of ABP Funding on Boosting Nigeria's Rice Output: ABP was launched by the Federal Government on 17th November 2015 in Kebbi State, North-west Nigeria. About 70,000 farmers benefitted from the pilot phase (2015/2016 dry season farming). According to a report by the CBN, as at February 2017, about ₦29billion ($US83million[6]) had been disbursed to over 125,963 smallholder farmers (SHFs) in 10 States who cultivated a total of 160,083 hectares at an average of 1.2 hectares per farmer through 31 anchors (CBN, 2017). This implies that the ABP has so far added about 1,207,090 tons of paddy rice into the economy. There are additional 24 States that have submitted an expression of interest to CBN to key into the programme for 2017/2018 rice farming season. Under the ABP, the average productivity has increased from 3.5 tons per hectare to 5 tons per hectare because of quality inputs and best agronomic practices (CBN, 2017). This indicates a tremendous improvement in the average yield of paddy rice in Nigeria under the ABP given that previous statistics have shown a yield of between 1.5 to 3 tons per hectare (Johnson et al., 2013). Studies support the hypothesis that access to credit increases the productivity and profit of smallholder farmers (Hazarika and Alwang; 2003; Foltz, 2004).

[6] $US1 = N350

Table 5: Performance of ABP in 2015/2016 Dry Season and 2016 Wet Season for Rice

	2015/2016 Dry season	2016 Wet season
No of SHF beneficiaries	73,941	125,963
No of hectares	81,335	160,083
No of Anchors	2	31
Total output of paddy	406,675	800,415

Source: CBN, 2017

Key Challenges Threatening the Success and Sustainability of ABP in Nigeria: DMBs' long checklist of documentary requirements; complex bureaucracy in loan processing; and SHFs' inability to make 5% equity contributions were found to be the major sources of delays in timely disbursement of funds by DMBs. Previous studies have confirmed that these factors hinder SHFs' access to credit and repayment capacity (Okorie, 1986; Agnet, 2004; Nmadu et al., 2013). Inadequate personnel and institutional arrangements were found to have hampered the effective implementation of ABP at the rural level such as selection of farmers, verification of farms, effective monitoring, supervision and reporting of farm activities. This finding is supported Evbuomwan and Okoye (2017), who found a dearth of extension agents as one of the implementation challenges of ABP in Nigeria. This contributed to inefficient coordination of logistics among the key participants and implementers of the programme including the PMT, DMBs, and Anchors leading to late supply/distribution of inputs to farmers, extension services provision and aggregation and supply of harvested paddy rice to anchors.

Had more challenges in repaying the loans and constituted the largest percentage of SHFs who defaulted in loan repayment and recovery by DMBs. Coker et al. (2018) observed a lack of updated database as one of the major issues militating against the effective implementation of the ABP. Side-selling of harvested farm produce by SHFs was one of the major challenges found to be a threat to the success of ABP. The guideline of ABP clearly stipulated that SHFs should sell their harvested farm produce to the Anchor in line with the executed tripartite memorandum of understanding (MOU). Majority of the SHFs gave various reason for side-selling, which included: (1) settlement of debt from other lenders due to late disbursement of ABP funds; (2) obtaining higher market prices being offered by Anchors that were not participating in the ABP; (3) withholding of sales at the harvest period in order to take advantage of increased market price during the off-season; and (4) expression of their dissatisfaction for non-receipt of ABP fund on time. Previous studies identified other reasons for side-selling such as government interference, weak institutional linkages, lack of trust among the value chain actors (SHFs, Anchors, DMBs, etc.), poverty, etc. (Coker et al., 2018; Evbuomwan and Okoye, 2017; Grow Africa, n.d.).

It is mandatory for SHFs to take up insurance cover for their field crops. There were several incidences of farm destructions by flood, drought, fire and nomadic herdsmen. The insurance cover provided by Nigeria Agricultural Insurance Company (NAIC) does not protect field crops against grazing. Besides, there was a poor channel of communication which made it difficult for farmers to report to NAIC within 24 hours as required. Hence, farmers experienced some difficulties in getting insurance compensation from NAIC. State government participated in the mainstream of ABP programme by providing the equity contribution and extension services for SHFs as stipulated in the ABP guideline. However, it was observed that government involvement in the programme created a wrong impression to SHFs who see the loan as a grant from the government. This confirms the findings of previous studies that many SHFs were insensitive, resolute and unresponsive in repaying loans because the majority of the SHFs erroneously believed that the loan is from the government.

Hence, a grant that is not supposed to be repaid (Oladeebo, 2008; CBN, 2005; Ben-Yami, n.d.). This attitude of SHFs largely contributed to the low repayment of ABP loans. Most smallholder farms are in remote rural areas of Nigeria where infrastructure such as good roads, bridges, telecommunication, etc. and security are grossly inadequate. These contribute to hamper the Anchors and DMBs in moving cash for on-farm payments to SHFs who often preferred and insisted on cash receipt of payment for paddy rice sold to the Anchor. It was observed that high cost of transportation and the stress of travelling a long distance on bad roads discouraged the majority of these SHFs from going to the DMBs in the urban areas to receive payments for

paddy rice sold to the Anchor. This finding is corroborated by Bamiduro and Rotimi (2011) who observed that high cost of transportation was the major problem faced by SHFs in the marketing of their agricultural products in Nigeria.

Key Lessons from the 2015 - 2017 ABP: Field experience of DMBs indicated that farmers in the more remote rural areas easily repaid their loans more than those in the Urban and semi-urban areas. Farmers in urban and semi-urban areas were mostly civil servants who are already indebted to other lenders. There was higher loan recovery from farmers who owned just one hectare of farmland than those who owned more than one hectare. This agrees with the findings of Oke et al. (2007) and Kohansal and Manosoori (2009) who in their separate studies identified loan size as one of the factors that determine repayment. In addition, the majority of farmers who easily paid their 5% equity contribution had their loans easily repaid.

4. Conclusion and Recommendations

ABP is a laudable programme capable of boosting SHFs productivities and making Nigeria self-sufficient in rice production as it is specifically targeted at smallholder farmers (SHFs) who cultivate less than 5 hectares. Based on the challenges observed and key lessons learnt, the following recommendations are made to strengthen the ABP towards achieving its objectives. There is a need for a simplified and standardized procedure for processing loan request under the ABP. Given the remote residence location and literacy level of an average SHF, it is imperative for DMBs to design a single package loan application and appraisal form that must capture all the requirements expected from the SHFs such as MOU, cross guarantees, acceptance of the offer, etc. Also, DMBs need to develop and approve well in advance, an enterprise-specific product paper for financing rice farming under the ABP to avoid the long bureaucracy of obtaining approvals before the loan can be disbursed. This ensures timeliness in loan approval and disbursement.

There is a need for a well-articulated institutional framework to drive the ABP in the rural areas enhance extension services and provide real-time feedback to DMBs, NAIC, Anchor and CBN. An institutional framework for financing SHFs has been proposed for ABP (Appendix A). This framework will help to effectively synergize and integrate the roles of government agencies, DMBs, traditional institutions and agency banking in driving formal lending, financial inclusion banking and extension services delivery to SHFs in rural areas. It can provide a guide towards effective implementation of ABP model in Nigeria through a public-private-based partnership. As earlier observed by Augustine et al. (2013), a public-private-based partnership (PPP) linkage programme can effectively improve the functioning of agricultural value chains, and ABP is such a programme that can enhance the functioning of the rice value chain in Nigeria. DMBs need to work closely with Anchors who aggregate these SHFs for obtaining reliable data of their bios and farms for accurate KYCs and other information required for effective financial planning. There are several ways to stem side-selling by SHFs. Timely loan disbursement is key. There is a need to integrate into the ABP model, a robust mechanism and system of incentivising SHFs who sold to the Anchor. Loan repayment is automatic if the harvested paddy rice is sold to the Anchor. Transparency in the negotiation and agreement of selling price between the SHFs and Anchor is important Paglietti and Sabrie (2013).

Punitive measures and sanctions should be given to SHFs who default in loan repayment. These may include blacklisting of the farmers involved (using their BVNs), enforcement of loan recovery using the law enforcement agents, etc. There is a need for collaboration between CBN and DMBs to strengthen agency banking programme to facilitate payment of paddy in rural areas. The agency banking platform needs to be complemented with the establishment of paddy rice aggregation and procurement centres in rural areas where there are clusters of rice farmers. Each centre must be equipped with a weighing machine and the entire paddy harvested within the cluster farms are taken and weighed at the nearest procurement centre. NAIC insurance cover needs to be reviewed to include the destruction of farms by grazing animals. Other mechanisms such as farm residence, use of inedible plants for fencing, etc. need to be put in place for improved security of smallholder farms. There is a need for minimal involvement of State government in the ABP. The roles of the State government should be restricted to the provision of rural infrastructure (feeder roads, culverts, bridges, dams, etc.), security, extension services, and the establishment of a mobile court to try farmers who have defaulted in loan repayment. DMBs and Anchors need to develop an effective enlightenment programme to educate SHFs that the ABP loan is neither government largess nor a grant. CBN

activities need to be restricted more to loan administration and supervision with minimal direct interactions with SHFs who often perceive ABP loans as a grant on sighting CBN staffs whom they perceive as government officials.

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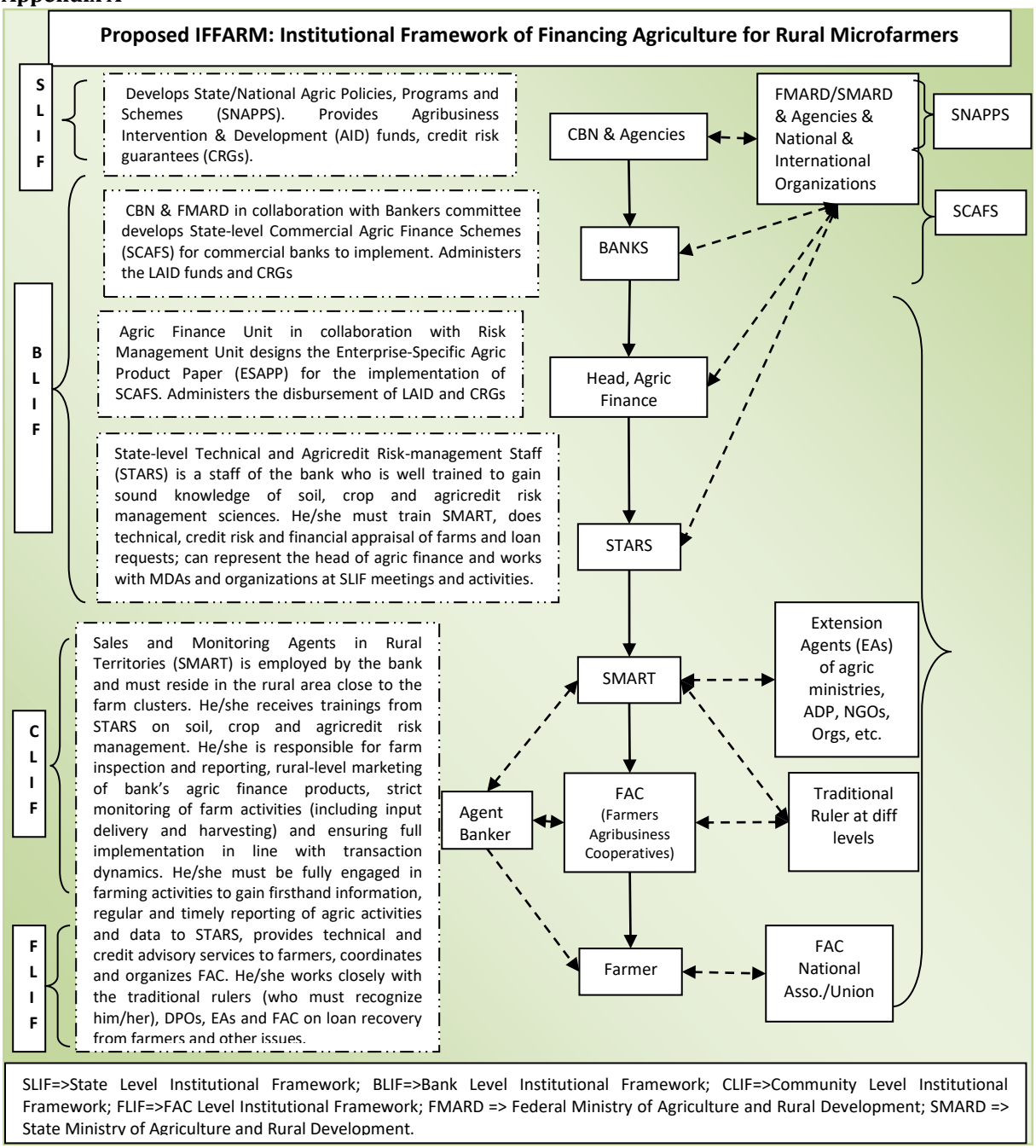
Appendix A



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Characteristics of Credit Instruments Issued by Stokvels in South Africa

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Abstract: Access to formal credit and other financial instruments remains a challenge for the majority of households in South Africa. The objective of this study was, therefore, to determine the characteristics of credit instruments issued by stokvels to households in South Africa. Prior studies have generally focused on mobilization of savings through stokvels while none has paid particular attention to the credit supply function of stokvels. This study attempts to fill this gap by using a self-administered research questionnaire on a sample of 386 respondents. Members of stokvels were surveyed from the cities of Pretoria and Johannesburg in the Gauteng province of South Africa. Data was analysed using descriptive statistics, exploratory factor and correlation analyses. Results show that stokvels issue short-term loans from less than 3 to 6 months. Interest rates are high ranging from 25% to 35% and are charged monthly. Loan sizes are small with approximately two-thirds of the respondents receiving loans above R500 while the remaining third received less than R500. Finally, all loans are secured by the borrower's identification document or bank card and personal identification number. The results of this study have policy implications for financial institutions in South Africa.

Keywords: *Credit, Savings, Stokvel, Households, South Africa, Exclusion*

1. Introduction

South Africa still remains one of the countries in the world with the highest income inequality (World Bank Report, 2006). Almost half of the population continues to live under the poverty datum line (Adelzadeh, 2006). During apartheid rule, black South Africans were excluded from utilising most aspects of the formal financial and banking sector. The state severely restricted Africans' access to formal credit. Moreover, the restriction on private ownership of council-owned homes, low wages and few opportunities for formal entrepreneurship added to the severe restriction of formal credit. The state erected numerous barriers to black home ownership, to accessing finance and to operating licensed business. It is no surprise that there developed a strong demand in urban townships for access to consumer credit. The 2011 census reported that South Africa has about 56 million people consisting of Africans (76,4%), Whites (9,1%), Coloured (8,9%), Asian (2,5%) and Other (0,5%). South Africa has eleven official languages, different cultures and religion. The economy of South Africa is the second largest in Africa after Nigeria. According to Statistics South Africa (2017), South Africa experienced a decrease of 0.7% in GDP during the first quarter of 2017, following a 0.3% contraction in the fourth quarter of 2016. The unemployment rate in South Africa increased to 27.7 percent in the first quarter of 2017 compared to 26.5 percent in the previous period. What is evident from these summary statistics is that innovative solutions are required to avert a further deterioration of the economy, stimulate saving and investment at all levels of society.

Previous studies have generally focused on mobilisation of savings through stokvels while none have paid particular attention to the credit supply function of stokvels in reducing financial exclusion among households. In South Africa, many households are poor and remain financially excluded, especially from the formal credit market. Financial exclusion is a process where an organisation lacks or is denied access to affordable, appropriate financial products and services, with the result that their ability to participate fully in social and economic activities are reduced, financial hardship is increased and poverty is exacerbated (Burkett and Sheehan, 2009). Financial exclusion negatively affects the economic development of the country (de Cock, et al., 2005). Recent empirical findings show that stokvels are community-based savings schemes aimed at improving the lives of poor household's and alleviating unemployment (Floro and Seguino, 2002:1). Moreover, literature shows that South Africa has a very low saving rate (Moyagabo, 2015). Savings are meant to be used in future by unemployed and poor households in times of need. Helms (2006) opined that even though poor and unemployed households are willing to save, they are confronted by multiple demands on their low incomes and lack access to banking services such as deposits. Many adult black African who are poor and unemployed, despite having formal banking accounts, save solely by becoming members of stokvels.

Stokvels are growing in popularity as a savings vehicle albeit official statistics indicating that South Africa has a very low saving rate (Moyagabo, 2015).

Since stokvels attempt to fill the gap created by formal financial institutions such as commercial banks by providing credit, the objective of this study was to examine the characteristics of credit instruments issued by stokvels to households in South Africa. This is important for South Africa in light of the growing population and rising unemployment, which requires improved access to finance to the poor in order to stimulate entrepreneurship and self-reliance. Findings from this study help South African authorities to develop and implement proper stokvels growth and promotion frameworks that will in the long run infuse into the development agenda of the country. The study also helps to conscientise all economic agents of the meaningful role that stokvels can play in promoting financial inclusion. Through stokvels credit instruments, the previously financially excluded people because they are not employed and they do not possess collateral security to become part of the mainstream economic activities. That is what this paper highlighted, knowledge upon which South African financial and monetary authorities can use to address the triple challenges of unemployment, poverty and inequality. The rest of the paper proceeds as follows. Section 2 presents the theoretical framework upon which this paper is premised. Section 3 discusses the methodology applied. In Section 4, the empirical results are presented and discussed. The conclusion and recommendations flowing from this study are presented in Section 5.

2. Theory of Credit

Economists often frame borrowing as "consumption smoothing" so that poor and unemployed people can continue spending even if income decreases or expenses increase. Most poor and unemployed people engage in borrowing for this reason from time to time (Demirguc-Kunt et al., 2012). They may want to buy or renovate a house, to invest in an education or to pay for a wedding. The lack of funds with which to meet these demands results in people having to borrow in order to bridge this financial deficit. Individuals, government, private firms and banks are some of the suppliers of credit. Banks have tended to see lending as an autonomous activity that precedes savings (FinMark Trust, 2012). They have therefore been reluctant to lend to poor and unemployed households because both collaterals in the form of fixed property and repayment ability has been seen to be lacking. In South Africa, township dwellings and movable assets were inappropriate as security to financial institutions, yet until 1994 poor and unemployed households were prohibited from owning fixed property outside townships. Furthermore, as a rule, few people maintained bank accounts or savings accounts at the Post Office or in building societies (Murray-West, 2017).

Banks and other formal lenders (Mashigo, 2012) consider lending to poor and unemployed people who do not have any significant assets that can be used as collateral for obtaining credit risky. This is because lenders use these assets as a fall-back position should the borrower default on credit repayment. To circumvent this liquidity constraint, households turn to stockvels for credit. An examination of the attributes of credit obtained from stokvels shows that in the absence of steady livelihood options, these poor and unemployed people often purchase items for day-to-day household consumption (both food and non-food) on credit from the local grocery store/spaza shop (Terblanche, 2010). They also seek to obtain small loans from friends, relatives and neighbours for daily subsistence needs and petty transactions of necessity. Consistent with formal banking practice, stokvels require collateral security for credit granted. However, both own funds and non-current assets which can provide security for loans are relatively rare (Schulze, 1997). A borrower has to disclose his assets to the stokvel. These assets will be used as a guarantee for the loan repayment. According to James (2014), stokvel moneylenders hold customers' ATM cards as collateral. The bank cards are used to withdraw the money owed to the lender at month end before returning them to their owners.

While households may want to bank with formal financial institutions, the cost of financial products (high transaction costs) limit the poor households from accessing formal bank credit. Most members of stokvels had bank accounts; all of them were formally employed and used their accounts extensively as they had their salaries paid into bank accounts weekly, fortnightly and monthly. Many people do not have sufficient financial resources to cover transaction costs; therefore, no one likes paying banking fees. This results in these households to not be part of the banking system. While it may appear that stokvels are a viable alternative (Naidoo, 2001), accessing banks usually involves travelling costs. This is in addition to expensive bank

charges which banks impose on their clients on transaction made. Banks do not offer easy access to loans to members of stokvel as they save in groups. It is clear that financial institutions are not attractive to the very poor households and unemployed. In addition to transaction costs, a typical credit transaction attracts an interest rate. Interest is paid periodically, say monthly, semi-annually or annually. In South Africa, the current interest rate is 10.25% (SARB, 2017).

3. Methodology

This study follows a survey research design using a quantitative research approach. The quantitative research design for this paper is premised on the use of survey primary data obtained from the stokvels members in the Gauteng province. The quantitative research design is the best for the study because of three reasons. Firstly, the survey data collected is quantitative in nature. Secondly, the approach uses numeric data to generate statistical values and empirical models which can easily be used to describe the characteristics of credit instruments issued by stokvels, consistent with Ivankova (2015). Credit transactions are issued for short-, medium- and long-term. The duration of the loan depends on the purpose for which the credit is required coupled with the borrower's capacity to repay (Joseph, 2013). The population of the study consisted of stokvel members based in the Gauteng province of South Africa. Three major reasons behind the choice of the target population are as follows the Gauteng province is in close proximity. Main researcher, low travelling costs of collecting data are incurred because the researcher resides in the Gauteng province and lastly because the Gauteng province is the economic hub of South Africa where the credit instruments issued by stokvels are most pronounced. Using purposeful sampling, the respondents were drawn from the Gauteng province's two major cities of Pretoria and Johannesburg.

Consistent with an earlier argument, these two cities are not only where the largest number of stokvels are concentrated in South Africa but it is where the majority of stokvels avails some form of credit instruments mainly to their members. Primary research was conducted using the self-administered research questionnaires that were given to a sample size of six hundred (600) members of stokvels to fill in. In support of Martinez-Mesa et al. (2014) argument, the larger sample size is normally associated with greater precision. It is against this backdrop that the current study chose a sample size of 600 respondents. However, three hundred and eighty-six (386) questionnaires made the final sample as others did not respond. The final sample or study population is still large enough to ensure precision, meaningful results and conclusions, consistent with Martinez-Mesa et al. (2014) and Kim et al. (2016). Biographical and general information about the members of the stokvels over and above the credit instruments related information offered by stokvels characterised the major information that questionnaires sought to extract. Following Mellor and Moore (2014) and Sullivan and Artino (2013), data was collected using a self-administered questionnaire using a 5-point Likert scale. In order to ensure the validity and reliability of the data, the research instrument was subjected to a pilot test. Results of the pilot test confirmed the reliability of the research instrument with a Cronbach alpha value greater than the threshold of 0.7. Respondents were not compelled to answer the questionnaire. Consistent with Cooper and Schindler (2011), the study kept all the respondent information in confidence.

Using Confirmatory Factor Analysis (CFA), the research instrument was found to be valid and acceptable (root mean square error of approximation = 0.674). Consistent with Kim et al. (2016:3), a root mean square error of approximation (RMSEA) value between 0.05 and 0.08 is acceptable. After confirming the reliability and validity of the research instrument, data was collected with the aid of 4 field workers who were trained by the researcher. The tests applied include descriptive statistics and Pearson correlation. Descriptive statistics such as frequencies, means and standard deviations were applied in order to gain a good understanding of the demographic data about the respondents. Further analysis was done using bivariate Pearson correlation tests in order to understand the relationship between different variables under study, more specifically the characteristics of credit instruments issued by stokvels in South Africa. This study adhered to all the principles of the University of South Africa (UNISA) Research Ethics as well as the main ethical considerations as guided by Babbie (2007). In order to comply with ethical considerations, the researcher applied and obtained ethical clearance from the University of South Africa prior to carrying out the survey. Furthermore, at the outset of filling in questionnaires, respondents were provided with a consent form included a request for the respondent's voluntary consent to fill in the questionnaire (Creswell, 2003).

Following Flick (2006), the researcher ensured that the study posed no harm to the respondents. Respondents were not compelled to answer the questionnaire. Consistent with Cooper and Schindler (2011), the study kept all the respondent information in confidence.

4. Results Discussion, Interpretation and Findings

In this section, the empirical results of the study are presented and discussed. First, the demographic characteristics of the respondents are presented and subsequently the results of the descriptive and correlation analyses.

Summary of the Demographic Information: Table 1 below presents the sample demographic information which includes the city in which respondents reside, either Pretoria or Johannesburg, gender, marital status, age and level of education of the respondents.

Table 1: Summary of Demographic Information

Demographics	Frequency	Percent	Valid Percent
City			
Pretoria	304	78.8	80.4
Johannesburg	74	19.2	19.6
Total	378	97.9	100.0
Gender			
Male	174	45.1	46.3
Female	202	52.3	53.7
Total	376	97.4	100.0
Marital Status			
Single	156	40.4	41.6
Engaged/not yet married	44	11.4	11.7
Married	108	28.0	28.8
Widowed	24	6.2	6.4
Divorced	43	11.1	11.5
Age			
Less than 20	10	2.6	2.6
21 – 30	95	24.6	25.1
31 – 40	106	27.5	28.0
41 – 50	93	24.1	24.6
Above 50	74	19.2	19.6
Total	378	97.9	100.0
Education			
No schooling	65	16.8	17.6
Matric	131	33.9	35.5
National certificate	38	9.8	10.3
Diploma	57	14.8	15.4
Degree	78	20.2	21.1
Total	369	95.6	100.0

Source: Field work (2016)

City: Approximately 78.8% of the respondents were based in Pretoria while 19.2% were based in Johannesburg. The remainder (2.1%) did not indicate the city they reside. Pretoria had the higher percentage of respondents than Johannesburg because members of stokvels who reside in Tembisa indicated that they reside in the city of Pretoria instead of Johannesburg. It is presumed by the researcher that respondents from Tembisa indicated their city as Pretoria. Because Pretoria is nearer to Tembisa than Johannesburg, easily

accessible to commute by public transport (train and taxis) with time spent of 30 minutes while it takes 1hour 30 minutes to the city of Johannesburg. The summary results are presented in Table 1 above.

Gender: Males who participated in the survey were 174, representing 45,1% of the total sample (N=386) with females accounting for a majority of 52,3% of the total sample while 2.6% did not indicate their gender. The large number of females participating in stokvels dates back around the 1930s when there was an influx of rural-urban migration particularly amongst women as they arrived in the cities and towns to join their husbands who were working in mines. According to Buijs (2002), most women participated in stokvels because they were poor, uneducated and unemployed. Those who were employed and earned lower income supplemented it with being involved in stokvels (Mboweni, 1990).

Marital Status: An analysis of the marital status shows that most of the respondents were single (40.4%) (N=386), followed by married respondents (28.0%). Those who were either engaged or not yet married constituted 11.4% of the sample while 6.2% were divorced.

Age: Most of the respondents (27.5%) were in the age group of 31-40 years. Interestingly, some of the members of stokvels were young, (less than 30) and constituted 46.4% of the sample. Approximately 24.1% were between 41 and 50 years old while 24.1% were above 50 years old.

Education: The results for education showed that most of the respondents (33.9%) had matric education, followed by degree holders constituting approximately 20.2% of the total sample. A total of fifty-seven (14.8%) respondents were found to be holders of diplomas. Those with no schooling at all were 16.8% of the total sample. Finally, there were 38 respondents (9.8%) who were holders of the national certificate. These results confirm Berg and Karlsen's (2012) argument that education results in the empowerment of people and enables them to think clearly and act effectively to achieve self-selected goals and aspirations.

Characteristics of Credit Instruments Issued by Stokvels in South Africa: Descriptive statistics of the term of the loan, interest rates, transaction costs, loan amount, collateral security and the lending process (see Table 2) is the first sub-heading under which the characteristics of credit instruments issued by stokvels are discussed. Correlation analysis of types of collateral (see Table 3) and that of the credit assessment criteria (refer to Table 4) are the other sub-headings which guided the discussion on the characteristics of credit instruments issued by stokvels in South Africa.

Table 2: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Term of loan –1st segment					
≤I month	47	1	5	4.30	.858
2 months	83	2	5	4.20	.694
3 months	90	2	5	4.32	.633
4 months	23	1	5	3.65	.935
5 months	23	2	5	4.09	1.041
6 months	40	1	5	4.08	.971
Valid N (listwise)	1				
Interest rates -2nd segment					
20% per month	93	1	5	4.28	.728
25% per month	98	1	5	4.06	.895
30% per month	64	1	5	4.17	.883
35% per month	45	1	5	3.91	1.125
Valid N (listwise)	0				
Transaction costs -3rd segment					
Application fee	94	1	5	3.83	1.197
Penalty for late payment	147	1	5	4.11	.994
Administration fee	80	1	5	3.83	1.320
Collateral fee	44	1	5	4.02	1.248

Valid N (listwise)	27				
Loan amount -4th segment					
≤R200	31	2	5	4.16	.820
201 – 300	26	2	5	3.81	.981
401 – 500	43	2	5	4.23	.684
>500	200	1	5	4.28	.840
Valid N (listwise)	0				

Source: Fieldwork, 2016

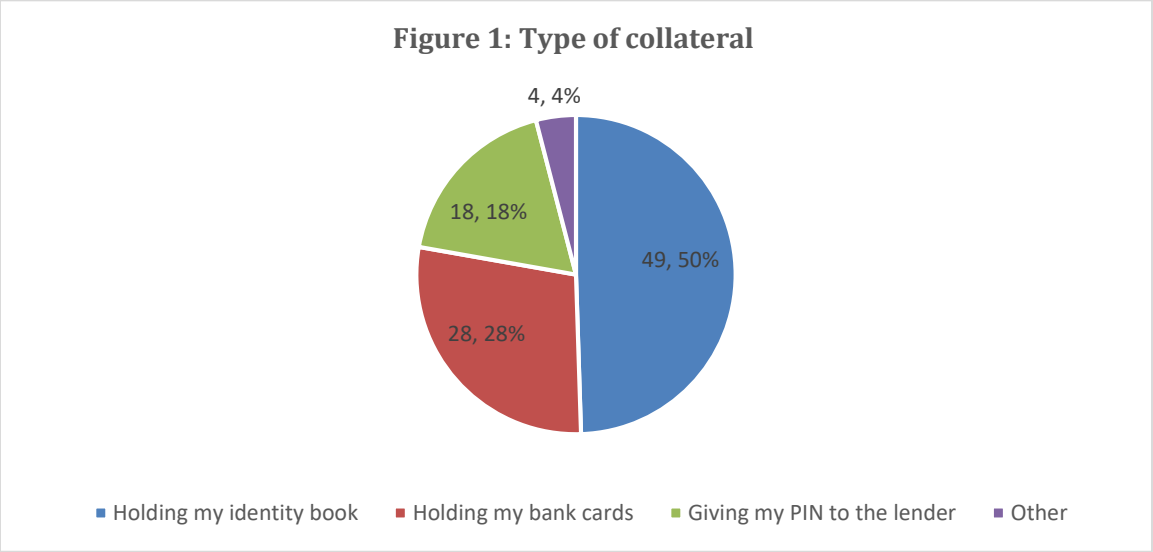
Term of the loan: Respondents were asked to indicate the term of the loan obtained from their stokvels. The purpose of this question was to determine whether stokvels issue short- or long-term loans as is the case with formal financial institutions. Table 2-first segment presents the descriptive statistics of the responses on term of the loan. The highest mean was "the term of the loan from my stokvel is, 3 months" with a numerical value of 4.32. The lowest mean was "the term of the loan from my stokvel is, 4 months" with a numerical value of 3.65. This implies that, the majority of the respondents agree that participating in stokvels members repay their debt in a certain period, usually three to four months. This finding is consistent with Matuku and Kaseke (2014) whose study noted that as a risk management strategy, the term to maturity of the stokvel loans is very short (usually three to six months).

Interest Rates: The study sought to establish the interest rates levied on credit by stokvels on their members. To this end, respondents were asked to state the interest rate charged by their stokvel when they borrow the money. Table 2, 2nd segment presents the mean and standard deviation for the factor interest rates based on data obtained from sampled respondents. The highest mean was "the interest rate on loans from my stokvel is, 20% per month" with a numerical value of 4.28. The lowest mean was "the interest rate on loans from my stokvel is, 35% per month" with a numerical value of 3.91. This implies that, the majority of the stokvel respondents agree that members repay their debt with interest rate, consistent with Matuku and Kaseke (2014). These results are also in sync with those of Bozzoli, 1991) who opines that stokvel credit is available at low-interest rates to stokvel members and can also be extended to non-members at high-interest rates.

Transaction Costs: Further to the interest rates charged by stokvels, the study sought to establish if stokvel members are charged transaction costs on credit as is the case with formal credit providers. Table 2, 3rd segment shows that stokvels charge application fees, administration fees, the penalty for late payment and collateral fees to all members applying for credit, consistent with Matuku and Kaseke (2014). Details of the means and standard deviations among responses are in Table 2, 3rd segment. Transaction costs such as application and administration fees had the lowest mean, whose numerical value was 3.83. The penalty for late payment was characterised by the highest mean value of 4.11, a reason why most stokvel members pay their debt in time in order to avoid incurring these punitive extra costs.

Loan Amount: Respondents were asked to indicate the amount of the loan their stokvel can give to an applicant, results of which are presented in Table 2, 4th segment. Table 2, 4th segment indicates that majority of stokvel members can get credit in excess R500 (Mean = 4.28). The lowest amount of credit accessible by a member from a stokvel ranges from R201 to R300 (Mean = 3.81). This implies that majority of the stokvels members agree that participating in stokvels enables them to access low initial loan amounts and gradually larger amounts become available in subsequent loans (Greg, 2011).

Figure 1: Type of Collateral



Consistent with Schreiner (2000) there is no paperwork that is involved in the lending process because the lenders know their clients' character behaviour and loyalty. Their relationship is based on loyalty and trust as they build a clean repayment or creditworthiness record.

Collateral: When asked to state the type of collateral required by stokvels as a condition for accessing loans, respondents indicated that loans were secured by "holding my identification book" with a mean numerical value of 3.74 (N = 156). The second highest mean was "my loans received from my stokvel were secured by, other" with a numerical value of 3.36 (N = 11). The third highest mean was "my loans received from my stokvel were secured by, holding my bank card(s)" with a numerical value of 3.33 (N = 89). The lowest mean was "my loans received from my stokvel were secured by, giving the PIN to the lender" with a numerical value of 3.18 (N = 57). Literature review states that, there is no paperwork for making an application for credit in stokvel, you need a steady job and bank Automatic Teller Machine (ATM) card with a personal identification number (PIN) that are kept by stokvels money lenders / mashonisa after credit has been granted. Credit repayment can be made next payday or within 30days after taking out the stokvel personal loan. These results confirm that members of stokvels are required to tender collateral security for all loans applied for, consistent with Wilkinson and Birmingham (2013). This implies that, the majority of the stokvel respondents agree that none of the members want to be viewed by others as irresponsible and their mutuality binds them together and improves their joint commitment to the smooth running of their financial activities (Verhoef, 2001; Schreiner, 2000). What is evident from Figure 1 below is that the majority of the respondents agree that when participating in stokvels' credit granting business, sufficient collateral is required to cover the amount of the loan should a member fail to repay the loan. These results are similar to those of Wilkinson and Birmingham (2013).

Correlation Analysis of Types of Collateral: Respondents were asked to state the form of collateral requested by their stokvels when borrowing and the responses were presented in the form of pairwise relationships. The summary correlation results emanating from these responses are presented in Table 3.

Table 3: Correlation Matrix for Types of Collateral used by Stokvels

		Holding my identification book	Holding my bank card(s)	Giving the PIN to the lender	Other
Holding my identification book	Pearson Correlation	1	0.768**	0.778**	1.000**
	Sig. (2-tailed)		0.000	0.000	.
	N	156	25	25	2

Holding my bank card(s)	Pearson Correlation	0.768**	1	1.000**	1.000**
	Sig. (2-tailed)	0.000		0.000	.
	N	25	89	24	2
Giving the PIN to the lender	Pearson Correlation	0.778**	1.000**	1	1.000**
	Sig. (2-tailed)	0.000	0.000		.
	N	25	24	57	2
Other	Pearson Correlation	1.000**	1.000**	1.000**	1
	Sig. (2-tailed)	.	.	.	
	N	2	2	2	11

*** Correlation is significant at the 0.01 level (2-tailed).

Source: Fieldwork, 2016

Significant positive correlations were observed between (1) holding the borrowing member's identification book and the borrower's bank card (p=0.000), (2) holding the borrowing member's identification book and giving the PIN to the lender and (3) holding borrower's bank cards and giving the PIN to the lender (stokvel). These results are logical and make theoretical sense because the lender (stokvel) would certainly require the borrower's bank card together with the PIN in order to withdraw funds from the ATM to recover the outstanding amount, in line with James's (2014) argument. Furthermore, holding the borrower's identification document and bank cards restrict the borrower from many other engagements for which an identification document is required, thus compelling the borrower to repay the loan and recover the identification book. This finding resonates with Kibuuka (2006) whose study implied that social collateral and holding of bank cards and identification documents is the most important form of collateral security required by stokvels in the lending process. Last but not least, holding on to the borrower's identification book and the PIN ensures that the borrower cannot clandestinely change the PIN code without the knowledge of the stokvel.

Correlation Analysis of the Credit Assessment Criteria: In order to determine the assessment criteria of credit applications by stokvels in the Gauteng Province, respondents were asked to identify several criteria from a given list guided by literature. The purpose was to establish the difference between the assessment criteria of formal lending institutions from those of stokvels. Results show that in order for a member to access credit from the stokvel, all membership fees must be up-to-date, the borrower must have collateral to hedge the stokvel against default risk and the member needs to have served for a certain time before they can qualify for credit from the stokvel. The correlation matrix for assessment criteria for credit applications is presented in Table 4.

Table 4: Correlation Matrix for Assessment Criteria for Credit Applications

		Membership to the stokvel	**Membership fees must be up to date**	**Collateral**	**Waiting period of member since joining as per constitution**	**Amount of the loan**	**Purpose of the loan must be in line with the constitution**	**Source of repayment**	**Character of borrower**	**Track record**
Membership to the stokvel	Pearson Correlation	1	.942**	.653**	.279*	.249	-.084	-.127	-.132	-.128
	Sig. (2-tailed)		.000	.001	.047	.111	.570	.379	.361	.369
	N	87	51	24	51	42	48	50	50	51
Membership fees must be up to date	Pearson Correlation	.942**	1	.696**	.238	.202	-.133	-.148	-.153	-.149
	Sig. (2-tailed)	.000		.000	.096	.205	.367	.306	.289	.297
	N	51	125	24	50	41	48	50	50	51
Collateral	Pearson	.653**	.696**	1	.840**	.624*	.858**	.741**	.907**	.696**

	Correlation					*				
	Sig. (2-tailed)	.001	.000		.000	.001	.000	.000	.000	.000
	N	24	24	37	24	24	24	24	24	24
Waiting period of member since joining as per constitution	Pearson Correlation	.279*	.238	.840**	1	.217	.221	.215	.221	.187
	Sig. (2-tailed)	.047	.096	.000		.178	.140	.142	.130	.198
	N	51	50	24	102	40	46	48	48	49
Amount of the loan	Pearson Correlation	.249	.202	.624**	.217	1	.406**	.403**	.381*	.395*
	Sig. (2-tailed)	.111	.205	.001	.178		.009	.009	.014	.011
	N	42	41	24	40	51	40	41	41	41
Purpose of the loan must be in line with the constitution	Pearson Correlation	-.084	-.133	.858**	.221	.406**	1	.949**	.946**	.944**
	Sig. (2-tailed)	.570	.367	.000	.140	.009		.000	.000	.000
	N	48	48	24	46	40	65	48	48	48
Source of repayment	Pearson Correlation	-.127	-.148	.741**	.215	.403**	.949**	1	.974**	.986**
	Sig. (2-tailed)	.379	.306	.000	.142	.009	.000		.000	.000
	N	50	50	24	48	41	48	71	50	50
Character of borrower	Pearson Correlation	-.132	-.153	.907**	.221	.381*	.946**	.974**	1	.982**
	Sig. (2-tailed)	.361	.289	.000	.130	.014	.000	.000		.000
	N	50	50	24	48	41	48	50	61	50
Track record	Pearson Correlation	-.128	-.149	.696**	.187	.395*	.944**	.986**	.982**	1
	Sig. (2-tailed)	.369	.297	.000	.198	.011	.000	.000	.000	
	N	51	51	24	49	41	48	50	50	70

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Source: Fieldwork, 2016

A significant positive correlation was found to have existed between the following variables: (1) membership to the stokvel and membership fees must be up to date and (2) membership to the stokvel and waiting period of a member since joining as per the constitution. The findings resonate with literature (Mashigo and Schoeman, 2010) which noted that members of the stokvel are expected keep up to date with the payment of membership fees whilst new members of the stokvel are expected to observe the waiting period before being eligible to borrow from the stokvel. However, the purpose of the loan, source of repayment, the character and track record of the borrowers were observed to be negatively correlated with one's membership to the stokvel. The collateral provided by the borrower was found to be positively and significantly correlated with the purpose of the loan, source of repayment, amount of the loan, the character and track record of the borrower. As expected, the amount of the loan was found to be positively but significantly correlated with the purpose of the loan, source of repayment, character and repayment track record of the borrowers. This is in line with the formal bank assessment criteria. Other significant positive correlations were observed between (1) repayment track record and character of the borrower, (2) source of repayment and the character of the borrower, (3) repayment track record and source of the repayment. The results are in sync with theoretical predictions.

5. Conclusion and Recommendations

In Gauteng province, poor and unemployed households often use loans to cope with health shocks, pay for children school fees, pay for insurance (burial societies and funeral parlour) and put food on the table for families. They contribute their savings monthly. The objective of this paper was to determine the characteristics of credit instruments issued by stokvels to members. The paper has shown that credit is available at low interest to members of stokvels. Stokvels issue short-term loans from 3 to 6 months. Interest rates are high ranging from 25% to 35% and are charged monthly. Loan sizes are small with approximately two-thirds of the respondents receiving loans above R500 while the remaining third received less than R500. The study concludes that households look for alternatives in order to satisfy their financial needs which the formal financial system fails to fulfil. What emerges from this study is that, households prefer financial independence irrespective of the level of income. The poor households of South Africa who do not have access to credit and other financial services, fill this gap by forming stokvels whose prime purpose is to mobilise savings for the benefit of those who are financially excluded.

It is also evident from the results of this study that members of the poor South African society seek convenient and low-cost financial services. Thus, this paper recommends a review of bank product portfolios to include financial services tailor-made for poor households. This will help eliminate financial exclusion to improve bank profitability through appropriately packaged products. The study also urges South African authorities to implement policies that strengthen the participation of the poor in economic activities through promoting stokvels and other pro-poor savings and investment vehicles. One of the limitations of the current study is that it collected data only from the Gauteng province due to financial and time constraints, therefore the results cannot be generalised for the whole country. Subject to time and financial resources availability, future studies should investigate the credit characteristics of stokvels in all provinces of South Africa such that the results can be more useful for national policy formulation. Further research should explore how the government can capacitate and strengthen the stokvels to enable them to play a meaningful role in reducing unemployment, inequality and poverty in South Africa.

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The Nexus between Narcissist Followers and Leaders-Antecedent for Toxic Leadership

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Abstract: Increasingly, it is recognized that organizations have toxic leaders, who harm organizational success. While they harm organizational success, it can be argued that followers who collude are also contributors to such harm. Literature increasingly points to the interrelationship between leaders and organizations and its impact on organizational success. Notably absent is the systematic examination of the toxic relationship between leaders and followers as colluders and its impact on organizational success. The purpose of the paper is to examine the extent to which followers as colluders reinforce toxic leadership through the relational aspects. The focus is on active, destructive and unethical leaders within the negative leadership continuum, since it is difficult to claim that behaviours representing passiveness and incompetence are equally negative. Through a relational approach to leadership study, the situated commonality between leaders and followers is explored to show that manifestations of narcissism in both leaders and followers who collude in perpetuating toxic leadership can cause organizations to drift into failure. The paper does not consider leadership in any organizational or situational context. The study's methodology contributes to the objective of the research. The use of a qualitative research method was useful in arguing the exhibitionism of narcissism not only among leaders, but also followers. This method aligns with the purpose of the study. There is a paucity of literature on how the relational aspects of the leader-follower dynamic influence the toxic leadership/ followership reality. The relevancy of the study not only contributes to the literature on toxic leadership, but more specifically showing how narcissist followers as colluders influence narcissist leaders in a toxic leadership relationship. By examining the toxic leader/ follower relationship, a richer understanding of toxic followers can possibly emerge. This is important, since leaders do not produce results alone, together with the followers they contribute to the well-being of the organization. A range of practitioner research articles and published empirical research articles were reviewed to highlight narcissism among toxic leaders and elaborate on the destructive role of followers who reinforce toxic leadership through support. The analysis shows that while leaders and followers as colluders can cause harm to organizational outcomes, the extent of the harm can be largely influenced by the nature of the narcissist traits commonly endorsed by both. The paper highlights an overall framework that may help to identify the major considerations needed to mitigate the harmful effects of the narcissist leader/ follower relationship on positive organisational outcomes. Further, the paper suggests examining the relational aspects of leaders and followers as colluders, especially by looking at the impact of various narcissist traits that potentially strengthen the toxic relationship between the leader and follower. Finally, it is recommended that the proposed guidelines be tested in an empirical paper to measure their effectiveness.

Keywords: *Nexus, leadership, leaders, followers*

1. Introduction

Considerable research has been conducted on the construct of narcissism. The vast majority of research in social/personality psychology uses various forms of personality to assess the narcissist construct. Various accounts of narcissism draw attention to entitlement, arrogance, exhibitionism and self-absorption (Ackerman et al., 2010). However, while everyone needs to be a narcissist to some extent to satisfy their needs during normal development, destructive narcissism based on grandiosity, self-deception and reactiveness invariably produces negative outcomes (Reed, 2004). This is supported by Kernberg (1998) and Rosenthal (2005) who both argued that destructive narcissists exhibit abnormal substructures, self-esteem, exploitiveness and instability. From a leadership perspective, narcissism can become destructive if it manifests through over ambition and superiority at the expense of organizational success. Traditionally, research has highlighted the destructive effect of bad leadership on organizational performance (Kelley, 1992; Kusy & Holloway, 2009; Lipman-Blumen, 2005; Padilla, Hogan & Kaiser, 2007). Additionally, escalation in cases of dark leadership associated with narcissism has drawn the attention of researchers as such leadership has the potential to generate a myriad of dysfunctional ties within the organization (Goldman, 2006). However, a fundamental turning point is when both narcissist leaders and followers collude to the

detriment of the organization. If leaders with high levels of entitlement and exploitiveness display a lack of concern for those being led (Brown, Budzek and Tamorski, 2009) and followers with higher levels of entitlement and exploitiveness engage.

In a higher frequency of negative behavioral interactions with such leaders (Ackerman et al., 2010), then it is important to focus on the influence of such a toxic relationship on organizational performance. This paper examines the toxic leader-follower relationship, by focusing on the negative outcomes associated with such a relationship, more especially if it is reinforced by mutual dark traits. Generally, leaders are seen as drivers of influence, motivation and persuasion, while followers are dependent on these drivers provided by leaders to achieve organizational goals. Such leaders can be pathological or non- pathological leaders, the former being abnormal, deep-end dysfunctional narcissism and the latter being considered normal and related to organizational success (Furnham, 2014). It is argued that there is the potential that a negative leader who possess detrimental behaviors associated with narcissism, can be supported by followers who share similar dark personality traits, that cumulatively inject toxicity into organizations. This can contend from the point that followership is based on an inter-relationship between the leader, follower and the circumstances.

The leader and follower influence each other's behavior, while both play an integral role in achieving organizational outcomes. It could therefore be asserted that while bad leaders negatively influence organizational outcomes, bad followers are responsible for contributing to the negative organizational outcomes through their involvement in a toxic relationship. It is therefore critical to examine the factors driving such a relationship, and the impact thereof. The paucity of research on negative leadership and its influence on followership reinforcing negative leadership demonstrates the need for research on both constructs. As contended by Goldman (2006), narcissist leaders can be the driving engine producing high levels of performance, but it is the degree of narcissism that moves closer to dark leadership that is destructive in its intentionality. This can be accentuated by dark leadership being systematically supported by followers who share the same narcissist traits that cumulatively violates the legitimate interest of the organisation by undermining the organisation's goals, tasks, resources, and effectiveness (Einarsen, Aasland, & Skogstad, 2007). The outcome of the paper is important to help organizations to circumvent the destructive nature of not only toxic leaders, but also toxic followers.

2. Methodology

The paper adopted an exploratory research design approach that analysed existing research on leadership and narcissism. The paper qualitatively examined the multiplicity of dimensions influencing the toxic leader-follower relationship and the effects of such a relationship on organizational performance.

3. Narcissistic Leaders and Followers

Rosenthal and Pittinsky (2006) described narcissism as a personality trait illustrating self-absorption, selfishness, entitlement, grandiosity, arrogance and low self-esteem. These personality traits are prevalent among many leaders, who are generally motivated by self-interest, rather than organizational needs. Narcissism becomes a destructive trait when it is complemented with a selfish, personal agenda that leads to destructive organizational outcomes (Maccoby 2000). Narcissism is closely linked to instability, entitlement, grandiosity, arrogance and dominance (Rosenthal & Pittinsky. 2006). Several authors (Yukl, 2013; Craig & Kaiser, 2012; Kusy & Halloway, 2009; Rosenthal & Pittinsky. 2006) associate narcissism with destructive leadership. Padilla et al. (2007) assert that exploitative relationships, demand for unconditional obedience, abuse of power to serve personal needs and failure to test their judgement because of grandiosity results in narcissist leaders defying organizational goals. Research studies include narcissism as a dimension of toxic leadership (Kellerman, 2008; Reed, 2004; Schmidt, 2008). Various researchers have described narcissist leaders in similar ways.

A toxic leader is viewed as someone with a narcissistic mentality, underpinned by self-absorption, deceit, lack of concern for the well-being of subordinates and intimidation (Kellerman, 2008; Reed, 2004). Foster, Shiverdecker and Turner (2016) identified 7 sub-traits of narcissism: authority, self-sufficiency, superiority, vanity, exhibitionism, entitlement, exploitiveness. While there is an exhaustive set of narcissistic traits,

overall, narcissism can perpetuate the self-interests of followers who share similar exhibits as toxic leaders and have a destructive effect on organizational success (Lipman-Blumen, 2005). Through the use of intentional and destructive means, narcissist leaders willingly make decisions that generate personal benefit at the expense of the organization. Follower behavior can range on a continuum from doing absolutely nothing to being deeply involved. Such behaviours can be influenced by various factors, one of which can be the nature of the relationship between the leader and follower.

Followers as active participants with their own goals and motives can be influenced by a leader into participating in individual or group efforts toward organizational goals in a given situation (Wortman, 1982). Within this relationship, the extent to which the follower allows toxicity to be an influence is an important consideration. Allowing the prevalence of toxicity makes the follower a participant in a toxic relationship that favours the narcissist actions of the leader. This is corroborated by Kellerman's (2008) assertion that followers follow leaders because it is in their self-interest to do so. It can therefore be argued that the actions of bad followers are the result of their needs being fulfilled, further fueling destructive leadership. As active agents in toxic leadership, both followers and leaders exert influence in the toxic triangle which comprises the behavior of the leader; the susceptible and colluding follower and the environment (Padilla et al., 2007). It can therefore be contended that the common behaviors exhibited by destructive leaders such as harassment, degrading employees and physical aggression are generally absent in this toxic triangle, because of mutual collusion. Followership literature has been categorized by Uhl-Bien, Riggio, Lowe and Carsten (2014) as follows: relational view: followers engage with leaders in a mutual influence process, follower-centric: followers construct leaders and leadership, leader-centric: followers as recipients or moderators of leader influence in producing outcomes, constructionist followership.

Followers as co-creators with leaders of leadership, and role-based followership: leader as recipient or moderator of follower influence in producing outcomes. It can be posited that the relational view, which can be aligned with the leader-member exchange theory, is an important aspect of leadership studies, as effective followership influences effective leadership. In this regard, Kelley (1992) claimed that organizational success is directly attributable to effective followership, therefore implying that followers have the power to influence leadership. Effective followers are committed to an organizational purpose, honesty and credibility. Conversely, it can be argued that narcissist followers in a toxic leadership context do not exhibit these qualities, as they are dependent on the high exchange relationship to support the self-interest of themselves and their leaders. While Leela, Mehta and Jambhulkar (2013, p. 360) assert that destructive leaders "maintain negative interaction with followers to control, exploit their loyalty and suppress them for attainment of their selfish agendas leading to organisational decline", on the contrary it can be contended that leaders and followers who collude in a toxic relationship will generally experience positive interaction. In this instance, it can be argued that narcissist followers engage in deviant and susceptible behavior, not necessarily because of repeated abuse, but rather due to the toxic relationship they enjoy with the destructive leader.

Narcissist Followers as Colluders: Followers can be conformers or colluders, where each follower group has the potential to participate in bad followership and contribute to toxic leadership. Conformists, seen as the "yes-people," are dependent on the leader for direction, thinking, and vision. Being passive, they are less likely to challenge the leader (Kellerman, 2008). While both conformers and colluders are bad followers, colluders can be seen as more destructive due to their narcissist tendencies. Toxic leadership is an ideal opportunity for colluders to advance their personal agendas, since there is an alignment of narcissist exhibits between leader and follower. By sharing the world views of the leaders, colluders actively participate in destructive leadership to pursue their ambitions (Padilla, Hogan & Kaiser, 2007). Rather than disapprove of a destructive leader, colluders are considered as opportunists who use the leader/ follower relationship to obtain personal benefits.

Henderson (2015) categorized colluder types as status-driven, Machiavellian, and risk-intensive. The research study by Henderson (2015) revealed that status driven colluders would do anything to achieve their goals of power and status, by willingly engaging in destructive behaviours. Machiavellian followership is characterized by manipulation, distrust of others and withholding negative personal information. Henderson (2015) asserts that while Machiavellian colluders would lie and steal to achieve their goals, risk-intensive colluders use risky destructive means like breaking the rules to achieve their goals. In all three types of

colluders identified by Henderson (2015), colluders can be regarded as more destructive than conformers as they fuel the destructive values and motives of a toxic leader, which is aligned to narcissist manifestations. In this case, the readiness of followers as colluders corresponds with the relationship, task and supportive behavior of destructive leaders.

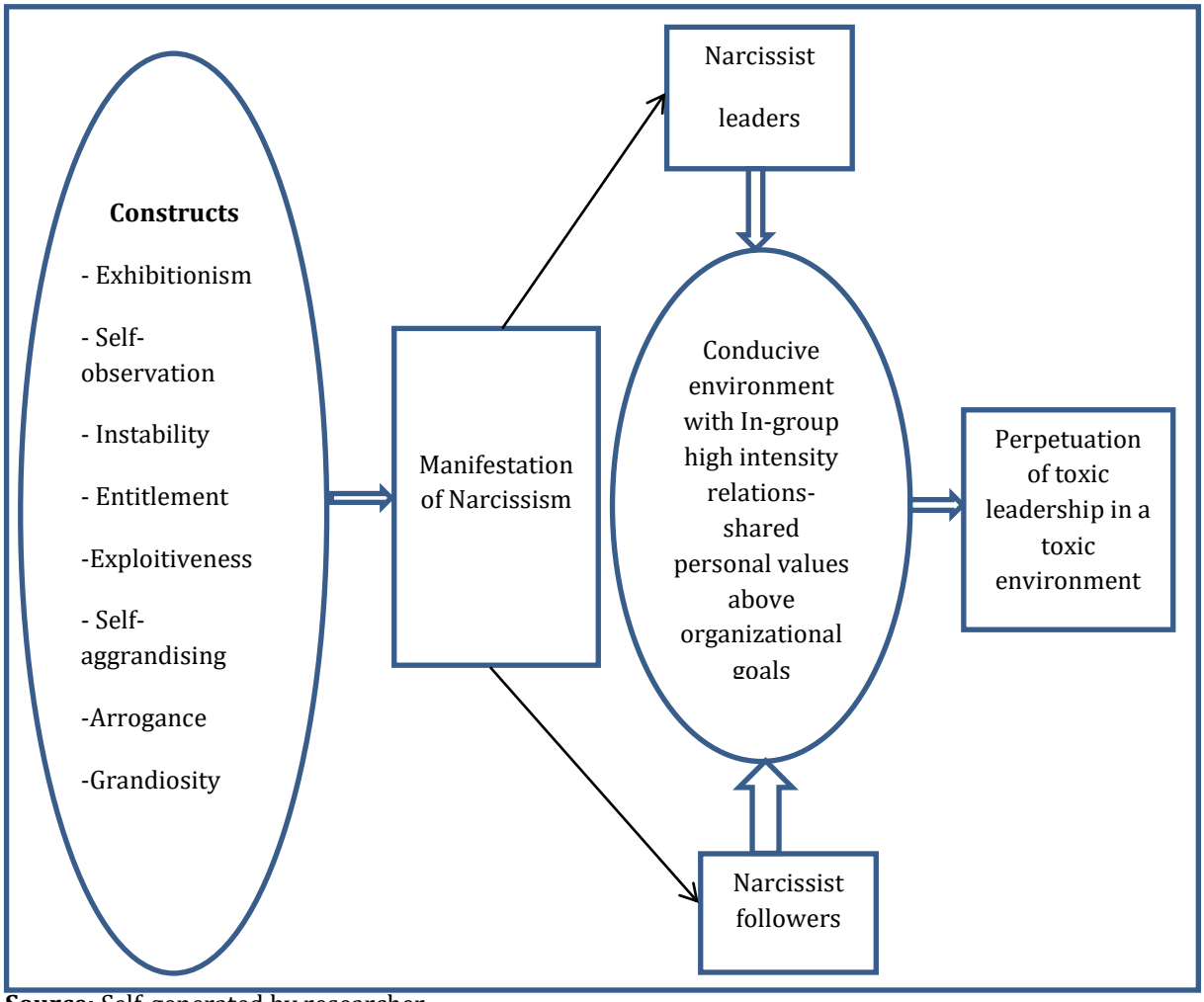
Narcissist Leaders and Colluders in a Toxic Leadership Relationship: Followers, both conformers and colluders, provide the consensus for the survival of leadership in any organization. While conformers attempt to mitigate the consequences of being disobedient, colluders seek personal gain by associating with destructive leaders. Padilla et al. (2007) contend that conformers are vulnerable because of negative self-perceptions, while colluders share the same destructive, narcissist goals. The confluence between colluders and leaders is grounded in a toxic relationship. A conducive environment, wherein the leader and followers share homogenous narcissist motives, perpetuates the survival of leaders in a toxic environment. Followers, who align themselves with destructive leaders to fulfil their self-interests, contribute to destructive leadership. Both parties show little or no concern for the organization, since they are propelled by entitlement and self-absorption. Herein, colluders who willingly assist in implementing the vision of destructive leaders, follow coercive policies so long as their worldviews and ambitions are advanced as evidenced by ambitious staff in Hitler's regime and Enron (Million, 1996). While opportunities for constructive leadership exist in every organization, leaders who display destructive traits associated with self-fulfilling agendas ultimately contribute to organisational destruction. Destructive leadership can generate ineffectiveness and unethical behaviour. In support, Lipman-Blumen, (2005) asserts that such destructive leaders are toxic when their dysfunctional personal characteristics cause harm to their constituents. Colluders, who share the same grandiose needs as their leader, may be seen as a hero, while others may view such leaders as toxic.

Craig and Kaiser, (2012) argued that destructive leadership which leans towards toxic leadership violated the interests of the organization. Kellerman (2004), asserted that negative leadership may fail to bring about change and unable to differentiate between different levels of ethics. Such destructive leadership is toxic, as it is counterproductive to organizational well-being. The study by Kusy and Holloway (2009) investigated the widespread prevalence of toxic leadership, highlighting the influential relationship between leader and follower in high exchange in-group interactions. This is illustrated by the Leader-Member Exchange theory, which categorizes followers into two categories: in- group and out-group followers. According to Yukl (2013), high-exchange, in-group followers tend to have more responsibilities, stronger commitment and tend to do extra things for the leader. The leader, in viewing the follower as dependable, establishes a high exchange relationship with the follower based on greater responsibility, authority, and occupational rewards being granted to the follower (Pelletier, 2012). In exchange, the follower becomes a colluder within the high exchange group, who commits to advancing the world view of the leader. The study by Pelletier, (2012) revealed that group members did not perceive toxicity in their leaders because of their favored status and possibly being blinded because of feelings of loyalty, trust and reciprocity.

The literature points to destructive leadership undermining the initiative, will and potential of followers, ultimately destroying morale (Bell, 2017; Cheang & Appelbaum, 2015; Edwards, Schedlitzki, Ward & Wood, 2015). However, when followers collude then this may not merge. The study by Reed (2004) noted that followers can identify toxic leaders, who have the potential to influence follower behavior. However, it can be argued that the converse is also possible, whereby the exhibition of dysfunctional personality characteristics by toxic leaders can influence followers to exhibit the same, thereby cumulatively contributing to organizational harm. Contrary to leaders helping followers to transcend their self-interest for the benefit of organizational success, toxic leaders and followers who collude may fuel each other's self-interests. Since destructive leadership includes behaviours directed towards the organization and behaviours directed towards subordinates, it can therefore be asserted that narcissist followers and leaders in a toxic relationship not only undermine organizational effectiveness and goals, but also harm the well-being of those who do not conformers or collude. Similarity, in- beliefs between colluders and leaders encourages colluders to commit to a common cause. While Lipman-Blumen (2005) highlighted psychological needs, unfulfilled existential needs, rapid change and contextual factors as reasons for following a toxic leader, the possibility of both leader and follower being narcissists requires further consideration.

In particular, narcissistic characteristics that reflect a drive to elevate the self, while harming organizational and other individual interests can be considered dark (Harms & Spain, 2014). Additionally, Jones and Figueredo (2011) argue that while well-meaning lies is a part of everyday life and good relationships, the dark side of personality emerges when callousness, dishonesty, and manipulation and lack of empathy all come together. For example, leaders like Dennis Koslowski, Hitler, Stalin and Charles Keating, were destructive even though they brought some value to their constituents (Hogan and Kaiser, 2007). The seven courages of followership (responsibility, moral action, speak to hierarchy, listen to followers, serve, participate in transformation, challenge) described by Chaleff (2009) can be perceived as traits of effective followers which are congruent with serving an organizational purpose. Figure 1 highlights the nature of the toxic relationship between leaders and colluders, underpinned by narcissistic manifestations.

Figure1: Progression toward Toxic Leadership



Source: Self-generated by researcher

Schmidt (2008, p.57) in describing toxic leaders as "narcissistic, self-promoters who engage in an unpredictable pattern of abusive and authoritarian supervision", captured five dimensions describing a toxic leader- narcissism, self- promotion, abusive supervision, unpredictability and authoritarian leadership. Narcissism, being one of the causes of toxic leadership, is detrimental to organizational culture. Rosenthal and Pittinsky (2006, p. 617) claim that negative leaders exhibit the narcissistic personality trait that encompasses "grandiosity, arrogance, self-absorption, entitlement, fragile self-esteem, and hostility". These drivers can impact followers, who through their dependence, invariably become followers of toxicity, especially in conducive environments. Lipman-Blumen (2005) described toxic leaders as intentionally harming others to

enhance the self. In connecting intentional harm to destructive behaviour and toxic leadership, Lipman-Blumen (2005 as cited in Heppel, 2011) identified the following dark traits of destructive leadership.

A tendency towards recklessness and a disregard for the costs of their actions to others as well as to themselves a form of cowardice, that leads them to shrink from the difficult choice. An enormous ego that blinds leaders to the shortcomings of their own character thus limiting their capacity for self-renewal an arrogance that prevents them from acknowledging their mistakes and results in the apportioning of blame upon others; an amorality that makes it virtually impossible for them to identify right from wrong A lack of integrity that marks the leader as cynical, corrupt, hypocritical or untrustworthy; An insatiable ambition that prompts leaders to put their own desire for power, glory and fortune above their followers' well-being. Additionally, Padilla et al. (2007) identified the following important elements of destructive leadership: there are bad and good results; based on selfish needs; the process involves manipulation and coercion; compromise of quality of life of constituents; and destructive organizational outcomes are the result of colluders, conformers and Conducive environments.

In drawing attention to the relationship between leaders and followers, Lipman-Blumen (2005) argues that the relationship between leaders and followers is of considerable importance, since toxic leadership be aided by followers who actively respond to aid destructive leadership because of common narcissist exhibits. While destructive leadership leans towards a generally selfish orientation, followers who collude with destructive leaders can be described as destructive followers. This is different from destructive leadership based on incompetence, as destructive leadership underpinned by narcissism is driven by self-serving goals. This is consistent with the argument of Leela, Mehta and Jambhulkar (2013), that self- absorbed followers believe that the strength of destructive leaders will generate tangible benefits for both if they help in actualizing the goals of the leader. While there is extant literature on the potential negative impact of narcissism as a toxic leadership dimension on followers (Cheang & Appelbaum, 2015; Brown, Budzek & Tamborski, 2009; Erickson et al., 2015; Schmidt, 2008; Foster, Shiverdecker & Turner, 2016, Bell, 2017)), there is limited literature on the correlation between potential negative impact of narcissist followers and leaders in a toxic leadership relationship. Further, there is limited research regarding the relationship between leaders and followers, using the different constructs of narcissism that reinforces organizational harm.

According to Yukl (2013), in high exchange relationships between leaders and followers, followers are involved in an in-group two-way relationship with the leader. The followers (colluders) interaction is based on high levels of respect, trust and obligation towards the leader. In researching the extent to which the relationship between followers and leaders influences the decision of followers to challenge toxic leaders, Pelletier (2012) noted that the follower had to critically analyse the behavior of the leader, highlighting that followers with favoured status had lesser intent to report the leader. Evidence of toxic leadership may be prevalent, but followers do not challenge such toxicity because of the high exchange relationship between the leader and follower. The study by Pelletier (2012) found that in-group followers were less likely to see the leader as toxic. Based on the high degree of support given to the leader and the lack of willingness to challenge a leader, it can be argued that in an in-group relationship demonstrating a willingness to support toxic leadership, followers can be described as perpetuators of such toxicity. Being close to leaders who share similar interests, provides the opportune breeding ground for bad followership and destructive leadership to flourish. This is supported by Reicher, Haslam and Smith (2012) who claim that active followership is not based on mere obedience or thoughtlessness, but rather identification with the leader.

This is supported by Kelley (1992) who asserts that followers are directly responsible for the organizational outcome in most cases. As such, courageous followers do not accept the actions of leaders that negatively impact them. By not embracing narcissist actions of leaders they therefore cannot be described as narcissist followers. This is corroborated by Padilla et al. (2007) who assert that bad followership allows bad leadership, describing such followers as colluders who use toxic leadership to promote themselves. Padilla et al. (2007) identified four environmental factors that reinforce destructive leadership: leaders are given more authority in unstable environments which require quick, centralized decision making e.g.: President George Bush's use of terrorist policies because of the fear of death); perceptions of threat or an external enemy increases the willingness to accept assertive leadership (IBM referred to as Big Brother by Apple's Steve Jobs); dark leaders thrive in cultures that prefer to avoid uncertainty, endorse collective loyalty and support

high- power distance (e.g.: Hitler's dictatorship based on Aryan superiority); and centralized governance with independent authority that lacks a system of checks and balances allows abusive power to flourish (e.g.: the abuse by Enron top management at the height of its success).

4. Contributors to the Toxic Narcissist Leader-Follower Relationship

In a positive leadership context, leaders can enhance organizational and follower performance by perpetuating an inspiring and intellectually stimulating vision to their followers and by establishing individualized relationships. In contrast, in a destructive leadership context, leaders can attract narcissist followers and establish individualized relationships which prevent organizations from achieving their goals. Generally, toxic leaders who are driven by power-oriented leadership are commanding, egoistic and authoritarian. However, it can be argued, that followers as colluders, who identify with and share the same personal goals as a toxic leader may support such leaders (Karakitapog˘lu-Aygu & Gumusluoglu, 2012). In this instance, subordinates who model the destructive behavior of leaders, also focus on individual interests, rather than organizational goals. These colluders enable and sustain toxic leaders, in an environment that generally tolerates them (Lipman-Blumen, 2005). Considering the complexities associated with toxic leadership, a range of factors can contribute to the toxic narcissist leader-follower relationship within any organization.

Firstly, followers may find that their goals cannot be accomplished through legitimate pathways. By supporting a toxic leader to advance his personal goals, followers are perceived favourably by their leaders. This high-intensity leader-follower exchange creates a conducive environment for followers to achieve their goals by playing politics (Erickson, Shaw, Murray & Branch, 2015). Playing politics may include reinforcing leader initiatives that show evidence of the leader achieving bottom-line results and supporting every source of information that instils perceptions of excellent performance. Such follower conduct thwarts potential exposure of otherwise bad leadership conduct, in the interest of maintaining a leader-follower exchange that advances the goals of both parties. Additionally, there could be a lack of will to circumvent bad leadership, because organization goals relating to performance is being achieved. This creates a fertile breeding environment for toxic leadership to thrive. The work environment like sales and science potentially supports narcissist qualities to thrive. Qualities like self-absorption and charisma augur well for narcissists in these work contexts. The convergence of the goals of the leader and followers sows the seeds for toxic relationships.

Rosenthal and Pittinsky (2006) support this in their claim that narcissist leaders and followers complement each other, where the leaders are always looking for admiration from followers who relate to power and prestige. Of particular interest is how dissatisfied staff contribute to the continuation of toxic relationships. In this instance, the study by Reed (2004) showed that while employees were dissatisfied with the toxic triangle, they were not inclined to leave their jobs because of their experiences, suggesting years of good leadership experiences and personal gratification with their positions as possible reasons for retention. This is a potential breeding ground for toxicity to flourish. Further, the lack of an ethical culture, underpinned by minimal or non-existent training in ethical conduct and reinforced by the absence of an organizational code of conduct can inculcate a culture of merely "doing things right". This promotes non-accountability by leaders and followers. This also contributes to non-conformers feeling powerless to take any action against toxic leaders and followers. Also, the toxic relationship is often allowed to fester because of weak mechanisms that do not support exposure. For example, the absence of a whistleblower policy may render it untenable to blow the whistle because of fear of retaliation by non-conformers. Another contributor to consider is limited communication channels that allow issues to be raised. In the absence of communication channels like feedback surveys and suggestion boxes, lack of awareness sows the seed for growth in the high-intensity leader-follower relationship.

Another systemic issue could be high turnover by non-conformers. This places constraints on exposing the toxic relationship, as new employees will generally not retaliate immediately or may be potential colluders as well. Also, through the use of their power, toxic leaders may prevent non- conformers from challenging them. This may result in such followers ignoring not only bad leaders, but also ignoring the bad leader-follower relationship. The relationship itself can become so powerfully entrenched, that non-conformers to the line

just to secure continued employment. Organizations can also become an incubator of toxic relationships because of an organizational culture based on high levels of internal competition; weak practices and policies; and toleration of blaming others (Mehta & Maheshwari, 2014). Kusy and Holloway (2009) contend that a toxic system allows toxic relationships to thrive. When colluders protect toxic leaders, then toxicity becomes part of the organizational culture. An organizational culture that avoids negative publicity 'invariably restraints any attempts to expose destructive leadership, underpinned by bad, colluding followership.

Effects of a Toxic Leader-Follower Relationship: There is a paucity of literature on the effects of the toxic relationship on individuals and the organization. A toxic culture invariably permeates an organization; once toxic relationships are thriving. Such a climate may possibly achieve short-term organizational goals. However, goals based on self-interest do not serve organizational goals in the long term. Research has shown significant relationships between destructive, toxic leadership and counterproductive work (Mullins, 2015); lower employee psychological well-being (Bell, 2017); work-family conflict (Erickson et al., 2015); and an unpleasant working environment (Jones & Figueredo, 2013). Generally, employees who do not want to be conformers or colluders, or those who feel compelled to conform, may experience high levels of job dissatisfaction, negative values and hopelessness. This can lead to lower levels of productivity, a tarnished view of the organization and resignations. While those in the toxic relationship may be content with the existing environment, those outside the relationship may not be developed to their full competency levels because of their disenchantment with toxic leaders who run organisations to the ground. They may be forced to remain in the organization because of no alternate employment opportunities. Working under such conditions mitigates cohesive teamwork that provides the springboard for individual and organizational stability.

In essence, if there are no active processes and procedures in place to eradicate toxic leader-follower relationships in an organization, such toxicity can spread like cancer, to the detriment of organizational longevity. This allows toxic leaders, because of their vulnerability and fear of threats to their power and control, to focus all their energy on acquiring power and authority. Generally, in a toxic environment, output based on merit is sacrificed, since more attention is placed on self-absorbed goals of the leader and followers. This practice can disillusion top performers who are outside the toxic relationship, possibly resulting in higher employee turnover (Mehta & Maheshwari, 2014). On the other hand, because of job security, employees who are forced to remain may display lower levels of commitment, loyalty and job satisfaction. In addition, external awareness of toxicity within the organization may result in perspective, ethical employees being discouraged to seek employment in the organization.

5. Conclusion

Research in recent years has shown significant interest in toxic leadership. Generally, literature argues that destructive leadership, underpinned by personal motives overriding organizational goals, ultimately leads to the decline of the organization. The paper highlighted that susceptible, colluding followers of destructive leadership create a conducive, environment for continued toxic leadership. The paper established that followers and leaders both influence organizational outcomes. In doing so, toxic leadership provides the ideal breeding ground for toxic followers to advance their own agendas. Therefore, it is recommended that toxic followers, as colluders, should also be held responsible for poor organizational performance. This will help to counter the effect of a toxic relationship. Since current literature does not answer the question relating to the extent to which followers, as narcissists, may be one of the influential antecedents of narcissistic leadership, thereby perpetuating toxic leadership, there is a need for more research relating to narcissism in leaders and how followers who exhibit similar traits mutually perpetuate narcissist, toxic behaviour.

This will make a significant contribution to broadening research into the leader-follower relationship and the impact of this relationship on toxic leadership. More robust research on the toxic relationship is pivot for organizations affected by dark leadership. Further, with new theoretical models on the antecedents of this relationship, and perspectives from different paradigms, consideration can be given to curbing narcissist following and ultimate narcissist leadership. Any attempt to restrain the destructive and harmful effects of toxic leadership in any organization requires an interrogation of the leader-follower relationship. This can be underpinned by organizational practices and policies that prevent the negative consequences of not only

toxic leaders, but also toxic leader-follower relationships that ultimately harm organizational culture. Finally, when destructive leaders generate negative outcomes, then bad followers must share the responsibility for producing negative outcomes as leaders alone do not produce organizational results.

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South Africa's Trade Performance under Alternative Exchange Rate Regimes

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Abstract: This study examined the effect exchange rates have on import and export volumes under alternative exchange rate policies adopted in South Africa over the period 1960 to 2017. Using quarterly time series data for the stated period, a log-linear error correction model is employed to estimate the country's export and import elasticities, taking into account Gross Domestic Product (GDP), the real price of exports, the real price of imports and real exchange rates. Using the freely floating exchange rate regime as the base period, the study concluded that both export and import volumes are lower under a system of fixed exchange rates. Export and import volumes were also found to be lower under the dual exchange rate regime, relative to the freely floating exchange rate regime. In accordance with export-led growth strategies, exports were found to be higher and imports lower under a managed floating exchange rate regime. It is therefore recommended that South Africa revert to a more managed exchange rate regime, until the South African economy is developed to accommodate a freely floating exchange rate regime.

Keywords and Phrases: *Error-correction model, exchange rate regime, export-supply, import-demand*.

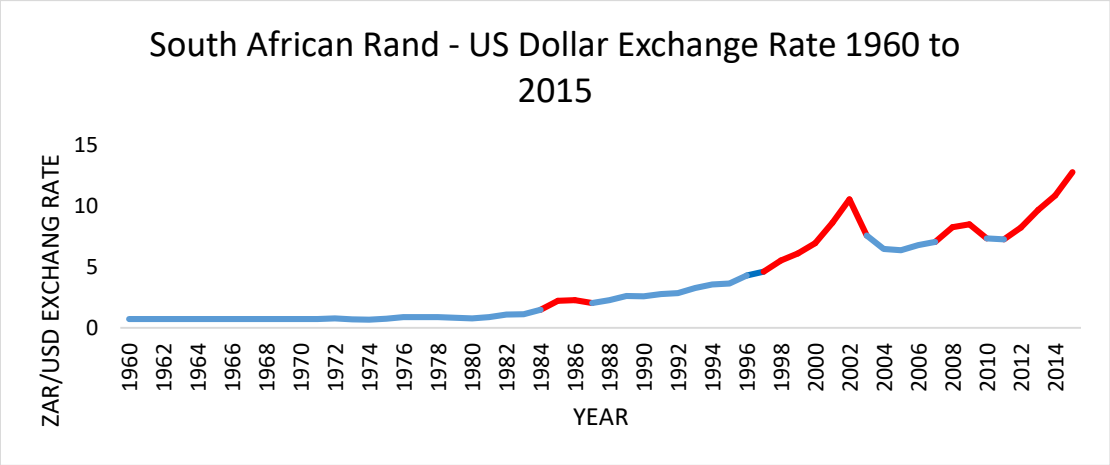
1. Introduction

There is a general consensus that trade occupies a crucial role in an economy's development and the exchange rate policy a country adopts has a substantial impact in determining such country's economic performance, growth and international competitiveness (Walters and De Beer, 1999; Bah and Amusa, 2003; Tarawalie, 2010). Over the last few decades, two distinct exchange rate regimes, namely fixed and floating exchange rate regimes have been presented as essential policies in determining the pace of economic development. Proponents of fixed exchange rate policies, among them Gylfason (2000), Moreno (2001), De Grauwe and Schnabl (2004) have argued that such policies provide currency and economic stability, protect small nations from external shocks, promotes international trade and investment stability and provides balance of payments stability among other advantages and to the contrary, advocates of a floating exchange rate regime, among them Friedman (1953), Bailliu et al. (2003) and Fisher (2001) have argued that the adoption of a floating exchange rate regime is desirable on the theoretical grounds of acting as an external shock absorber in times of exchange rate volatility, thereby correcting the balance of payments disequilibria and promoting economic growth. They further explain that in current times, fixing the exchange rate is unsustainable, often leading to severe recessions during times of crisis. In-between these two extremes are the dual and the managed exchange rate regimes. Whilst most developed countries departed from the fixed exchange rate in the advent of globalisation and free trade in the 1990s, many developing countries lack the financial structures to expose their economies to the volatility and uncertainty associated with a freely floating exchange rate (Moreno, 2001).

Over the past few years, the South African rand has experienced upward and downward trends, significantly affecting the country's current account (Moreno, 2001). The dramatic exchange rate fluctuations, coupled with political uncertainty, has also resulted in price instability, which has led to inflation, as well as dampened South Africa's global competitiveness and investor confidence (Fin 24,2017). Therefore, numbers of developing countries adopted a managed floating exchange rate system, thereby allowing authorities to control the value of the currency, mainly to avoid disruptions of their foreign trade and mitigate exchange rate volatility, which the economy may not be able to handle. Although the importance of exchange rate policy for economic growth and trade is a popular topic, there is still much debate amongst policymakers as to which exchange rate policy a country should adopt in a bid to confront the trade and economic development concerns of any country. Over the past decades, South Africa has adopted numerous exchange rate systems, with the objective of having a competitive exchange rate that encourages more exports and less imports, increase foreign direct investments, create more job opportunities, improve the balance of payments position and ultimately maintain stable economic growth. These exchange rate policies adopted were the fixed exchange rate (1945 to 1985), the dual exchange rate (1986 to 1995), the managed exchange rate policy

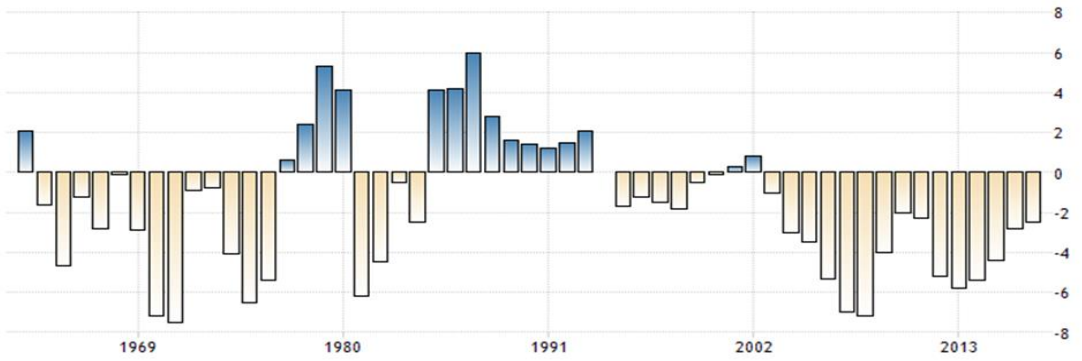
(1996 to 2000) and the freely floating exchange rate regime (2000 to 2015) (Van der Merwe and Mollentze, 2010; Mtonga, 2011). The current policy has however left the South African Rand vulnerable to global shocks and volatility in the foreign exchange values of major currencies, especially the dollar (see Figure 1).

Figure 1: South African Exchange Rate Trends (ZAR/$) 1960 to 2015



Source: South African Reserve Bank (2015)

Figure 2: South Africa's Current Account to GDP



Source: tradingeconomics.com | South African Reserve bank

This has also resulted in South Africa's business confidence reaching a 32-year low, losing investment grading from two of the world's largest investment rating agencies: Standard and Poor's, and Fitch (Fin 24, 2017). Although the relationship between exchange rates, economic development and exchange rate policies remain current topics, not much research has investigated the impact alternative exchange rates policies have on South African trade. Research in South Africa has focused on the effect of real exchange rates volatility. The studies that have touched on exchange rate regimes are for outdated periods and provide inconclusive results. For example, Eun, Kilic and Lai (2012) focused on the dual exchange rate system in South Africa. Their study is limited by its study period and does not make a substantial contribution to the topic of economic or trade performance under the alternative exchange rate regimes in South Africa as only the dual exchange rate regime system is tested and discussed.

Mtonga (2011) examined whether South Africa's adoption of an inflation-targeting framework in the year 2000 was responsible for the rand's exchange rate fluctuations. The result of this study was that the change of

monetary policy in the year 2000 did influence the pricing of the rand. However, this study did not take into account other exchange rate regimes. The change of exchange rate policy to a freely floating exchange rate regime in the year 2000 may have influenced the pricing of the rand and not only the change of monetary policy. This study therefore utilised updated time series data and advanced time series modelling techniques to inform this article. The rest of the article is organised as follows, the next section reviews the evolution of South Africa's exchange rate policies and analysis the exchange rate and trade trends over the study period (1960 to 2017), followed by a discussion of the dataset and methodology, the empirical findings and finally conclusion and recommendations.

2. Evolution of South Africa's Exchange Rate Policies (1945 – 2017)

South Africa's exchange rate policies have developed from fixed to managed floating and to freely floating exchange rate regimes over the years, and can be split into five periods.

The Bretton Woods System of Fixed Exchange Rates (1945 -1960): During 1945, South Africa, along with other founding members, became a signatory of the Bretton Woods monetary agreement. In the absence of an active and developed foreign exchange market, the South African pound was linked to the pound sterling (De Kock, 1954). This period was characterised by a deteriorating balance of payments and the need to promote foreign investments (Van der Merwe and Mollentze, 2010).

The disintegration of the Bretton Woods Agreement (1961 to 1985): During 1961, the rand replaced the pound as South Africa's official currency, but remained linked to the pound sterling. This period was also characterised by a significant deterioration in the balance of payments. South African authorities devalued the rand by 17.9% in September 1975 in order to improve the balance of payments position (The Department of Justice and Constitutional Development, 2002). By the late 1970s, the changing economic conditions and the deterioration of the balance of payments status led to the government appointing a commission of inquiry, known as the De Kock Commission, established in 1977 (Van der Merwe, 1996). The commission concluded that the South African exchange rate system at that time was flawed and not conducive to economic growth and achieving a stable balance of payments as well as a stable economic environment (De Kock Commission, 1979). The commission proposed that South Africa develops a unitary exchange rate system (Van der Merwe, 1996).

The goal of this system was to develop a competitive foreign exchange market in South Africa where the rand could find its own level subject to limited Reserve Bank intervention (De Kock Commission, 1979). Taking into account the commission's recommendations, steps were taken to develop the South African foreign exchange market that was free from government intervention (Van der Merwe, 1996). In the pursuit of a more flexible exchange rate system, the dual currency (the commercial and the financial) was introduced to the foreign exchange market in 1979 (De Kock Commission, 1979), where the commercial Rand rate was fixed, whilst the financial Rand rate was allowed to float freely. However, the dual currency was abolished in 1983. Following the abolishment of the dual currency, the rand remained stable until the later months of 1983, where the decline of the gold price, the debt crisis and increasing political instability led to a significant depreciation of the rand (Aron et al., 1997; Bah and Amusa, 2003). South Africa also experienced a significant decline in GDP during this period.

Dual Exchange Rate Regime (1985 to 1995): At the end of 1984, South Africa's political climate hindered the development of the foreign exchange market (see Figure 1). Due to political instability, sanctions and possibly the South African debt crisis, South Africa was forced to revert to direct control measures to manage the exchange rate and regulate the influence of capital flows on monetary reserves (Van der Merwe and Mollentze, 2010). Together with the imposition of the temporary halt on foreign loan repayments and exchange controls on capital transfers by non-residents in the form of the financial Rand, the dual exchange rate system was re-introduced and remained until the unification of the rand in 1995 (Aron et al., 1997).

Unitary Exchange Rate- Managed Floating Exchange Rate Regime (1995 to 2000): With the aim of achieving the long-term goal of complete financial liberalisation and reintegrating South Africa's economy into the global economy, the financial Rand was abolished in March 1995 and a managed exchange rate

system, where market forces determined the spot exchange rate, was adopted. While the rand was no longer linked to the US dollar or any other currency, the Reserve Bank still participated in the market by buying and selling US dollars which had an influence on the exchange rate (Van der Merwe and Mollentze, 2010; Mtonga, 2011). The rand remained stable for a period of 11 months following the adoption of a managed floating exchange rate system. This period was characterised by a peaceful political environment together with increased foreign direct investment, warranting improved economic performance and increased economic growth rates (Mtonga, 2011).

Unitary Exchange Rate- Free Floating Rand, With Inflation Targeting Framework of Monetary Policy (2000 to current): During the year 2000, the South African Reserve Bank moved from an exchange rate targeting policy framework to an inflation rate targeting policy framework. This was followed by a gradual change to a freely floating exchange rate system, in line with achieving the fundamentals of an inflation targeting policy (Masson et al., 1997). Although South Africa has moved towards an exchange rate system where the currency is determined by market forces prior to the year 2000, Mtonga (2011) found that the move towards an inflation targeting framework in the year 2000 demarcates the previous year's attempts. The current Reserve Bank policy is to stay out of the foreign exchange market and allow the currency to be determined by market forces (SARB, 2012). Since the inflation targeting framework, South Africa enjoyed sustained economic growth rates registering growth of 5.6% per annum in 2006 (The World Bank, 2017). However, Economic growth started decelerating in the year 2007, decreasing to 3.2% in 2008. GDP growth further declined to -1.5% in 2009. This negative economic growth can be attributed to the 2008/2009 global financial crisis (Mnyande, 2010). The negative economic growth rate experienced in 2009 was the lowest level of economic growth recorded since independence (Mnyande, 2010). Economic growth recovered quickly in 2010, recording a growth rate of 3% per annum (The World Bank, 2017). Economic growth has remained sluggish since the year 2011, declining annually from 2.4% in 2013 to 1.2% in 2015 and 0.2% in 2016 (The World Bank, 2017). There are a few possible causes for the sluggish economic growth. One is the mining strikes and labour unrest experienced over the period 2013 to 2015, and the severe drought suffered by the agricultural sector (Hausmann, 2014). Another is the uncertain South African political climate, and dampened investor confidence (Hausmann, 2014).

3. Data and Methodology

The traditional import demand and export supply functions derived from Khan (1974), and expanded by Warner and Kreinin (1983), Kabir (1988), as well as Aziz (2013) are utilised in this study. This study employed time series data for the period 1960 to 2017. The period 1960 to 2017 has been chosen because the rand became the official currency from the pound in 1961. This period was also characterised by the fixed exchange rate system and a managed floating exchange rate system. The period 2000 to 2017 was characterised by a move towards a freely floating exchange rate systems. Taking into account the alternative exchange rate regimes presented in the previous section, South Africa's import demand and export supply functions are specified as follows:

$$\log XV = f\ (\log GDP\ , \log RPX, \log RER, \log \mathrm{MV}, DX_1\ , DX_2,\ DX_3\ , DX_4,\ Q_1, Q_2,\ Q_3, Q_4) \quad (1)$$

$$logMV = f\ (\log GDP\ , \log RPM\ , \log RER, \log \mathrm{XV}\quad DX_1, DX_2, DX_3, DX_4, Q_1, Q_2, Q_3, Q_4) \quad (2)$$

where XV is export volume, obtained by dividing the value of exports with its price index; MV is export volume, also obtained by dividing the value of imports with its price index; GDP is gross domestic product, and captures the effect of income on the dependent variables; RPX is the relative price of exports, obtained by dividing the export price index with the domestic price (inflation); RPM is the relative price of imports, obtained by dividing the import price index with the domestic consumer price; RER is the real exchange rate. D1, D2, D3 and D4 (base) are dummy variables that capture the effect of various exchange rate policy regimes on imports and exports, while Q1, Q2, Q3 and Q4 are quarterly dummy variables. The data used in this study is quarterly time series data, obtained from the South African Reserve Bank for the period 1960 to 2017. Since the data is quarterly in nature, quarterly dummy variables were adopted to capture the seasonal effects, with the fourth quarter as the base. Table 1 summarises the variables used in this study and the expected outcome.

Table 1: Definition of Variables

Variables	Definition of Variables	Expected outcome
XV	Export Volume = Value of exports/ export price Index	Dependent variable
MV	Imports Volume = Value of imports/ import price index	Dependent variable
GDP	Gross domestic product (Constant US $)	Positive effect on the demand for imports and supply of exports. See Warner and Kreinin (1983), Aydin et al. (2004), Aziz (2013), Nyatanga (2017), among others.
RPX	Relative price of exports = Export price index/ domestic prices	Positive effect on export supply (Khan, 1974; Warner and Kreinin, 1983; Aziz, 2013; Nyatanga, 2017).
RPM	Relative price of imports = Import price index/ foreign prices	Positive effect on imports (Khan, 1974; Warner and Kreinin, 1983; Aziz, 2013; Nyatanga, 2017).
RER	Real exchange rate	Exports are expected to respond negatively and imports positively to exchange rate depreciation. (Aziz, 2013; Younus and Chowdury, 2006; Bahmani-Oskooee and Kantipong, 2001; Nyatanga 2017),
DX_1 (1960-1985)	Fixed exchange rate dummy variable	Positive effect in developing countries (Morena,2001; Huang and Malhotra ,2004; and Zaraga, 2014).
DX_2 (1985-1995)	Dual exchange rate dummy variable	Positive effect in developing countries (Yeyati and Strurzenegger, 2002; Calvo and Reinhart, 2002).
DX_3 (1995-2000)	Unitary exchange rate dummy variable (Managed floating exchange rate)	Positive effect in developing countries (Huang and Malhotra, 2004; Adam and Cobham,2007; Rose, 2003).
DX_4 (2000-2017)	Unitary exchange rate dummy variable (Free floating rand)	Native effect (Nilsson and Nilsson's, 2000; Zaraga, 2014; and Adam and Cobham, 2007),
Q1	Quarter one	Seasonal effects
Q2	Quarter two	Seasonal effects
Q3	Quarter three	Seasonal effects
Q4	Quarter four	Seasonal effects

Source: Compiled by the authors

Since the data used in this study is time series by nature, it is essential to test for the stationarity properties of the variables used in order to ascertain whether the relationship between economic variables is stationary in levels or after first differencing, given that non-stationarity may yield a spurious relationship. Consequently, the Dickey-Fuller unit-root test was employed to determine the stationary properties of the data. From Table 2, import volume, gross domestic product, the real price of exports, the real price of imports, and real exchange rates were found to be non-stationary at all levels as the null hypothesis of a unit root cannot be rejected. After first differencing, they all become stationary [I (1)].

Table 2: Augmented Dickey-Fuller Unit-Root and Cointegration Test Results

Series		*Level*	*First Differenced*	*Conclusion*
MV	Tμ	0,62	-15,33***	I(I)
	Tτ	-1,34		
XV	Tμ	-0,608	-19,35***	I(I)
	Tτ	-4,68***		
GDP	Tμ	11,122	-10,453***	I(I)
	Tτ	4,23		
RPX	Tμ	-1,471	-16,402***	I(I)
	Tτ	-1,704		
RPM	Tμ	-1,745	-14,09***	I(I)
	Tτ	-2,004		
RER	Tμ	-1,782	-12.552***	I(I)
	Tτ	-2,846**		
		Engel and Granger cointergration test on residuals		
Residuals (XV)	Tμ	-4,047		I (0)
Residuals (MV)	Tμ	-4,499		I (0)

Notes: (i) T_{μ} – without trend, T_{τ}- with trend (ii) *** Statistical significance at 1 percent level, ** at 5 per cent level and * at 10 percent level.

Table 3: Johansen's Multivariate Cointegration Test Results

Null hypothesis	Alternative Hypothesis	Trace test	
		Statistic	95% critical value
Export function: lnXV, lnGDP, RPX, RER			
r = 0	r = 0	72.4649	54.64
r ≤ 1	r = 1	25.8305*	34.55
r ≤ 2	r = 2	10.3779	18.17
r ≤ 3	r = 3	0.0561	3.74
Import function: lnMV, lnGDP, RPM, RER			
r = 0	r = 0	60.7949	54.64
r ≤ 1	r = 1	27.6525*	34.55
r ≤ 2	r = 2	6.2351	18.17
r ≤ 3	r = 3	0.4995	3.74

Note: *reject null hypothesis at 5% level of significance, *r* implies the number of Cointegrating Vectors

The study further applies the Engel-Granger (1987) two-step procedure for cointegration. It was concluded that the error term for both export and import functions had no unit root, I (0). The Johansen (1988) cointegration technique, which is based on maximum likelihood estimation to determine cointegration, was also applied. From Table 3, both the functions' "trace statistic" rejected the null hypothesis of no cointegration vectors (r = 0), but the null hypothesis of one Cointegrating vector (r ≤ 1) could not be rejected at 5 percent level of significance. Based on these test results, this study adopts the error correction model. The error correction model has also been used in similar studies study such as Kumar (2012), Aziz (2013), Nyatanga

(2017) amongst others. The export supply log-linear error correction model is expressed in equation 3 and the import demand log-linear error correction model is expressed in equation 4:

$$\Delta logXV_t = \alpha^S + \beta_1^S \Delta logGDP_t + \beta_2^S \Delta logRPX_t + \beta_3^S \Delta logRER_t + \beta_4^S \Delta logMV_t + \sum_{j=1}^{5} \delta_j^S \Delta D_{j,t} + \sum_{j=1}^{4} \vartheta_j^S \Delta Q_{j,t} + \gamma\left[\alpha_0^L + \alpha_1^L (t-1) + \beta_1^L \Delta logGDP_{t-1} + \beta_2^L \Delta logRPX_{t-1} + \beta_3^L \Delta logRER_{t-1} + \beta_4^L \Delta logMV_{t-1} + \sum_{j=1}^{5} \delta_j^L \Delta D_{j,t-1} + \sum_{j=1}^{4} \vartheta_j^L \Delta Q_{j,t} - logXV_{t-1}\right] + \varepsilon_t^S \quad .. (3)$$

$$\Delta logMV_t = \vartheta^S + \varphi \Delta logGDP_t + \varphi_2^S \Delta logRPM_t + \varphi_3^S \Delta logRER_t + \varphi_4^S \Delta logXV_t + \sum_{j=1}^{4} \theta_j^S \Delta Q_{j,t} + \tau\left[\vartheta_0^L + \vartheta_1^L (t-1) + \varphi_1^L \Delta logGDP_{t-1} + \varphi_2^L \Delta logRPX_{t-1} + \Delta logRER_{t-1} + \varphi_4^L \Delta logXV_{t-1} + \sum_{j=1}^{5} \rho_j^L \Delta D_{j,t-1} + \sum_{j=1}^{4} \theta_j^L \Delta Q_{j,t} - logXV_{t-1}\right] + \omega_t^S \quad .. (4)$$

Where α, β_1, β_2, β_3, δ and γ as well as ϑ, φ_1, φ_2, φ_3, ρ and τ are the unknown regression parameters to be estimated in the export (equation 3), and import (equation 4) functions respectively. Superscript S represents the short-term and L the long-term. The export supply adjustment coefficient is expressed as γ, ($0 < \gamma < 1$), whilst the import demand adjustment coefficient is expressed as τ, ($0 < \tau < 1$). Following Engel and Granger (1987), the two-step procedure is applied. The first step estimates the long-run parameters for the export supply and import demand function as follows:

$$logXV_{t-1} = \alpha_0^L + \alpha_1^L (t-1) + \beta_1^L \Delta logGDP_{t-1} + \beta_2^L \Delta logRPX_{t-1} + \beta_3^L \Delta logRER_{t-1} + \beta_4^L \Delta logMV_{t-1} + \sum_{j=1}^{5} \delta_j^L \Delta D_{j,t-1} + \sum_{j=1}^{4} \vartheta_j^L \Delta Q_{j,t} - logXV_{t-1} + \varepsilon_{t-1}^L \quad .(5)$$

$$logMV_{t-1} = \vartheta_0^L + \vartheta_1^L (t-1) + \varphi_1^L \Delta logGDP_{t-1} + \varphi_2^L \Delta logRPM_{t-1} + \varphi_3^L \Delta logRER_{t-1} + \varphi_4^L \Delta logXV_{t-1} + \sum_{j=1}^{5} \rho_j^L \Delta D_{j,t-1} + \sum_{j=1}^{4} \theta_j^L \Delta Q_{j,t} - logMV_{t-1} + \omega_{t-1}^L \quad .. (6)$$

The second step estimates the short-run parameters by substituting equations 3 and 4 into equations 5 and 6 respectively, as per the equations below:

$$\Delta logXV_t = \alpha^S + \beta_1^S \Delta logGDP_t + \beta_2^S \Delta logRPX_t + \beta_3^S \Delta logRER_t + \beta_4^S \Delta logMV_t + \sum_{j=1}^{5} \delta_j^S \Delta D_{j,t} + \sum_{j=1}^{4} \vartheta_j^S \Delta Q_{j,t} - \gamma \varepsilon_{t-1}^L + \varepsilon_t^S \quad .. (7)$$

$$\Delta logMV_t = \vartheta^S + \varphi \Delta logGDP_t + \varphi_2^S \Delta logRPM_t + \varphi_3^S \Delta logRER_t + \varphi_4^S \Delta logXV_t + \sum_{j=1}^{5} \rho_j^S \Delta D_{j,t} + \sum_{j=1}^{4} \theta_j^S \Delta Q_{j,t} - \tau \omega_{t-1}^L + \omega_t^S \quad .(8)$$

Equation 9 and 10 respectively express the long-run and short-run expenditure elasticities.

$$\frac{\partial \log XV_t}{\partial logGDP} = \frac{\Delta XV/XV}{\Delta GDP/GDP} = \beta_{1^{\text{term}}} \quad . (9)$$

$$\frac{\partial \log XV_t}{\partial D_{jt}^{term}} = \delta_{jt}^{term} XV_t \quad .. (10)$$
$$term = L, S$$

All effects and elasticities are calculated at the sample mean and vary with variables MV_t, GDP_t, RPX_t, RPM_t and RER_t.

4. Results and Discussion

Based on the elasticity results presented in Table 4, GDP has a positive and statistically significant effect on export volumes, in the long- and short-term, while the effect on imports is only significant in the long-term. Ceteris paribus, a 1% increase in domestic income results in 0.83% increase in exports in the short-term and 0.33% in the long-term. Ceteris paribus, given a 1% increase in GDP, imports increase by 0.049% in the short run and 0.132% in the long-term. This result is consistent with previous studies by Warner and Kreinin (1983), Aydin et al. (2004), Aziz (2013), Nyatanga (2017), amongst others, who found that an increase in a country's real income level leads to increased export and import volumes.

Table 4: Estimates Elasticities

Variable	*Export Elasticities*		*Import Elasticities*	
	Short-term	Long-term	Short-term	Long-term
InGDP	x	0.329***	0.049	0.132***
	[4.15]	[21.77]	[0.24]	[3.50]
InRER	0.166**	0.099	0.279***	-0.316***
	[2.25]	[1.81]	[3.17]	[-4.07]
InRPX	-0.278**	-0.009	-	-
	[-1.95]	[-0.13]	-	-
InRPM	-	-	-0.423***	-0.662***
	-	-	[-2.90]	[-6.01]
InXV	-	-	0.06	0.627***
	-	-	[0.94]	[6.30]
InMV	0.047	0.181***	-	-
	[0.76]	[4.09]	-	-
DX 1960-1985	-0.003	0.473***	-0.008	-0.136
	[-0.41]	[9.17]	[-0.75]	[-1.44]
DX 1986-1995	-0.014	0.197***	-0.003	-0.486***
	[-1.47]	[4.75]	[-0.23]	[-9.57]
DX 1996-2000	0.004	0 .124***	-0.004	-0.362***
	[0.32]	[3.21]	[-0.25]	[-8.43]
Quarter 1	0.03	0.004	-0.005	-0.027
	[1.46]	[0.22]	[0.36]	[-0.98]
Quarter 2	-0.003	-0.004	0.066***	-0.002
	[-0.26]	[-0.22]	[4.85]	[-0.08]
Quarter 3	0.031	0.011	0.065***	0.02
	[1.64]	[0.55]	[4.97]	[0.73]
Constant	-0.027**	1.625***	-0.0001***	2.024***
	[-2.14]	[5.62]	[-2.93]	[4.15]
Adjustment Coefficient	-0.012		-0.0001	
Adjusted R-sqr	0.1617	0.9736	0.2950	0.9411

Note: i. ** when p-value ≤ 0.05, and ***when p-value ≤ 0.01. ii. Numbers in parentheses are t-ratios

The short-term and long-term regression results reveal that the real price of exports has a negative, though inelastic effect in determining export volumes, and only statistically significant in the short-term. The short-term and long-term results are inconsistent with the findings from previous studies of Khan (1974) and Warner and Kreinin (1983), who found that exports respond positively to export price increases. The price of exports is an indicator of South Africa's competitiveness. The higher the price of South African exports, the less competitive South Africa is as compared to the rest of the world, and the less South African produced goods and services are demanded by the rest of the world. Since South Africa is a relatively small economy as compared to the rest of the world and a net importer of goods, South Africa is regarded as a price taker in international markets. Therefore, South African exports are elastic to the rest of the world.

When the price of exports increases, other countries can do without South African products. On the one hand, the responsiveness of imports to a change in the real price of imports is highly significant in the long-term and short-term. The relationship between import volume and the price of imports is negative, which was expected and consistent with economic theory. As per the regression results displayed in Table 5 above, Ceteris paribus, given a 1% increase in real import prices, imports decrease by 0.423% in the short-term and 0.662% in the long-term. The relationship between export volumes and real exchange rates is relatively inelastic and statistically significant. Ceteris paribus, the regression results mean, given a 1% increase in real exchange rates, exports increase by 0.166% in the short-term and by 0.099% in the long-term. Interestingly, the rand depreciation has a positive effect on import demand in the short-term. Ceteris paribus, given a 1% increase in the real exchange rate, imports increase by 0.279% in the short-term and decreases imports by 0.316% in the long-term. As expected and consistent with economic theory, the depreciation of the rand increases exports and decreases imports in the long-term. Export volume has a positive effect on import demand, and import volume has a positive effect on export supply.

According to the regression results, ceteris paribus, a 1% increase in export volume, increases imports by 0.06% in the short-term and by 0.627% in the long-term. Ceteris paribus, a 1% increase in import volumes, results in export volumes increasing by 0.047% in the short-term and by 0.181% in the long-term. These results are consistent with the fact that South Africa is a net importer of machinery and raw materials used in the production of exports. Therefore, increased demand for South Africa goods abroad, results in an increase in the demand for machinery and raw materials imported from foreign countries. As far as policies are concerned, the fixed exchange rate system adopted in 1960 to 1985 had a statistically significant effect on export supply relative to the base period of a floating exchange rate regime in the long-term. However, there was no significant difference in export volumes under the two exchange rate regimes in the short-term. In the long-term, export volumes were 0.473% higher 'between' 1960 to 1985 compared to the base period of floating exchange rate (2000-2015). Consistent with findings from studies by Levy-Yeyati and Strurzenegger (2002), Edwards and Yeyati (2003) and Calvo and Reinhart (2002), fixed exchange rates have a positive effect on the economy in the short-term.

Although exports are higher under this regime as compared to the base period of floating exchange rates, Calvo and Reinhart (2002) warn that in the long-term a fixed exchange rate is not conducive to economic growth and may lead to a financial crisis, as experienced in other developing countries such as Thailand and Brazil. For import volumes, while negative, no statistically significant difference was found under the two exchange rate regimes. It is necessary to note that, during the 1960 to 1985 period, the South African government intervened to reduce imports and increase exports by introducing import tariffs, import surcharges and import licenses. Authorities also devalued the currency to improve South Africa's balance of payments. This together with the oil crisis in 1973 could be acceptable explanations for the decreased import volumes during this period of fixed exchange rates as compared to the base period. Export volumes were significantly higher under the dual exchange rate system, than the base period of freely floating exchange rates in the long-term. In the short-term, no significant difference was observed. According to the regression results (Table 5), exports were 0.014% less in the short-term and 0.197% higher in the long-term. Consistent with the J-curve phenomenon, the rand depreciation during this period did not have a positive effect on exports in the short-term but improved in the long-term. Imports under the dual exchange rate system were not significantly different in the short-term but significantly different in the long-term.

Ceteris paribus, import volumes are 0.003% less under the dual exchange rate system than the freely floating exchange rate system, whilst import volumes are 0.486% less in the long-term compared to the era of freely floating exchange rates. Economic sanctions enforced on South Africa in 1985 have contributed to the lower import volumes under the dual exchange rate system when compared to the freely floating exchange rate system. Political instability has also hindered economic growth and international trade during this period. The responsiveness of exports under the managed floating exchange rate regime was positive but insignificantly different in the short-term and statistically significant in the long-term at 1% level. South Africa's export volume was 0.004% more in the short-term and 0.124% more in the long term. The removal of sanctions, economic liberalisation, and reintegration of South Africa into the global economy could have also contributed towards the positive response of exports under the managed floating exchange rate regime than the freely floating exchange rate system. This result is consistent with the improvement of the balance of trade surplus at the beginning of 1996. According to Edwards (2005), export volumes increased as a percentage of GDP from 20% in 1990 to 29% in 2000.

Import demand under the managed floating exchange rate system was significantly different in the long-term and not significantly different in the short-term. Imports were 0.004% lower in the short-term and 0.362% lower in the long-term as compared to the base period of freely floating exchange rates. Although economic sanctions were removed during this period, imports were negative during this period. The managed floating system coupled with the peaceful transition to a democratic country could have brought about improved economic growth and decreased imports, thereby improving South Africa's balance of payments position. The results are consistent with the improvement of the balance of trade surplus at the beginning of 1996. The adjustment coefficient for export and import volumes is 0.012% and 0.0001% respectively, following a disequilibrium in the export and import function with only a minuscule small proportion corrected within a quarter. Export supply and import demand adjustments are slow in the long-term.

5. Conclusion

In view of the above findings, it can be concluded that in the long run, exchange rate regimes do matter for trade. When comparing the freely floating exchange rate regime (year 2000 to current), to the fixed exchange rate regime, the dual exchange rate regime and the managed floating exchange rate regime, it was found that South African trade performed better under a fixed or managed exchange rate regime than the freely floating exchange rate regime. This study's findings are consistent with economic theory and empirical studies that developing countries perform better under a more managed or fixed exchange rate regime. However, caution should be taken when considering the adoption of a fixed exchange rate regime as it can be costly to maintain and may not be sustainable in the long run. It is therefore recommended that South Africa adopts a managed floating exchange rate regime until its markets and the economy are developed to deal with exchange rate fluctuations associated with a freely floating exchange rate regime. The objective of the South African Reserve Bank is to maintain price stability through the inflation rate-targeting framework. However, the adoption of a freely floating exchange rate implies that import and export prices also fluctuate, defeating the objective of monetary policy. A study by Gupta (2012) revealed that South Africa's inflation rate was more volatile since the year 2000, when the South African Reserve Bank discarded exchange rate targeting and adopted an inflation rate-targeting framework. As a result, it is recommended that the Reserve Bank should consider reverting to an exchange rate targeting framework.

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Dual Process Difference in Families Regarding Home Buying Decision

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Abstract: The system of thought between rational systems and experience systems is inherent in each individual and produces different decisions. Thinking using logic tends to be used by almost every individual, but cognitive limitations make the individual simplify complex thinking to make practical decisions. This study aims to examine more in dual process on decision home buyers according to dual motives based on demographics and life cycle. Data collection was done by distributing questionnaires to selective home buyers of 235 buyers. Survey instruments include demographic and family life cycle variables. The dual process measurements using Rational-Experiential Inventory (REI-40) are designed to test individual preferences for two decision making, such as cognitive styles (rationality) and intuition (experience) using Likert scales. The results show that dual process cannot be distinguished based on dual motives. However, demographic variables such as gender, age, education, and family life cycle showed the difference in the dual process.

Keywords: *Dual Process, Dual Motives, Demography, Family Life Cycle*

1. Introduction

A rational person is assumed to be a person who obeys the rules, but rationality also has its limits. One cannot do it perfectly due to cognitive limitations, logical fallacies, miscast implications, and limited time allocation (Simon, 1973). Basically, there are two perspectives on how a person reacts to something. The first perspective has been supported by experiments that proved there are two contrast cognitive systems; rational analysis (called executive-analytic) and an experimental-intuitive system called heuristic (Epstein, Pacini, Denes-Raj, & Heier, 1996; Stanovich & West, 1998; De Neys, 2006). Both systems support a person to use their reasoning with dual-process to help analyze alternatives and decide on a better decision. On the contrary, the second perspective states that humans draw conclusions based on logical deductions, cognitive capabilities, knowledge, and limited time so a simple psychological mechanism is called pragmatic heuristic (Gigerenzer & Goldstein, 1996). Both groups, rational cognitive versus experience and the pragmatic heuristic is still in debate, which is the consequence of automatic intuitive response or the consequence of a certain cognitive of a person. Individual differences such as causal reasoning, cognitive capability, cognitive reflection, numerical measure, and rational and intuitive thinking styles have a great impact on decision or bias. Shiloh, Salton, & Sharabi (2002) found that normative response correlates positively with rational thinking style, and negatively with experimental intuitive thinking style.

The rational style combines the use of intentional rule-based criteria, analytical, and critical evaluation of evidence so the process of decision making is structured. Conversely, experimental style is thought to be automatic, quick, recognizable, and intuitive, because it is affected by the condition, private disposition, and emotional passion. Furthermore, preference in decision-making style and thinking which is done in this study sees the possibility of diversity among a certain population, namely homebuyers and property investors. Young families as first-time homebuyers have a consumption motive, and therefore tend to use rational thinking process. Their experience as buyers is low, so their decision-making is affected by their current information and cognitive knowledge. Meanwhile, the investors, coming from a financially more capable family, have done a lot of transactions and therefore are a lot more experienced compared to first-time buyers. Decision-making tends to involve experience and intuition (Njo, Made-Narsa, & Irwanto, 2017). Gender stereotype also shows that women tend to get involved in experience-based processes, while men in rational processes (Epstein, 2003). Pacini & Epstein (1999) have done a revision on analytical and intuitive thought testing, which is called Rational-Experiential Inventory (REI), using 40 items to increase instrument's reliability.

This study uses said instrument towards buyers and property investors to measure rational cognitive and intuitive styles (dual process) while completing transactions of house purchasing in Indonesia. This study is an extension of Njo, Made-Narsa, & Irwanto (2017) study involving dual motives and dual process. The aim of this study is to empirically test the differences dual process in buyers and investors regarding decision-making in housing purchase. The differences are viewed from demography and stage of family life perspective. Dual process in each family stage becomes crucial to be understood clearly so as to plan family financially in order to avoid making a biased decision. A family that is able to plan family financial wisely is expected to achieve their life goals. Furthermore, understanding the dual process which is rational system and experience system based on demography and stage of family life in relation to the motive of purchase can provide an insight about family financial planning, marketing strategy, and property development plan. This insight can be used to minimalize losses suffered by every party involved in the real estate market.

2. Literature Review

Dual Process: Perspective from Cognitive Experiential Self Theory shows result from two different processing system, rational and experience. Both systems operate synchronously and produce a compromise, but at times contradict themselves, resulting in a conflict between heart and head (Epstein, 1994). Development from dual process occurs in numerous fields including decision-making (Kahneman & Frederick, 2002) Quick, autonomous and easy, against slow, sequential and controlled. A number of theories have tried to map dual process on two cognitive systems with different names, which is experience-rational (Epstein, 1994), heuristic-analytical (Evans, 1989), and system 1 and system 2 (Stanovich, 1999). Experience system (system 1) and rational system (system 2) operates in parallel and interactively (Epstein, 2003) as grouped in Table 1. Epstein (2003) states that the experience system affects the rational system. The experience system is quick, operates automatically and subconsciously. When an individual thinks rationally, bias may occur through the experience process. Bias affect a rational mind when experience system operates as the scheme an individual acquire from past experience. In some cases, however, a bias which is based on experience and upcoming rationalization is very maladaptive. Experience system can affect a rational system both positively or negatively. As an associative system, experience system can become a source of creativity through ideas which are not present in the rational system. The experience system is a learning system which can be used as a source of information to penetrate into a rational system. The most important thing however, is that experience system can be used as a fuel for passion in a rational system, so the intellectual pursuit can be done with caution.

Table 1: Clusters of Dual-Process Theories

Type 1 process (intuitive)	Type 2 process (reflective)
Definition: Does not require working memory Requires working memory	Definition: Autonomous Cognitive decoupling; mental simulation
Typical correlates: Fast, High capacity, Parallel, Nonconscious, Biased responses, Contextualized, Automatic, Associative, Experience-based decision making, Independent of cognitive ability	Typical correlates: Slow, Capacity limited, Serial, Conscious, Normative responses, Automatic, Controlled, Rule-based, Consequential decision making, Correlated with cognitive ability

Source**:** (Evans & Stanovich, 2013)

Conversely, the rational system also affects the experience system. Rational system is slower but able to revise the experience system. An individual will contemplate on his spontaneous and impulsive thoughts, realize the inappropriate ones, and replace them with constructive ones. The rational system can also affect the experience system, where a person trains his experience system so that his initial reaction is more proper, automatically, whether intentionally or not (Epstein, 2003). Thoughts in rational system trigger emotion in experience system in an associative way, where a repeat of thoughts or initial behavior under rational control will be standard or "procedural", in which case that control will shift from rational to experience (Smith & DeCoster, 2000). Benefit from this control shift includes the lesser need for cognitive resources in thoughts and behavior, and even allows them to happen subconsciously. However, the downside is when thoughts and behavior are in the subconscious level, it is a great deal harder to change. Pacini & Epstein (1999) created Rational-Experiential Inventory (REI) to measure rational system and experience system. Rational system is measured using two scales, and so is the case for the experience system, which includes preferences and

abilities. The latest version of REI uses 40 items, Rational dimension (20 items) consists of Rational Ability (RA) (10 items) which refers to the ability to think logically and analytically, and Rational Engagement (RE) (10 items) which refers to the pleasure of doing so.

Dual Process in Property Purchase: The difference between dual process, quick and intuitive, compared to slow and discussion is closely related to human reasoning and cognitive process, such as judgment and decision-making by an individual. Individual behavior is a study of physical activity, mental and emotional of an individual, group, or organization when choosing, buying, using and disposing of goods or service to fulfil their needs. Those activities include decisions made before, during, and after the procedure (Kuester, 2012). Gibler & Nelson (2003) did a search and selection process on houses by combining behavioral and real estate theory which is called Behavioral Real Estate (BRE) (DeLisle, 1985). In the last few decades, a study on individual behavior has experienced a shift from rational factor to psychological or irrational factor (Bargh, 2002) involving decision-making process of purchases, mainly real estate products (Ajzen, 1991; Han & Kim, 2010; Kunshan & Yiman, 2011). Smith (1992) along with McAllister & Mansfield (1998) states that real estate market less liquid (weak form efficient) compared to equity and obligation market. The contributing factors are massive transaction value, high transaction fee, the absence of a centralized market, low transaction frequency (especially in the homebuyers group) and delays caused by legal proceedings. Real estate market condition will affect market players, and so the decisions taken will be affected simultaneously by information and the processing of it based on experience and cognitive capabilities (Epstein, 1998).

Experience and cognitive systems can communicate with and affect each other where the balance of both systems is flexible and varied according to conditions. Experience system will improve intuitive abilities, so individual action and decision will systematically deviate from rational assumption. This condition results in a fundamental bias and persistent in decision-making that regularly produces behaviour with the inexplicable assumption (Kahneman, 2003). Houses are one of many types of housing from real estate products, where it serves two purposes which is consumption and investment (Shiller, 2007), but that statement triggered controversial debates. Conservatives do not see a house as an investment, but rather as a better and comfortable place to live. Buyers who look for houses for private use will select rationally according to their personality and lifestyle (Koklic & Vida, 2009). While from an economic point of view, a house is an investment (Shiller, 2007) because it can provide potential revenue and profit in the future. This difference in function leads to decision-making process shifting from rational to a heuristic. Generally, consumers have a limited chance to access all available information. However, wider knowledge or insight will affect buyers' behaviour toward better comprehension and prediction in decision-making in the real estate market according to the financial commitment of buyers (Daly, Gronow, Jenkins, & Plimmer, 2003).

House buying is one of the complex decisions to make as it requires strategy before deciding (Koklic & Vida, 2009). This includes product profile identification, information collecting on said profile, profile evaluation based on certain criteria, and then making the most favourable decision. Decision made based on rational thinking is also called rational decision making (Green, May 2002). First homebuyers decide on the purchase rationally (Monico, 2013). Scanlon & Whitehead (2010) also states that owners of many properties decide more rationally compared to those who only own one or two properties. But, buyers also decide heuristically by involving intuition which processes problems quicker, ignoring new information. Especially in situations with a high degree of complexity, choices, risk and uncertainty, done in high-stress and high time-pressure (Gigerenzer & Gaissmaier, 2011; Tversky & Kahneman, 1973; Tversky & Kahneman, 1974). Njo, Made-Narsa, & Irwanto, (2017) states that buyers with consumption motive tend to be rational compared to those with investment motive, which tend to be heuristic. Bias is the result of the rule of thumb, heuristic, and mental 'shortcut' that shortens information processing. A heuristic is a process of solving problems and making decisions effectively, especially in situations with a high degree of complexity, choices, risk and uncertainty (Gigerenzer & Gaissmaier, 2011; Kahneman, Slovic, & Tversky, 1982; Tversky & Kahneman, 1973; Tversky & Kahneman, 1974).

A person tends to keep their efforts heuristically, but accuracy becomes an issue (Shah & Oppenheimer, 2008) which is caused by limited time of information gathering and efforts needed, resulting in a trade-off of loss of accuracy to speed and cognitive saving. The more complex the problem, the more alternative heuristic behavior will eliminate by limiting information gathering and evaluation. As a result, the decision made will

be biased and inefficient, because the conclusion is drawn without effective consideration and analysis according to the parameters used (Simon, 1978). Hardin (1997) however, noted that if heuristic information processing is applied correctly, it is able to reduce search time to complete a task. Furthermore, experience dimension (20 items) consists of Experiential Ability (EA) (10 items) as an ability to recount impression and intuitive feelings, and Experiential Engagement (EE) (10 items) in regard to the feelings involved in decision-making based on intuition and feeling.

Hypothesis 1: Buyer with consumption motive uses Rational Ability (RA) and Rational Engagement (RE) compared to the buyer with investment motive tends to use Experiential Ability (EA) and Experiential Engagement (EE).

Dual Process Reviewed by Demography Buyer and Family Life Cycle: Demographical study in population structure and population characteristic consists of gender composition, age, education, income and job, can be used in order to understand cause and consequence of demographic phenomena, the scale or the change from time to time, and how to control population characteristic towards a certain view (Anderson, 2015). Furthermore, Family Life Cycle by Duval in 1977 is used classification on stages measured by the age of marriage (Spanier, Sauer, & Larzelere, 1979) as shown in Table 2. The family life cycle can indicate family mobilization regarding the needs of the family, including house purchase.

Table 2: Family Life Cycle Stage Age of Marriage Scheme

No.	Family Life Cycle Stage	Description	Age of Marriage (year)
1.	Honeymooners	Married; whether a parent or not	0 - 5
2.	Full Nest	Couple with the oldest child less than 6 years old	6 - 20
3.	Empty Nest	Couple with at least one child still living at home	21 - 30
4.	Dissolution	Couple living alone; spouse has passed away and currently no children living with them	31+

Source: Spanier, Sauer, & Larzelere (1979) processed

Every family according to each of their life cycle stage will encounter dual process within themselves as their cognitive abilities develop in regard to the home buying process. The process occurring in system 2 relies on intelligence, while system 1 does not (Reber, 1993; Stanovich, 1999). Next, Colom, et al. (2004) divides individuals based on working memory capacity and intelligence measurement. Memory capacity can be used to predict performance level as long as the range of cognitive task is extensive and directly related to dual process cognitive function. The ability to think analytically contributes to performance on intelligence test as age increases. Young families will have different working memory capacity and intelligence compared to families in later stages. The difference in age in information and emotional processing along with experience processing happens as a way to compensate the decrease in cognitive resources. Thinking logic and belief significantly affect decisions made, but the two are personally contradicting in an individual. Ability to resolve a conflict consistent with cognitive abilities (Newstead et al., 2004), decreases later along with age (Gilinsky & Judd, 1994) and creates a disastrous result when responded swiftly (Evans & Curtis-Holmes, 2005).

Pacini & Epstein (1999) proved there are significant gender-based differences on every REI scales except Rational Engagement (RE). Men scored Rational Ability (RA) slightly higher compared to women, while women scored Experiential Engagement (EE) slightly higher compared to men. The difference in an age when considering decisions also occurs as a result of age in effective process beside the change caused by the discussion process. The first observation based on age shows that grown adults tend to gather lesser information and use simpler strategy compared to young adults, their choices are not varied. Second, grown adults experience a decline of cognitive resources, so they are more selective on using it and will not bother to put more efforts to reach a better decision. Affective and emotional information tend to affect decision and judgment more on grown adults compared to young adults, caused by the decline of ability to discuss or by the change of motivation when they feel the end of their life is approaching. Individuals will process information qualitatively as they grow in age, along with experience. Hence, the aging process affects grown adults advantageously in decision-making compared to young adults in the certain situation, although it

worsens in unforeseen situations. Understanding the changes an individual goes through along with age can help identify means to improve decision-making such as home buying (Peters et al., 2008).

Hypothesis 2: Rational system and experience system in the dual process which occurs in a homebuyer shows significant differences based on buyer's demographical background (gender, age, education, income, and job) and family life cycle.

Hypothesis 3: Homebuyers in an older family group tend to use experience system compared to those in the younger family group who use a rational system.

3. Methodology

This quantitative study is explanatory, meaning it analyzes the correlation between variables family life cycle and dual process. This study's population is individual who lives in major cities in Indonesia and is in different family life cycle stage, was involved in a home buying transaction regardless of the region, at least within the year. This period of time is chosen consistent with (Nickerson, 1968)'s study which states Long Term Memory (LTM) can remain after one year although degrades from 92% to 63%. Sample withdrawal technique uses a convenience sampling method where the respondent's sample is chosen appropriately to its availability in property exhibition halls, property broker offices, and developer offices. Data extraction is done through questionnaires spread to two hundred fifty (250) respondents, but after selection it is reduced to two hundred thirty-five (235) respondents. Respondents are asked to complete paper and electronic survey instruments which consist of demographical questions (gender, age, education, income, and occupation), family life cycle (marriage age) and Rational-Experiential Inventory (REI-40) containing 40 questions designed to test individual preferences to 2 decision-making styles: cognition (rationality) and intuition (experience), using Likert scale 1-5 points, definitely wrong (1) to correct (5). Every question demands each respondent to reflect on his own ability or feeling regarding rational or experiential decision-making activity as such: Rational ability refers to the ability to think logically and analytically (which is "I have a logical mind" Rational involvement refers to the dependence and pleasure felt when using logical and analytical thinking (which is "I enjoy intellectual challenges") Experiential ability refers to the ability felt regarding intuitive impressions and feelings. which is trust my feeling") Experiential involvement refers to the dependence and pleasure felt when using feelings and intuitions (which is tend to use my heart to lead my actions").

Table 3: Description of Variable

No	Variable	Code	Measurements	Questionnaire number
1	Dual Process	RA	Rational -Likert scale	(1 + 4 + 8 + 13 + 14 + 17 + 25 + 27 + 30 + 39)/10
		RE		(2 + 6 + 10 + 16 + 20 + 26 + 28 + 32 + 33 + 40)/10
		EA	Experiential -Likert scale	(3 + 5 + 18 + 19 + 21 + 34 + 35 + 36 + 37 + 38)/10
		EE		(7 + 9 + 11 + 12 + 15 + 22 + 23 + 24 + 29 + 31)/10
2	Dual Motives	DM	Dummy	1 = consumption 0 = investment
3	Sex	Sex	Dummy	1 = man 0 = woman
4	Age	Age	nominal	1 = < 20 years 2 = 21–30 years 3 = 31–40 years 4 = 41–50 years 5 = >51 years
5	Education	Educ	nominal	1 = < High school 2 = Undergraduate 3 = Master's degree 4 = Doctoral degree 5 = Others

6	Income	Inc.	nominal	1 = <= 3 mil 2 = 3–5 mil 3 = 5–10 mil 4 = 10–25 mil 5 = 25–50 mil 6 = >=51 mil
7	Occupation	Occp	nominal	1 = Private employee 2 = Civil servant 3 = Self employed 4 = Professional 5 = Others
8	Family Life Cycle	FLC	nominal	1 = honeymooners 2 = full nest 3 = empty nest

Data processing begins with reverse in REI-40 for numbers: 4, 6, 8, 9, 10, 12, 15, 16, 22, 25, 27, 29, 32, 33, 35, 36, 37, 38, and 39. The rational score is achieved by adding responses from Rational Ability (RA) and Rational Engagement (RE), while experience score is achieved by adding Experiential Ability (EA) and Experiential Engagement (EE). Followed by a validation test, reliability test, and normality test. Quantitative data analysis uses SPSS ver.21 (IBM Corp). Continued data will be presented in the mean. To follow up on the significant difference between groups, ANOVA and corrected coupled comparison following the Games-Howell procedure is used (unequal sample size). Statistic hypothesis testing uses alpha $\alpha = 0.05$.

4. Results and Discussion

Dual process study using Rational-Experiential Inventory (REI-40) as information processing measuring instrument in individual has been applied to various population such as scholars (Epstein et al., 1996), paramedic (Jensen, et al., 2013), prospective jury (Gunnell & Ceci, 2010), cardiologist (Sladek et al., 2008), and emergency room doctors (Calder, et al., 2012). Those psychometric instruments have passed validity and reliability test with Cronbach's Alpha score 0.74-0.91. Therefore, REI-40 is used in this study, and have been translated into Indonesian and spread to homebuyers in Indonesia. Next, Content Validity Ratio (CVR) test is done to each instrument with Aiken's value above 0.35, so the questionnaire's instruments can be used in the following studies. After CVR test, validity test is done as required in significant Pearson Correlation on level 0.05 and reliability test shows Cronbach's Alpha between 0.601 - 0.863 > 0.6, meaning instruments used in decision-making model are valid and reliable. Respondent's description is reviewed from gender, age, education, occupation, and family life cycle (marriage age), and then categorized based on homebuying motive as per Table 4. There are 132 respondents with consumption motive, and 103 with investment motive.

Table 4: Homebuyer Profile and Correlation

Profile	Frekuensi		Percentage		Pearson's Correlation Sig.
	Consumption	Investment	Consumption	Investment	
Gender:					
Male	74	63	54.0	46.0	
Female	58	40	59.2	40.8	.433
Age					
< 20 years	2	2	50.0	50.0	
21-30 years	53	19	73.6	26.4	
31-40 years	45	33	57.7	42.3	
41-50 years	21	32	39.6	60.4	
>51 years	11	17	39.3	60.7	.000
Education:					
≤High school	25	15	62.5	37.5	
Undergraduate	89	66	57.4	42.6	

Profile	Frekuensi		Percentage		Pearson's Correlation Sig.
	Consumption	Investment	Consumption	Investment	
Master's degree	11	15	42.3	57.7	
Doctoral degree	1	5	16.7	83.3	
Others	6	2	75.0	25.0	.313
Income:					
≤Rp.3 mil	6	3	66.7	33.3	
Rp.3 mil – Rp.5 mil	30	11	73.2	26.8	
Rp.5 mil – Rp.10 mil	29	15	65.9	34.1	
Rp.10 mil – Rp.25 mil	34	29	54.0	46.0	
Rp.25 mil – Rp.50 mil	17	26	39.5	60.5	
≥Rp.50 mil	16	19	45.7	54.3	.001
Occupation:					
Private employee	71	36	66.4	33.6	
Civil servant	7	0	100.0	0.0	
Self employed	42	46	47.7	52.3	
Professional	5	8	38.5	61.5	
Other	7	13	35.0	65.0	.000
Family Life Cycle (FLC)					
Honeymooners (0-5 years)	85	38	69.1	30.9	
Full Nest (6-20 years)	34	43	44.2	55.8	
Empty Nest (21-30 years)	13	22	37.1	62.9	.000

There are more male buyers with consumption motive than female buyers. Respondents who need the property as living space are in the range of 40 years old and currently in the honeymoon stage, while those with investment motive are around 31-50 years old and currently in full nest stage (married for 6-20 years). The majority of respondents are undergraduates. The need of a house is also the aim for respondents with income in the Rp. 3 mil – 25 mil range, while the position of investors is held by respondents with an income above Rp. 10 mil, with private employment or self-employment as their occupation. Buyers' and investors' demographic correlates with property purchase dual motives based on age, income, occupation, and family life cycle. On the other hand, as seen in Table 5 regarding H_1, it is not shown from dual process any significant differences on dual motives (accept H_0). Furthermore, by showing rational system mean score on gender, it turns out that males are more rational compared to females, while both parties' experiential and ability engagement are equal. Getting older and higher education in an individual shows a more rational personality with the tendency to think involving rational ability (RA) and rational engagement (RE), but respondent experiential tends to increase after 51 years of age. That pattern also occurs in the family life cycle. Income and occupation groups have a similar way of thinking, although the rational thinking process slightly dominates over the experiential process. A dual process which is rational and experiential from either buyers or investors shows there is a difference based on gender, age, education, and family life cycle, and further reviewed on each of their mean value.

Table 5: Comparison Dual Process based on Homebuyers Demography

Demographics	R-Ability Mean	R-Engagement Mean	Rational Mean	E-Ability Mean	E-Engagement Mean	Experiential Mean
Dual Motives						
Consumption (n=132)	3.4917	3.2227	3.3572	3.1970	2.9758	3.0864
Investment (n=103)	3.5728	3.3087	3.4408	3.1981	2.9437	3.0709
F-value	.809	1.518	1.296	.000	.136	.041
Gender:						
Male (n=137)	3.6007	3.3445	3.4726	3.1839	2.9591	3.0715
Female (n=98)	3.4245	3.1429	3.2837	3.2163	2.9653	3.0908
F-value	3.815*	8.483**	6.689**	.174	.005	.063
Age						

Demographics	R-Ability Mean	R-Engagement Mean	Rational Mean	E-Ability Mean	E-Engagement Mean	Experiential Mean
< 20 years (n=4)	3.2250	3.2500	3.2375	3.3000	2.9000	3.1000
21-30 years (n=72)	3.4583	3.1889	3.3236	3.2278	3.0319	3.1299
31-40 years (n=78)	3.5077	3.2513	3.3795	3.1051	2.8859	2.9955
41-50 years (n=53)	3.7509	3.4057	3.5783	3.1415	2.9358	3.0387
51-60 years (n=28)	3.3786	3.1964	3.2875	3.4679	3.0500	3.2589
F-value	2.171*	1.433	2.112*	1.286	2.223*	.610
Education:						
≤ High school (n=40)	3.4675	3.1800	3.3238	3.1925	2.9150	3.0538
Undergraduate (n=155)	3.5058	3.2310	3.3684	3.2142	3.0045	3.1094
Master's degree (n=26)	3.6115	3.4077	3.5096	3.1538	2.8423	2.9981
Doctoral (n=6)	4.3167	3.8833	4.1000	3.0833	2.6333	2.8583
Others (n=8)	3.3750	3.2875	3.3313	3.1250	3.0000	3.0625
F-value	2.349*	3.011**	3.039**	.154	.799	.466
Income:						
≤Rp.3 mil (n=9)	3.2444	3.2889	3.2667	3.2889	3.2444	3.2667
Rp.3-5 mil (n=41)	3.4683	3.1902	3.3293	3.2098	3.1024	3.1561
Rp.5-10 mil (n=44)	3.4864	3.3295	3.4080	3.1818	2.9500	3.0659
Rp.10-25 mil (n=63)	3.5937	3.2841	3.4389	3.1159	2.8556	2.9857
Rp.25-50 mil (n=43)	3.5023	3.2140	3.3581	3.1698	2.9674	3.0686
≥Rp.50 mil (n=35)	3.6314	3.2629	3.4471	3.3600	2.9229	3.1414
F-value	.684	.383	.384	.854	1.055	.743
Occupation:						
Private employee (n=107)	3.5477	3.2832	3.4154	3.1944	2.9944	3.0944
Civil servant (n=7)	3.4571	3.1286	3.2929	3.0429	2.8286	2.9357
Self employed (n=88)	3.5057	3.2193	3.3625	3.2432	2.9955	3.1193
Professional (n=13)	3.5154	3.3077	3.4115	3.1154	2.9077	3.0115
Other (n=20)	3.5450	3.3350	3.4400	3.1200	2.7200	2.9200
F_value	.067	.408	.201	.404	.882	.647
Family Life Cycle (FLC)						
Honeymooners (n=123)	3.4715	3.2089	3.3402	3.2179	3.0195	3.1187
Full Nest (n=77)	3.6130	3.3299	3.4714	3.0792	2.8260	2.9526
Empty Nest (n=35)	3.5343	3.2886	3.4114	3.3857	3.0571	3.2214
F-value	1.008	1.285	1.329	3.528**	2.490*	3.229**

Note: RA=Rational Ability; RE=Rational Engagement; EA=Experiential Ability; EE=Experiential Engagement; ANOVA F-value sig. ** p< 0.05 * p< 0.1

Table 6 shows Levene Test results with p-value > 0.05, so the data is deemed homogeneous along with dual process ANOVA test result by gender (137 male; 98 female). Post Hoc test on RA among male (M=3.6007) shows a difference compared to female (M=3.4245) with p-value .052, as well as in RE in male (M=3.3445) and female (M=3.1429) with p-value .004. Post Hoc test on EA and EE does not show any difference based on gender. H_2 proves that dual process on a rational system shows a difference between male and female, but none on the experiential system.

Table 6: ANOVA Findings for Dual Process vs Sex

		Sum of Squares	Df	Mean Square	F	Sig.	Levene Statistic	Sig.
RA	Between groups	1.775	1	1.775	3.815	.052*	.210	.647
	Within groups	108.391	233	.465				
	Total	110.166	234					
RE	Between groups	2.324	1	2.324	8.483	.004**	.145	.704
	Within groups	63.818	233	.274				

	Total	66.142	234					
EA	Between groups	.060	1	.060	.174	.677	1.831	.177
	Within groups	80.179	233	.344				
	Total	80.238	234					
EE	Between groups	.002	1	.002	.005	.944	.115	.734
	Within groups	102..213	233	.439				
	Total	102.215	234					

sig.** p< 0.05 * p< 0.1

Table 7 shows the Levene Test result with p-value > 0.05, hence data is deemed homogeneous. So, apart from RA, difference test among groups refers to Welch test. Dual process ANOVA test result by age describes Post Hoc test on RA in age group of 21-30 years old (n=72) (M=3.4583) shows a difference compared to group of 41-50 years old (n=53) (M=3.7509) with p-value .084, as well as EA in group of 31-40 years old (n=78) (M=3.3445) compared to over 51 years old (n=28) (M=3.1429) with p-value .064. Post Hoc test on RE and EE shows no difference based on age. H_2 test results prove that dual process on the rational system or RA, and experiential system or EA, shows a difference based on age.

Table 7: ANOVA Findings for Dual Process vs Age

		Sum of Squares	Df	Mean Square	F	Sig.	Levene Statistic	Sig.
RA	Between groups	4.008	4	1.007	2.171	.073*	3.142	.015
	Within groups	106.157	230	.462				
	Total	110.166	234					
RE	Between groups	1.608	4	.402	1.433	.224	.801	.526
	Within groups	64.534	230	.281				
	Total	66.142	234					
EA	Between groups	2.986	4	.747	2.223	.067*	1.059	.378
	Within groups	77.252	230	.336				
	Total	80.238	234					
EE	Between groups	1.072	4	.268	.610	.656	1.439	.222
	Within groups	101.143	230	.440				
	Total	102.215	234					

sig.** p< 0.05 * p< 0.1

Table 8 shows Levene test results with p-value > 0.05, hence data is deemed homogeneous. Dual process ANOVA test result by education describes Post Hoc test on RA in high school group (n=40) (M=3.4675) shows a difference compared to doctoral group (n=6) (M=4.3167) with p-value .076; RA in undergraduate group (n=155) (M=3.5058) shows a difference compared to doctoral group (n=6) (M=4.3167) with p-value .091; RA on others group (n=40) (M=3.3750) shows a difference compared to doctoral group (n=6) (M=4.3167) with p-value .070. As is the case with RE in high school group (n=40) (M=3.1800) shows a difference compared to doctoral group (n=6) (M=3.8833) with p-value .049; RE on undergraduate group (n=155) (M=3.2310) shows a difference compared to doctoral group (n=6) (M=3.8833) with p-value .070. Post Hoc test on EA and EE shows no difference based on education. H_2 test result proves dual process on the rational system, which is RA and RE, shows a difference based on education, but none in the experiential system, which is EA and EE.

Table 8: ANOVA Findings for Dual Process vs Education

		Sum of Squares	Df	Mean Square	F	Sig.	Levene Statistic	Sig.
RA	Between groups	4.323	4	1.081	2.349	.055*	.107	.980
	Within groups	105.842	230	.460				
	Total	110.166	234					
RE	Between groups	3.291	4	.823	3.011	.019**	.337	.853
	Within groups	62.851	230	.273				
	Total	66.142	234					

EA	Between groups	.214	4	.053	.154	.961	.079	.989
	Within groups	80.024	230	.348				
	Total	80.238	234					
EE	Between groups	1.401	4	.350	.799	.527	.701	.592
	Within groups	100.815	230	.438				
	Total	102.215	234					

sig.** p< 0.05 * p< 0.1

Table 9 shows the Levene test with p-value > 0.05, so data is deemed homogeneous. So, apart from RA, difference test among groups refers to Welch test. Dual process ANOVA test results based on FLC group describes Post Hoc test on EA in FLC Full Nest (M=3.0792) shows a difference compared to FLC Empty Nest (M=3.3857) with p-value .045. RA, RE and EE show no difference based on LFC. H_3 test result proves dual process on the rational system, which is RA and RE, shows no difference compared to EE based on FLC, apart from an experiential system which is EA.

Table 9: ANOVA Findings for Dual Process vs Family Life Cycle

		Sum of Squares	**Df**	**Mean Square**	**F**	**Sig.**	**Levene Statistic**	**Sig.**
RA	Between groups	.949	2	.475	1.008	.366	3.466	.033
	Within groups	109.216	232	.471				
	Total	110.166	234					
RE	Between groups	.725	2	.363	1.286	.278	.658	.519
	Within groups	65.417	232	.282				
	Total	66.142	234					
EA	Between groups	2.368	2	1.184	3.528	.031**	2.118	.123
	Within groups	77.870	232	.336				
	Total	80.238	234					
EE	Between groups	2.148	2	1.074	2.490	.085*	2.539	.081
	Within groups	100.067	232	.431				
	Total	102.215	234					

sig.** p< 0.05 * p< 0.1

Discussion: Decision-making process of home buying is a complex process, involving both rational and experiential system. Rational system, which is Rational Ability (RA) and Rational Engagement (RE) and experiential system which is Experiential Ability (EA) and Experiential Engagement (EE). The result shows that each system does not show any significant difference toward buyers' dual motives. This is contradictory to the study of Njo, Made-Narsa, Irwanto (2017) which states buyers with consumption motive tend to have a rational decision compared to buyers with investment motive, which tend to be heuristic. The ability to think logically and analytically, with the pleasure of doing so, is hard to be distinguished in buyers with consumption motive. As is the case with the ability to recount impressions and intuitive feelings in one's self, with the feeling when deciding intuitively and based on feeling. It is hard to distinguish one from the other.

Buyers or investors profiles, if not grouped according to their demographical characteristic and structure, will make it hard to discern the cause and consequences of home buying decisions. Therefore, this study delves deep into the correlation of demographics in the dual system in buyers. Individual demography proves there is a difference based on gender, age, education, and family life cycle. Male tends to be more rational than female in both the ability to think and the pleasure in thinking logically. The age group of 41-50 years is superior to the 21-30 years group in the ability to analyze logically, while the 31-40 years group is superior to the over 51 years group in the ability to use both their experience and logic. The 31-50 years group shows personal maturity and logical thinking that is formed through their acquired knowledge and experience. Oppositely, those in the 21-30 years group are in the stage of forming their thinking logic, while those in the later stage are starting to lose theirs.

This study however, is contradictory to the study of Kokis et al. (2002) which states that the ability is a predictor to analytic reasoning, not caused by age. Dual system theory proves "controlled" cognitive process

correlates with intelligence and individual working memory capacity, while "automatic" process does not correlate. The educational background shows a higher education leads to the domination of the rational system over experiential. Even more, this domination of the rational system is seen in every educational level. Shiloh & Shenhav-Sheffer (2004) studied about "difficulties in the mate-selection decision", participants with higher rationality experienced less difficulty in making decisions regarding statements which measured difficulty in making decisions (e.g. doubt, unreliable information, and external conflict). On the contrary, participants with higher experiential style expressed they faced difficulties when asked to make an overall decision. This research also proved that each family depending on their own stages uses logic in thinking, so it is hard to distinguish their level of rationality. Rational system is an individual comprehension which is transmitted consciously, relatively slow and analytic.

Cognitively, every individual tends to use their logic, so it is hard to distinguish based on their life cycle. Conversely, the experiential system on later families (empty nest) is higher compared to younger families (full nest). Experiential system is a learning system that is presumptuous, quick, automatic, and holistic. The experiential system operates in contrast to the rational system; it works independently because of different rules, but remains interactive. Limited time and effort to gather information cause later families to process problem-solving and decision making rapidly. Experience is the best "teacher" to those families, which leads to a trade-off between loss of accuracy and the preservation of cognition and speed (Shah & Oppenheimer, 2008). Heuristic behavior occurs in later families because they do not want the presence of heavy thinking and high complexity problems. The decisions made are biased and inefficient. Conclusions are drawn without effective consideration and analysis based on parameters used (Simon, 1978).

5. Conclusion and Implications

The rational and experiential system of buyers cannot be differentiated. But with deeper analysis on their characteristics based on demographic background, study shows there is a difference in the dual process based on gender, age, and education. There is also a difference based on family life cycle, especially on the experiential system regarding the ability to recount impressions and intuitive feelings of their own. On the other hand, the rational system on every family life cycle stage along with experiential system regarding feelings in making a decision using intuition cannot be differentiated. Dual process studies in decision making on buying a house is a tough process on every individual that although numerous considerations and logical thinking have been carried out. Psychological factors and experience will still affect the process. This dual process is so strongly imprinted that it is inevitable, but cognitive ability and time condition will play an active role as a guide to a rational or intuitive decision making. Therefore, a study on dual process still needs improvements to create an efficient real estate market. Understanding the behaviors of real estate buyers and investors can help create a stable market condition, thus reducing the volatility of property price.

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Appendix – Questionnaire REI 40

Rational Ability

1. I have a logical mind.
4. I am not a very analytical thinker.*
8. I don't reason well under pressure.*
13. I am much better at figuring things out logically than most people.
14. I usually have clear, explainable reasons for my decisions.
17. I have no problem thinking things through carefully.
25. I'm not that good at figuring out complicated problems.*
27. Reasoning things out carefully is not one of my strong points.*
30. Using logic usually works well for me in figuring out problems in my life.
39. I am not very good at solving problems that require careful logical analysis.*

Rational Engagement

2. I prefer complex problems to simple problems.
6. I try to avoid situations that require thinking in depth about something.*
10. Thinking hard and for a long time about something gives me little satisfaction.*
16. Thinking is not my idea of an enjoyable activity.*
20. Learning new ways to think would be very appealing to me.
26. I enjoy intellectual challenges.
28. I enjoy thinking in abstract terms.
32. I don't like to have to do a lot of thinking.*
33. Knowing the answer without having to understand the reasoning behind it is good enough for me.*
40. I enjoy solving problems that require hard thinking.

Experiential Ability

3. I believe in trusting my hunches.
5. I trust my initial feelings about people.
18. When it comes to trusting people, I can usually rely on my gut feelings.
19. I can usually feel when a person is right or wrong, even if I can't explain how I know.
21. I hardly ever go wrong when I listen to my deepest gut feelings to find an answer.
34. Using my gut feelings usually works well for me in figuring out problems in my life.
35. I don't have a very good sense of intuition.*
36. If I were to rely on my gut feelings, I would often make mistakes.*
37. I suspect my hunches are inaccurate as often as they are accurate.*
38. My snap judgments are probably not as good as most people's.*

Experiential Engagement

7. I like to rely on my intuitive impressions.
9. I don't like situations in which I have to rely on intuition.*
11. Intuition can be a very useful way to solve problems.
12. I would not want to depend on anyone who described himself or herself as intuitive.*
15. I don't think it is a good idea to rely on one's intuition for important decisions.*
22. I think it is foolish to make important decisions based on feelings.*
23. I tend to use my heart as a guide for my actions.
24. I often go by my instincts when deciding on a course of action.
29. I generally don't depend on my feelings to help me make decisions.*
31. I think there are times when one should rely on one's intuition. *reverse the score of statement

Subjective Risk Tolerance of South African Investors

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Abstract: In general, the amount of risk an individual is willing to tolerate can be influenced by demographic factors. However, needs for research arise as to whether demographic factors influence the amount of risk investors in South Africa are willing to tolerate. The survey was conducted in 2017 and all South African investors were included in the sample frame. For this study, a sample of 800 was collected and used. Multinomial regression was used to indicate whether there were more than two factors that can influence the four risk tolerance levels of South African investors. The study suggested that gender is a determining factor in the risk tolerance of individuals. African investors were more likely to take the substantial financial risk. Age was also a determining factor of risk tolerance which follows the assumptions of the investor lifecycle where younger investors are more risk tolerant. The study furthermore found that higher annual income attracts more risk-taking while lower-income attracts more risk averseness in individuals. It was lastly observed that married individuals and those that are no longer married will be more likely to be risk-averse. This study makes a significant contribution in profiling investors risk tolerance according to their demographic factors whereby financial institutions can offer more tailored investment options.

Keywords: *Subjective risk tolerance, demographics, investments, South African investors*

1. Introduction

Due to the unpredictability and uncertainty of the future, the risk is created from uncertainty. The risk that arises from uncertainty can potentially be managed (Crouhy et al., 2014). People encounter risk in everyday life. Risk can be explained in terms of investment where as a result of uncertainty regarding future returns or potential losses, the risk is created (Van den Berg, 2004). However, risk and uncertainty do not concur (Rachev et al., 2011). The continuation of risk is known as a situation or rather, a group of situations, in which a probability of loss occurs that generates uncertainty on behalf of the individual (Vaughan & Vaughan, 2008). Individuals' determine the amount of risk they are willing to tolerate or accept for a given period of time. The main aim is to identify the possible causes of risk in order to accurately manage and control these risks (Old Mutual, 2015). The outcome probabilities are known for investment decisions made under risk whereas the outcome probabilities are unknown for investment decisions made under uncertainties (Goldstein & McElligott, 2014). A relationship has been identified between risk perception, risk propensity and risk-taking behaviour of investors. From this it could be gathered that investors can take a certain amount of risk comfortably when making investment decisions.

These risks of investors are composed out of risk appetite and risk capacity. It can be concluded that investors can tolerate a certain amount of risk when making investment decisions. During the 1900's, Tversky and Kahneman (1981) stated that risk tolerance should be used as the dependent variable and other factors as independent variables. From previous studies conducted by Van de Venter et al. (2012) and Nguyen (2015) risk tolerance can be influenced by socio-economic, demographic and psychological factors. The amount of risk an individual is willing to tolerate can be influenced by demographic variables (MacCrimmon & Wehrung, 1986). However, needs for research arise as to whether demographic factors influence the amount of risk investors in South Africa are willing to tolerate. Previous research done by Dickason and Ferreira (2018) found that gender and age do influence investors risk tolerance. A study by Van Dorresteijn (2017) also found that marriage status influence risk tolerance where unmarried individuals were more willing to accept risks than married individuals. The University of Missouri-Columbia (2017) confirmed that gender has an influence where male investors were more tolerant of financial risks than female investors.

2. Literature Review

Rutgers (2014) stated that risk tolerance is one of the most important concepts in the financial industry and a fundamental factor that should be taken into account when planning investment strategies for individuals.

Risk tolerance is commonly referred to an investor's attitude towards risk (Sahin & Yilmaz, 2009). Moreover, Grable (2000) defined risk tolerance as a degree of uncertainty in investment returns which an individual investor is willing to accept. Davey and Resnik (2008) stated that risk tolerance is the amount of risk individuals are willing to take when exploring unfavourable outcomes with possible favourable outcomes in the future. Risk tolerance can ultimately be divided between subjective and objective risk tolerance (Hanna & Chen, 1997). Subjective risk tolerance is known by the economic theory of risk aversion whereas objective risk tolerance based on Malkiel's notion of the objective financial situation of households including investment goals' horizon (Malkiel, 1996). According to Hanna et al. (2001) risk tolerance can be measured by four measures namely to determine the individual investors' investment choices, to ask a combination of investment and subjective questions, to evaluate actual behaviour and to assess specific scenarios in terms of asking hypothetical questions. Risk tolerance can influence both short- and long-term goals of individual investors. The method of investing in short- (savings) and long-term (retirement) is influenced by risk tolerance (Grable, 2016). Risk tolerance incorporates risk requirement, risk capacity and risk preference of investors and this can be measured by how investors perceive risk (Louw, 2017). Hence if an investor is willing to take high risk, the question remains if it is to generate a high return or a reflection of a lack of financial knowledge (Louw, 2017). Numerous factors can impact risk tolerance levels of investors whilst making investment decisions.

As a result, risk tolerance levels of investors are regarded as the dependent variable. Irwin (1993) explained that demographic factors (i.e. age, income, gender, ethnicity, marital status) can influence the level of risk an investor is willing to tolerate. Sung and Hanna (1996) highlight from previous research that demographic factors such as education levels, ethnicity, employment status, gender, other income and age can possibly influence financial risk tolerance. Previous researchers such as Wang and Hanna (1997) found that there is a relationship between age and risk tolerance; whereas, Grable and Lytton (1998) found that the two most influential variables on risk tolerance are age and gender. Grable and Lytton continued with research in the field of financial risk tolerance and found that other factors such as marital status, education levels, financial knowledge, income levels, occupation and economic expectations also have an impact on the level of risk investors are willing to tolerate. In contradiction to the previous findings, Grable (2000) emphasised in research that gender, marital status and age are not considered important influences. Moreover, Mazumdar (2014) conducted a research study and concluded that no evidence exists of a relationship between financial knowledge and investment behaviour. Irwin (1993) indicated that young people are more risk tolerant than older people. It is believed that older people have time constraints to recover from financial losses due to making inaccurate investment decisions (Grable, 1997). Therefore, young people are willing to take on more financial risk as they have more time to recover from financial losses experienced due to inaccurate investment decisions (Grable & Roszkowski, 2008; Gibson et al., 2013). Contrarily, researchers such as Botwinick (1966), Vroom and Pahl (1971), Baker and Haslem (1974), Okun and DiVesta (1976), Morin and Suarez (1983), Hawley and Fuji (1993), Wang and Hanna (1997), Grable (2000) and Van de Venter et al. (2012) found in their research that older people are willing to tolerate more risk.

No universal agreement is established as to whether gender, as a demographic factor, influence the level of risk an individual is willing to tolerate. Research done by Higbee and Lafferty (1972), Blume (1978), Coet and McDermott (1979), Rubin and Paul (1979) and Yip (2000) indicated that gender is an important influential factor of risk tolerance. Roszkowski et al. (1993), Hawley and Fuji (1993), Slovic (1966), Sung and Hanna (1996), Sharma (2006) and Rahmawati et al. (2015) reached a consensus that females take less risks than males, thus males are more risk tolerant than females. Cultural differences in terms of values, tastes and preferences can affect risk tolerance levels. The general norm is that White people are willing to tolerate more risk than non-White people. This norm is based on the accessibility of White people to banks and financial institutions, more future-oriented outlooks and more investment opportunities than non-White people. White people will therefore, portray an attitude of confidence in decision-making skills and their abilities to analyse (MacCrimmon & Wehrung, 1986; Zhong & Xiao, 1995; Sung & Hanna, 1996). In South Africa a study was conducted between risk tolerance and ethnicity. Metherell (2011) found, based on research done, that a significant difference exists between White people and the Indian population. Moreover, Van Schalkwyk (2012), concluded in his study that African people tend to take higher risks than White people, thus making African people more risk tolerant. Marital status can be compartmented into married, never married, divorced, separated and widowed. It can be argued that married investors have more

responsibilities in terms of households, dependants and spouses. The identified risk, social risk, are apparent for married investors as there can be a possible loss of self-esteem in social circles as financial losses can be a result of inaccurate investment choices (Roszkowski et al., 1993).

Researchers such as Baker and Haslem (1974), Lee and Hanna (1991), Lazzarone (1996), Sung and Hanna (1996) indicated that married investors tend to have a decreased investment risk appetite in comparison to unmarried investors. The general belief is that people with high gross incomes are more likely to take on high investment risks compared to lower gross income groups (Cohn et al., 1975). Moreover, a research study conducted by Warren et al. (1990) concluded that high-income males are more likely to invest in risky bonds and stocks than high-income females. A general consensus is reached between researchers such as Grable and Lytton (1998), Grable and Joo (1999), Grable (2000), Grable and Joo (2004), Ardehali et al. (2005), Gibson et al. (2013) and Rahmawati et al. (2015) that high-income individuals take on higher investment risks. The study of Rahmawati et al. (2015) aimed to determine the main determinants of the risk tolerance of individual investors in Pakistan. The study included the risk tolerance measurement of 187 participants.

3. Methodology

The influence of subjective financial risk tolerance on individual decisions are known over the world, however, subjective financial risk tolerance has not received a lot of attention in the South African context, specifically for investors. It is important to analyse the factors that can potentially influence the subjective risk tolerance of investors in order to understand their investment decisions. Previous research indicated that age, gender, income, marital status and ethnicity influence subjective risk tolerance levels of individuals. As a result, this study aimed to test whether these factors also influence the investment decisions of South Africa investors. A survey was electronically distributed to investors in South Africa.

Data: The survey was conducted in 2017 and all South African investors were included in the sample. For this study, a sample of 800 was collected and used. This sample is distributed over the nine provinces in South Africa. The study made use of purposeful sampling as the most productive sample has been included (Marshall, 1996; Quinlan, 2011; Creswell, 2014). The questionnaire was sent electronically to a South African investment company and the company reloaded the questionnaire onto a system that is used to interact with their clients. This electronic version of the questionnaire was distributed to the participants via the company's system and was returned electronically. The Survey of Consumer Finances (SCF) is a single risk-tolerance question. This scale continues to be widely used by researchers. The reason for this is that the measured item is the only direct measure of risk attitudes (Gilliam et al., 2010). The data analysis involves the use of a multinomial logistic regression. This regression is used to analyse the influential demographic factors that predict the subjective risk tolerance level of South African investors. A multinomial regression is used when there are more than two factors that can influence the four subjective risk tolerance levels of South African investors.

Therefore, the Multinomial Model can be defined as Follow:

$$\boldsymbol{P_{ij}} \frac{\mathbf{exp}(\boldsymbol{B_j X_i})}{\mathbf{1} + \sum_{j=1}^{4} \mathbf{exp}(\boldsymbol{B_j X_i})} \; \boldsymbol{for\; j} = \mathbf{1, 2, 3, 4}$$

Where $\boldsymbol{X_i}$ is the vector for the independent variables representing the demographic variables for each ith investor profile. $\boldsymbol{B_j}$ represents the vector for the regression estimates for each alternative $\boldsymbol{j}$ subjective risk tolerance level. The base category for each of the explanatory variables assumed to have a coefficient of zero when used as the reference group. The base category was chosen as follow:

$$\boldsymbol{P_{i=}} \frac{\mathbf{1}}{\boldsymbol{X_i}} = \frac{\mathbf{exp}(\boldsymbol{B_j X_i})}{\mathbf{1} + \sum_{j=1}^{4} \mathbf{exp}(\boldsymbol{B_j X_i})}$$

The probability of investors falling into one of the other subjective risk tolerance groups can be calculated as follow:

$$\boldsymbol{P_{i=}}(\mathbf{j} = \mathbf{mx}) = \frac{\mathbf{exp}\left(\boldsymbol{B_j X_i}\right)}{\mathbf{1} + \sum_{j=1}^{4} \mathbf{exp}\left(\boldsymbol{B_j X_i}\right)} \mathbf{where\; m} > 1$$

Therefore, the multinomial regression model to determine investors subjective risk tolerance levels according to their demographics can be defined as follow:

$$\boldsymbol{P_{ij}} = \boldsymbol{In}\,(\boldsymbol{Pij}\ ) = \boldsymbol{B_0} + \boldsymbol{B_1 X_{1i}} + \boldsymbol{B_2}\ \boldsymbol{X_{2i}} + \ \boldsymbol{B_3}\ \boldsymbol{X_{3i}} \ldots\ldots\ldots \boldsymbol{B_n X_{ni}} + \boldsymbol{\varepsilon}$$

$\boldsymbol{P_i}$ is the probability that investors might fall into any of the four subjective risk tolerance categories being, (1) not willing to take any financial risk (2) willing to take below average financial risk (3) willing to take above average financial risk and (4) willing to take suthe bstantial financial risk.

4. Results and Discussion

The following sections represent the descriptive statistics and regression analysis of the influence of demographic factors on investors' subjective risk tolerance levels.

Demographics of South African Investors' Subjective Risk Tolerance: Table 1 indicates the frequencies of South African investors according to their subjective risk tolerance, age, gender, marital status, annual income and ethnicity.

Table 1: Frequency of Dependant and Independent Variables

Variable	Category	Frequency
Subjective risk tolerance	Not willing to take any financial risk	21.5%
	Willing to take average financial risk	43.9%
	Take above average financial risk	26.1%
	Take substantial financial risk	8.5%
Age	16-34	25.0%
	35-49	35.8%
	50+	39.3%
Gender	Male	43.9%
	Female	56.1%
Marital status	Never married	25.8%
	Married	57.9%
	No longer married	16.4%
Annual Income	R100 000 or less	15.4%
	R100 001-R300 000	36.1%
	R300 001-R500 000	22.8%
	R500 001-R700 000	13.6%
	More than R700 000	12.1%
Ethnicity	African	17.5%
	White	66.5%
	Coloured	7.8%
	Asian	8.3%

Table 1 above reflect the frequencies of the dependent variable, subjective risk tolerance, as well as the five independent variables namely age, gender, marital status, income and ethnicity. The sample consisted of 800 investors where the majority (43.9%) of investors indicated that they are only willing to take the average financial risk. Only 8.5 percent of the sample were willing to take the substantial financial risk. Merely, 25.0 percent of the investors were below the age of 34 years, where the majority of investors were older than 35 years. This is indicative that the sample consisted of older more experienced investors. More than half of the sample (56.1%) were female investors while 43.9 percent represented male investors. Almost 60.0 percent were married, followed by 25.8 percent that has never been married and 16.4 percent investors that are no longer married. Considering the income distribution, the majority of investors earn between R100 001-R300 000 per annum, whereas, only 12.1 percent earn more than R700 000 per annum. The sample consisted mainly out of White investors where this ethnicity group represented 66.5 percent of the sample.

Table 2: Multinomial Logic Regression Results

Dependant category	Variable	Beta	Std. Error	Wald	DF	Sig.	EXP (B)
Willing to take average financial risk	Gender (Male)	0.508	0.216	5.521	1	0.019	1.662
	African	1.016	0.432	5.527	1	0.019	2.761
	White	0.877	0.347	6.391	1	0.011	2.404
	Coloured	0.344	0.451	0.580	1	0.446	1.410
	Asian (Ref. group)						
	16-34	0.903	3.050	8.767	1	0.003	2.466
	35-49	-0.169	0.224	0.569	1	0.451	0.845
	50+ (Ref. group)						
	<R100 000	-1.136	0.433	6.878	1	0.009	0.321
	R100 001-R300 000	-0.634	0.397	2.544	1	0.111	0.530
	R300 001-R500 000	-0.058	0.420	0.019	1	0.891	0.944
	R500 001-R700 000	-0.068	0.476	0.020	1	0.887	0.934
	>R700 001 (Ref. group)						
	Never married	0.128	0.332	0.157	1	0.692	1.136
	Married	0.493	0.258	3.651	1	0.056	1.637
	No longer married (Ref. group)						
Take above average financial risk	Gender (Male)	1.071	0.240	19.896	1	0.000	2.917
	African	0.677	0.470	2.071	1	0.150	1.968
	White	0.489	0.381	1.645	1	0.200	1.631
	Coloured	-0.088	0.513	0.030	1	0.863	0.915
	Asian						
	16-34	1.342	0.338	15.728	1	0.000	3.825
	35-49	0.281	0.259	1.177	1	0.278	1.324
	50+						
	<R100 000	-1.948	0.456	18.264	1	0.000	0.143
	R100 001-R300 000	-1.694	0.408	17.222	1	0.000	0.184
	R300 001-R500 000	-1.095	0.432	6.444	1	0.011	0.334
	R500 001-R700 000	-0.548	0.480	1.302	1	0.254	0.578
	>R700 001						
	Never married	0.738	0.384	3.686	1	0.055	2.092
	Married	0.651	0.326	3.986	1	0.046	1.917
	No longer married						
Take substantial financial risk	Gender (Male)	1.063	0.326	10.635	1	0.001	2.896
	African	1.747	0.611	8.172	1	0.004	5.739
	White	-0.073	0.569	0.017	1	0.898	0.929
	Coloured	-0.243	0.761	0.102	1	0.750	0.785
	Asian						
	16-34	1.887	0.476	15.700	1	0.000	6.600
	35-49	0.985	0.396	6.197	1	0.013	2.677
	50+						
	<R100 000	-1.055	0.614	2.955	1	0.086	0.348
	R100 001-R300 000	-1.076	0.558	3.724	1	0.054	0.341
	R300 001-R500 000	-0.915	0.612	2.236	1	0.135	0.400
	R500 001-R700 000	-0.416	0.663	0.393	1	0.531	0.660
	>R700 001						
	Never married	-0.651	0.477	1.861	1	0.173	0.522
	Married	-0.762	0.412	3.414	1	0.065	0.467
	No longer married						

Cox and Snell 0.192	Goodness of fit Chi-square 542.480
McFadden 0.085	P-value 0.462
Nagelkerke R-squared 0.210	

Table 2 reflects the multinomial logistic results of the relationship between the independent demographic variables and the dependent variable, subjective risk tolerance. The results of the study are provided in Table 2 which indicates that the data fits the model as the p-value is not significant in both Pearson (0.462) and Deviance (0.585) goodness-of-fit tests. The Pseudo R-Squared statistic was used to assess the model fit and measure the predictive power of how well the dependent variable, in this case subjective risk tolerance, can be predicted based on the explanatory variables, age, gender, income, ethnicity and marital status. The results indicated a 19.2 percent variance in the subjective risk tolerance of an individual investor that is predictable from the demographical attributes. Previous literature suggests that gender is a determining factor in subjective risk tolerance of individuals. Hence, the results for this research study found an overall p-value for gender significant at the 1 percent level of significance. For the individual risk tolerance models willing to take average financial risk (0.019), above average financial risk (0.000) and substantial financial risk (0.001), a significant difference was found at 1 percent and 5 percent.

The dominant sign for gender was positive indicating that male investors are less likely to be in the reference category – not willing to take any financial risk. Therefore, the results concur with previous research by Higbee and Lafferty (1972), Blume (1978), Coet and McDermott (1979), Rubin and Paul (1979), Yip (2000), Roszkowski et al. (1993), Hawley and Fuji (1993), Sung and Hanna (1996). Sharma (2006) and Rahmawati et al. (2015) which suggested that males are more risk tolerant than females. For the independent variable ethnicity, an overall significant p-value (0.000) at 1 percent was obtained. For the first model, willing to take the average financial risk, a significant difference at 5 percent was found for African (0.019) and White investors (0.011). For the third model, take the substantial financial risk, a significant difference (0.001) at 1 percent was observed for African investors. For all three models African investors were more likely to fall in the dependent category rather than in the reference category, not willing to take any financial risk. These results are similar to Van Schalkwyk (2012), who found African people to be more risk tolerant than other races. A negative coefficient was obtained for Coloured investors in two out of the three models indicating that Coloured investors are more likely to be risk-averse and not willing to take on any financial risk.

Concerning the age distribution, an overall significant p-value (0.000) at 1 percent was again obtained. For all three models, the age category 16-34 years was significant at 1 percent, whereas the age category 35-49 was only significant in the third model (0.013). Positive coefficients for age groups 16-34 and 35-49 were observed in all three models indicating that investors within these age categories are more likely to fall in the higher risk categories, compared to older investors (50+) which are not willing to take on any financial risk. This correlates with research studies of Irwin (1993), Grable and Roszkowski (2008), Gibson et al. (2013) indicating that older investors tend to be more risk-averse and not willing to take on any financial risk while young investors are more willing to take on average to higher risk investments. For the independent variable annual income, an overall significant p-value (0.000) at 1 percent was obtained. Previous literature by Grable and Lytton (1998), Grable and Joo (1999), Grable (2000), Grable and Joo (2004), Ardehali et al. (2005), Gibson et al. (2013) and Rahmawati et al. (2015) concluded that annual income plays an important role in the risk tolerance of individuals i.e. how much risk they are willing to tolerate. These previous results found that higher income attracts more risk-taking while a lower income attracts more risk averseness in individuals.

The results of this study indicate similar results. The income groups, less than R100 000 and R100 000 up to R300 000 were significant at all three models. Largely negative coefficients were found for these low-income groups indicating that investors earning less than R300 000 per annum are more likely to fall in the reference category of not willing to take on any risk. The theoretical reasoning behind these results that investors with less income are not willing to take on high-risk investments in fear of losing their investment. The other income groups higher than R300 000 but below R700 000 per annum were also more likely to fall in the reference category but a linear decline in the negative coefficients was observed as the annual income group became larger. Therefore, these groups were also less likely to take on substantially higher financial risk compared to the income group of R700 000 and more. The last coefficient was on marital status, with no

longer married as the reference group. For marital status an overall significant p-value (0.005) at 1 percent was obtained. Previous studies by Baker and Haslem (1974), Lee and Hanna (1991), Lazzarone (1996), Sung and Hanna (1996) indicate contradicting opinions regarding the influence of marital status on subjective risk tolerance. For married investors a p-value significant at 10 percent was found at all three models indicating a difference between married investors and investors that are no longer married.

5. Conclusion

The dominant sign for both never married and married investors were positive in the first two models indicating that these investors are more likely to take on average to higher risk than to be risk-averse, not willing to take on any risk. However, a larger positive coefficient was observed for never married investors. In the last model a negative coefficient was observed indicating that married investors and those that are no longer married will be more likely to be risk-averse. However, no significant difference was found at 1 percent or 5 percent. In a financial context, the amount of risk an individual is willing to accept is known as subjective financial risk tolerance. Previous research indicated that demographic factors can potentially influence the subjective risk tolerance levels however this has not been tested in a South African context. As a result, the primary objective of this study was to determine whether demographic factors influence the subjective risk tolerance levels of South African investors.

The survey method was used for this study of which the survey was conducted in 2017 and investors in the nine South African provinces were included. The sample size for this study was 800, thus the data of 800 investors were used. The risk tolerance levels of South African investors were divided into four levels and this study made use of the multinomial regression to indicate whether more than two factors can actually influence the risk tolerance levels of South African investors. Previous international studies concluded that more than two factors can influence the risk tolerance levels of investors and this was put to the test for a South African perspective. Results from this study indicated that African investors are more likely to take the substantial financial risk when making investment decisions. Moreover, the investors' lifecycle indicates that young investors tend to be more risk tolerant, results from this study confirms this statement. This study further indicated that high-income investors are more willing to take on financial risk whereas low-income investors are more risk-averse. The final factor investigated for this study was marital status. It can be concluded that married investors and no longer married investors are less risk tolerant than those never married. Results found to accord with previous international research results, only in a South African context. A significant contribution is made by this study in terms of profiling investors subjective risk tolerance levels in terms of demographic factors whereby financial institutions can offer more tailored investment options to their clients.

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