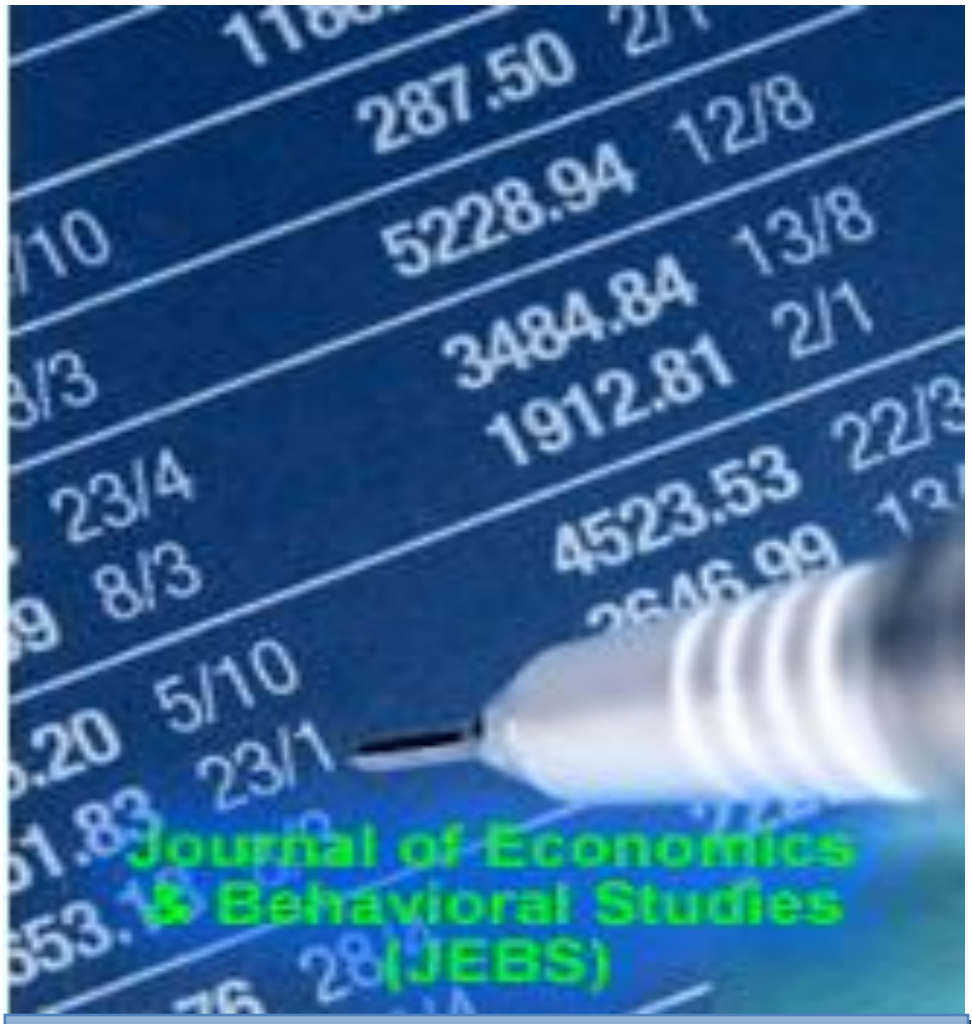

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Editorial

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, Namibia and Nigeria. Organizational cultural practices and employee efficiency, modeling stock market returns of BRICS, a model to measure the service quality of pharmaceutical wholesalers, trade liberalisation and migration policy development, evaluating bank cost efficiency using stochastic frontier analysis, comparative study of rural entrepreneurial challenges, structural changes of the 21st century and their impact on the gold price, evaluation of owners' characteristics and succession practice, fostering a culture of performance management in municipalities & assessment of bank technology machine and mobile banking as market strategies 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

Editorial Board

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PAPERS

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Organizational Cultural Practices and Employee Efficiency among Selected Nigerian Commercial Banks

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Abstract: The study examined the relationship between organizational culture and employee efficiency among commercial banks in Nigeria. Primary data was gathered by means of a self administered questionnaire. to select 223 respondents using simple random sampling technique, and out of which 218 were retrieved. the Statistical Package for the Social Sciences (SPSSS) was adopted to analyze collected data. The findings revealed that organizational processes and structures were significant predictors of employee efficiency. As a result, the staff's familiarity with the organizational processes and structure, their efficiency levels. Arising from these findings, it is recommended that all bank employees should become familiar with and committed to the corporate culture. Appropriate incentives should be offered to employees. These should not be restricted to monetary rewards, but should include recognition of their performance and present opportunities to achieve individual goals and aspirations. Finally, both managers and employees should receive training to enhance efficiency.

Keywords: *Organizational culture, organizational processes, organizational structure, employee efficiency*

1. Introduction

Contemporary dynamics corporate organizations present both opportunities and challenges (Osibanjo & Adeniji, 2013). Understanding such dynamics is essential in pursuing organizational strategic objectives (Awad & Saad, 2013). An organization can improve its workers' behavior by including ethical values in its mode of operation. However, certain cultural traits might be more effective than others in enhancing competitive advantage (Barney, 2012). Corporate culture is an intangible asset which organizations use to build a reputation and to gain strategic advantage to differentiate them from other firms. Numerous studies have found that corporate culture could be predictor of performance and many researchers have empirically tested this relationship (Ojo, 2009). Organizational culture refers to the modus operandi in which an organization conducts its affairs. It is a perception of the organization which is shared and observed by all its members and reflects the characteristics that distinguish it from other organizations (Ghorbanhosseini, 2013). In addition, the content of organizational culture such as value system, beliefs and assumptions may differ from one organization to another. Awadh and Saad (2013) observed that organizational culture adapts over time to respond to dynamic changes and meet the different demands placed on an organization in its quest for competitive advantage in all its activities.

Ritchie (2000) defined supportive culture as a motivational instrument that allow firms smooth operations and also guarantee success. Consequently, it is necessary for an organization to establish an organizational culture to maintain its market position and promote continuous improvement (Habib, Aslam, Hussain, Yasmeen & Ibrahim, 2014). Finally, in order to enhance employee commitment as well as staff retention, the organizational culture should be flexible to be adaptable to changing circumstances. In light of contemporary dynamic business environment, organizational structure and performance have been the subject of considerable debate. An inappropriate structure that results in low levels of employee commitment could prevent the achievement of organizational goals and objectives (Lawson, Hatch, & Desroches, 2013). While the organizational processes adopted by commercial banks are similar, the quality of the services they render to customers differs. This has raised questions about the relationship between organizational processes and employee efficiency. It is against this background that this study examined organizational culture and employee efficiency among selected Nigerian commercial banks in Ilorin metropolis. Montana and Charnov (2015), note that organizational culture is the sum of the values, customs, traditions, and meaning that establish the uniqueness of a company.

Research Objectives: The main objective of this study was to examine the impact of organizational cultural practices on employee productivity among selected commercial banks in Ilorin metropolis. The specific objectives were to:

- Explore the effect of organizational processes on employee efficiency.
- Determine whether organisational structure have significant relationship with employee's efficiency.

2. Literature Review

Employee Efficiency and Effectiveness: Cascio (2006) describe effectiveness and efficiency as important parameters utilized to measure employee's productivity. Effectiveness is used to determine the level at which employees' exhibit ethical practices consistently between their values and performance (Gordon, 2008). While efficiency dictates job specification and ways of performing employees role to accomplishment of such task (Cascio, 2006). Good communication skill that establish acceptable relationship between the stakeholder and team spirit are key factors in measuring employee performance. Cascio (2006) submitted that skills, relationship, adaptability, self motivation tolerance and innovation are performance indicators that can improve productivity among other factor Self motivation, also called self-efficacy is seen as key to sustainable business success and increase individuals' ability to generate new business idea and provide innovative and proactive solutions to business challenges (van der Westhuizen, 2016; van der Westhuizen, 2018).

Organizational Culture: Organizational culture is defined as combination of a constructs that influences employees behavior and attitude to work, such are the shared values, norms and beliefs that affect the work place (Schein, 2009). It prescribes the standards and norms of organizational behaviour (Khan, 2015). Organizational culture is described as the basic assumptions of different organizations that organizational members should embrace in their behavior pattern and attitudes (Schein, 2009). As such, it is often referred to as the mode of operation of an organization. Organizational culture reveals the founders vision and the foremost achievers of the business firm. Nelson and Quick (2011) state that culture is the relationship that exist within different group or department of an organization and the stakeholders, it control the ways and manner of which they interact, it is known as values, norms and beliefs. Defines corporate culture as: "A system of shared values and beliefs that interact with a company's people, organizational structures, and control systems to produce behavioural norms". The organizational culture lays the foundation for work and colors all aspects of the organization (Gunaraja, 2014).

Organizational culture and employee performance are related, although the exact nature of this relationship remains open to debate. Most definitions subscribe to the concept of something shared (especially values) reveals the distinct and uniqueness in the organizational values. However, Baker (2004) asserts that most organizational and corporate culture definition were not practicable thereby sees it at as the sum of the verbalization of traditions. Since the emergency of the organizational culture in the twentieth century, the concept has been defined in different ways by different scholars. Organisational culture are with common features that are communicated to the employees, they are the shared values, beliefs and assumptions (Olulana, 2015). It comprises the unwritten customs, behavior pattern and beliefs that determine the fundamental parameters for managerial action. It is based on the shared history and traditions of the organization combined with current leadership values and styles. In this context, it defines methods at which business activities is been carried out, performed; and strategies for its sustainability and personal growth and success (Dave & Urich, 2011).

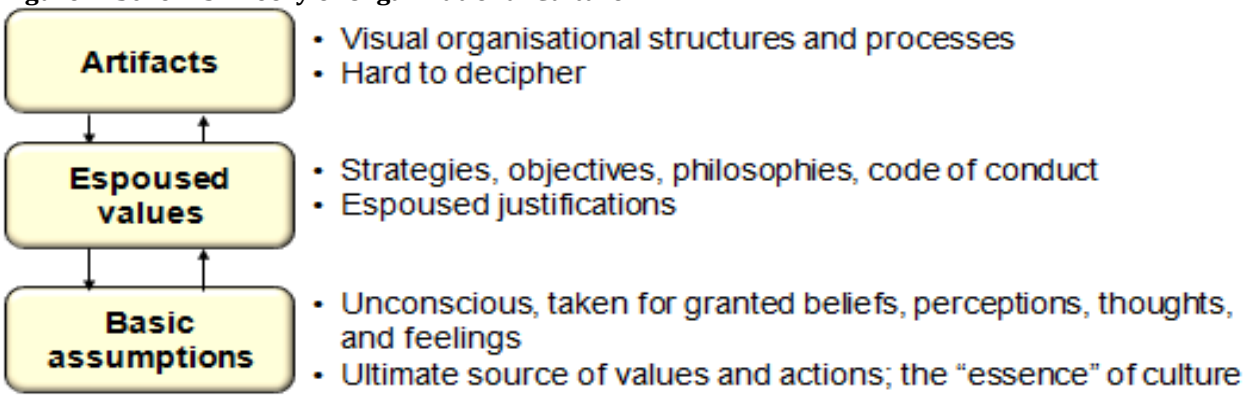
Dimensions of Organizational Culture

The Organizational Process: The organizational process involves stages in modes of operation to transform task and activities inputs to output in an organized firm (Mba, 2014). These vary and can include human capital, good communication network and materials. Vivid examples of it include new product development, employee and stakeholders satisfaction, while less obvious, but equally legitimate factors, are resource allocation and decision making (Ekra & Omondi, 2016). The processes within an organization can be classified using various criteria, including decision-making, planning, the organization's design and structure, staffing; directing, motivating and communicating, and also controlling, all of which are different but equally significant processes within an organization (Mba, 2014).

Organizational Structure: Thomas (2015) defines an organizational structure as pre-mediated or preconceived methods or ways of quality service delivery at the work place for the achievement of organizational mission and vision. Chijindu, Alaye and Gideon (2016) explained that it refers to how work are assigned and supervised. It involves giving other from the superior to subordinates for task accomplishment among members of the organization. Germain (2006) conceptualizes organizational structure as the manner at which assignment and authority are delegated through the line managers inside the organization and work ethics are employed. It is the formal system of authority relationships and tasks that control and coordinate employee action and behaviour to achieve the organization's goals (Jones, 2013). Bernd, (2007) defined organization structure as the segmentation of the workers to various task unit to enhance integration and coordination of the activities. The organizational structure adopted by companies depends on a number of factors such as the size and nature of the business, its geographical location, and the work flow, leadership style and hierarchy (Rishipal, 2014).

Schein's Theory of Organizational Culture: Schein (1991) describes how organizational culture can be used effectively by the managers to simplify the complex nature of corporate culture and to initiate interventions (Sackmann, 1992). Schein (1991) points to the role leaders play while exhibiting the principles of the corporate culture to achieve the organization's set goals. Figure 1 depicts organizational culture as interaction between interrelated cultural levels (Schein, 1991).

Figure 1: Schein's Theory of Organizational Culture



Source: Schein (1991) Adapted in Rietmann, (2013)

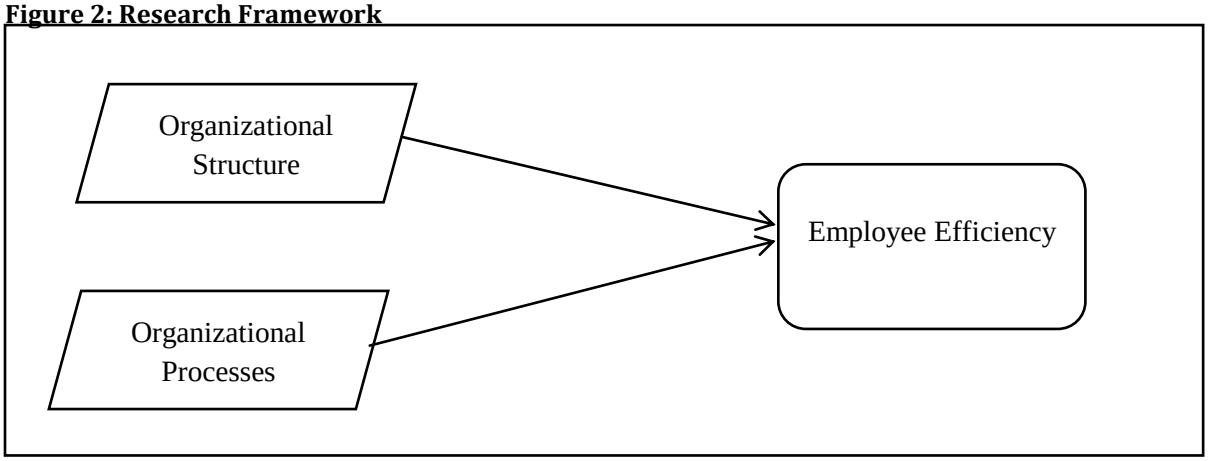
The first layer showed that object and artefacts were created through culture; which includes physical, visible such as structural building; designs; logo; physical products; or intangible objects which also includes stories, speeches, interactions, rites, and rituals etc. However, Sackmann (1992) cautions against drawing conclusions without adequate conceptual clarifications of what clearly constitutes or attributed to visible cues. He uses anthropology as an illustration where Mayan and Egyptian pyramids served different purposes. The collective values of the organization's members occupy the second layer. These have a significant impact on attitudes. According to Schein (1991), the influence of imposed values on behavior is not significant but will only results to self-imposed, internalized moral concepts. The reflections from the third layer revealed the cultural relevance as well as its basic assumption otherwise known as underlying principles guiding organizations members.

These assumptions which have expected long-term binding influence on the members of organization are usually not taken seriously because they are not consciously perceived or visible to members. Schein (1991) notes that basic assumptions are the most important in understanding organizational culture, followed by values. Decoding the embedded fundamental principles is relevance to Schein, whose model relied on anthropologists' research (Sackmann, 1992). In contrast, Hofstede's (2007) suggested that values are integrated into a larger societal culture and collective practices determine organizational culture (Sackmann, 1992). Schein's description of the dichotomy in layers of culture that was first published in 1985 is still widely accepted although there have been numerous adaptations (Sackmann, 1992). This study examined the relationship between organizational culture and employee efficiency.

3. Research Methodology

Research Framework: Research has shown that, while a sound organizational culture might exist, certain staff members still fail to conform to the organizational structure and processes. Figure 2 sets out the framework for the empirical investigation that was based on the literature review presented above.

Figure 2: Research Framework



Research Hypotheses: The following hypotheses are tested:

H_{01}: Organizational processes do not significantly affect employee efficiency.
H_{02}: There is no significant relationship between the organizational structure and employee efficiency.

Measurement and Data Collection: Structured questionnaires were utilized to collect data from the staff of the selected commercial banks in Nigeria. Section A gathered information relating to respondents bio-data such as age; gender; marital status; academic qualifications, income levee; and years of experience to ascertain participant affiliation with the organisation. Section B includes a 34 items designed to measure organisational culture, out of which seven (7) relevant items were employed to examine organizational processes; seven (7) relevant items were utilized for organizational structure and seven (7) to measure employee efficiency. Five-point Likert scale ranging from strongly disagree (1) to strongly agree (5) were employed as a measuring scale. Out of a total possible research population of 224, 214 questionnaires were retrieved and 208 were analysed after removing about six (6) outliers cases.

4. Data Analysis

Reliability Test: It is expected that a reliable instrument will reduce measurement error to a large extent. The most common test of inter-item consistency reliability is Cronbach's alpha coefficient. Cronbach's alpha coefficient was adopted to examine the internal consistency of the instrument in this research. The analysed data reveals that there is high reliability standard that range between 0.717 to 0.866. This is in accordance with the rule of the thumb that a measuring instrument with a coefficient not less than 0.60 have an average reliability, while a coefficient of 0.70 and above revealed high level of high level of reliability of the instrument (Sekaran & Bougie, 2010). Table 1 presents the reliability result of the latent constructs.

Table 1: Reliability Test of the Constructs

Latent Variable	Items	Cronbach's Alpha
Organizational Processes (OP)	7	0.765
Organizational Structure (OS)	7	0.866
Employee Efficiency (EE)	7	0.717

Descriptive Statistics – Profile of the Respondents: Table 2 reveals the demographic information of the respondents. It shows that 156 (75%) respondents were male. In terms of qualifications, 10 (4.9%) respondents held an Senior Secondary Certificate Examination (SSCE); 38 (18.2%) a National Certificate of Education/National Diploma (NCE/ND) and 122 (58.7%) a Higher National Diploma/Bachelor Degree (HND/Degree). Twenty-nine respondents (14.9%) held Masters Certificates and nine (4.3%) had other certificates. Thirteen (6.3%) respondents were below the age of 20, while 50 (24%) were aged between 21 and 30, and the majority (107 or 51.4%) fell into the age group 31-30 years. There were 13 respondents (6.3%) in the age group 41-50, and 25 (12%) were aged 51 and above. In terms of marital status, 51 respondents (24.6%) were single, 152 (73.1%) were married, two (0.9%) were separated and 3 (1.4%) were widowed. Regarding years of service, 35 respondents (16.8%) had five or less years of service; 49 (23.6%) between 6 and 10 years, 78 (37.5%) from 11 – 20 years, and 29 (13.9%) and 17 respondents (8.2%) had been in service for 21 – 30 years and 31 or more years, respectively.

Table 2: Respondents Bio-Data Distributions

S/N	Responses	Frequency	Percentage (%)
1	**Gender**		
	Male	156	75
	Female	52	25
2	**Age**		
	20 yrs and below	13	6.3
	21 - 30 yrs	50	24
	31 - 40 yrs	107	51.4
	41 - 50 yrs	13	6.3
	51 yrs and above	25	12
3	**Marital Status**		
	Single	51	24.6
	Married	152	73.1
	Separated	2	0.9
	Widowed	3	1.4
4	**Educational Qualifications**		
	SSCE	10	4.9
	OND/NCE	38	18.2
	HND/B.Sc.	122	58.7
	M.Sc/MBA/MPA	29	13.9
	Other	9	4.3
5	**Years of Service**		
	Less than 5 yrs	35	16.8
	6 - 10 yrs	49	23.6
	11 - 20 yrs	78	37.5
	21 - 30 yrs	29	13.9
	31 yrs and above	17	8.2

Descriptive Statistics for the Variables: Mean and standard deviation were utilized as descriptive statistics for interval and ratio scale in this study. Mean may be referred to as the average value of the data set (Sekaran & Bougie, 2010). Standard deviation was described as statistical procedures utilized to measure spread or dispersion which offers an index of variability in the data. This study used a five-point Likert scale. Nik, Jantan and Taib (2010) recommended that scores below 2.33 are regarded as low, scores from 2.33 to 3.67 are considered to be moderate, and 3.67 and above are recorded as high. The illustrations shown in Table 3 reveals mean and standard deviation of all the constructs utilized in this research. Organizational structure recorded the highest mean (M = 4.440, SD = 0.242) and organizational processes the lowest (M = 4.424, SD = 0.233). Finally, the table depicts that the mean of all the variables' were all recorded to be high. The table also presents skewness and kurtosis which formed the basic statistical apparatus of normality was performed. A distribution is found normal when both values of skewness and kurtosis are close to zero. According to Tabaniche and Fidel (2007) the skeweness and kurtosis should be within the range of ±2.58 for a large sample size. Table 3 shows the result of the skeweness and kurtosis of the variables.

Table 3: Skewness and Kurtosis of the Variables

Constructs	N	Mean	S.D	Skweness	Kurtosis
Organizational Processes (OP)	208	4.424	.233	-2.172	2.333
Organizational Structure (OS)	208	4.440	.242	-2.133	0.986
Employee Efficiency (EE)	208	4.439	.197	-1.795	0.336

Correlation Test: Correlation analysis is used to explain the strength and direction of a linear relationship between two variables (Pallant, 2011). Pearson correlation was adopted in this study to examine the interrelationship between the variables under study. Table 4 below illustrates the interrelations among organizational processes, organizational structure, and employee efficiency. Pallant (2011) reported that a correlation between two variables which indicates 0 explains no relationship; a correlation that indicates 1.0 describe positive correlation, while a relationship between two variables that point to the value of -1 demonstrates perfect negative correlation. In a similar way, Cohen (1988) recommended the following guidelines on correlation test: r = 0.10 to 0.29 small; r = 0.30 to 0.49 medium; and r = 0.5 to 1.0 large.

Table 4: Pearson Correlation between the Constructs

Constructs	Mean	SD	OP	OS	EE
Organizational Processes (OP)	4.424	.233	1		
Organizational Culture (OC)	4.440	.242	.502**	1	
Employee Efficiency (EE)	4.396	.197	.513**	.475**	1

**. Correlation is significant at the 0.01 level (2-tailed) *. Correlation is significant at the 0.05 level (2-tailed).

The table above depicts that the entire variable have values above 0.9 which indicates a significant correlation among the variables, which means that there is no multicollinearity of variables (Hair et al., 2010).

Regression Analysis and Hypotheses Test between Organizational Processes, Organizational Structure and Employee Efficiency: Multiple regression analysis provides an avenue to neutrally examine the established behavior and extent of the relationship between the dependent variables and the independent variable (Sekararan & Bougie, 2012; Field, 2009). The regression coefficient shows the relative importance of each of the independent variables in predicting the dependent variable. The size of each (individual) regression coefficient shows the extent to which an increase in one unit in the individual variable would affect the dependent variable when we jointly regressed the independent variables against the dependent variable, taking into cognizance all other individual variables and the dependent variable used in the multiple correlation coefficient (Sekaran & Bougie, 2010). Regression analysis was utilized to test the hypotheses in this study in order to investigate whether there is relationship between independent and dependent variables. Multiple regression analysis was performed in determining if there is a relationship between organizational processes, organizational structure, and employee efficiency.

Table 5: Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.616[a]	.379	.370	.15658

a. Predictors: (Constant), OS, OP
b. Dependent Variable: EE

The model summary in Table 5 above shows that R Square is 0.38; this implies that 38% of the variation in the dependent variable (organizational processes and organizational structure) was explained by the constant variable (employee efficiency) while the remaining 62% is due to other variables that are not included in the model. This means that the regression (model formulated) is useful for making predictions.

Table 6: ANOVA[a]

Model		Sum of Squares	DF	Mean Square	F	Sig.
1	Regression	3.055	3	1.018	41.535	.000[b]
	Residual	5.002	204	.025		
	Total	8.057	207			

a. Dependent Variable: EE
b. Predictors: (Constant), OS, OP

Table 6 above summarizes the outcomes of variation analysis in the dependent variable with a high value of regression mean squares (1.018) compared to the residual sum of squares with a value of 5.002 (this indicates that the model properly explained a lot of variation in the dependent variables). However, the estimated F-value (41.535) in the table has a significance value of 0.000; which is below the p-value of 0.05 ($p<0.05$). This means that the explanatory variable elements as a whole can jointly influence change in the dependent variable (employee efficiency).

Table 7: Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
	B	Std. Error	Beta	T	Sig.	Tolerance	VIF
1(Constant)	1.853	.238		7.794	.000		
OP	.228	.057	.270	3.974	.000	.660	1.515
OS	.149	.056	.183	2.659	.008	.642	1.557

a. Dependent Variable: EE

The dependent variable shown in Table 7 illustrates the influence of organizational processes and organizational structure on employee efficiency. This was used as a benchmark to examine the influence between the two variables (for example, organizational processes and organizational structure). Organizational processes' t-test coefficient is 3.974 and the p-value is 0.000 which is below 0.05 (for example, $p<0.05$). In a similar manner, the organizational structure test coefficient is 2.659 and the p-value is 0.008. This means that these variables are statistically significant at 5% significance level. The overall summary of this regression result shows that the coefficient of organizational processes and organizational structure exerts a significant influence on employee commitment. This implies that the null hypothesis will be rejected (organizational processes and organizational structure do not exert any influence on employee efficiency) while the alternate hypothesis will be accepted (organizational processes and organizational structure influence employee efficiency). Consequently, hypotheses H_1 and H_2 are supported.

5. Discussion of the Finding

The results indicate that organizational processes wield an effect on employee efficiency in the selected commercial banks. This concurs with the findings of study performed on effects of organizational culture on employee performance of Kenya private organizations. The results indicated that organizational values have a strong significant effect on employee job performance more than the organizational climate, compared to the mostly found assumptions of a reverse relationship. Overall, the study revealed a positive relationship between organizational culture and employee performance; however, the study found that the effect varied with work processes and systems having more effect on employee performance. This suggests that managers that wish to improve their business should focus on the factors that have a significant effect on employee performance.

Recommendations and Conclusion

In light of the above, it is recommended that all members of an organization and specifically banks should be familiar with and committed to the corporate culture. Appropriate incentives should also be offered to employees. These should not be restricted to monetary rewards, but should include recognition of their worth and opportunities to achieve individual goals and aspirations. Finally, both managers and employees should receive training to boost efficiency and thus productivity. In light of these findings, it is concluded that organizational culture has a significant impact on employee attitudes. The study revealed that organizational cultural practices in banking occupy an essential role in business practices because they provide the means to structure the work process. Similarly, the organizational culture is conducive to fostering interconnected employee-management relations. Companies that include employees in decision-making and promote their development have an advantage over organizations where employees are feeling disregarded.

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Modeling Stock Market Returns of BRICS with a Markov-Switching Dynamic Regression Model

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Abstract: This article adopted a Markov-switching dynamic regression (MS-DR) model to estimate appropriate models for BRICS countries. The preliminary analysis was done using data from 01/1997 to 01/2017 and to study the movement of 5 stock market returns series. The study further determined if stock market returns exhibit nonlinear relationship or not. The purpose of the study is to measure the switch in returns between two regimes for the five stock market returns, and, secondly, to measure the duration of each regime for all the stock market returns under examination. The results proved the MS-DR model to be useful, with the best fit, to evaluate the characteristics of BRICS countries.

Keywords: *Markov-Switching Dynamic Regression, Regime, Stock Market Return, BRICS.*

1. Introduction

Nonlinear models are often used for various purpose and one of their primary purpose is to forecast financial and economic data. Predictive models are usually judged based on their forecast ability (Clements, Franses & Swanson, 2004). Nonlinear models are often used due to their ability for revealing certain attributes in financial and economic data. Some of these features are time-changing variance, asymmetric cycles, higher-moment structures, thresholds and breaks and cannot be modelled by linear processes. Many financial and economic data are associated with events such as financial crises, war or change in government monetary policy exhibit dramatic jumps in their behavior (Yarmohammadi et al., 2012). When this behaviour arises in time series data, a powerful tool needed to explain the sudden changes in the business cycle or economy (Clements et al., 2004). Markov regime-switching is one of the statistical tools suitable for data with the said features. A number of studies applied Markov regime-switching models in both financial and economic data analysis. For instance Turner et al. (1990), Cecchetti et al. (1990) and Schaller and van Norden (1997) used Markov Switching Models (MSM) to explain the behaviour of the stock market return while Gray (1996), Hamilton (1988) and Ang and Bekaert (2002) used Markov switching model to explain the characteristics of interest rates. Subagyo and Sugiarto (2016) in their study employed switching Markova regression to estimate better model that can fit GDP of Indonesia.

Wasim and Band (2011) contributed to the literature by applying MS-AR measure the existence of bull and bear in the Indian stock market. Amiri (2012) demonstrated the ability of nonlinear models by comparing MS-AR and linear model forecasting performance. Blazsek and Downarowicz (2008) in their work compared the forecasting ability of different models that includes regime switching model, ARIMA model, GARCH model. Furthermore, the authors combined Markov switching model and ARIMA-GARCH models to capture dramatic jumps experienced by the hedge fund returns during the periods of financial chaos. The objective of the study was to assess nonlinear behavior in the hedge funds returns. Galyfianakis et al. (2016) used data from 2005 to 2015,the study examine the behavior of five energy prices series. The current study also tries to address the similar objectives in the BRICS stock market returns data. Furthermore, the study measure the duration of each regime for all the stock market returns under examination and to assess the quality of the regime classification. The current study also tries to address the similar objectives employing the BRICS data. Furthermore, the study measure the duration of each regime for all the stock market returns under examination and to assess the quality of the regime classification. The study is organized as follows. Section 2 outlines the relevant literature review of the study. Section 3 outlines the data and methodology. Section 4 presents the empirical results and Section 5 concluding remarks.

2. Review of Literature

In this section, the study briefly describes the application of Markov switching models to stock market returns and others markets. The applications of Hidden Markov Models (HMM) to time series appear to have been introduced by Quandt and Goldfeld (1973). However, the models were made more popular after the

publications of Hamilton (1989, 1990). Hamilton (1989) applied Markov-switching model after recognizing their usefulness in capturing asymmetric conditional moments or asymmetric dynamic properties of time series. In one of his popular work, Hamilton (1989) applied MSM to model the recession in the US economy. The estimated model of the economy alternated between two unobserved states of high growth and slow growth according to a Markov chain process. More recently, Caporale & Spagnolo (2004) employed the MSM to model East Asian exchange rates. The motivation for applying Markov switching models was provided by the work of Engle and Hamilton (1982), Bekaert (2002), Engle (1982). All these authors document regime shifts in exchange rates, and find that regime switching models provide better in-sample fit and out-of-sample forecasts. This class of models is flexible and has interesting properties, with the models being described by a mixture of two or more distributions.

Ismail and Isa (2007) captured regime shifts behaviour in both the mean and variance of Malaysian ringgit exchange rates against British pound sterling, Australian dollar, Singapore dollar and Japanese yen in the period 1990 to 2005 using univariate 2-regime Markov switching autoregressive model (MS-AR) model. The results show that the model captured regime shifts successfully in all four series. Furthermore, likelihood ratio test (LR test) signified the utilization of nonlinear MS-AR model over a linear AR model. Parikakis and Merika (2009) employed Markov switching models to exchange rates with the aim of capturing volatility dynamics and to assess models forecasting ability. It is found that structural changes are somewhat responsible for increased volatilities in four euro-based exchange rates. It is also evident that there is a close relationship between currencies particularly in high volatility periods. Random walk hypothesis is rejected in favour of Markov switching models when using Markov switching Monte Carlo approach. Exchange rate movements are accurately forecasted when using econometric methodology in terms of testing in-sample and out-of-sample Markov trading rules. The model performs exceptionally in terms of out-of-sample returns when applied to euro/US dollar and euro/British pound daily returns.

However, it loses power when applied to euro/Brazilian real and euro/Mexican peso and this seems to be due to higher volatility exercised in Latin America. Yarmohammadi and Mostafaei (2012) used Iranian exchange rate series and compared MS-AR model with six other models in terms of performance in capturing the series. Based on the results MS-AR model is found to be appropriate in terms of best fit to Iran's exchange rate as this is based upon the criterions of AIC and BIC values. The study explored the prospects of formation of currency union among BRICS countries using Markov Regime-Switching model. Furthermore, the real exchange rate markets behaviour in terms of regime switching is compared, the period of the data used is before and after the formation of the group. The study found that there is divergent of real exchange market before the group was found. However, India, China and South Africa show the convergence in direct intervention of central bank after the integration of economies. The study concluded that there is a chance of a strong currency union among BRICS members should there be a strong policy interaction especially in monetary management (Saji, 2019). In the study, volatility of gold returns was tested using the developed models of MS-FIGARCH-hybrid-MPL, MS-APGARCH-hybrid-MLP and MS-FIAPGARCH-hybrid-MLP.

Forecasting criterions of MSE, MAE and RMSE are utilized to evaluate model performance and modified Diebold-Mariano is employed for evaluating forecasting accuracy of the models. Based on the results it is found that the proposed models performs better in modelling and forecasting volatility in daily returns of international gold market (Bildirici and Ersin, 2016). Çifter (2017) employed both regime-dependent impulse response and Markov switching vector autoregression approach to investigate and test the effect of inflation on South African stock market and nonlinear regime-dependent interaction approach respectively. The period between July, 1995 and July, 2017. It is found that in the short-term there is a negative impact in the of inflation, however in the long-term is not evident. Furthermore, stock market movement is also strongly regime-dependent. Aye et al. (2014) used ARFIMA models to BRICS countries in terms of investigating the existence of long memory in daily stock market returns of these countries. Furthermore, the study attempted to clarify the effectiveness of ARFIMA models in predicting stock returns. The evidence found that predicting stock markets yields superior forecasting results by estimating ARFIMA models using various estimation procedures unlike using non-ARFIMA models (AR, MA, ARMA and GARCH).

3. Data and Methodology

The study used monthly stock market returns of BRICS countries (Brazil, Russia, India, China and South Africa) from 01/1997 to 01/2017. A total of 241 observations were collected. The variables were sourced from www.quantec.com. The variables are stock market returns in percentage $R_t = \ln(P_t / P_{t-1})$ where P_t the monthly stock market returns are monthly series could reveal structural breaks more clearly across time. The stock market returns display an increasing linear upward trend with drifts from January 1997 to January 2017.

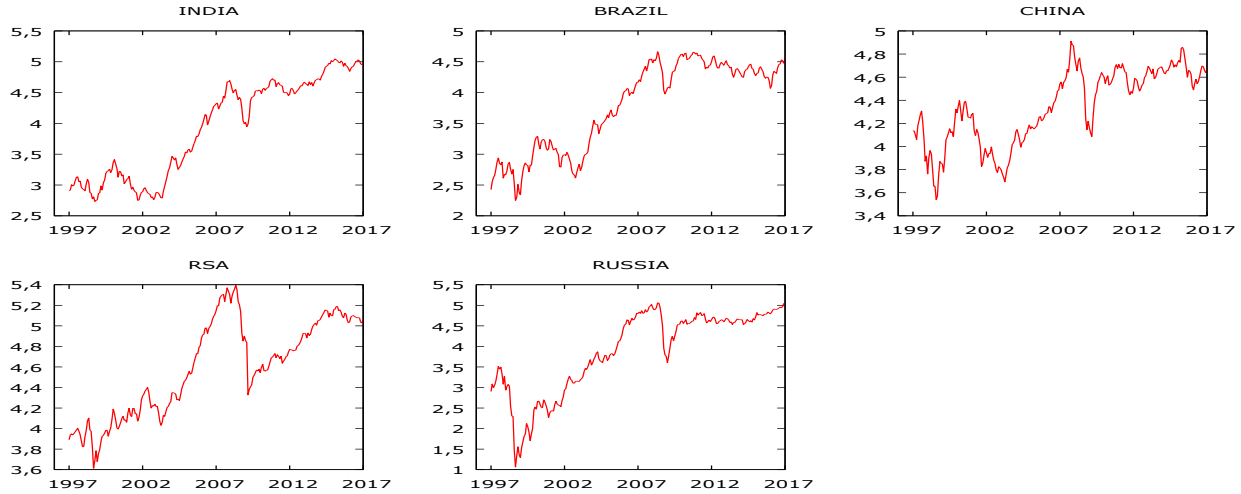
Nonlinearity and Nonstatinary Tests: The study applied several tests of nonlinearity and nonstationry to assess if it is appropriate to use nonlinear models. Isa and Ismail (2007) in their work advised that it is wise to use different nonlinearity tests, since nonlinearity in time series may appear in several ways. We used two portmanteau tests are the McLeod-Li test and the BDS test. The McLeod-Li test was proposed by McLeod and Li (1983) based on suggestion by Granger and Andersen (1978) to test for ARCH effects. The BDS test is derived and discussed by Brock et al. (1996) to test the null hypothesis of independently and identically distributed (iid) in the data. The plot indicates that the data is unstable and non-stationary, reported in fig 1 below. Further empirical analysis is continued by employing the nonlinear unit root test.

Table 1: Summary Statistics and Unit Root Tests

	Mean	Std. Dev.	Skewness	Kurtosis	JB	Prob.
Brazil	3.779	0.723	-0.435	1.633	26.350	0.000
China	4.341	0.322	-0.386	2.031	15.435	0.000
India	3.930	0.788	-0.154	1.412	26.262	0.000
Russia	3.894	1.000	-0.832	2.593	29.456	0.000
South Africa	4.592	0.463	-0.117	1.746	16.330	0.000

Table 1 reports summary statistics and unit root tests for the return series. On average, stock market returns of South Africa are higher than the stock returns of other BRICS countries, but they are more volatile as indicated by the associated standard deviations. The stock market in China is the least volatile (0.322%) among the stock markets of the BRICS, while the Russian stock market is the most volatile (1.00%). Jarque Bera (JB) for normality is rejected. We were unable to reject the hypothesis that the level of each series was non stationary. In other words, over the sample period all the data series evidence significant skewness and kurtosis implying the existence of market movements with great frequency.

Figure 1: Monthly Returns for the Brics Stock Market Returns During the Period of 01 January 1997 to 01 January 2017



Markov Switching Dynamic Regression Model: The study adopted two types MS-DR model to capture the regime shifts behaviour of BRICS stock market returns. Furthermore, the study used CUSUM test to evaluate the stability of the five stock market retunes. In case of nonstationary, the study used Beirens and Guo test and Beirens Nonlinear ADF unit root test. We applied all these tests to provide evidence that the BRICS stock market returns were nonlinear in nature. Hamilton (1989, 1990) was the first to apply Markov switching models (MSM) on time series data to identify and describe the specific features of the business cycle. Other researchers used this econometric framework in order to model other financial and economic variables.

Hamilton (1993) proposed MSM that is based on the assumption that the development of X_t can be explained by states (or regimes), where a two regime Markov-switching regression model can be expressed as:

$$\text{Regime} \quad 1: X_t = \mu_1 + \varphi X_{t+1} + \varepsilon_t$$

$$\text{Regime} \quad 2: X_t = \mu_2 + \varphi X_{t+1} + \varepsilon_t \tag{3.1}$$

where X_t is the dependent variable,

μ_1 and μ_1 are the intercepts in each state,

φ is the autoregressive coefficient and ε_t is the error at time t.

In the case where the state (regime) shifts are known, the two regime Markov-switching model can expressed as:

$$X_t = S_t\mu_1 + (1-S_t)\mu_2 + \varphi X_{t-1} + \varepsilon_t \tag{3.2}$$

where S_t represents the regime and is equal to 1 if the process is in regime 1 and 2 if it is in regime 2. However, in most cases it is not possible to observe in which regime S_t the process is currently in and therefore unknown. In Markov-switching regression models the regime S_t follows a Markov chain. A model with k regime-dependent intercepts, can be expressed as:

$$X_t = S_t\mu_{st} + \varphi X_{t-1} + \varepsilon_t \tag{3.3}$$

where $\mu_{st} = \mu_1, \mu_2, ..., \mu_k$ for $s_t = 1, 2, ..., k$ regimes.

Study follows the work of Hamilton (1994), that the probability of the Markov chain S_t can be expressed as:

$$p_{ij} = P(S_t = j | S_{t-1} = i) \tag{3.4}$$

where p_{ij} is the probability of moving from regime i at time t-1 to regime j at time t. Using the fact that:

$$p_{1i} + p_{2i} + ... + p_{ki} = 1 \tag{3.5}$$

the probability of state i being followed by state j (also known as the transition matrix) is given by

$$P = \begin{pmatrix} p_{1,1} & p_{2,1} & \cdots & p_{k,1} \\ p_{1,2} & p_{2,2} & \cdots & p_{k,2} \\ . & . & ... & . \\ . & . & ... & . \\ p_{1,k} & p_{2,k} & \cdots & p_{k,k} \end{pmatrix} \tag{3.6}$$

The transition matrix is, thus, given by:

$$P = \begin{pmatrix} p_{11} & p_{21} \\ p_{12} & p_{22} \end{pmatrix} \tag{3.7}$$

so that $p_{11} + p_{12} = 1$ and $p_{21} + p_{22} = 1$.

Expected duration of regime i as well as the average duration of regime i were derived from the transition matrix. The formula for expected duration given below:

$$E[D(S_t = i)] = 1/p_{ij} . \quad (3.8)$$

A small value of p_{ij} ($i \neq j$) is an indication that the model tends to stay longer in regime i while its reciprocal $1/p_{ij}$ is the expected duration of staying in regime i.

Model Selection Criteria: To identify the best fitted MS-DR model, study used the Akaike information criterion (Akaike, 1974) and Likelihood ratio test (Bevington and Robinson, 2003). These criterions measure the deviation of the fitted model from the actual data. The model with the minimum value of AIC and LR is chosen. The study compared the MS-DR model with different lags based on these two criterions.

4. Empirical Findings

In this section, study reports the empirical results obtained from the various tests and regime switching model. The study first extract the states of stock market return by using a regime switching model. A two-state regime switching model is estimated for all the variables under investigation.

Test of Nonlinearity Results

LM Test Results: There is evidence of ARCH effects in the series as the reported p-value is less than the significance level of 0.05 and it is reported in Table 2. Thereby, the null hypothesis of the series being independently and identically distributed (i.i.d.) is rejected and the conclusion is that the stock returns are nonlinear and dependent.

Table 2: LM Test Results

Engle Test	F-statistic	Prob.
Using up to lag 1	357.9192	0.000000
Using up to lag 2	297.3410	0.000000
Using up to lag 3	255.5467	0.000000
Using up to lag 4	222.6531	0.000000

*** represents p-value at 0.05 percent level. The null hypothesis that time series is IID.

BDS test was utilized to evaluate nonlinearity on the series. Both the null hypothesis and alternative hypothesis were stated respectively, the latter stated that the series is i.i.d and the former that the series is nonlinear or non i.i.d. As per the results indicated in table 3, the p-values of the BDS test statistic are all less than 0.05 significance level. Therefore, the null hypothesis of i.i.d is strongly rejected in favour of the alternative hypothesis. Therefore, the conclusion is that the time series is nonlinear in nature.

Table 3: BDS Test Bootstrap Results

Variable	Dimension	BDS Statistic	Std. Error	z-Statistic	Normal Prob.	Bootstrap Prob.
Brazil	2	0.192852	0.003194	60.38128	0.0000	0.0000
	3	0.325690	0.005042	64.59433	0.0000	0.0000
	4	0.417110	0.005961	69.97328	0.0000	0.0000
	5	0.479644	0.006167	77.77683	0.0000	0.0000
	6	0.522370	0.005902	88.50425	0.0000	0.0000
China	2	0.173597	0.003025	57.39432	0.0000	0.0000
	3	0.291708	0.004805	60.70696	0.0000	0.0000
	4	0.368850	0.005717	64.52132	0.0000	0.0000
	5	0.417682	0.005951	70.18268	0.0000	0.0000
	6	0.447370	0.005732	78.05340	0.0000	0.0000
India	2	0.195683	0.002763	70.83480	0.0000	0.0000
	3	0.331063	0.004351	76.08637	0.0000	0.0000
	4	0.423737	0.005132	82.56943	0.0000	0.0000

	5	0.486378	0.005296	91.83307	0.0000	0.0000
	6	0.528785	0.005057	104.5737	0.0000	0.0000
Russia	2	0.190330	0.004182	45.50991	0.0000	0.0000
	3	0.324126	0.006632	48.87583	0.0000	0.0000
	4	0.415277	0.007877	52.72027	0.0000	0.0000
	5	0.476354	0.008188	58.17597	0.0000	0.0000
	6	0.516488	0.007875	65.58829	0.0000	0.0000
	2	0.191644	0.002658	72.11316	0.0000	0.0000
South Africa	3	0.323895	0.004208	76.96429	0.0000	0.0000
	4	0.414564	0.004990	83.07677	0.0000	0.0000
	5	0.475633	0.005178	91.86352	0.0000	0.0000
	6	0.516674	0.004970	103.9662	0.0000	0.0000
	2	0.191644	0.002658	72.11316	0.0000	0.0000

Furthermore, the study followed the study of Brock, et al. (1987) which simulated the results using 1000 repetitions. The independently and identically distributed null hypothesis is rejected strongly. It should be taken into account that regulatory reforms or regime change amongst other factors can lead to the rejection of i.i.d and giving returns an appearance of non-randomness (when actually returns are random in suitable periods).

Nonstationary Results: The Bierens and Guo (1993) test results of stationarity are rejected in table 4. Overall, we come to a conclusion that there is no proof of mean-reversion in the level of stock price using the critical values computed by Mackinnon's (1990) method. It is discovered that at conventional significance level the null hypothesis which states that real stock market returns series contains unit root cannot be rejected and therefore the conclusion is that all series are nonstationary, similar results were found by Assaf (2006).

Table 4: Bierens-Guo (1993) Stationarity Tests Applied to Levels of Stock Price

Stock Market Returns	Type 1	Type 2	Type 3	Type 4
Brazil	58.3424	150.2177	20.4031	19.1813
China	19.5093	30.4404	3.6187	3.0060
India	81.1735	240.4810	48.7387	34.9765
Russia	105.2667	225.7970	18.5194	13.1446
South Africa	96.2278	178.1200	17.8913	11.6877

Notes: The table reports the four types of Gauchy tests of Bierens-Guo (1993) stationarity tests applied to levels of stock price. Critical values are (5%) = 12.706 and (10%) = 6.314. The tests are based on m = 19 = [c.nr], where c = 5, r = .25, n = 241.

The B-NLADF unit root test results for different Chebyshev polynomial orders are presented in table 5. Wild bootstrap procedure is utilized for simulating p-values for all the tests, an approach by Bierens (1997) is adopted by the study. The AIC is used for choosing optimal lag length for each variable, while the 10000 replications of Gaussian AR(m) process was used to obtain test statistics. The results show that at conventional levels of 0.05, 0.10, 0.90 and 0.95 the null hypothesis of nonlinear unit root cannot be rejected for all the five variables. The test statistic of t-test, Am and F-test reported are all greater than their corresponding critical values. In conclusion all the variables are non-stationary at levels.

Table 5: Bierens Nonlinear Unit Root Test Results

			Fractiles of the Asymptotic Null Distribution				
Variable	**Test**	**Test statistics**	**0.05**	**0.10**	**0.90**	**0.95**	**Simulated p-value**
Brazil	$\hat{t}(m)$	-1.923	-3.97	-3.64	-1.20	-0.82	0.8190
	$\hat{A}(m)$	-11.083	-27.20	-23.00	-4.10	-2.60	0.6420
	$\hat{F}(m)$	1.593	1.08	1.36	4.88	5.68	0.0790
China	$\hat{t}(m)$	-3.697	-3.97	-3.64	-1.20	-0.82	0.1525
	$\hat{A}(m)$	-28.304	-27.20	-23.00	-4.10	-2.60	0.0675
	$\hat{F}(m)$	4.601	1.08	1.36	4.88	5.68	0.7405
India	$\hat{t}(m)$	-3.697	-3.97	-3.64	-1.20	-0.82	0.1850
	$\hat{A}(m)$	-28.304	-27.20	-23.00	-4.10	-2.60	0.0785
	$\hat{F}(m)$	4.601	1.08	1.36	4.88	5.68	0.7020
Russia	$\hat{t}(m)$	-2.148	-3.97	-3.64	-1.20	-0.82	0.9125
	$\hat{A}(m)$	-10.801	-27.20	-23.00	-4.10	-2.60	0.7495
	$\hat{F}(m)$	2.4347	1.08	1.36	4.88	5.68	0.1095
South Africa	$\hat{t}(m)$	-2.002	-3.97	-3.64	-1.20	-0.82	0.8652
	$\hat{A}(m)$	-8.449	-27.20	-23.00	-4.10	-2.60	0.7957
	$\hat{F}(m)$	1.524	1.08	1.36	4.88	5.68	0.0476

Estimates of the MSM for the Stock Market Returns: First, linear likelihood ratio (LR) test needs to be conducted in order to assess if two-regime switching models for the variables can be used. Based on the current study LR test was utilized and upon the results, it is suggested that null hypothesis of no regime switching is rejected in favour of existence of two regime since the reported p-values of the chi-square statistic for all the five variables are less than 10%, 5% or 1% significance level. Therefore, two-state regime is supported by the LR test results for all the variables. Similar results were reported by Psaradakis et al. (2009), Wasin and Bandi (2011), Yarmohammadi et al. (2012) and Saji (2017).

Table 6: Linearity LR Test of Two-Regime Switch

Variables	**Brazil**	**Russia**	**India**	**China**	**RSA**
Chi-square statistics	451.35	340.83	480.30	314.22	332.26
p-value	[0.0000]	[0.0000]	[0.0000]	[0.0000]	[0.0000]

In this section, study report the empirical results obtained from the regressions. A regime switching model is used to extract the states of the stock market return. A two-state regime switching model is estimated for all the variables under investigation. The Table 7 below shows the estimated coefficients of the regime switching models. As observed from these results, Brazil, Russia, India, China and RSA, the estimated coefficients of the regime switching models (expected monthly increments in stock returns) are higher in Regime 0 (low) than in Regime 1(high) (that is, > for Brazil, Russia, India, China and RSA). These results indicates that regime 0 (low or calm regime) is more stable and markets spend more time in this regime than in regime 1 (high regime) for all stock market returns. Furthermore, parameter σ represents volatility. Among the five commodity prices, Russia has the highest variance of returns followed by India.

Table 7: Two-Regime MS-DR Modelling Results

Parameter	Brazil	Russia	India	China	RSA
$\mu(s_t = 0)$	4.35391	4.52082	4.58386	4.62193	4.95241
$\mu(s_t = 1)$	3.00646	2.67507	3.10683	4.06313	4.13500
σ	0.27645	0.481925	0.28359	0.15815	0.22010
p_{11}	0.99610	0.99633	0.99592	0.98742	0.98856
p_{12}	0.00452	0.00514	0.00449	0.01253	0.01363
$E[D(s_t = 0)]$	256.4103	272.4796	245.0980	79.491	87.4126
$E[D(s_t = 1)]$	1.0045	1.0052	1.0045	1.0127	1.0138

Notes: The sample period ranges from January 1997 to January 2017. t-values are reported in the parenthesis. *indicates statistical significance at the 10% level.

Transition probabilities are reported and analyzed as well in the following paragraph, demonstrating that there is a strong tendency for all variables to switch from one state to another. Study obtain the average expected durations for all series as given in table 3.4. Duration for the regime 0 is defined by 1/(1-p) and for the regime 1 by 1/(1-q). Thus, the average length to stay in regime 0 (regime1) is 256.41 (1.00) months for Brazil, 272.48 (1.01) months for Russia, 245.10 (1.00) for India, 79.49 (1.01) for China and 87.41 (1.01) for RSA. According to the empirical results, all the series stay longer in regime 0 than in regime 1. Similar results were reported by Galyfianakis et al. (2016) and Saji (2017). Further, study specifies the mechanism that describes how to move from one regime to another. This is achievable with the Markov transition matrix which contains probabilities of jumping from one regime to another (Huisman and Mahieu, 2003). The probability of moving from state j in one period (regime 1) to state i in the next period (regime 0) only depends on the previous state. Study thus obtain, as presented in the following Table 8, the matrix of transition probabilities, with conditional probabilities in columns summing to one for all the parameters under investigation.

Table 8: Transition Probabilities

	Brazil		Russia		India		China		RSA	
	Reg. 0,t	Reg. 1,t	Reg. 0,t	Reg. 1,t	Reg. 0,t	Reg. 1,t	Reg. 0,t	Reg. 1,t	Reg. 0,t	Reg. 1,t
Reg. 0	0.99610	**0.00390**	0.99633	**0.00390**	0.99592	**0.00408**	0.98742	**0.0158**	0.98856	**0.01143**
Reg. 1	**0.00452**	0.99548	**0.00514**	0.99548	**0.00449**	0.99551	**0.01253**	0.98747	**0.01363**	0.98637

Notes: The system has to be in one of N states and we have that $\sum_{i=0}^{N} p_{ij} = 1$

The results show that for Brazil, there is a 0.39% probability to move from regime 1 to regime 0 but is much easier to get out of regime 0 with a probability of 0.45% each month. Similarly, the results obtained for Russia 0.39% probability to move from regime 0 to regime 1, while there is a 0.51% probability to get out from regime 0. India results show that there is a probability 0.41% to move from regime 1 to regime 0, while there is a 0.45% probability to get out from regime 0. Analogically, China and RSA provide us with similar results with the other stock market returns by moving from one regime to another but much higher probability (1.58%) of getting out of regime 0. To further assist with the economic interpretation of the different regimes, the Smoothed Regime Probabilities depicted in Figures 3-7 for all the parameters under investigation. Study note that for all our data series, episodes of the crisis (low) regime (regime 1) occur in two distinct periods. The first begins at about the 25th month of our data and coincides the Russian financial crisis, at the second half of 1998. The second distinct period, beginning almost at the 120th month of our data, which caused a global economic crisis and a sharp decline in stock market in 2008.

Figure 2: Smoothed Probabilities: Brazil's Stock Market Returns

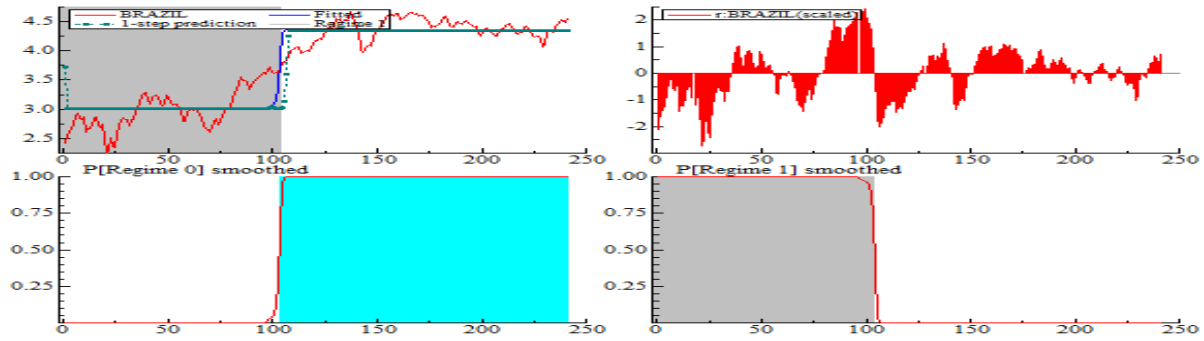


Figure 3: Smoothed Probabilities: Russia's Stock Market Returns

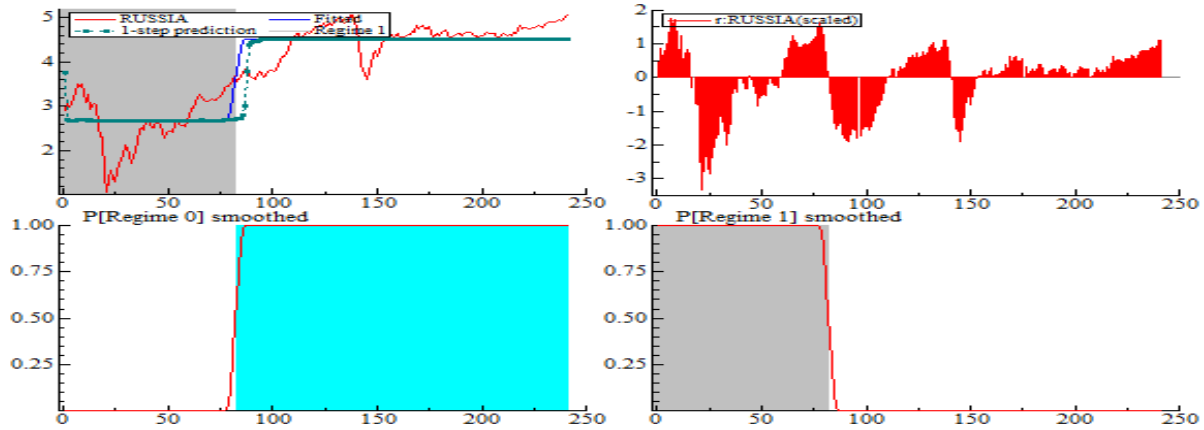


Figure 4: Smoothed Probabilities: Indian's Stock Market Returns

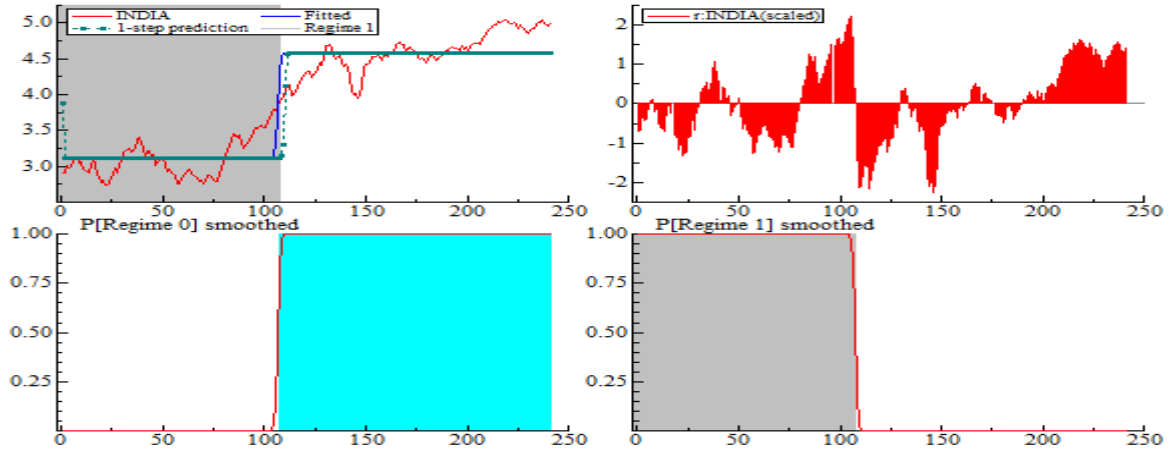


Figure 5: Smoothed Probabilities: China's Stock Market Returns

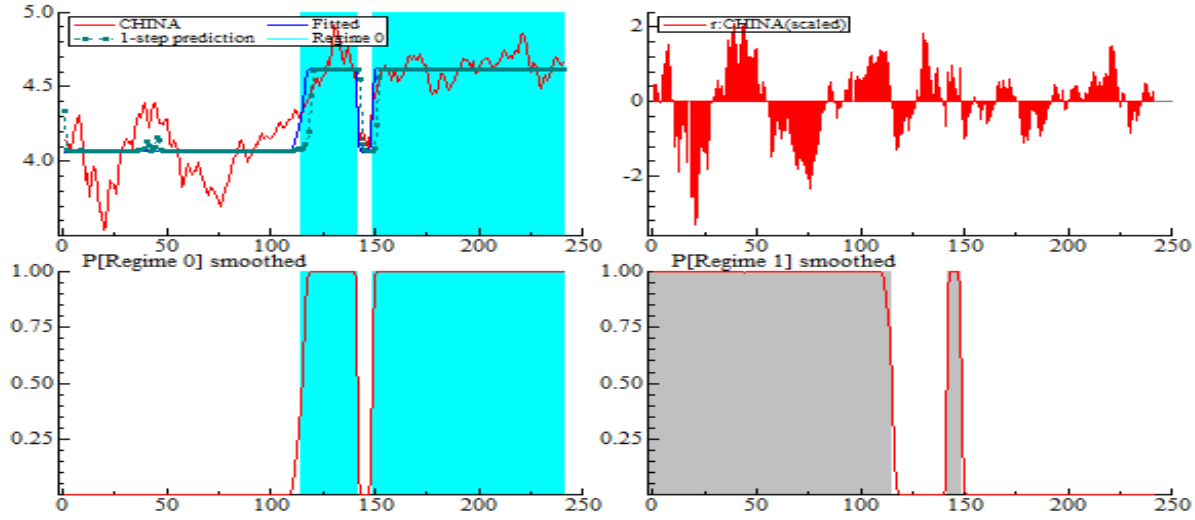


Figure 6: Smoothed Probabilities: RSA's Stock Market Returns

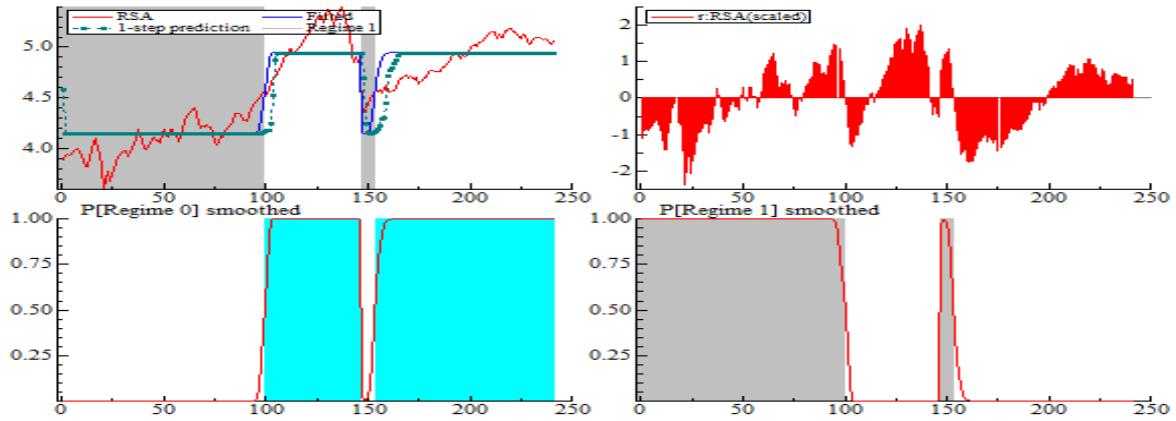


Table 9: Regime Classification Based on Smoothed Probabilities

Stock Market Returns	Regime 0 (Low) Range	Months	Avg. Prob.	Regime 1 (High) Range	Months	Avg. Prob.
BRAZIL	1 - 107	107	0.999	108 – 241	134	0.996
	Total Months: 107 (44.40%)			Total Months: 134 (55.60%)		
	Avg. Duration: 107 Months			Avg. Duration: 134 Months		
RUSSIA	1 – 106	108	0.998	117 - 125	33	0.993
	142 - 151	10	0.994	157 - 157	90	0.995
	Total Months: 118 (48.96%)			Total Months: 123 (51.04%)		
	Avg. Duration: 59 Months			Avg. Duration: 61.50 Months		
INDIA	1 - 104	104	0.998	105 - 241	137	0.994
	Total Months: 104 (43.15%)			Total Months: 137 (56.85%)		
	Avg. Duration: 104 Months			Avg. Duration: 137 Months		

CHINA	1 - 117	117	0.998	118 - 141	24	0.971
	142 - 146	8	0.986	150 - 241	92	0.995
	Total Months: 125 (51.87%)			Total Months: 116 (48.13%)		
	Avg. Duration: 62.50 Months			Avg. Duration: 58.00 Months		
RSA	1 - 94	94	0.997	95 – 241	147	0.994
	Total Months: 94 (39.00%)			Total Months: 147 (61.00%)		
	Avg. Duration: 94 Months			Avg. Duration: 147 Months		

Based on the smoothed probabilities of the various MS-DR models, stock market returns yields were classified into one of the two regimes – low or stable regime (Regime 0) and high or unstable regime (Regime 1) – as reported in Table 9 The regime classification based results show China stock returns having the longest period of stability (125 months or 51.87% stability of the time) with an average duration of 62.50 months, while RSA stock returns have the shortest period of stability (94 months or 39.00% stability of the time) with an average duration of 94 months.

Regime Classification Measure: According to Ang and Bekaert (2002) we can calculate a measure in order to assess the quality of the regime classification. This measure is called Regime Classification Measure (RCM) and the formula for a model with two regime is the following:

$$RCM = 400 \times \frac{1}{T} \sum_{t=1}^{T} p_t (1 - p_t),$$

Where p_t is the smoothed regime probabilities and T is their total number. When the regime-switching model cannot successfully separate the regimes, then we have weak regime inference. If p_t is close to 1 or 0, the regime-switching model is ideal and it classifies regimes abruptly. The fixed term in the form is used to keep the RCM statistics between 0 and 100. Low RCM implies good regime classification. On the other hand, a value of denotes that we cannot observe any information about the regimes. Now, in the analysis study find the following values for the RCM statistic (Table 10).

Table 10: Regime Classification Measure on Smoothed Probabilities

RCM	Brazil	Russia	India	China	RSA
Value	1.219	1.930	0.980	2.339	3.863

The RCM statistic is relatively low for all the indices. Therefore, study can conclude that the regime classification for the model in all five cases is good enough. The regime-switching model of India produced perfect followed by Brazil, Russia, China and RSA.

5. Conclusion

The exploratory analyse were conducted to examine the nature of the data. Preliminary analysis were conducted which revealed that all the variables were not normally distributed. Furthermore, the study was to provide evidence that the underlying characteristics of the five stock retunes (Brazil, Russia, India, China and RSA) used in the study were nonlinear in nature. To address the objective, various tests, including the BDS and LM, were conducted. Results from the BDS tests results revealed no structural change in the data while Lagrange Multiplier (LM) tests also suggested that the five stock returns (Brazil, Russia, India, China and RSA) were nonlinear in nature. Furthermore, nonstationary test was used the support the results of nonlinear test and the Bierens nonlinear unit root tests confirmed that variables are nonlinear and nonstationary in nature. Moreover, the three tests suggest that a nonlinear model is more appropriate to be used in this study. Study employed a regimes Markov Switching Dynamic Regression (MS-DR) model to measure the switch. The smooth probability enables the researcher to look back and to determine, when a particular regime has emerged, or, in other words, if and what specific time the regime switches occur.

Our results indicate that our model corresponds to two regimes; a calm regime (regime 0) and a crisis regime (regime 1) for all of stock market with the exception of gasoline which plots some more recessions (or crisis

regimes). In returns between two regimes for the five variables, and to measure the duration of each regime for all the variable. The study found that the five return series are well fitted by the MS-DR model and a two regime switching behaviour can be extracted. Furthermore, the study found that the MS-DR model managed to capture a satisfactory timing of the two crisis period that affected the five stock markets. Finally study concluded that there is evidence of comovement among the five stock market returns because study managed to extract common regime switching behaviour among them. Overall, the results indicate that, using a simple MRS model, financial analysts of stock markets may be able to obtain superior gains in terms of regime switching modeling (i.e. when it allows different states of the economy). An interesting direction for future research is to explore stock market use using a Markov switching Bayesian VAR approach.

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A Model to Measure the Service Quality of Pharmaceutical Wholesalers

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Abstract: The study constituters a model to measure the service quality of pharmaceutical wholesalers in South Africa. Several pharmaceutical wholesalers distribute medical supplies throughout South Africa in a very regulated and competitive market where high service quality levels are anticipated. In this price-undifferentiated market, service quality can have a significant impact on the competitiveness of a pharmaceutical wholesaler. As a result, the primary objective was to develop a model to measure the service quality levels of large pharmaceutical wholesalers. The literature study compiled an industry profile of the South African pharmaceutical market, analysed service quality and then proposed an adapted SERVQUAL model to measure the service quality. A review of the literature also highlighted the general structure of the pharmaceutical industry and the regulatory framework in the supply of pharmaceutical products. The literature study also focuses specifically on the role and function of the pharmaceutical wholesaler in the supply chain. Data was collected from clients of a pharmaceutical wholesaler using to record the service expectations and perceptions on a seven-point Likert scale. Some 385 of the 4468 clients completed and returned the industry-adapted SERVQUAL survey questionnaires on the electronic platform Google Forms (signifying an 8.6% response rate). The results showed that the data were reliable with a Cronbach alpha coefficient higher than 0.70. The results also show that in five, the service dimensions gap where perceptions and expectations are measured had negative gaps. This means that the clients expected better service quality than what they received. The service dimension Assurance showed the largest gap, while Tangibility had the smallest gap. However, none of these gaps was practically significant. Further analysis using exploratory factor analysis identified three underlying service quality variables, namely Positive employee actions, Business process management and Marketing channels. These factors explained a favourable cumulative variance of 67.7%. The study finally proposes a model to measure service quality in the pharmaceutical wholesale industry.

Keywords: *Service quality, pharmaceutical wholesaler, customer satisfaction, loyalty, healthcare, medicine.*

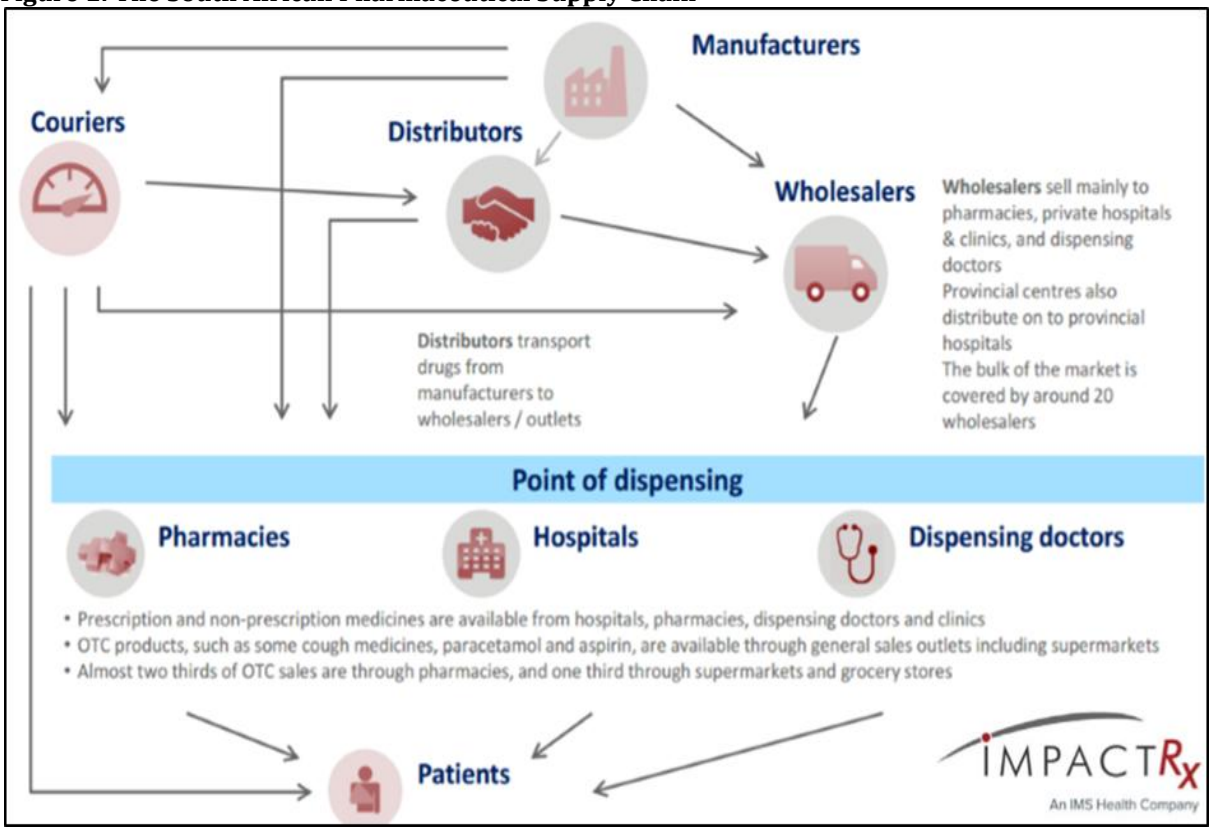
1. Introduction

South African pharmaceutical wholesalers service all the healthcare-providing institutions throughout the country and play a vital role in the supply chain of pharmaceutical products to customers who are both public and private healthcare providers. Some pharmaceutical wholesalers distribute medical supplies throughout South Africa, and similar to any other business, they need to remain competitive. They employ typical strategic competitive thrusts such as customer service and satisfaction to compete actively in the health market (Antonie et al., 2018). Pharmaceutical wholesalers and its customers operate in a very regulated and competitive market where high quality services are expected, making the interaction and service received from the wholesaler all the more critical (Bangalee & Suleman, 2015:522:). The quality of service received from the wholesaler strongly affects the service a patient receives down the supply chain, and as such, the wholesaler directly affects the business performance, profitability, customer loyalty, and customer satisfaction of its customers (Mehralian et al., 2016:973).

It is common practice that most of a wholesaler's customers have accounts with several competitive pharmaceutical wholesalers; this is to prevent medicine shortages and also to compare product prices. This business practice makes the principles of being the supplier of choice and customer loyalty all the more difficult to achieve for pharmaceutical wholesalers (Ball, 2011). Customers expect to receive pharmaceutical quality products at a competitive price on time, every time. Any errors from the wholesaler are unacceptable because of the direct impact it can have on the service quality provided by the health service providers to their customers and also on their patients' health and safety. Furthermore, because of the stiff competition in the wholesale pharmaceutical industry and the resultant low price margins of medicine, most pharmacies and doctors are forced to keep smaller quantities of stock on hand and ordering more frequently, thereby making quick deliveries a highly competitive advantage for pharmaceutical wholesalers.

According to the South African Pharmacy Council (SAPC, 2018), there are 216 pharmaceutical wholesalers registered in South Africa. Pharmaceutical wholesalers are in intense competition with each other, trying to grow their market share by taking business from their rivals, thereby making service satisfaction of customers critical for pharmaceutical wholesalers (Mehralian et al., 2016:973). Figure 1 shows how fragmented and complex the pharmaceutical supply chain is and shows where the pharmaceutical wholesaler and its customers fit in the supply chain of pharmaceutical products.

Figure 1: The South African Pharmaceutical Supply Chain



Source: Impact Rx (2016)

According to the Helen Suzman Foundation's report on the supply of pharmaceuticals in South Africa, the top 15 pharmaceutical wholesalers in South Africa account for over 95% of wholesale turnover (Antonie et al., 2018). These top pharmaceutical wholesalers all focus on service quality as competitive thrust, more specifically promoting the service qualities of availability of a wide range of products, competitive prices, quick and free deliveries, professional and high-quality service, simple invoicing, strong financial relationships, and overall good customer relationships.

Importance of the Study: The study is important for the wholesale industry because customer service is a vital competitive tool in the pharmaceutical wholesale industry. This is more so than in most other industries because the pharmaceutical industry is regulated by a single exit price legislation; this means that the price of pharmaceutical products are standardised and none of the marketing price theories can be used as a competitive tool. Furthermore, products are also standardised, and no product differentiation strategies can be used to compete in the market. Furthermore, most customers hold an account with more than one wholesaler; this means that no switching costs exist to deter customers from switching their pharmaceutical supplier of choice. Probably the most effective competitive strategy a pharmaceutical wholesaler can implement is to deliver excellent customer service. However, to date, no specific customer service managing model could be located that managers of pharmaceutical wholesale organisations could use to measure and manage their service levels. This is the contribution of this study; it presents a developed and tested model to measure and manage customer service of pharmaceutical wholesalers.

Problem Statement: Pharmaceutical wholesalers compete with each other by providing identical pharmaceutical products and similar services mainly, to private healthcare institutions. These institutions are typically independent and retail-chain pharmacies, doctors, other wholesalers, hospitals, clinics, veterinary facilities, health shops, homeopaths and export customers. To add insult to injury, competitive price regulations of medicine in South Africa imply a single exit price, and as a result, the pharmaceutical wholesalers can no longer compete or use lower prices as a strategic business advantage. The single exit price on medicine makes it almost impossible for customers to differentiate pharmaceutical wholesalers on the cost of (identical) products. As a result, customers have moved their focus to the overall quality of service they receive from pharmaceutical.

Wholesalers (for example, delivery times, ordering errors and consistency) and how well the wholesalers fulfil their service expectations (Ramamoorthy et al., 2018:834). This change in customer focus now forces the pharmaceutical wholesalers to shift their core focus from buying in bulk and getting better deals to promote products at lower prices, towards an overall high-quality service strategy whereby they can differentiate themselves from other pharmaceutical wholesalers. As such, service quality therefore, also has a significant impact on the financial performance of the pharmaceutical wholesaler (Niaz et al., 2009:26) and its long-term profitability. Wholesalers should therefore actively manage their service levels, and a proper point of departure is to measure their service levels. As a result, a study is not only needed to determine the current perceived service quality of pharmaceutical wholesalers but also to develop a model whereby the service quality can be effectively measured to facilitate managerial intervention where needed. This study then aims to develop a model that managers can use to measure the pharmaceutical wholesaler service quality they deliver to their customers so that they can manage towards providing a higher quality of service and also meet customers' expectations.

Objectives: The primary objective of this study is to develop a model to measure the service quality at a pharmaceutical wholesaler. The secondary objectives are to determine the perceived and expected levels of customer service the retail customers receive from the pharmaceutical wholesaler and measure the difference (gap) between them; identify underlying factors that influence the quality of service provided by a pharmaceutical wholesaler, and to formulate managerial interventions to improve service levels to customers. These objectives are serviced based on the SERVQUAL model of customer service (Parasuraman et al., 1985:41; 1988:14; Zeithaml et al., 1990:67) as successfully adapted and applied in health industry studies by various researchers (Niaz et al., 2009:26; Bisschoff & Kadé, 2010; Ramamoorthy et al., 2018:841; Appalayya & Paul, 2018:261).

2. South African Pharmaceutical Wholesale Context

Features of South African Pharmaceutical Markets: The South African pharmaceutical sector has faced many regulatory changes since the first democratic election and governmental change in 1994, especially about the price control of medicine. Bangalee and Suleman (2015:526), in support of Van den Heever (2003), state that these changes were long overdue and can be attributed mainly to the systemic cost increases in the private healthcare market of South Africa. The pharmaceutical sector is regulated by the Medical and Related Substances Act 101 of 1965 (MARSA) (SA, 1965). This act authorises the South African Health Products Regulatory Agency (SAHPRA, 2018) to set up a framework for the registration of medicines, the classification thereof into schedules, and regulates the purchase and sale of medicines by manufacturers, distributors, wholesalers, pharmacists and persons licensed to dispense medicines. The sales of pharmaceuticals in the private sector are regulated by MARSA (as well as some general regulations); this demarcates a specific supply chain. All entities in the supply chain of pharmaceutical products must be licensed with the Department of Health (DoH). Manufacturers, importers, distributors, retailers and wholesalers are recognised as part of this supply chain. There are three levels where value can be added in the supply chain to pharmaceutical products. They are manufacturer level, where the manufacturer's price is added; the wholesaler/distributor level, where the logistics fees are added; and the retailer level, where the dispensing fee is added.

Manufacturer level: Manufacturers manufacture and set medicine prices in the private sector during their applications for the official approval and registration of a medicine. Prices are subject to ceilings, and the

periodic adjustment of prices is determined by the Department of Health. Manufacturers, however, can: submit applications to temporarily or permanently reduce the costs of their medicine; and apply for price increases if required to keep the medicine available on the South African market, especially in the case where manufacturers are importers of medicinal ingredients (Antonie et al., 2018).

Wholesaler/Distributor Levels of Distribution: Definitions for "distributor" or "wholesaler", as provided by MARSA, are vague. However, generally, a distributor is defined as "an agent acting on behalf of the manufacturer" and a wholesaler as an entity who "buys in bulk for its own account". Manufacturers make use of either distributors who act as their agents who, therefore, deal with either retailers or wholesalers, or they may use wholesalers who buy in bulk from them and then sell to retailers in smaller quantities. A pharmaceutical wholesaler may only purchase medicine from the "original manufacturer" or the "primary importer" and may only sell to the retail sector as per section 22H of MARSA. On 31 October 2018, the South African Health Products Regulatory Authority (SAHPRA, 2018) had licenced a total of 216 pharmaceutical wholesalers (Antonie et al., 2018).

Retail level: A retail pharmacy is regarded as a business that is allowed to purchase and sell medicine. They may do so by buying directly from a manufacturer, a distributor or a wholesaler. Independent retail pharmacies may prefer to obtain their medicine from wholesalers other than ones integrated with corporate retail pharmacies. They may do so to avoid supporting their competitors. The corporate retailers can buy their medicines from the distributor or wholesaler with whom they are integrated, or from independent wholesalers or distributors, or directly from manufacturers. However, the 15 larger wholesalers account for nearly all pharmaceutical products passing through the South African wholesale distribution chain. The majority of pharmaceutical wholesalers are small regional wholesalers. In the distributor channel, four large distributors dominate the market and account for most pharmaceutical products in this channel.

Licensing and the Supply Chain: It is illegal, as regulated by the Medicines and Related Substances Act (Act 101 of 1965) (SA, 1965), to handle the sale and distribution of any medicines or scheduled substances without a valid licence to do so from the South African Pharmaceutical Council (SAPC, 2018) and SAPHRA. MARSA, along with the General Regulations, governs licences for all entities that form part of the pharmaceutical supply chain.

Pricing Regulations: Single Exit Price (SEP): Historically, consumers often had to pay higher prices on doctors' preferred medicines because incentives were given to the doctors and other healthcare professionals by medicinal manufacturers to prescribe their medicines specifically. However, funding these incentives also increased medicine prices at manufacturer-level. In an attempt to make healthcare more affordable, especially given the country's history of high poverty levels among mostly the previously disadvantaged groups, the South African Government and the Department of Health stepped in. The Medicines and Related Substances Act (Act 101 of 1965) (SA, 1965), which governs the manufacturing, distribution, sales, and marketing of medicines, was amended in 1997 adding sections about the banning of "bonus" stock and the creation of a pricing committee that aimed to enforce a transparent pricing system that includes a Single Exit Price (SEP) for medicines. The single exit price came into effect in 2004, and it is the only price at which a manufacturer may sell medicines to any person (Pretorius, 2011). The SEP consists of a determined price as per manufacturer or importer, the publicly negotiated logistics price (shown separately) between manufacturer and wholesale, and a 15% value added tax as per government regulations.

Service Quality

Defining Services: Initially, Zeithaml et al. (1990) defined service broadly as "experiences, performances, and deeds produced or provided by one person or entity for another person or entity". Later, Constantinides (2006:407) stated that a service is "an act or a benefit to the customer, but does not result in the ownership of anything tangible, making it a peculiar characteristic of service compared to goods". He continues to add that it should not be ignored that "products also possess and deliver intangible benefits to customers". Wilson et al. (2012) follow the intangibility debate and state that an important aspect of marketing is that, in essence, customers buy products based on the benefits they provide, and that even the most tangible products also have intangible benefits. This consequently implies that real goods or real services rarely exist, as most offers

are a combination of tangible and intangible elements. More recently, a service has been defined by Heizer et al. (2017) as "an economic activity that typically produces an intangible product." Furthermore, wholesalers and distributors are entitled to the negotiated logistics fee for their services and pharmacists may add an "appropriate" dispensing fee for their services regarding the regulations.

These definitions and many more, all indicate towards the difficulty to evaluate services because of its intangibility. Furthermore, the customer's experience of a service received is subjective and depends on direct or indirect contact with the service provider. The customer experience on a specific service encounter varies from person to person because it is influenced by customer views, interactions, and lifestyle behaviours; even the mood of the customer on the specific moment when the service is delivered may alter the service experience (Meyer & Schwager, 2007:116). It is for these reasons that failure or success of a service provided can be determined by certain variables that have an impact on the interaction, cultivation, and attraction between the service provider and its customers. In support, the American Institute for Quality (ASQ) (2019) defines quality as "The totality of features and characteristics of a product or service that bears on its ability to satisfy stated or implied needs".

Characteristics of Services: Services differ from tangible products because of several unique service characteristics that differentiate them from products. Wirtz and Bateson (1999:55) mention that the most important differentiating characteristics are that:

- a service cannot be stored and consumed later (intangibility)
- a service is dependent on the time of delivery (perishability)
- a service is dependent on the place of delivery (locality)
- the customer plays a fundamental role and is part of the service delivery process (inseparability)
- the customer's perception of service quality is influenced by his own experiences and perceived quality expectations, nor is every service delivery encounter exactly duplicated (heterogeneity and variability).

Here many service specialists (such as Putit et al., 2011; McDonald et al., 2011; Fahy and Jobber, 2012; Heizer et al., 2017) agree that service characteristics have important implications for marketing and management decision-makers in their quest to deliver quality service and use service quality as a competitive tool.

Managing Service Quality: Quality is defined differently, and the definition thereof largely depends on different products, services and industries (Wicks & Roethlein, 2009:85). Own orientations and perspectives also influence the definitions of quality. The International Organization for Standards (ISO) (2018) defines quality as "the degree to which a set of inherent characteristics fulfils the requirement". This is one of the most accepted and used quality definitions. Another more practical view, held by Heizer et al. (2017), state that quality can have significant implications for organisations regarding their company reputation, product and service liability and also have global consequences. Managing quality (and service quality) is a worthy competitive thrust, and developing and implementing practical and applicable service quality strategies can differentiate an organisation. This is especially true in the case (such as the pharmaceutical wholesale industry) where other competitive tools (such as price, product or quality of merchandise) are not at the disposal of managers to use. In such cases, delivering high-quality service is a key to sustainable competitive advantage and will result in satisfied customers. As customers continue to upgrade their service expectations, service providers are forced to better their levels of courtesy and assistance. Consequently, Mehralian et al. (2016:981) state that it is of high importance for companies to differentiate themselves and continuously upgrade the quality of their services to compete in a modern competitive environment.

According to Bisschoff and Hill (2018:1449), service quality has a significant impact on the customers' repurchase intentions, their loyalty and also the recommendations they make. This is vital for pharmaceutical wholesalers to retain their customers and to create favourable behavioural intentions (Putit et al., 2011:147) because these factors positively influence an organisation's future revenue and profits. This is especially relevant in the pharmaceutical wholesale industry, where customers deal with more than one supplier. Here, Mehralian et al. (2016:979) point out that service quality management is the key to remain the supplier of choice in the highly competitive health market. Service quality also positively affects patient satisfaction,

which, in turn, increases customer loyalty and customers' purchase intentions (Bisschoff & Hill, 2018:1501). However, most research on service quality in the healthcare sector focuses on the patient service experience, while the pharmaceutical supply chain as an integral part of healthcare services is rarely studied (Mehralian et al., 2016:981). The services that patients receive are strongly influenced by the quality of service received from the pharmaceutical wholesaler as part of the supply chain. This supply chain process is complex, and although the pharmaceutical wholesaler sells tangible goods, the service rendered is of the utmost importance not only for the competitiveness of the pharmaceutical wholesaler but also for the safety of patients. Mehralian et al. (2016:977), state that even minor errors at a pharmaceutical wholesaler are unacceptable due to the many challenges and the sensitivity of the pharmaceutical supply chain that can have a direct impact on the health and safety of patients.

3. Research Methodology

Questionnaire Design: Van Heerden (2010) states that the SERVQUAL model has been used numerous times to measure service quality in different industries; Clapton (2013) affirms that the SERVQUAL model has been used in various health institutions. A study conducted by Mehralian et al. (2016:975) developed a service quality measurement instrument for pharmaceutical retailers and pharmaceutical distributors. Based on this research and SERVQUAL principles, the questionnaire was adapted for use to measure the service quality of a pharmaceutical wholesaler in South Africa. The validity of the original SERVQUAL questionnaire has repeatedly been confirmed by several researchers in the medical industry (Bisschoff and Kade, 2010; Carrillat et al., 2007:475; and Adebisi and Lawal, 2017:4). Although the original SERVQUAL model's strength lies in the fact that it was designed not to be industry specific, these authors showed that it is not only a valid tool for the medical industry but also suitable to be adapted for more specific use (for example, for the use by pharmaceutical wholesalers in South Africa). Although this might pose a threat to the validity of the questionnaire, the validity of the modified questionnaire and the reliability of the data were confirmed statistically in this study.

Regarding validity and reliability, the questionnaire was:

- **Firstly**, subjected to face- and content validity by presenting it to a group of experts in the field of the pharmaceutical supply chain. This included pharmacists, quality assurance pharmacists, pharmaceutical wholesale managers, sales and marketing managers, logistics managers, financial managers and supply chain managers as well as personnel knowledgeable in the field of customer service to evaluate and scrutinise both the question formulations and the layout of the modified service quality measurement scale. They were also instructed to suggest any missing service quality concepts they deem essential in such a service quality study. These suggestions and changes were made to the questionnaire to finalise it.

- **Secondly**, the questions measuring each of the five service dimensions (Reliability: questions 1-9; Tangibility: questions 10-15; Assurance: questions 16-21; Empathy: questions 22-26; Responsiveness: questions 27-29) were subjected to factor analysis to confirm that these criteria indeed do measure the specific dimension.

- **Thirdly**, the reliability coefficient Cronbach alpha was used to calculate the reliability of the data.

The questionnaire was designed in Google Forms in such a way that all relevant questions had to be answered, ensuring completeness. Confidentiality was secured for each participant. The questionnaire consists of three sections. Section A captures the classifying variables such as the customer's first choice of pharmaceutical wholesaler, customer referrals of this pharmaceutical wholesaler to other healthcare professionals, and customers type (doctor, hospital or pharmacy). A seven-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree) was used to capture the service quality perceptions of the respondents.

Study Population: The study population consists of all customers of a leading pharmaceutical wholesaler and is geographically located all over South Africa. The company's customer list comprises independent and

retail pharmacies, doctors, hospitals, clinics and veterinarians; all of them formed part of the study population. This study specifically selected this target population because the wholesales one of the three largest pharmaceutical wholesalers, it specifically employs customer service as a competitive strategy, and management was willing to share their database with the researchers. No sample was drawn. All the customers on the address list received the adapted questionnaire via email. To ensure that sufficient data were collected, a call centre was used to remind the customers to complete the questionnaires online. The call centre had to follow-up frequently throughout the two weeks of questionnaire distribution to ensure that all willing customers received and completed the questionnaire.

Data Collection: Data collection followed four steps. They were:

Step 1: Permission - The study was approved during a managerial meeting by the operational manager of the pharmaceutical wholesaler, as well as the wholesaler's responsible pharmacist.

Step 2: Awareness - A formal letter per email was sent from the pharmaceutical wholesaler, and the call centre helped to sensitise and explain the purpose of the study.

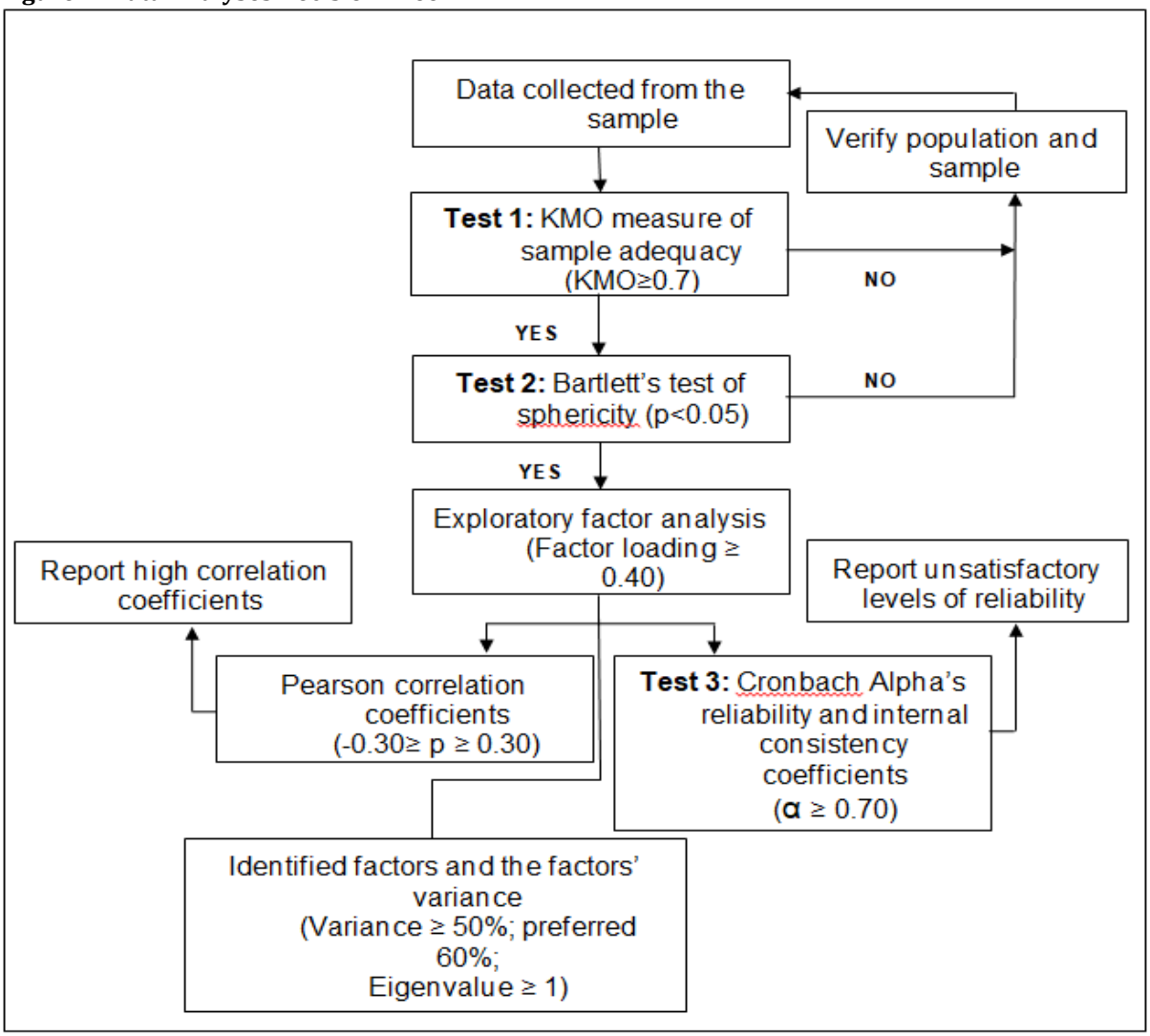
Step 3: Distribution - The formal letter that was sent by the pharmaceutical wholesaler had a link to Google Forms that opened the questionnaire to all customers of the pharmaceutical wholesaler. The questionnaires were distributed on a specific date, and the deadline was communicated to all personnel and customers to maximise the response rate quantity of completed questionnaires.

Step 4: Collection - The call centre of the pharmaceutical wholesaler assisted in the distribution of the questionnaires and making follow-up reminder calls over a two-week data-collection period. After the agreed time frame, the questionnaires and data were collected from the Google Forms platform and analysed.

Over the two-week data-collection period, a total of 4 468 questionnaires were distributed via email and a total of 385 were received back. This signifies a response rate of 8.6%. The response rate was adequate as the Kaiser, Meyer and Olkin value of 0.96 exceeded the required adequacy value of 0.70 with ease (Field, 2009:668) (see also Table 4).

Statistical Analysis and Decision Criteria: The data was captured on Microsoft Excel and imported into the 25th version of the Statistical Package for Social Science (IBM SPSS, 2018) where data analysis was performed. Microsoft Excel was used to determine the effect size or practical significance on the information received. The specialised statistical software was used for the more advanced statistics, which included the reliability of the data, as well as exploratory factor analysis to identify underlying factors within the quality of service dimensions. The Bartlett test of sphericity and the Kaiser, Meyer and Olkin measure of sampling adequacy measure were also calculated to determine if the data was suitable to be subjected to factor analysis. The data and their respective decision-criteria were analysed using several quantitative statistical techniques, as shown in the statistical analysis decision tree in Figure 2 (originally developed by Naidoo, 2011).

Figure 2: Data Analyses Decision Tree



Source: Adapted from Arbuckle (2012), Naidoo (2011:19), and Field (2009)
* This study did not employ Pearson correlations

Ethical Considerations: This study applied the following ethical principles:

- Participation in the survey was voluntary
- Personal data of the customers that participated voluntarily was processed lawfully and fairly and used only for the study
- Personal responses from customers were not ascribed to any individual
- The questionnaire did not contain the names or any other personal information of customers, and the anonymity of customers was maintained throughout the study
- The interpretation of the survey finding was upheld with independent objectivity.

This study was evaluated for compliance with the ethical standards, practices and requirements of the North-West University's Ethics Committee (Faculty of Economic and Management Sciences). The committee approved the study and classified it as a low-risk study; a study-specific ethics number (NWU-00271-18-A4) was issued.

4. Results

Demographic Analysis: Three customer categories participated, namely pharmacies, doctors and other customers (represented by wholesalers, hospitals, clinics, veterinary facilities, health shops, homeopaths and export customers). Some 39.5% of the respondents were pharmacies, 38.2% were doctors, and the other category accounted for 22.3%. Regarding delivery methods preferred, customers receiving inventory delivered by the wholesaler's delivery vehicles account for 75.6%, whereas customers who are receiving courier deliveries account for 24.4%. Regarding an overall service quality measure, customers who are satisfied with the overall service from the pharmaceutical wholesaler amount to 97.7%, in comparison with 2.3% who said they were not satisfied. This represents an excellent satisfaction percentage, and the wholesaler should strive to maintain these service levels.

SERVQUAL GAP 5 Analysis: The data received about the different dimensions of service delivery that were addressed by the questionnaire will now be analysed and discussed. The level of actual or perceived service delivery is compared with the expected level of service delivery and the gap between the two levels was determined. The results are presented in Table 1. The criteria in the tables represent the summary index values per statement. The average expected service and perceived service per statement are followed in the next column by the difference between them, while the overall averages appear in the last row of Table 1.

Table 1: SERVQUAL GAP 5 Results

Dimension	Statement	Average scores		E-p	Average for dimension
		E	P		
Assurance	15. Order placing are accurate	6,252	5,839	0,413	**0,484**
	16. Stock delivered on time	6,488	5,919	0,569	
	17. Deliveries incorporate specific business needs	6,294	5,938	0,356	
	18. Call centre agents are professional	6,384	5,956	0,429	
	19. Ability to resolve queries	6,283	5,608	0,675	
	20. aims to provide excellent service	6,439	5,977	0,462	
Empathy	1. Interest in solving any product related problems	5,919	5,327	0,592	**0,437**
	21. Sincere interest in solving problems	6,312	5,743	0,569	
	22. Call centre is easy to reach	6,343	5,951	0,392	
	23. Payment methods are convenient	6,395	6,216	0,179	
Responsive-ness	24. Fulfil specific business requirements	6,325	5,873	0,452	**0,544**
	25. Responds effectively to account enquiries	6,351	5,966	0,384	
	26. Responds effectively to complaints	6,304	5,740	0,564	
	27. Inform on when order will be delivered	6,195	5,574	0,621	
	28. Delivers in time and in full	6,408	5,800	0,608	
Reliability	2. Deliveries contain correct products	6,509	6,195	0,314	**0,483**
	3. Deliveries contain correct quantities	6,447	6,088	0,358	
	4. Competitive pricing on non-SEP products	6,177	5,644	0,532	
	5. Promotions communicated effectively	6,135	5,771	0,364	
	6. Relevant promotions	5,953	5,525	0,429	
Tangibility	7. Stock all relevant items required in business	6,075	5,174	0,901	**0,281**
	8. Packaging material of good quality	6,470	6,153	0,317	
	9. Modern online website	6,042	5,486	0,556	
	10. Marketing materials visually appealing	6,481	6,325	0,156	

	11. Vehicles well branded	6,145	6,026	0,119
	12. Drivers act professionally	6,353	6,029	0,325
	13. Drivers are professional in appearance	6,244	5,860	0,384
	14. Cold chain is maintained for fridge parcels	6,517	6,405	0,112
TOTAL		**6,294**	**5,861**	**0,433**

The analysis shows that the customers' expected service from the wholesaler was not met. The table shows that there is a positive gap between the expected services and perceived service levels. This means that the services rendered to customers did not meet nor exceed the customers' service expectations. All five dimensions have positive gaps. The overall gap of the mean scores for the 28 statements is 0.433 (6.294 (expectations) less 5.861 (perceptions)). Regarding the five dimensions, the customer expectation for the assurance dimension is the highest with an average of 6.357, followed closely by the tangible and responsiveness dimensions with averages of 6.322 and 6.314. The dimension with the lowest average customer expectation is that of reliability, with an average of 6.219. The most significant gap between customer expectations and perceptions is that of the responsiveness dimension with a difference of 0.544.

Significance of the Gaps: The effect size, or practical significance (d), was used as a measure to determine whether significant differences exist between the perceptions and the expectation of the customers. The effect size (d-value) ranges between 0 and 1. A d-value of 0.8 and higher implies that there is a large practical significance. Values between 0.5 and 0.8 suggest medium practical significance, where a d-value of more than 0.2 but less than 0.5 signifies a small or moderate significance (Ellis, 2010). For this study, d-values of 0.2 and above (thus indicating low or high levels of practical significance) are considered significant differences between the perceptions and the expectation of the customers. The results of the effect sizes of each of the five service dimensions appear in Table 2.

Table 2: Effect Size per Dimension

Item	E	P	Difference in average	Standard deviation	Effect size
Assurance	6,357	5,873	0,484	1,463	**0,331**
Empathy	6,259	5,822	0,437	1,440	**0,303**
Responsiveness	6,314	5,770	0,544	1,535	**0,355**
Reliability	6,216	5,733	0,483	1,425	**0,339**
Tangible	6,322	6,040	0,281	1,359	**0,207**

The practical significance between the perceptions and expectations in all five dimensions of service quality are moderate to low with d-values between 0.2 and 0.5. In practice, this means that there are no significant discrepancies in service quality levels between what the customers expect and what they received.

Reliability of Dimensions: The Cronbach alpha (α) coefficient was calculated to statistically determine the reliability of the data in all five the service quality dimensions. Cronbach's alpha determines the internal consistency or average correlation of items in a survey instrument to gauge its reliability (Bryman & Bell, 2014). Typically, an adequate sample and sufficiently low sphericity are data properties that are required to extract meaningful factors from the data successfully. This study employed the Kaiser-Meyer-Olkin test to determine the suitability of the data for factor analysis. An acceptable level of reliability is usually implied by a result of 0.7 and above, although most researchers accept an alpha coefficient of 0.7 as acceptable (Field, 2009:668). The minimum alpha coefficient for this research was therefore set at $\alpha \geq 0.70$. Table 3 below shows the reliability coefficients for all the antecedents of service quality. All the antecedents have returned very satisfactory reliability coefficients of more than 0.8. This exceeds the minimum coefficient of 0.7 by far and shows excellent reliability and internal consistency of data about each dimension.

Table 3: Reliability Coefficient

Dimensions	Cronbach Alpha (α)
Reliability	0,884
Tangibility	0,894
Assurance	0,920
Empathy	0,897
Responsiveness	0,890
Total data set	**0,896**

Exploratory Factor Analysis: Successful exploratory factor analysis requires data that is suitable for multivariate analysis. Furthermore, Bartlett's test of sphericity used to determine the sphericity within the data. Low sphericity (below 0.05) and high sample adequacy (≥0.70) needed to determine whether the data is suitable to be used for exploratory factor analysis (Williams et al., 2010:10). The results appear in Table 4.

Table 4: Kaiser-Meyer-Olkin Measure and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		**0,963**
Bartlett's test of sphericity	Approx. chi-square	10133,241
	Df	378
	Sig.	**0,000**

The Kaiser-Meyer-Olkin measure displays a value of 0.963, indicating that the sample is adequate. The Bartlett's test of sphericity also returned a favourable value less than the required value of 0.05. Three factors were identified with exploratory factor analysis using an orthogonal varimax rotation. According to Beavers et al. (2013:10), rotational techniques such as varimax serve to create a more interpretable solution than Principal component analysis, because it identifies factors and the communalities without altering the structural relationships, while Field (2009:746) points out that a varimax rotation is particularly suitable for exploratory studies (like this one) because it aims to maximise the variance per factor explained. Field (2009:667) also stated that factor loadings of 0.40 and above are considered to be significant and are used in the analysis. Table 5 below indicates that all 28 of the statements loaded onto three factors; all had factor loadings of 0.40 or higher. The table also shows the variance explained and reliability of the factors.

Table 5: Rotated Factor Structure

NR	Statement	Factors		
		1	2	3
A5(P)	19. Ability to resolve queries	0,788		
E2(P)	21. Sincere interest in solving problems	0,786		
E1(P)	1. Interest in solving any product related problems	0,738		
A4(P)	18. Call centre agents are professional	0,713		
A6(P)	20. Aims to provide excellent service	0,694		
E5(P)	24. Fulfil specific business requirements	0,689		
R2(P)	26. Responds effectively to complaints	0,677		
E3(P)	22. The call centre is easy to reach	0,670		
R1(P)	25. Responds effectively to account enquiries	0,659		
R3(P)	27. Inform on when the order will be delivered	0,653		
A1(P)	15. Order placing is accurate	0,613		
RL6(P)	7. Stock all relevant items required in business	0,536		
T5(P)	12. Drivers act professionally		0,739	
A2(P)	16. Stock delivered on time		0,686	
R4(P)	28. Delivers on time and in full		0,678	
RL2(P)	2. Deliveries contain correct quantities		0,667	

T4(P)	11. Vehicles well branded		0,666	
RL1(P)	3. Deliveries contain correct products		0,661	
T6(P)	13. Drivers are professional in appearance		0,661	
A3(P)	17. Deliveries incorporate specific business needs		0,634	
T7(P)	14. The cold chain is maintained for fridge parcels		0,603	
T1(P)	8. Packaging material is of a good quality		0,577	
E4(P)	23. Payment methods are convenient		0,536	
RL5(P)	6. Relevant promotions			0,712
RL4(P)	5. Promotions communicated effectively			0,653
T2(P)	9. Modern online website			0,631
RL3(P)	4. Competitive pricing on non-SEP products			0,618
T3(P)	10. Marketing materials visually appealing			0,598
Percentage of variance explained		**28,31%**	**23,11%**	**16,23%**
Cumulative percentage of variance		**28,31%**	**51,43%**	**67,66%**
Reliability (Cronbach alpha)		**0,959**	**0,941**	**0,866**

It is noteworthy from the table that a satisfactory cumulative variance is explained by the three factors (67.66%), which exceed the desired variance explained of 60%. Regarding the reliability coefficients for all three factors, it is evident that all three of them returned very satisfactory reliability coefficients, exceeding the required coefficient of 0.7 with ease. Factors 1 and 2 have reliability coefficients higher than 0.90, whereas Factor 3 has an alpha coefficient that is higher than 0.8.

Factor 1: Positive Employee Actions: A total of 12 statements, namely statements number 19, 21, 1, 18, 20, 24, 26, 22, 25, 27, 15 and 7 loaded onto factor 1. All the statements under factor 1 deal with positive actions undertaken by the employees to prevent complaints and ensure a good service to customers. The factor is therefore labelled as Positive employee actions. Statements 1, 18, 19, and 21 all have factor loadings more than 0.70, suggesting that these statements are regarded as significant by the customers of the pharmaceutical wholesaler the factor explains a variance of 28.31%. Woods et al. (2012:201) conducted a study to examine the relations of organisational commitment and demographic factors with objectively measured absence frequency. The results of this study are supported by Woods et al. (2012:202) who stated that organisations could benefit from employees with high organisational commitment and well-being because their positive actions can increase levels of customer satisfaction, generate higher profit, increase productivity, and lower turnover rates. Studies have also shown that organisational commitment and positive employee actions are closely connected to job satisfaction, and that satisfied employees deliver better service overall (Harrison et al., 2006:307).

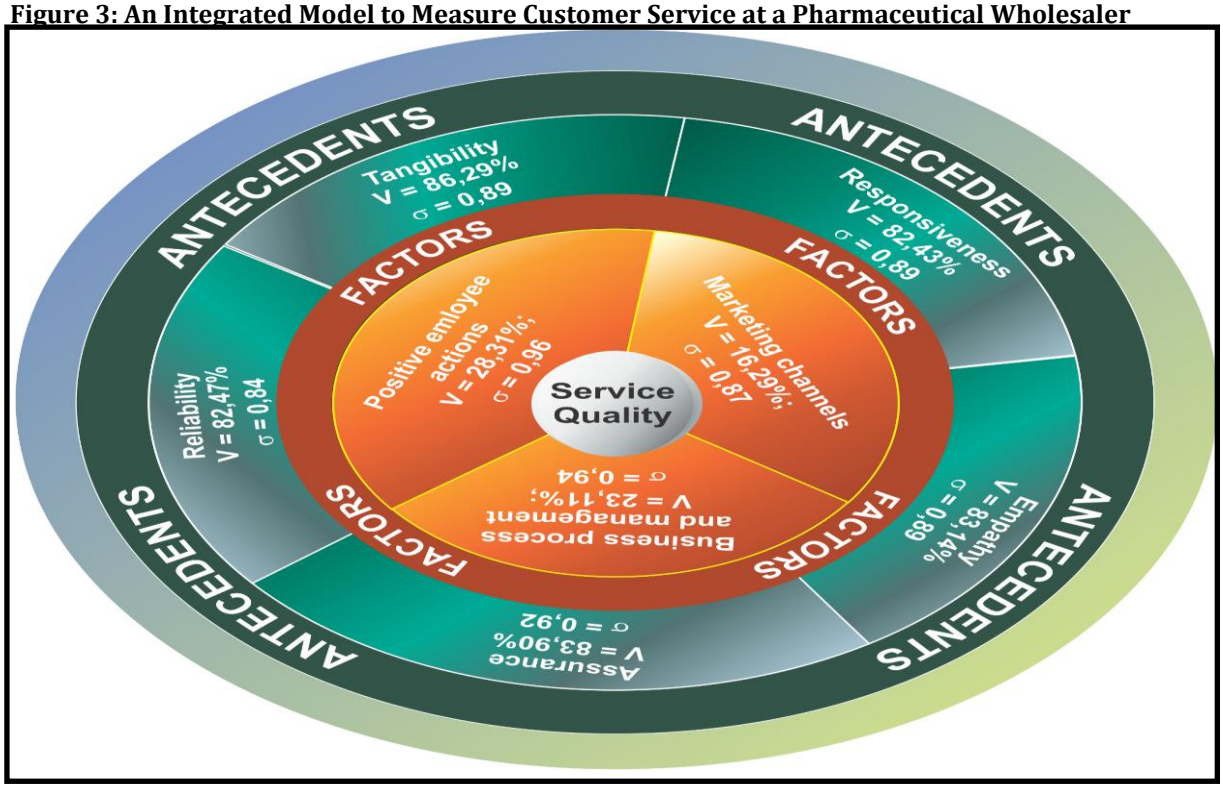
Factor 2: Business Process Management: Statements 12, 16, 28, 2, 11, 3, 13, 17, 14, 8 and 23 all loaded onto factor 2. Only statement 12 has a factor loading above 0.70, but the rest of the statements are well above the cut-off factor loading of 0.40. All the statements relate to business process controls that management set in place to ensure good service quality. The factor identifies business process management; the factor is labelled as such. The factor explains a variance of 23.11%. Ziemba and Obłąk (2013:15) studied the critical success factors for successful enterprise resource planning (ERP) systems implementation in public administration. This identified factor is in support of the results achieved in a study by Ziemba and Obłąk (2013:16) as they argue that organisations are constantly seeking ways to increase customer satisfaction, increase efficiency, improve product quality, and reduce costs. Organisations have realised that it lies in the performance of their processes. Hsu et al. (2015:927) examined the relative importance that ERP system quality has on the service quality rendered to customers. Their findings are similar to that of Ziemba and Obłąk (2013:12) who concluded that service quality was found to interact with information quality and system quality significantly.

Factor 3: Marketing Channels: Five statements, namely: 6, 5, 9, 4 and 10 loaded onto factor 3. These statements describe the marketing channels the pharmaceutical wholesaler use to connect with customers.

The factor is therefore labelled as marketing channels because it shows the effect that organisational marketing channels have on the customers' service perceptions of the pharmaceutical wholesaler. Statement 6 reflects a factor loading above 0.70, suggesting that the customers regard targeted promotions as very important. The factor has a variance of 16.23%. The findings are supported by Aghazadeh (2015:127) in a study on the development of a comprehensive model for integrated marketing strategy, which argues that marketing strategies and channels used can be a competitive advantage as it can attract customers, create value for customers, satisfy customers, and encourage customers to return.

A Model to Measure Customer Service at a Pharmaceutical Wholesaler: The model to measure customer service in this study was developed in three stages. In the first stage, the model employed a sound theoretical basis to identify the relevant customer service measuring criteria to the wholesale pharmaceutical industry. These criteria were classified into the five customer service antecedents, namely tangibility, responsiveness, assurance, reliability and empathy as per the SERVQUAL model in the second stage. The third and final stage of the model construction then subjected the measuring criteria to exploratory factor analysis to identify the latent variables of customer service at a pharmaceutical wholesaler. Three factors were identified. The model is shown in Figure 3.

Figure 3: An Integrated Model to Measure Customer Service at a Pharmaceutical Wholesaler



The model shows that all five of the customer service antecedents are highly reliable; they have Cronbach alpha coefficients of more than 0.80. Furthermore, these antecedents explain high percentages of variance each (exceeding 80% variance explained in all the cases). In practice, this means that each antecedent does measure the service quality antecedent well. Regarding the factors (or latent variables), all three also have high Cronbach alpha coefficients, and they explain a satisfactorily cumulative variance of almost 68%. This model is a practical tool for use by managers if they want to measure the customer service of a pharmaceutical wholesaler. The model could be highly productive if these managers apply the findings of their measurements to improve poor service areas while also trying to maintain excellent service areas. However, without measuring, there can be no accurate managerial intervention to enhance the quality of service. Herewith lies the benefit of this study; it provides a reliable tool to measure customer service in

practice that can be used to improve the competitive stance of a wholesaler in a highly competitive environment where no product differentiation exists.

5. Conclusion and Recommendations

Three sets of conclusions are drawn based on the findings of this study. This includes conclusions from the literature review, the empirical results and the model to measure service quality.
The literature study concludes that:

- The South African pharmaceutical wholesale industry is a highly competitive business environment.
- The industry is highly controlled by law, government regulations and formal bodies.
- Competitiveness is seriously influenced by the single exit pricing (SEP) regulation.
- It is standard practice for customers to have more than one wholesaler as a supplier.
- Pharmaceutical wholesalers cannot use price to compete in the market and must find another competitive edge.
- Overall, the South African pharmaceutical wholesalers' industry aims to compete using service quality and strategic thrust.
- No validated South African service quality measurement model could be identified that managers can apply as is.

The empirical results lead to the following conclusions:

- Overall the customers of the wholesalers are happy with the service quality levels they receive.
- There are differences (negative gaps) between all five the service quality antecedents which indicate that although they are happy with the service levels, the customers are expecting an even better service quality experience from their pharmaceutical wholesaler.
- Although these gaps exist, they are not practically significant. However, the fact that there are gaps should not be discarded, and management should attempt to decrease or eliminate these gaps in totality.
- The data collected are statistically reliable and can, therefore, be analysed with confidence.
- Three factors also exist that can be managed to improve service levels, namely Business processes, Marketing Channels and Positive employees.

Regarding the development of the model to measure service quality in the pharmaceutical wholesale industry is can be concluded that:

- The SERVQUAL model successfully served as a basis to develop a measurement model for the pharmaceutical wholesale industry.
- The model could be adapted to service pharmaceutical wholesale measurements specifically.
- The developed model can be applied in practice for managerial applications and interventions.

Finally, it is concluded that the proposed customer service research model provides relevant management information and appears to be successful in determining the quality of service of a pharmaceutical wholesaler.

Recommendations: Based on the conclusions, recommendations are that:

- Managers of pharmaceutical wholesale organisations should take note of the model to measure service quality. It could assist them greatly to determine service quality levels, and then also to be more competitive in a non-price competition business environment.
- Managers should also note that measuring service quality is merely the diagnosis but that managerial interventions based on the measurement results are the key to enhance competitiveness (merely doing the measurement is not good enough).
- Despite the five service dimensions, three additional key service factors have been identified. These should also be managed actively to enhance the customer experience.
- Although the negative gaps between the five service dimensions are not practically significant, it is recommended that managers should seriously consider the gaps because marginal deteriorations might result in practical significant gaps; at that stage, service quality will be compromised.

- Finally, it is recommended that future researchers who plan to investigate service quality should take note of this research model. The model may, or may not be used as is for their project, but it can provide a cognitive roadmap for innovative thinking and future studies.

Summary: This study set the objective to use and adapt a validated model to measure service quality, and then test the model by applying it in practice. In doing so, developing a tailormade model for the pharmaceutical industry the data were used to test the reliability and validity of the model (using factor analysis) to ensure that it does measure what was intended, namely the service quality of pharmaceutical wholesalers. The developed model is also visually presented for ease of understanding and application. Finally, the article drew conclusions and also presented some recommendations to managers to apply in the pharmaceutical wholesale industry.

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African Big Economies on the Continental Trade Liberalisation and Migration Policy Development

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Abstract: African countries are faced with a broad spectrum of political and economic challenges that have shadowed hugely in an anticipated socio-economic prosperity. The continent overtime has resolved to come up with a single currency as well as opening borders for trade but none of that has been realised. Polarisation of economic development has caused brain drain within the continent with educated people from poorly governed countries moving across borders (Europe and America), and the same happens with gifted entrepreneurs who search for a country with a better business enabling environment than their own home countries. There is uneven development in Africa with very poor, fragile and better performing countries constituting the continent. This has caused a huge burden on those economies that are doing well as those economies have to create jobs for immigrants as well and for their own people. However, the founding principles of the African Union were basically to bring African countries together and help each other to see through economic and political prosperity across the continent in as much as there are laid out guiding rules. Africa has continued to be a highly protective continent especially amongst itself as most countries still require visas from citizens of other African countries, while countries still impose import duties and all forms of control on imports and practices that are against the foresights of the founding principles of the African Union. This paper acknowledges the efforts that have been done in the West and South of Africa for the formation of regional blocks that desire to achieve socio-economic progress in those regions. The formation of ECOWAS in the WEST and SADC in the South are good strides towards integration efforts in Africa but if the founding objectives of the African Union are to be achieved, member countries still have to do more. This paper recommends the two biggest countries in Africa to make use of their economic power to influence smaller member states to also envision possible socio-economic benefits that can emanate from total integration of the continent. They could make use of the African parliament, African Union summits and other several platforms to lobby for this important goal.

Keyword: *Economic development, trade, integration, liberalisation, immigrants.*

1. Introduction

Apparently countries around the world including those in Africa have over the years continue to engage with each other through the means of trade, because trading typically makes a country better off which creates income and enhance social and economic development through exchange. In global exchange, competition happens at the firm level, while citizens of each nation may profit by a facilitated or free trade. Nationals appreciate a more significant variety of goods and ventures, and by and large at a lower cost (Martin, 2005). The withdrawal or decrease of restrictions that hinder free trade between countries is eluded to be the advancement of exchange (liberalisation of trade). This incorporates the expulsion of exercise duty deterrents, for example, duties charges, and non-tariff hindrances that is permitting principles, shares and different needs, which facilitate integration. Trade Integration development is the decline of exchange practises, that shambles free movement of merchandise and enterprises opening with one country to another. The facilitating of these limitations is regularly alluded to as evolving “systematized trade”.

Those against exchange advancement argued that it can cost jobs as less expensive goods surge the market (World Bank, 2013). However, exchange development eventually brings down consumer costs, expands productivity and cultivates monetary development. This paper argues that a complete tariff abolishment together with significantly reducing nontariff barriers can actually improve economic growth and raise the volume of exports and imports while significantly improving the terms of trade across Africa. In order for the integration agenda to be achieved, member countries need to abolish non-tariff barriers, speed up the development and modernization of infrastructure, specifically trade-enabling infrastructure, and raise the level of resources allocated to the financing of intra-African trade. As of 2016, the African Union (AU) recorded its three major importers in the name of Egypt, South Africa and Algeria whilst on the other side its

biggest three exporters were South Africa, Nigeria and Angola. This category of big importers and importers accounted for a total of 39% of AU imports and exports.

According to African Trade Report (2018), the share of Intra African trade in Africa's total imports and exports continue to hit their low. Statistics released by the bank show a recorded 13% for intra-imports and 17% for intra exports over the period of the last seven years. While the value of total exports diminished, the share of intra-exports trade increased by 30 % in 2016 in comparison with 2010. Outside Africa trade makes up more than 80% of the total African trade. The volume of exports to other continents and imports from other continents is similar and on average Africa receives 450 billion USD from exports and spends 490 billion USD on imports from other continents. The leading countries on the trade arena are South Africa and Nigeria. South Africa is the main player in Intra African trade with a share in intra exports which varies from 27 to 30% over the period of 7 years followed by Nigeria with 8% (African Trade Report 2018). However, much hasn't been done to cover the aspect of migration to promote peaceful co-existence, which is the motivation behind this study. Despite the fact that integration has been set up by some African nations.

The arrangement of the European Union (EU) serves as a motivation and reinforced numerous other African nations' quest for an amassed African landmass be that as it may, given the present crisis confronting the euro zone and its effect on the exclusive political structures (Candice, 2004). A more profound provincial incorporation is part of the answer for accomplishing economies of scale and improved development, particularly for littler less created nations in Africa. The continent of Africa is apparently home to 1 billion people scattered crosswise over 54 nations whose joined GDP was US$1,871 billion in 2011 (World Bank, 2013). Regional economic integration has become an exceptionally applicable issue in Africa, especially in light of its existing political and financial shortcomings. Africa is invaded with the most profound levels of poverty, and without a doubt Africa could be viewed as the most reduced share of world trade, and furthermore the weakest progress in human capital development, as well as structure but endowed with abundance of materials and talents. It is as a direct result of this that territorial integration is required in Africa, as this tended to upgrade continent's monetary advancement and economic development. This study therefore concentrates principally on trade liberalisation import for economic development in Africa.

With the economic investment and trade liberalisation within the sub-regions to promote peace and sustainability this could be done through the existing various sub-regional institutions. This study therefore influenced by the thoughts of other scholars who are of the opinion that regional economic incorporation will further aggravate African economic problems. These incorporate the East African Community (EAC), the Southern African Development Community (SADC), the Common Market for Eastern and Southern Africa (COMESA), the Economic Community of West African States (ECOWAS), the Economic Community of Central African States (ECCAS), the Community of Sahel-Saharan States (CEN-SAD) and the Arab Maghreb Union (AMU). It is critical to note here that the European Union (EU) remain one of the most proficient regional integration institution in the world today, which has practically comparative targets as those relevant to the Africa's regional integration (Enaifoghe, 2019). Africa's exceptional physical, economic and political geography position made it difficult to achieve economic development, and the administration of shared public goods. Political fringes are regularly not adjusted to economic and natural resources and numerous nations are landlocked.

2. Method and Materials

The researchers adopted a qualitative research approach as the suitable research technique or method for this study. Data was collected from numerous secondary bases predominantly from journal article, reports from government and non-government organizations, book and others source. Secondary research is based on secondary resources that already available (Mouton, 2001). The researchers therefore used content analysis which allows researchers to study, and make sense of transcribed materials or documents (Mogalakwe, 2006). The researchers therefore determined the relevance of the documents that they consult on the basis of their significance to the subject understudy. Furthermore, Dey (2005, p.105) argues that "in documented or content analysis, the criteria for selecting documents, or for focusing on particular extracts, should reflect the issues on which the researcher is seeking evidence." This method made it possible for the researchers to explore various existing literature on African economic integration with regards to trade

liberation, both the economic and political factors that may have hindered the complete implementation of the agenda. Over 30 literatures were assessed but only 23 literatures were found very relevant to inform the study, the various literatures were accessed from Google scholars, Scopus and sources.

3. Literature Review

In order to establish the significance of this study, and to display the existing studies relevant to this current study area, the preliminary literature review in this study focuses on both the socio-economic and political factors responsible for the African regional integration organizations for level of economic development experienced in various sub-regions. Regional integration has been seen to be a key force for a sustainable development around the world today. Hence it can promote economic growth, reduce poverty, foster social development or protect the environmental issues. Nevertheless, it can as well have a negative impact on both economic and social aspects, notably if the regulatory framework on domestics becomes inadequate or not effectively implemented. The Southern African Development Community (SADC), continue expansion of the current integration processes in the sub-region amongst its members as its main commitment, has therefore adopted the Regional Indicative Strategic Development Plan (RISDP), this is to provide strategic direction in the design and formulation of SADC programs, projects and activities so as to achieve it development objectives and economic growth, alleviate poverty, enhance the standard and quality of life of the people of Southern Africa and support the socially disadvantaged, through regional integration (Enaifoghe and Adetiba, 2018).

Nonetheless, many African nations progressively perceive that communitarian or collaborative activities and regional approaches are basic to accomplishing their advancement or development objectives. According World bank, one of the advantages from seeking after regional incorporation or integration are bunch, including: the procuring economies of scale or different efficiencies by acting collectively in the quest for common goals to expand local supply capacity or limit, and further enhance access to business sectors; a coordinated or orchestrated treatment of trans-limit issues, for example, exchange, administrative systems and strategies, territorial framework and different cross fringe issues; and the administration of shared characteristic assets (The World Bank, 2013). These arrangements are especially significant for the numerous African nations that have small economies, small populations or are land-bolted. Little nations regularly think that it's hard to subsidize the huge settled expenses related with significant foundation, making a regional approach alluring. Connecting little markets can open the advantages of agglomeration and scale economies and spread speculation openings and development past current focuses of improvement (Enaifoghe, 2019) it was further stated by Enaifoghe that most Regional Economic Communities (RECs), particularly.

The African sub-regional institutions, and other territorial development organisations, are creating vital regional structures and capacity that could enable it seeks after integration regionally and over different regions. There is a developing interest to scale up regional arrangements with a more prominent concentrate on mainstreaming regional issues in national planning, handling the environmental change drive, regional infrastructure and the missing connections, the economic integration, investment on human capacity building, peace and security and regional public goods (Enaifoghe, 2019). Furthermore, in line with the World Bank's territorial program, it is critical to the effort of moving Africa's regional incorporation motivation forward, in a close coordinated effort with the member states and other advancement parties. The diversity of Africa's array of provincial organisations are as of now advancing more prominent political and monetary reconciliation among neighbouring nations, thereby handling shared asset administration issues. Currently, at the continental level, the African Union tries to join African nations under a solitary political union and basic market. At the provincial level, Africa's Regional Economic Communities unite nations to address regular advancement challenges and extend both economic and political cooperation integrated.

Africa's regional specialized bodies concentrate on particular cross-fringe issues, for example, river basin administration, local power exchanging and cross-outskirt infection transmission. Reinforcing the limit of these establishments is basic to quickening the incorporation incentive (The World Bank, 2013). Regional Integration Institutions (RIIs) otherwise called Regional Economic Communities (RECs), was resulting from the introduction of the Abuja (Nigeria) Treaty of the then Organization of African Unity (OAU) which came into force in May 1994 (UN Economic Commission for Africa, 1999:53). That Treaty visualizes the production

of an African Economic Community through six periods of regional participation and reconciliation with the utilization of the regional integration institutions (RIIs) as its guiding structure. Principally the main point and goal of these organizations is to realize social, economic and even political incorporation among Africa's nations in order to achieve higher economic development and reinforcing the flourishing of the people of Africa. In regards to the above, the previous two decades particularly, have seen an escalation of Africa's provincial.

Joining process of integration and the establishment or the fortifying of RIIs in Africa, Robson (1968) noted that economic integration between sovereign states becomes a trend in the mid-twentieth century and the increasing formation of such integrated bodies has led to this era being termed 'the age of integration'98. This need for integration is manifested in the establishment of organizations such as the European Economic Community (EEC), the European Free Trade Area (EFTA), the Central American Common Market, and the Arab Common Market across the developed, Latin American and Middle Eastern world respectively (Mauro, 2000). With the formation of institutions such as the Southern African Custom Unions (SACU), African countries have increasingly joined the integration bandwagon and their interest not only comes from the economic benefits of such bodies but is also as a result of the political and social aspects, all of which are closely associated to one another high priority in the political agenda of many African countries and its importance is associated with the need to form strong Regional Economic Integration (REI) mechanisms which would in turn lead to an increase in economic growth through the convergence of macroeconomic and fiscal policies, and an increase in intra-regional trade. The integration of states is a complex process which cannot be explained by a single theory.

Several theories in international relations argue for the interdependency and cooperation of states as a means of not only helping to overcome the disadvantages of small size. Then surviving the current economic and political environment (Langenhove, 2004), is also as a result of impact of globalization on the world economy, where the local has interpenetrated the global and vice versa. This has led to the issue of boundaries and/or frontiers among states becoming socio-economically imaginary and as such, these challenges would need to be turned into opportunities. Furthermore, regionalization and globalization have increasingly become tag-lines which are used to characterize the development and evolution of the world's economy in the post-war era and states would need to be more organized in order to meet up with these exigencies brought about by the globalized economy. While globalization is used to refer to the global liberalization of trade and factor flows, regionalization on the other hand is used to characterize the increasing number of regional integration blocs (Langenhove, 2004). Njinkeu and Mangeni, (2004), argued that the issue of economic integration between African countries has continued to deepen over the past decades and Africa currently contains a wide range of Regional Economic Communities (RECs) which can be divided into two main categories.

Those recognized by the AU and sub-regional economic communities (also known as SECs) (Njinkeu and Mangeni, 2004). The AU only recognizes eight RECs which they consider to be the building blocks of a greater African integration21; however, other SECs have been known to play a significant influence in sub-regional politics (Njinkeu and Mangeni, 2004). In spite of the scholarly works on Africa regional integration on trade liberation some scholars still holds the view that integrating African economies through a regional economic incorporation will aggravate African economies than they are currently. This work identifies the paucity of literature in this area of study, and seeks to covers such gaps, by contributing significantly to the body of knowledge. The primary focus is on the socio-economic aspects regards to trade development, mobilization and implementation of its blueprint and policy, Nigeria and South Africa as the main drivers of the ECOWAS and SADC trade liberalization in the sub-regions, using various mechanisms and strategies, the question is who benefit from the trade liberalization? The member states of a sub-regional organisation are not at the same level of preparedness to commit to the organisational policy implementation of its objectives for example; Malawi, Mozambique, Tanzania and Zimbabwe are not up to date.

The principal aim of this study is to explore the socio-economic factors at play in the implementation and liberalization of trade in both ECOWAS and the SADC sub-regional integration related to this therefore are others sub aims including; to investigate the thoughts of other scholars. Whose view on regional economic incorporation on trade liberalization will further aggravate African economies than they are currently with

regards to trade and movement of persons across border? To determine a more effective ways for smaller nations to achieve economic development, since the strength of vast economies makes chances to lift other smaller economies through regional exchange with trade. To investigate the liberalization of trade within two sub-regions of Africa (SADC and ECOWAS), and who are the benefactors – member states or the divers. To determine to what extent is trade liberalized with the member states or rather with the outsider to create competition within the sub-regions, To investigate why the liberalization of trade tend to benefits the drivers of sub-regional institution's objectives for national development and what South Africa can learn from Nigeria and ECOWAS. With respect to exchange, the SADC was to accomplish a Free Trade Area by end of 2008 and furthermore start a SADC Customs Union by 2010 (Department of Economic Affairs, African Union, 2008).

The Renewed Interest in the Africa Economic Integration Development: The southern Africa or Southern Africa is a term used to generally include the following countries Angola, Botswana, Lesotho Malawi, Mozambique, Namibia, South Africa, Swaziland, Zambia, and Zimbabwe. However, the region is said to be unipolar with South Africa as a first regional power in a political perspective (Schenoni, 2017). Broadly viewed, African regional cooperation has been revitalised in some ways due to two main developments at the beginning of the 1990s that include the abolition of the apartheid regime in South Africa, and the eventual stabilisation of political and economic relationships in the Southern Africa sub-region. This helped deepen the already existing regional integration in the Southern Africa States, Enaifoghe and Adetiba, (2018: 4). Cheru (2002) noted that since the end of the Cold War, and with the emergence of powerful trading blocs, there has been a renewed interest in South Africa regarding the need to create strong REI mechanisms to promote economic growth for the region.

South Africa in the Southern Africa Integration Efforts: In 1980, nine Southern African states - Angola, Botswana, Malawi, Mozambique, Lesotho, Swaziland, Tanzania, Zambia and Zimbabwe - set up the Southern African Development Co-appointment Conference (SADCC). The principle target of this organisation was to decrease its individuals' monetary reliance on the Republic of South Africa, additionally to begin the procedure of provincial political and financial integration between these alleged forefront states. Within the two last decades ago the association has changed from an advancement or development conference into a development community -currently known as the SADC. It has likewise extended its topographical scope to cover six more states – the Democratic Republic of Congo, Mauritius, Namibia, the Republic of South Africa, Madagascar and the Seychelles - and it points today at a profound combination, yet so far has accomplished almost just a few. By the year 2005, SADC was yet to set up the primary phase of financial incorporation, which is the free trade area (FTA) among its member states by the year 2008 but finally accomplished it in 2010 (SADC (2003a).

According to Enaifoghe and Adetiba (2018: 7) “the SADC has experienced a thorough rearrangement or change with South Africa turning into its true front-runner as opposed to her essential aim. Amongst the fundamental goals of SADC are to accomplish advancement and monetary development, lighten neediness, improve the standard and personal satisfaction of the general population of Southern Africa and support the socially disadvantaged through territorial incorporation or integration. It pursues other objectives such as propelling basic political quality frameworks and foundations, progression and ensuring peace and security. “Nevertheless, “The SADC has appears to be among the best integrated sub-region in Africa aided largely by South Africa’s material, commodity and political investment” (Enaifoghe and Adetiba, 2018). As far as integrating the organisation is concerned, the SADC has recorded accomplishments on structure and restoration of transportation connection among its member states. However, the free trade area was only accomplished on August 2008 as expected, regrettably missing the 2010 deadline for the establishment of custom union.

While the SADC (South African Development Community) met in 2015 to negotiate a new target date for the transformation of the organisation into a Customs Union (CU), during the 2015 Ordinary Summit, nevertheless SADC has not yet achieved the establishment of custom union in the sub-region by end of 2016 (Enaifoghe, 2019). In as much as it seem like the SADC region is organised, this block has no much power to influence policy among member states. The bigger part of the region’s member states are struggling economically and there is limited or no intervention that has happened either from member states or the block itself. Countries like Zimbabwe, Malawi and Madagascar are not doing well economically with

Zimbabwe in worst situations compared to those three and the lack of intervention from the block has negatively affected the region because the economic contribution from Zimbabwe has been deteriorating on a yearly basis so as that of the other mentioned member states of the SADC region. However, in terms of political stability, the SADC region has maintained peace for a very long time and it is one of the achievements that can be forged to be credited on the SADC region. On the socio-economic front, little has been achieved by the block since the majority of the member states have high poverty rates that are above 50% with South Africa included (UN ECA, 2017).

Nigeria in the Western Africa Integration Efforts–ECOWAS: The Economic Community of West African States, otherwise called ECOWAS, and in French: "Communauté économique des États de l'Afrique de l'Ouest, CEDEAO; Portuguese: Comunidade Económica dos Estados da África Ocidental, CEDEAO, is a regionals financial union of fifteen nations located in the Western part of Africa." In 2015 had an expected populace of more than 349 million the union was built up on 28 May 1975, with the marking of the Treaty of Lagos, with its expressed mission to advance financial or economic combination over the area (Adeyemi, 2003 and Yahoo News AFP, 2017). A reconsidered form of the bargain was concurred and marked on 24 July 1993 in Cotonou. Considered one of the pillar provincial coalitions of the landmass wide African Economic Community (AEC), the state's objective of ECOWAS is to accomplish "aggregate independence" for its part states by making a solitary vast exchanging alliance by building a full financial and exchanging union. ECOWAS additionally fills in as a peacekeeping power in the district, with members at times sending joint military powers to mediate in the coalition's part nations on occasion of political unsteadiness and turmoil. This paper believes that if fully integration can be done and the free trade corridors can be opened for the region, that can facilitate resources to flow where they are less utilised to where they are needed the moist and that can help the economy of the continent to grow significantly to alleviate citizens of the continent from socio-economic problems of poverty, unemployment and inequality.

In the African continent, the Southern Africa occupies the southernmost region of the continent, variably defined by geography or geopolitics. As of late these included mediations in Ivory Coast in 2003, Liberia in 2003, Guinea-Bissau in 2012, Mali in 2013, and Gambia in 2017 (Adeyemi, 2003 and Yahoo News AFP, 2017). ECOWAS incorporates two sub-territorial alliances: The West African Economic and Monetary Union (known by its French-dialect acronym UEMOA) is an association of eight, basically French-speaking states in the ECOWAS sub-region which share a customs union and currency union. It was set up in 1994 and expected to balance the predominance of English-speaking economies in the alliance, (for example, Nigeria and Ghana), individuals from UEMOA are for the most part previous domains of French West Africa. The currency they all accept is the CFA franc, which is pegged to the euro. The West African Monetary Zone (WAMZ), set up in 2000, involves six for the most part English-talking nations inside ECOWAS which plan to work towards receiving their own basic money, the eco. ECOWAS works in three co-official dialects—French, English, and Portuguese, and comprises of two foundations to execute engagements: the ECOWAS Commission and the ECOWAS Bank for Investment and Development (EBID), in the past known as the Fund for Cooperation until it was renamed in 2001.

There is high brain drain from countries such as Mozambique, Zimbabwe, Zambia and Malawi into South Africa, mostly because the socio-economic front has not achieved any significant strides in the region. In 1976 Cape Verde joined the ECOWAS regional block, and in December 2000 Mauritania pulled back, having declared its expectation to do as such in December 1999. In 2011, ECOWAS embraced its improvement outline for the following decade, Vision 2020, and, to go with it, a Policy on Science and Technology (ECOPOST). Nevertheless, "it is argued that the SADC is seen to be lagging behind the Economic Community of West Africa States (ECOWAS) and the Common Market for East and Southern Africa (COMESA) particularly in both social and economic development of their members" (Enaifoghe, 2018). In any case, The World Bank has for quite some time been a champion of regional incorporation issues and has altogether scaled up support as of late after the dispatch of the Africa Regional Integration unit in 2004. World Bank relentless support for regional activities remains multi-frame: Financing and counselling administrations for territorial speculation programs, specialized help and investigative work on incorporation issues, and limit working for local institutions– utilizing the Bank's gathering energy to attract consideration regarding the mix motivation and use joint effort and assets from giver accomplices and the private segment.

The Biggest Economies in the Trade Liberalization: South Africa and Nigeria are the biggest economies in Africa with Nigeria being the biggest in GDP terms and South Africa being the most industrialised economy on the continent. Surely these two countries play a huge role in terms of intra African trade and they are expected at least in the context of this paper to play extra roles than other countries. Nigeria is reported to be the biggest recipient of Foreign Direct Investment (FDI) in the ECOWAS region but its exports into that region have remained very low as well as its imports from the region. This is despite various opportunities that are offered by ECOWAS member states in the region. On the outset, South Africa enjoys almost the same benefits in relation to the FDI receipts in the SADC region but its imports from the region are quite very low despite its corporates enjoying a huge market from struggling economies such as Zambia, Malawi and Zimbabwe. South Africa and Nigeria still view the African Union member states as their potential market rather than taking them as partners as far as economic development is concerned. The time these two big economies start to understand that other African member states are not simply their clients this will short change the polarised industrial development that is witnessed in Africa at the current moment. A wide spread industrial development as a result of partnership among African states shall help to improve the value addition and stop Africa from trading primary products.

The biggest sector making Africa lose millions of jobs that it could be offering to its citizens is the mining sector. South Africa is a country with a huge mining sector but it has not developed to an extent of exporting processed or manufactured mining products and this is making the region billions in potential income. The same happened to Nigeria in the context of oil products. Nigeria can work as a refinery for oil producing African states and Africa can be the biggest exported of refined oil products but this can be realised on if it starts viewing other oil producing African country as neighbours but as partners in economic development through reducing the amount of jobs that the region is exporting to Europe through exportation of primary products. Nigeria and South Africa can facilitate and influence the region to achieve full economic integration also through their huge network of huge companies that are operational in the region already. These big companies can be useful to the economic integration agenda either as funders or through policy recommendations.

These companies have seen the potential partnerships they can exploit as well as their growth prospects that are hindered by lack of integration in the region. On the other side, these two big economies are better resourced compared to other member states and lack of funding has been cited in the literature (UNECA 2006) as one of the problems dampening efforts of economic integration. In that regard they can come in as resource mobilisers for the attainment of economic integration which is evident that they might one of the biggest beneficiaries. To add, since they are the biggest economies, South Africa and Nigeria can partner with other member states to influence infrastructure development to ensure that there is easy and cheap transportation of goods from one country to another advancing the interests of integration? As much as it is evident that the two countries have been huge supporters of African Economic Integration, it does not show that its implementation urgency is not one of their politics priorities and that can have contagious effects to other small countries in the region who are members states to the African Union.

4. Conclusion and Recommendations

Despite the known and bold spelt economic development efforts that are known to be realised by all African states as result of a fully integrated Africa, little has been done to achieve that goal. The founding objectives of the Organisation of African Unity (OAU) which later became the African Union (AU) are very clear as far as free trade and single currency are concerned for Africa. Since 1963, Africa still has trade barriers amongst member states as well as travelling visas. However, efforts have been done as far as bilateral arrangements are concerned. Also the western part of Africa has made huge strides in bringing the member states of that sub-region together in trade terms and security. On the other front, Southern Africa as well through the formation of the SADC showed that it is possible to bring member states together for a common agenda. However, these organisations that have emerged in these two corners of Africa have not done enough as far as spreading this to the whole of Africa and there are better results and benefits for all Africans if the African Union can manage to make all the members states and if not all, the majority of its member states speak with one voice. The AU has been challenged that it has never has much power but a mere secretariat organisation for the continent but its member states have more power. Just as in this study we focused on both the power

play on the socio-economic and political factors, which are responsible for the African regional integration organizations through the liberalization of trade for a leveled economic development experienced in various sub-regions.

Regional integration has been seen to be a key force for a sustainable development around the world today. Hence it can promote economic growth, reduce poverty, foster social development or protect the environmental issues. Nevertheless, studies find that, it can as well have a negative impact on both economic and social aspects, notably if the regulatory framework on domestics becomes inadequate or not effectively implemented. The Southern African Development Community (SADC) through South Africa, continue expansion of the current integration processes in the sub-region amongst its members as its main commitment with trade penetration. It has therefore adopted the Regional Indicative Strategic Development Plan (RISDP), this was meant to provide strategic direction in the design and formulation of SADC programs, projects and activities so as to achieve it development objectives and economic growth, alleviate poverty, enhance the standard and quality of life of the people of Southern Africa and support the socially disadvantaged, through regional integration. Nonetheless, many African nation, has progressively perceived that communitarian or collaborative activities and regional approaches are basic to accomplishing their advancement or developmental objectives. The World banks also viewed that one of the advantages from seeking after regional incorporation or integration cluster, including the procuring economies of scale or different efficiencies by acting collectively.

In the quest for common goals to expand local supply capacity or limit, and further enhance access to business sectors; a coordinated or orchestrated treatment of trans-limit issues, for example, exchange and trade, administrative systems and strategies, territorial framework and different cross-border issues; and the administration of shared characteristic assets. Finally, the argument driven by this paper or caries forms the basis of the choice of the countries that were assumed to have more power to champion the integration efforts for the continent which are South Africa and Nigeria, the most industrialised and biggest economy respectively. These two countries can pursue their influence through institutions of higher learning in the continents (scholars), through the parliament of Africa although it does not have much power but that platform can be used for advocacy to other member states. However, among African Union member states, there is evidence of reluctance on the part of African leaders because they talk about the benefits of economic integration in Africa but they do not act. They know the importance of integration but are not acting aggressively for its achievement, evidence of political will that lacks. It is recommended that in order to pressure governments, the civil societies in Africa needs to be engaged to that they continue to engage their national governments as well as SADC, ECOWAS and AU leadership on the urgency and need positive strides towards achieving free trade corridors amongst African economies for the benefits of citizens through job creation and poverty alleviation.

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Evaluating Bank Cost Efficiency Using Stochastic Frontier Analysis

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Abstract: The study seeks to assess the cost efficiency of the commercial banks in Zimbabwe using the stochastic frontier analysis. The cost efficiency of the Zimbabwean banks is estimated using the trans-log stochastic frontier approach. The Stochastic Frontier Analysis methodology is among the host of methods that has been used to measure banking sector efficiency. The analysis of cost efficiency of commercial banks has important implications for the economy since an efficient banking system has potential to reduce interest rates which can lead to increased investment and growth for the economy. The cost of doing business in Zimbabwe is perceived to be high hence improved bank efficiency has the potential to reduce the cost of doing business. The average cost efficiency scores for the Zimbabwean banks over the study period show that the banking sector in Zimbabwe experiencing 17 percent inefficiency. The efficiency levels have been declining over the years reflecting increased resource wastage in the system. The study recommends that the banking institutions should continue to innovate so as to reduce their inefficiencies.

Keywords: *Commercial Banks, Cost Efficiency, Stochastic Frontier Analysis, Zimbabwe.*

1. Introduction

In recent times there has been a proliferation of studies in bank efficiency (Abel, Bara, & Le Roux, 2018), (Okoire & Agu, 2015), (Kofi, Gan, & Hu, 2014), (Ngan, 2014), (Hasan, Kamil, Mustafa, & Baten, 2012), (Manlagñit M. C., 2011). (Berger & Mester, 1997), notes the interest in banking sector efficiency emanates from the structural changes taking place in both the financial and non-financial sectors coupled with the adoption of technologies in the provision of financial services. Efficiency measurements are being used as proxies to measure innovativeness of managers and their ability to contain expenditures while maximising payoffs i.e. income and profit. It follows therefore that institutions are interested in pursuing activities that lead to the realisation of planned objectives but also assure more gains from less inputs. The concept of efficiency in economics has been analysed from an economic and organization theory perspective. Efficiency can be defined broadly as the application of minimum resources in the production of maximum output. Institutions are interested in producing maximum output using limited resources. Institutions that are able to produce more output given a limited amount of resources are perceived to be more efficient as compared to one that produces less output. The concept of efficiency has been expanded outside the realm of welfare economics to other related economic disciplines such as banking, finance and health economics among other.

(Farrel, 1957), is credited with introducing the subject of efficiency in the economic discourse. Efficiency is made up of two parts, technical and allocative efficiency (Farrel, 1957). Technical efficiency is a measure of the extent to which a decision-making unit is able to minimise resources in the production of a given level of output. Allocative efficiency evaluates a decision-making unit ability to apply resources during the production process in optimal proportions given the prices and state of production technology. Technical efficiency combined with allocative efficiency provides a measure of total efficiency (Coelli, 1998). Efficiency measurement contains both macroeconomic and microeconomic implications (Berger & Mester, 1997). Microeconomic studies shows that bank efficiency is a product of the level of competition which emanates from the entry and exit of foreign banking institutions in the domestic market, improvement in the regulatory environment and changes in institutional frameworks over time (Koutsomanoli-Filippaki, Margaritis, & Staikouras, 2009). On a macroeconomic scale banking sector efficiency reduces the cost of banking and improves the strength of the system (Rossi, Schwaiger, & Winkler, 2005). This is mostly a result of the linkage between the financial system and the productive sector which draws resources from the earlier.

An efficient banking system leads to enhanced resource allocation in favour of projects that are growth improving (Andrie & dan Cocri, 2010). Despite increased research on banking efficiency, there has not been

much consensus on the results generated (Brack & Jimborean, 2010). The differences among the various studies has been a result of differences in economic conditions in the different countries, methods and mechanism used to regulate institutions as well as supervisory regimes. In country differences have been attributed to the magnitude of competition among financial players, differences in product offering in terms of quality and the level of development in the financial markets (Brack & Jimborean, 2010). The current study evaluates the commercial bank cost efficiency in Zimbabwe using the stochastic frontier analysis. There have not been more studies that have focused on the performance of the Zimbabwean banking system (Abel, S. 2018) (Abel, Bara, & Le Roux, 2018) to the author's knowledge and the majority of them employed the data envelopment method. In divergence with the previous studies the current one will use the parametric method of stochastic frontier analysis.

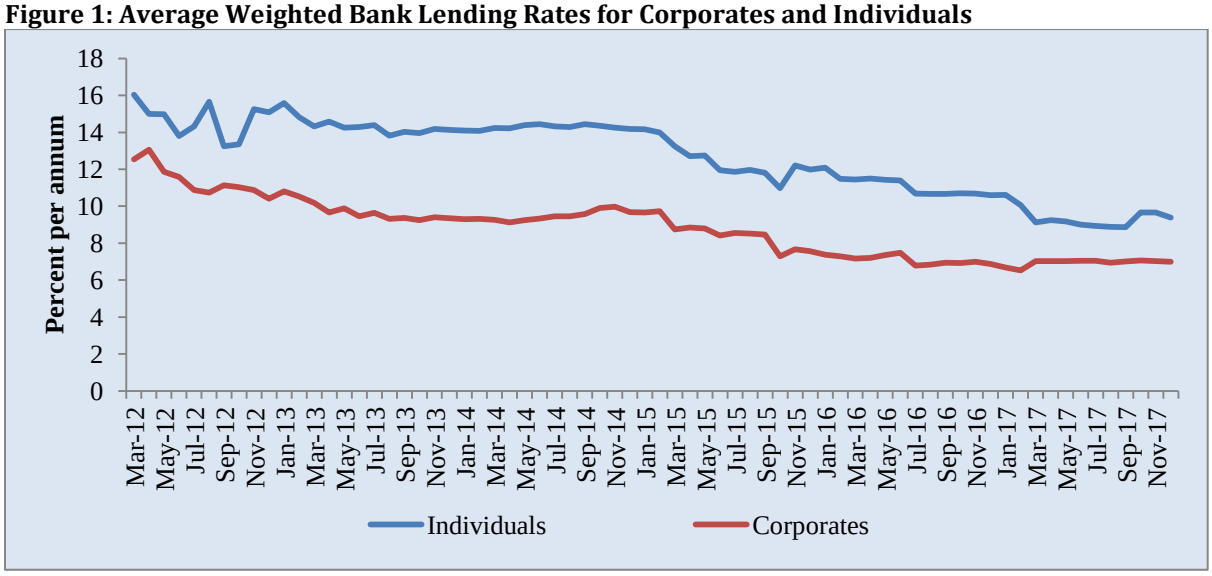
A study like this one has important implications for the country for a number of reasons; an efficient banking system has potential to reduce interest rates which can lead to increased investment and growth for the economy. Secondly, the cost of doing business in Zimbabwe has been perceived to be too high hence improved efficiency has the potential to reduce the same. The government of Zimbabwe has been interfering in the setting of interest rates through controls hence such study can help justify or dispel the government's action. The study is organised in the following manner; in section 2, the study discusses the developments in the banking sector. The literature review is presented in section 3. The methodology will be discussed in section 4 followed by presentation of results. In section 5 conclusions and recommendations of the study are discussed. There have been a number of innovative developments by banks which has been experiencing a lot of pressure from competition coming from both the banking and no banking sector. Banks were coerced into pursuing aggressive growth strategies driven by deposit mobilisation, strategic partnerships and investment in digital platforms.

Developments in the Banking Sector in Zimbabwe: The Zimbabwe economy has transformed significantly from the hyperinflationary periods of 2008 to date. The banking sector has been witnessing great transformation as a result of the low inflation rates between 2009 and 2017. The non-bank financial system has been exerting a lot of pressure on the banking sector especially mobile money. To counter competition from the mobile money service providers the banks have been innovative which included partnering the mobile network operators. In December 2016, all banks had partnered with the biggest mobile network operator (Econet) on its ecocash platform. Some of the banks had also partnered with other smaller MNOs. The partnership became handier for banks as the economy experienced cash challenges hence the majority of the transactions were being facilitated through mobile money. During the study period there was a proliferation of new product by banks as they tried to wither competition. New products or customer made products such mortgage financing, money transfer agency business, bill payments, as well as various products targeted at farmers and SMEs. These new products were mostly meant to increase the sources of bank income in light of tight competition from fellow banks and non-bank financial institutions. Partnering money transfer agents and mobile services providers was meant to harness resources coming from the diaspora, a growing foreign currency cash cow for the country whose diaspora population is quite significant.

The banks were also affected by exogenous shocks hence rendered banks to become aggressive in preserving their markets. The banking sector experienced closure of many correspondent relationships during the period. As a result of derisking, most correspondent banks were forced to close accounts that were held by Zimbabwean banks. This then handicapped the banks from undertaking foreign payments and receiving remittances from abroad. This further compromised the banks' ability to source foreign lines of credit which are critical for the resuscitation of the ailing economy. The closure of correspondent relationships forced the banks to circumvent this challenge through the use of third-party banks or use alternative currency for foreign currency payments though this could be expensive alternative. The banks also experienced challenges with a situation where the Central Bank also became more of a player. The Central Banks become involved in financing the productive sector hence directly competing with commercial as well as other financial players. The central bank was involved in financing tobacco, horticulture, small scale miners, among others. This brought direct competition between the central bank and banks leading to financial disintermediation as commercial banks were by passed in the credit allocation. These central bank financing facilities were cheaper than commercial banks leading disintermediation. In another form of financial disintermediation, the

central bank on behalf of the government was involved in private placement of treasury bills against international best practice.

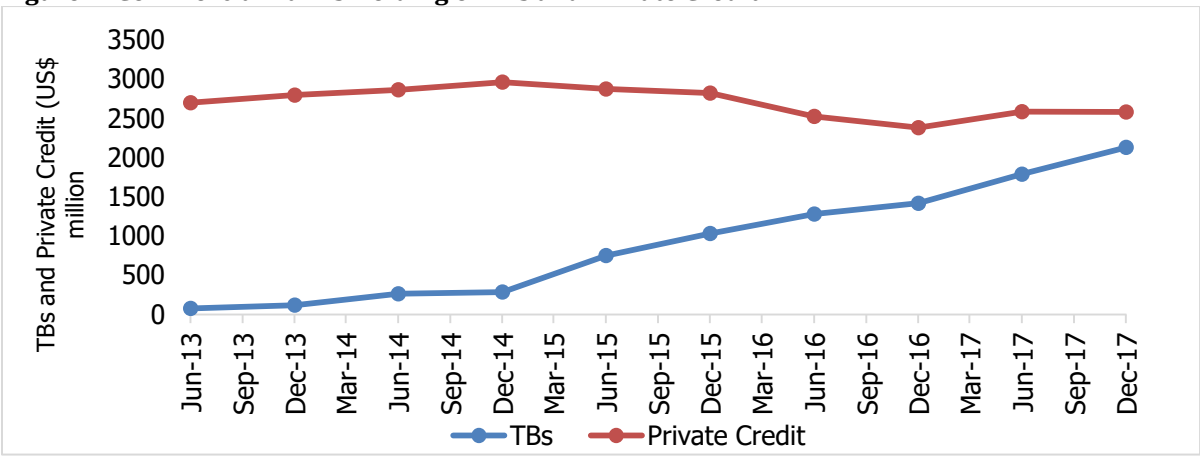
Figure 1: Average Weighted Bank Lending Rates for Corporates and Individuals



Source: RBZ, 2017

The central bank is heavily involved in the pricing of the banking product especially productive sector facilities. This intervention is a form of pricing controls on the banks as it involves dictating the maximum allowable interest rates and charges to be charged on loans and services. The interest rates have gradually been revised down from 18%, 15% and 12% for the productive sectors without market-based justification. The whole situation shows that the financial system has reverted back to periods of financial repression since market forces are no longer applicable in the determination of the interest rates (Figure 1). Given the controls that were placed on lending rates, banks were forced to go for treasury bills at the expense of lending to the productive sector. This then led to the crowding out effect. Banks suffered as their business models were distorted as a result of financial repression. The regulating of pricing distorts the business models because the caps on service charges and lending rates fail to absorb the cost of funds. This then compromised the ability of the banks to seek external lines of credit as most potential lenders believe in the markets determining pricing. On the other hand banks had acquired lines of credit based on prevailing interest rates hence the move of the central bank only led to situations where banks had to cut down on their margins. As a result of the caps on lending banks adopted a conservative approach to lending hence affecting the productive sectors of the economy.

Figure 2: Commercial Banks Holding of TBs and Private Credit



The combined effect of reduced interest rates and the increased Treasury Bills issuance by the government forced banks to abandon lending to individuals and corporates preferring to hold public debt perceived to be risk free (Figure 2). This was further worsened by the fact that the margin between the lending rates and the government paper was declining over time hence the preference of the later by the banks. Banks were therefore finding a safe haven in TBs which are a relatively less risky investment. The justification for such a move by the banks is that the interest rates are low to cushion them from the risk prevailing in the market hence better to hold relatively less risky assets. In light of the increased issuance of government paper on the market, the bank's assets were increasingly being composed of TBs. This was a signal of the increased dominance of the government paper against lending to corporates and individuals. This then compromises the banks ability to source resources offshore if they have a balance sheet tilted towards government paper. Banks would then need to strongly justify such lines of credit where these resources are likely not to be applied to the productive sector. The study evaluates the cost efficiency of the banking sector using a parametric technique of stochastic frontier method.

2. Literature Review

This section reviews studies that have been done by other scholars on bank efficiency. The studies will direct the current paper on the various discussion, methodologies and results used in prior studies. The section concentrates mostly on studies that have used the methods of data envelopment analysis and stochastic frontier analysis (Abel, 2018) (Abel, Bara, & Le Roux, 2018) (Okoire & Agu, 2015) (Kofi, Gan, & Hu, 2014) Kofi (Ngan, 2014), (Hasan, Kamil, Mustafa, & Baten, 2012), and (Manlagñit M. C., 2011). The literature review will assist in drawing conclusion and comparisons in the succeeding sections. (Khalil, Mehmood, & Ahmad, 2015), evaluated the cost efficiency of the Pakistan's banking using a transcendental logarithmic (translog) cost frontier using quarterly panel data. The aim of the study was determine the level of efficiency in the Pakistan banking sector for the period 2005-2013. The authors found that banks in Pakistan had enough scope to improve their efficiency levels through maximising output by adopting either a diversification or cost containment approach. The cost of banking could be reduced through a reduction in the prices of inputs. Employing the same method of stochastic frontier analysis, (Ngan, 2014) assessed the cost and profit efficiency of banks in Vietnam spanning the period 2007-2012. The results revealed mixed results which showed that local institutions were cost efficient while foreign ones were profit efficient. Cost efficiency was found to be closely related to bank concentration, mergers and bank ownership.

(Manlagñit M. C., 2011), evaluated the relationship between risk and bank efficiency of the Philippine commercial banks for the period 1990-1999. The results revealed that the 1997 financial crisis had a negative and significant impact on banking sector cost efficiency. The regulatory reform that was instituted in Philippine has the effect of strengthening the banking sector. The cost efficiency was negatively affected also by mergers and acquisitions. Applying a 2 step estimation technique, (Montgomery, 2014) studied the cost and profit efficiency of the Japanese banking system during the period 1996 - 2009. The findings from the study indicated that bank mergers had a positive effect on both profit and cost efficiency. (Hasan, Kamil, Mustafa, & Baten, 2012), applied the stochastic frontier analysis to measure the technical efficiency of the Malaysian banks listed on stock market. The sample was drawn from only those banks that were listed for the period between 2005 and 2010. The technical efficiency score was found to be 94 percent reflecting a 6 percent level of wastage. The study period exhibited an overall upward trend in technical efficiency characterised by wide considerable fluctuations. (Kristo, 2013), adopted a mixed method approach in assessing the efficiency of the Albanian banks. The approaches employed included the traditional approach as well as the stochastic frontier analysis. The traditional approach revealed that efficiency was declining in the Albanian banking sector. The stochastic frontier approach showed that the big banks tended to be more efficient compared to small bank.

The results of the study did not show any noticeable effect of return on assets and size on the cost efficiency scores. In a study of 12 Central and Eastern European countries for the period 1993-2000, (Semih Yildirim & Philippatos, 2007) applied both the stochastic frontier and DFA methods to measure bank efficiency. The study adopted loans, investments and deposits as inputs. Borrowed funds, labour and physical capital were the outputs used. The SFA and DFA scores were 77 percent and 72 percent respectively. They further established that Poland and Slovenia were the most efficient countries among the countries studied. Using the

same method, (Yan, X, & J, 2009) assessed the implication of ownership as well as the implementation of hard budget constraint on the efficiency of banks. The study established that non-state banks were more efficient as compared to state banks with a margin of 8-18 percent. The study revealed that banks that relied on government funding were less efficient compared to those that experienced hard budget constraints. Employing the fixed effect and dynamic generalised method of moments, (Kofi, Gan, & Hu, 2014) evaluated the efficiency of the Ghana banking industry. The study showed that Ghana's banking sector is inefficient. The study further revealed that banks that were adequately capitalised were not efficient. Size and loan loss provision was found to be insignificant in determining efficiency. Larger banks were equally inefficient as the smaller banks.

The study found cost efficiency persistence among banks where efficiency was increasing over time. (Abel S., 2018), studied the cost efficiency of commercial banks in Zimbabwe during the period the 2009-2014. The study used the data envelopment analysis and Tobit regression method. The study revealed that banks in Zimbabwe experienced an average inefficiency level of 19 percent. The significant determinants of efficiency were found to be profitability, capital adequacy, bank size, credit risk and economic stability. A stable macroeconomic environment was found to be important for financial institutions to improve their cost efficiency. (Abel, Bara, & Le Roux, 2018; Abel, Bara, & Le Roux, 2018; Abel, Bara, & Le Roux, 2018), decomposed the technical efficiency of the banking sector into pure technical and scale efficiency of the Zimbabwean banking sector using the data envelopment analysis. The study sample consisted of domestic and foreign banks. The average bank efficiency was found to be 82.9 percent, while pure technical efficiency and scale efficiency were 96.6 percent and 85.6 percent respectively. Decreasing returns to scale was found to be the main reason for the scale inefficiency. Zimbabwean banks are hence operating below their optimum capacity with greater room to improve on their efficiency levels. Decomposing time periods into pre-consolidation and post consolidation, (Okoire & Agu, 2015) assessed the effect of reforms on the Nigerian banks performance and efficiency using the data envelopment analysis method. The study found that the two time periods exhibited differences in efficiency. The reforms improved the efficiency of the majority of the banks with a few remaining inefficient.

Consolidation was found not to be the reason behind improved efficiency since some banks remained inefficient after the process. The Nigerian banking system was not spared by the effects of the global financial crisis. (Nazir & Alam, 2010), used data envelopment analysis to measure the effect of financial restructuring on the Pakistan banks performance for the period 2003-2007. The aim of the research was to determine the operating efficiency of the Pakistan commercial banks. The result showed that there was no improvement in banking efficiency as a result of privatisation. The study further shows that public banks could do better by covering their interest and non-interest expense from their corresponding revenues. In a study on the efficiency of the domestic banks in Pakistan, (Ahmed, S, & H, 2009) used the data envelopment analysis and the malmquist index for the period 1990 - 2005. The study further assessed the effect of financial sector reforms on the banking sector. The results confirmed that financial sector reforms improved the domestic commercial banks efficiency. (Olaosebikan, 2009), studied the effect of the introduction of the minimum capital requirements on bank efficiency in Nigeria. The study covered the period 1999-2005 and took into consideration the pre and post introduction of minimum capital requirements in the banking sector and used the data envelopment analysis as well as the Tobit method to evaluate efficiency. The study showed that there was a decline in the number of institutions in distress as a result of the reforms introduced in the late 1990s. The banking sector was strengthened and became less volatile as result of consolidation and introduction of minimum capital requirements.

3. Methodology

The study employs the stochastic frontier analysis methodology. (Aigner, C. & P), and (Meeusen & van den Broeck, 1997) are credited with the development of the stochastic frontier approach independently. The Stochastic frontier approach is a stochastic method which incorporates random errors. The functional form of the model needs to be defined in advance. The output of a company is a function of inputs, inefficient and random errors which are predefined as well as the error term distribution. The SFA method allows the modelling of factors which could impact an organisation but not controllable by the same. The above advantages render the Tran slog function more suitable for the evaluation of the banking system premised on

its multi criteria character. The assumption of linear homogeneity in input prices is imposed by normalising total costs and input prices by one input price. The method achieves this by the introduction of the random error term in the specification of the frontier efficiency model (LR, 2004). Following (Kristo, 2013) and (Ngan, 2014) the general form of the cost frontier model is depicted as follows:

$$TC_{it} = \beta X_{it} + V_{it} + U_{it} \quad (1)$$

$$i = 1, 2, \ldots . n; t = 1,2, \ldots , T$$

Where

TC_{it} Total cost in logarithmic of form in period t

X_{it} Matrix of outputs, prices and input in logarithmic form

B Vector of unknown parameters

V Random variables which are assumed to be iid $N(0, \delta_v^2)$ independent of U

U Non-negative random variables which are assumed to be identically distributed as normal variate and the error term

There are a number of methods that can be used to specify the cost function. These include Cobb Douglas, Leontief, and constant elasticity of substitution, transcendental logarithmic and linear functions. The study uses the transcendental logarithmic (translog) cost function since there is flexibility regarding the stochastic frontier method when a functional form of the translog type functions is used as compared with the Cobb – Douglas functions. The translog form also allows data to indicate the real value of the curvature of the function, rather than impose prior hypotheses regarding its value. This type of formulation follows previous studies that have been conducted (Pruteanu-Podpiera, Weill, & Schobert, 2008), (Kristo, 2013). The empirical model is then outlined as:

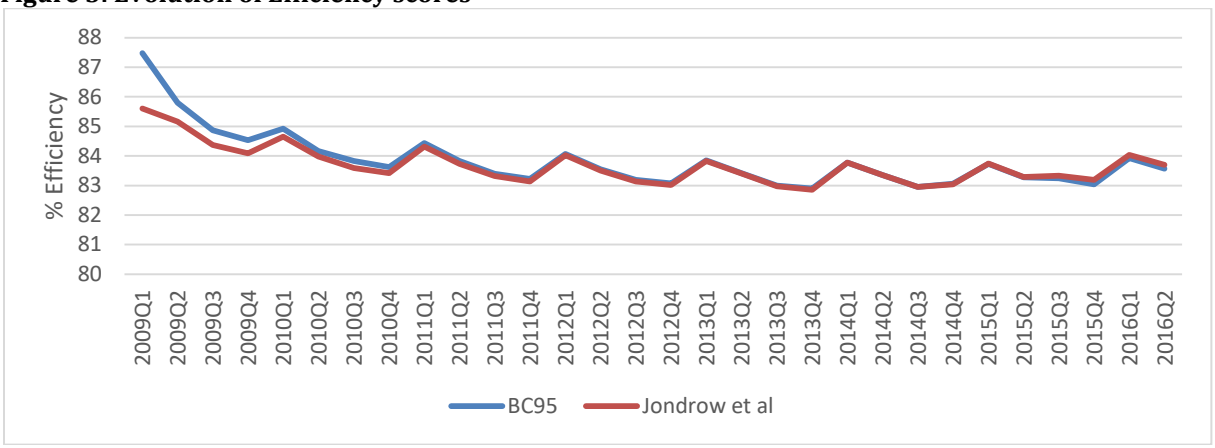
$$ln\left[\frac{TC_{it}}{w_{3it}}\right] = \alpha_0 + \alpha_1 \ln Y_{it} + \frac{1}{2}\alpha_2 (\ln Y_{it})^2 + \alpha_3 ln\left(\frac{w_{1it}}{w_3 it}\right) + \alpha_4 ln\left(\frac{w_{2it}}{w_{3it}}\right) + \alpha_5 ln\left(\frac{w_{1it}}{w_{3it}}\right) ln\left(\frac{w_{2it}}{w_{3it}}\right) + \frac{1}{2}\alpha_6 \left[\ln\left(\frac{w_{1it}}{w_{3it}}\right)\right]^2 + \frac{1}{2}\alpha_7 \left[\ln\left(\frac{w_2 it}{w_{3it}}\right)\right]^2 + \alpha_8 \ln Y_{it} \, ln\left(\frac{w_{1it}}{w_{3it}}\right) + \alpha_9 \ln Y_{it} \, ln\left(\frac{w_{2it}}{w_{3it}}\right) + \varepsilon_{it} \quad (2)$$

Where:

Y	Total loans of a bank
TC_{it}	Total cost of the bank
w_1	Price of labour
w_2	Price of physical capital
w_3	Price of borrowed funds

The study employs the method used by (Battese & Coelli, 1995) to estimate efficiency scores using the time-varying stochastic frontier approach for panel data with firm effects. The estimations are run using bank fixed effects. For the sake of robustness, the results are compared with those using true random effects stochastic frontier model. The study data is drawn from the financial statement of financial institutions in Zimbabwe. The banking sector in Zimbabwe is composed of twenty financial institutions (14 commercial banks, 4 building societies, a merchant bank and a savings bank). The study only drew data from commercial banks on the basis of completeness of data for the study period (2009-2016) using quarterly data. Before performing any manipulations of the data, the study computes the descriptive statistics. It is important that the econometrics results adhere to certain a priori expectations to avoid spuriousness in the results. The study computes correlation coefficients to ascertain the levels of correlation among variables also.

Figure 3: Evolution of Efficiency scores



The evolution of the efficiency scores are shown in Figure 3. The efficiency scores declined from an average of 85.6 percent in 2009 quarter 1 to an average of 83.6 percent in 2010 quarter 3 (Figure 3). Since then the average efficiency score has been hovering between 83 percent and 84 percent. The striking issue is the fact that both the scores established by the BC95 model and true random effect model show the same pattern after 2010 quarter 3 with the scores trending together and showing no difference. This is unlike the period between 2009 quarter 1 and 2010 quarter 3 where the BC95 was showing high efficiency scores as compared to the true random effect model. Overall the results augur well with the results obtained in Zimbabwe by other authors using the data envelopment methodology (Abel, 2018) (S & P., 2018).

4. Result Presentation and Analysis

The results of the Trans log function are presented in Table 1 and Table 2. Table 1 is premised on the (Battese & Coelli, 1995) (BC95) model which is dependent on the fixed effects of the banks.

Table 1: The BC95 Model

```
Inefficiency effects model (truncated-normal)       Number of obs =       537
Group variable: nameofbank                        Number of groups =        22
Time variable: quarter                          Obs per group: min =         1
                                                              avg =      24.4
                                                              max =        30

                                                    Prob > chi2   =    0.0000
Log likelihood =  -267.0964                         Wald chi2(9)  =   1431.95
```

lntcpf	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
Frontier						
lny	1.952411	.3071004	6.36	0.000	1.350506	2.554317
halflnysq	-.0518114	.0191362	-2.71	0.007	-.0893178	-.0143051
lnpkpf	-.9589003	.1883098	-5.09	0.000	-1.327981	-.5898198
halflnw2w3sq	-.001501	.0054975	-0.27	0.785	-.0122758	.0092738
lnplpf	1.579343	.8019789	1.97	0.049	.0074934	3.151193
halflnw1w3sq	-.0580679	.0598253	-0.97	0.332	-.1753234	.0591876
lnw1w3lnw2w3	.0216538	.0163578	1.32	0.186	-.0104069	.0537144
lnw1w3lny	-.0490011	.0456877	-1.07	0.283	-.1385473	.0405452
lnw2w3lny	.0596451	.0096987	6.15	0.000	.040636	.0786543
_cons	-7.800246	2.886547	-2.70	0.007	-13.45777	-2.142718
Mu						
lny	-1.294085	.1697343	-7.62	0.000	-1.626758	-.9614121
lnpkpf	.5132181	.1236688	4.15	0.000	.2708316	.7556046
lnplpf	-.6090414	.3196209	-1.91	0.057	-1.235487	.017404
_cons	21.34899	2.536827	8.42	0.000	16.3769	26.32108
Usigma						
_cons	-.4827765	.2287652	-2.11	0.035	-.931148	-.034405
Vsigma						
_cons	-2.303643	.1224535	-18.81	0.000	-2.543648	-2.063639
sigma_u	.7855366	.0898517	8.74	0.000	.6277747	.9829446
sigma_v	.3160605	.0193514	16.33	0.000	.2803199	.356358
lambda	2.485399	.1018871	24.39	0.000	2.285704	2.685094

Table 1 presents the estimation of the cost frontier function. The results in the table show that model is correctly fitted and returns correct signs of the estimated coefficients. The coefficient of loans and advances shows that there is a positive relationship between total cost and loans. An increase in loans advanced to bank clients also leads to an increase in total cost. This reflects the fact that banks incur costs as they undertake due diligence on the customers before advancing loans to them. The costs were a bit higher in the Zimbabwean case as the economy did not have a comprehensive credit reference system which meant that banks were supposed to go an extra mile in vetting their clients before actually releasing the loans. The price of labour shows a positive associated with cost. This implies that an increase in price of labour leads to an increase in the total cost of banks. The results are not very surprising for Zimbabwe especially on the labour part where the economy is perceived to be a high cost economy which had been impairing the competitiveness of the economy. The normalised price of capital has a negative effect on the total cost. The results of the BC95 model compares with the results of the true random effects shown in Table 2. This is based on firm-specific efficiency scores as elucidated by Jondrow et al., 1982.

Descriptive Statistics: The average cost efficiency scores for the Zimbabwean banks over the study period is, 83.68 percent using the BC95 model while 83.68 percent using the true random effects model. The average cost efficiency scores for the Zimbabwean banks over the study period is, 83.68 percent using the BC95 model while 83.68 percent using the true random effects model. The two models agree that the average efficiency is around 84 percent indicating that the average bank in the model suffered a 16 percent level of inefficiency compare to the best bank in the sample.

Table 2: True Random Effects SFA Model

True random-effects model (half-normal) — Number of obs = 537
Group variable: nameofbank — Number of groups = 22
Time variable: quarter — Obs per group: min = 1
avg = 24.4
max = 30

Prob > chi2 = 0.0000
Log simulated-likelihood = -154.6542 — Wald chi2(9) = 1566.59

Number of Randomized Halton Sequences = 50
Base for Randomized Halton Sequences = 7

lntcpf	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
Frontier						
lny	.1655702	.1865883	0.89	0.375	-.2001361	.5312766
halflnysq	.0403908	.0103719	3.89	0.000	.0200623	.0607192
lnpkpf	-.6323551	.1717203	-3.68	0.000	-.9689208	-.2957895
halflnw2w3sq	-.0134373	.0063503	-2.12	0.034	-.0258837	-.0009908
lnplpf	1.22053	.4721317	2.59	0.010	.2951684	2.145891
halflnw1w3sq	.044137	.04696	0.94	0.347	-.0479029	.1361769
lnw1w3lnw2w3	.0168252	.0133556	1.26	0.208	-.0093513	.0430018
lnw1w3lny	-.012849	.0286718	-0.45	0.654	-.0690448	.0433468
lnw2w3lny	.0398232	.0082826	4.81	0.000	.0235896	.0560568
_cons	9.938035	2.06584	4.81	0.000	5.889063	13.98701
Usigma						
lny	-.7587278	.105574	-7.19	0.000	-.9656491	-.5518066
lnpkpf	-.142729	.0566529	-2.52	0.012	-.2537666	-.0316914
lnplpf	-.025385	.324131	-0.08	0.938	-.66067	.6099
_cons	9.804517	1.631614	6.01	0.000	6.606613	13.00242
Vsigma						
_cons	-2.815893	.1057376	-26.63	0.000	-3.023135	-2.608651
Theta						
_cons	.2776484	.0366568	7.57	0.000	.2058024	.3494943
E(sigma_u)	1.366558				-.1221066	2.855223
sigma_v	.2446452	.0129341	18.91	0.000	.220564	.2713555

Like the BC95 model, the results in the Table 2 shows that the model is correctly fitted and returns correct signs of the estimated coefficients. This is in line with the results of Khalil et al. (2015). The coefficient of loans and advances shows that there is a positive relationship between total cost and loans. The price of labour shows a positive associated with cost. This implies that an increase in price of labour leads to an increase in the total cost of banks. The normalised price of capital has a negative effect on the total cost. The results are similar to those obtained using the BC95 model save for the magnitude of the signs. The true random effect model retaining lower coefficients compared to the BC95 model.

Table 3: Descriptive Statistics of Efficiency Scores

	BC95 Model	True Random Effects Model
Mean	83.835	83.684
Median	83.547	83.561
Maximum	97.338	89.997
Minimum	81.680	79.280
Standard Deviation	1.490	1.057
Jarque – Bera	16467.61	579.831
Probability	0.000	0.0000
Observations	540	540

According to the BC95 model the minimum efficient score for the sample was 81.7 percent while the maximum score was 97.33. On the other hand, the true random effects model shows that the minimum score was 79.2 percent while the maximum score was 90 percent. The results show that the random effects model compresses downwards the efficient scores as compared to the BC95 model. Despite these differences the two models show that the majority of the scores were above 83.5 percent with both models showing that there are little variations in the scores as indicated by the standard deviation.

5. Conclusion

The study sought to investigate the evolution of the banking sector efficiency in Zimbabwe using the Stochastic Frontier Analysis. The SFA methodology is among the host of methods that has been used to measure banking sector efficiency. The analysis of cost efficiency in the commercial banking system of Zimbabwe is an important for the reduction the cost of banking in a country perceived to have high interest rates on lending detrimental to growth. Second the government of Zimbabwe is working on the mechanisms of reducing the cost of doing business of which the perceived high interest rates have been targeted. The intervention by the authorities in the interest rates setting though a major concern calls for an investigation on the efficiency of the banking system. The results show that the banking sector in Zimbabwe experiencing 17 percent level inefficiency score, implying that there are wastages in the banking sector. If this inefficiency is resolved, banks could pass on the reduced cost to their clients in the form of reduced interest rates as well as bank charges and fees. The study recommends that the banking institutions should continue to innovate so as to reduce their inefficiencies.

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A Comparative Study of Rural Entrepreneurial Challenges: Towards Rural Economic Development and a Policy Framework

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Abstract: The primary purpose of this rural study was to compare the challenges that impede successful operations of entrepreneurial activities and small businesses. Through quantitative design, a seven-point Likert-scale questionnaire was utilized to gather primary data. Two sampling techniques, namely simple random and purposive, were applied to select the research participants. Based on a Likert spectrum, 267 questionnaires were administered to SME owners by the researcher, assisted by two research trainees. These questionnaires were ranked from (1) strongly disagree to (7) strongly agree. Two main questions, which provided guidance to this study, were certified reliable by the Cronbach alpha coefficient of 0.768 and 0.976. Data analysis was possible through the descriptive and inferential tools supported by the independent t-test, Pearson's chi-square test, and cross-tabulation. The final outcomes demonstrate higher levels of challenges in the Frances Baard (FB) District than in the John Taolo Gaetsewe (JTG) District. This implies that owner-managers of small businesses in the FB District experienced more challenges in operating their businesses. The study recommends SME Policy Framework (SPF) training and intensifying the existing processes of monitoring after training to justify the owner-managers' moral commitments.

Keywords: *Entrepreneurial activities, SME owners, John Taolo Gaetsewe District, Frances Baard District.*

1. Introduction

Academic literature suggests strong and positive association between entrepreneurial activities and economic fortunes (Acs, Desai and Hessels 2008; Bosma and Levie 2010). Through successful entrepreneurial activities and SME operations, rural economies are diversified to a lesser dependency on a mono-industrial base (Bryden and Hart 2005). Furthermore, other studies revealed that entrepreneurial activities are perceived worldwide to strongly influence economic potential and provide job opportunities (Marshall and Samal 2006). Due to its importance, the South African government has provided assistance over the years, especially to SMEs in rural areas (Fatoki and Smit 2011). However, scientific evidence from rural areas suggests there is growing concern about the rapid decline in entrepreneurial activities (Sternberg 2009). Besides, SMEs in South Africa lack the potential to expand their operations from the survival stage to become large entities (Fatoki 2014). Simply put, across the country, the SME sector was unable to proceed from the stage of survival to the status of maturity (Fatoki and Garwe 2010). In the past, several researchers were of the view that in South Africa up to 75% of newly established SMEs were unable to grow into operational businesses of sustained substance (Fatoki and Garwe 2010). According to Adeniran and Johnston (2011), SMEs failure has increased to between 70% and 80% in the country. The inability of SMEs in South Africa to attain the level of maturity has reached alarming proportions; thus a major concern for all spheres of government.

A report by the Global Entrepreneurship Monitor (GEM) (2014) has indicated that the Total Early-Stage Entrepreneurial Activity (TEA) has continued to perform below expectations. For instance, in 2014, South Africa's TEA further declined from 34% to 7% (GEM, 2014). The growing decline of entrepreneurial activities could be attributed to various factors. Persistent failures in entrepreneurial activities and the lack of operating successful SMEs are not unique to South Africa. Even across the developed world, where much assistance is given to entrepreneurial activities and the SME sector, SME failure continues to grow. According to a European Commission report (2013), one of the challenges that SMEs encountered related to fierce pressure from *"big businesses"* to meet new supply targets and design standards. A study by Hyder and Lussier (2016) indicated that worldwide, roughly 50% of newly established firms failed within the first five years. Other contributing variables to growing business failures were linked to the recent global recession, which created a tighter credit business climate (Kennickell, Kwast and Pogach 2015). Although globalisation is hailed as beneficial to business operations, in a way the concept proves to be another impediment to

business success. (Frynas and Mellahi 2015) describe globalisation as a combination of economic, political, as well as cultural shift events, which bring into the business focus the political interconnection among nations.

Through globalisation, various form of world business activities become integrated in line with economics, culture industries and the global market, besides policy decision-making. SMEs, as part of entrepreneurial activities, function on a small scale due to funding and other business related constraints. Operating businesses in the global arena creates fierce competition among small and "big businesses" for the same markets and resources opportunities (Cronje et al., 2000). Within the global environment, "big businesses" and SMEs share and provide products to similar markets and under similar marketing conditions. Due to a lack of resources and given the role players on the global stages, entrepreneurial activities and operating SMEs face challenges. A study by (April 2005) found that the general lack of managerial skills adds to other factors that contribute to business failures. However, the traits of different cultural practices and principles drive entrepreneurial activities (Venter, Urban and Rwigema 2008), which fuel the uncertainties of SMEs, and is largely influenced by cultural events. This study was conducted in rural settings, as such cultural events across communities are likely to influence SME operations in terms of the values, knowledge and experiences of individuals (Yew Wong 2005). Although it was not easy to make predictions regarding how and when SMEs will survive or fail, comparing the entrepreneurial challenges is likely to provide policy experts with answers to make credible and sustainable policy decisions.

This study is designed to identify some of the challenges that undermine the success of SME in certain business climates so as to shed light on the phenomena. Through this study, the author planned to explore four areas of entrepreneurial challenges to make comparisons in rural districts. The most cited challenges, according to the literature, include business and operational (BOP), specific (SCs), personal (PCs), and typical challenges (TCs). This empirical study sought to identify the most significant challenges that impact on SMEs operations in two rural districts of South Africa, namely the Frances Baard (FB) and John Taolo Gaetsewe (JTG) districts. In line with the objectives of comparing entrepreneurial challenges, the study could as well add significant insights to existing literature by providing answers to some of the difficult questions relating to the growing entrepreneurship failures. Moreover, the cultural beliefs of communities contribute to business failures. For the simple reason that this empirical study was conducted in two rural settings, the concepts "SMEs", "entrepreneurial activities" and "small businesses" are used interchangeably as mostly applied in the South African context (Love and Roper 2015) to mean rural businesses that are capable of employing not more than 50 local individuals with existing business assets valued below one million rand. Research by Le Fleur et al. (2018) indicated that countrywide SMEs are characterised as unregistered entities with less than 250 employees.

Further research by (Van Wyk, 2010) into the operations of SMEs found that the sector entails various descriptions, such as small, micro, and medium enterprises. More empirical study found that micro enterprises represent entities with an employment volume of not more than five payroll employees, while very small establishments are classified with an employment volume of less than ten payroll employees. Small establishments entail fewer than 50 payroll employees, compared to medium establishments of 100 payroll employees. (Amra, Hlatshwayo and McMillan, 2013), large establishments in South Africa are critical tools in providing economic growth. These establishments are able to provide employment opportunities to over 250 individuals. To ensure that the underlying issues are addressed in line with the stated objectives, this study is structured as follows: first, a theoretical background is provided, which includes the characteristics of the study areas, the conceptualising of business failures, the conceptual framework, and research hypotheses. This is followed by sections on the research method, the design approach, sampling techniques and the research instrument, and a section on data analysis. Lastly, the formulated hypotheses are evaluated and discussed, together with a section on the implications for rural policy, the ethical considerations, the study limitations and conclusions. Below are two leading questions that were designed to provide insights into stated objectives: Which district municipality is hindered most by the entrepreneurial challenges? Which of the entrepreneurial challenges severely impede small businesses and entrepreneurial activities in the district municipality?

2. Theoretical Background

The central precept of entrepreneurship as a concept is the profit-making motive that encompasses high-level risks based on the personal willingness to embark on unceasing future innovation. Further extant literature add that through entrepreneurship, individuals are encouraged to pursue more innovative paths to provide more risky decisions for entrepreneurial gains (Petuskiene and Glinskiene, 2011). Entrepreneurship is a concept of various processes that seeks to create values through the integrating of scarce resources with the aim to explore opportunities (Stevenson, Roberts and Grousbeck 1989). Jones (1999) posits that through entrepreneurship, individuals are able to recognise opportunities that satisfy their expectations. Wennekers and Thurik (1999) explained entrepreneurship in simple terms – a concept that creates economic potential, combines new product markets, and establishes fresh markets in a climate of uncertainty and barriers. It is a process that is influenced by the existing economic and physical environment, besides other social variables (Stathopoulou, Psaltopoulos and Skuras 2004). According to Barth, Yago and Zeidman (2006), small businesses are stimulated through entrepreneurial activities for job opportunities, as well as to create the necessary avenues to encourage self-employment. Various researchers have studied the challenges of small businesses and entrepreneurial activities in developed and developing countries (Klapper, Laeven and Rajan 2004; Lan and Wu 2010; Fatoki and Garwe 2010; Nawaser et al., 2011; Singh Sandhu, Fahmi Sidique and Riaz 2011; Zamberi Ahmad and Xavier 2012). The survival of SMEs in developing countries is severely threatened by a series of hurdles that are known to be relates to operational, as well as management, issues.

Past evidence indicated barriers such as the lack of funding and opportunities, inadequate business and technical owner-manager acumen, in addition to the inability to provide credible records for planning purposes (Dabson 2001; Baron and Shane 2007; Schwartz and Hornych 2010; Saxena 2012). Similar studies confirmed that small businesses in South Africa and elsewhere failed due to certain challenges, including the lack of technical and management knowledge to successfully manage them (Omerzel and Antoncic 2008; Mbonyane and Ladzani 2011). It was found that more than 70% of entrepreneurial activities and SME operations failed within the first three years (ocBiyase 2009; Fatoki and Smit 2011). According to Martinsons (2008); (Okpara 2011), one of the primary reasons for failed small business operations was due to the inability by authorities to formulate proper macro-economic regulatory and policy frameworks to guide SME owners in developing countries. Moreover, the inability of banks to provide adequate funding, and the lack of education and training contribute to the failure of small businesses (Cassar 2004; Herrington, Kew and Kew 2009; Fatoki and Garwe 2010). Other researchers suggest that rural SME owners are unable to understand the procedures of accessing bank loans and other related information. According to (Agyapong, Agyapong and Darfor 2011) and (Storey 1994), small scale business owners are not closely assessed by financial houses; thus, most of these businesses overstate their businesses viability to access finance.

Characteristics of the Study Areas: According to Statistics South Africa, roughly 43.7% of South Africa's population reside in rural areas. Attempts to standardise the definition of rural areas in the country are marred by difficulties due to the growing decay of the infrastructure and other facilities. These two rural districts share similarities in economic, social and political conditions. According to (Kok and Collinson 2006), the Northern Cape Province, where the two districts under study are located, is one of the most rural areas in South Africa. Rural communities in the Northern Cape Province are by definition the representation of communities that are categorised to have limited ordinary public facilities, including inadequate water and sanitation facilities. In addition, most rural areas are known to be without functional formal local and district authorities. The District is known for its youthful population, aged between 15 and 34 years, which accounts for 35.7% of the population. Unemployment is rife across the District and its unemployment rate stands at 23.1%. Some of the challenges the District faces can be attributed to the low level of education. Most of the working population in the FB District lack formal education; 25% of the District's labour force only obtained a high school education. Agriculture and mining activities are the main economic activities of the District. These economic activities contribute a meagre 20.2% to the District's gross geographic product (GGP). However, between 2011 and 2016 the District's population increased from 224 799 to 242 264. Frances Baard district municipality is one of the smallest districts of the Northern Cape Province with a population of 301995 (Quantec Research Database, 2006).

Conceptualising Business Failure: Business failures, no matter the size or scope, mean different things to researchers and academics depending on the type of business, failure takes place in various forms. SMEs fail if the owner is unable to attain the set revenue standards or growing expenditure levels, which result in insolvency (Shepherd, 2005). This implies incompetence to pursue economic operations due to certain limitations. In the past several researchers have provided extensive evidence in entrepreneurship literature on business failures (Hussain 2003; Ucbasaran et al., 2010; Cope 2011; Mantere et al., 2013; Jenkins, Wiklund and Brundin 2014). Extant literature further asserts that business failures occur at different stages, such as at the design, staff and facility, or customer stages (Cronje et al., 2000). According to Venter, Urban and Rwigema (2008), business failure can be due to other external variables, such as the inability to mobilise resources and the lack of active participation in the consumption patterns of products and services. Other external causes of business failures, based on the views of several researchers, are factors relating to industries, the environment, interest rates and industry recession (Ooghe and De Prijcker 2008; Holt 2013; Frynas and Mellahi 2015).

Conceptual Framework: This study sought to compare the entrepreneurial challenges of two rural districts. To accomplish the stated objective, the relevant entrepreneurial challenges were conceptualised into a framework. These challenges were business and operational (BOP), specific (SCs), personal (PCs) and typical (TCs). BOP challenges in this study entailed difficulties in funding, fluctuating interest rates, issues of collateral, lack of SME support, lack of resources, and scarcity of business opportunities. **SCs** involved location problems, infrastructure difficulties and the inability to apply technology, supplier problems, inadequate cash flow, and older employees**.** PCs in this study were defined as the fear of failure, lack of confidence, education and training, sub-standard competency, scarce information, unable to plan, family pressures and lack of financial knowledge. TCs entailed administration problems, legislative flaws, an over-competitive climate, growing crime levels, distance market conditions, the inability to retain a younger population, and high business costs. These challenges were described and identified throughout the theoretical framework above as SME challenges that impede success. Furthermore, these challenges formed the core of secondary data that the author used with options to gather data from SME owner across the two rural districts of JTG and FB.

Formulated Hypotheses: Drawing from various inter-disciplinary literatures and in line with stated objectives, the author utilised null and alternate hypotheses to determine the significant differences between the dependent and independent variables in the study areas as indicated in the conceptual framework above. Regarding the size of the District, the JTG District is the second smallest district in the Northern Cape Province and covers about 6% of the Province's geographic area, which translates into 16% of the Province's entire population. The District provides employment to 4.67% of the population through agricultural activities. Two primary reasons underpinned the author's decision to utilise these hypotheses. These reasons entail validation of relevant scientific theories and to make logical assessments regarding the dependent and independent variables. Below are the formulated hypotheses that steered this empirical study:

$H1_0$: There is no significant difference between BOP challenges in terms of the FB and the JTG districts.
$H1_A$: There is a significant difference between BOP challenges in terms of the FB and the JTG districts.
$H2_0$: There is no significant difference between SCs in terms of the FB and the JTG districts.
$H2_A$: There is a significant difference between SCs in terms of the FB and the JTG districts.
$H3_0$: There is no significant difference between PCs in terms of the FB and the JTG districts.
$H3_A$: There is a significant difference between PCs in terms of the FB and the John JTG districts.
$H4_0$: There is no significant difference between TCs in terms of the FB and the JTG districts.
$H4_A$: There is a significant difference between TCs in terms of the FB the JTG districts.

3. Research Method

Primary data for this empirical study was possible through a quantitative and a cross-sectional approach. A seven-point Likert scale was designed, aided by extant literature sources, which formed part of the objectives. During the course of this study, the null and alternate hypotheses were formulated and tested through statistical means; thus, the post-positivism approaches were the most suitable tools throughout this study. Post-positivism allowed the author to use current theories in the development of the stated hypotheses,

which were to be tested. During the process, the independence of the author was critical to attain the stated objectives.

Design Approach and Sampling: The primary aim of this study was to compare the significant differences between the dependent and independent variables in two rural districts, namely the Frances Baard (FB) District and the John Taolo Gaetsewe (JTG) District of the Northern Cape Province of South Africa. This study was quantitatively designed in order to allow easy generalisation of its outcomes to benefit other rural districts country-wide. The author employed a cross-sectional design as primary data was gathered within a specific timeframe of approximately three weeks intervals without the author manipulating the entrepreneurial challenges as the independent variables (Lavrakas 2008; Cherry 2017). Being empirical rural study, the target population entailed SME owners from the JTG District and the FB District in the Northern Cape Province of South Africa. The author approached two informants each from the research areas that assisted in selecting SME owners according to the set requirements. Primary dataset was available only from SME owners, based on strict requirements. The final research participants of 267 SME owners assisted in providing data by means of simple random and purposive sampling techniques. The purposive sampling technique was preferable as the author was able to select only SME owners who were knowledgeable on the phenomena to attain the research objectives, as well as knowing that the relevant data was provided for inferences.

Research Instrument: A prior academic study by Lebakeng (2008), which validated a seven-point Likert scale questionnaire was adapted by the author and applied to collect the primary data for this study. The instrument was designed with clarity to achieve constant results (Kothari 2004). More alterations of relevant questions were performed to the original instrument to suit the current study objectives. A statement such as *"business success",* as part of the original questionnaire, was deleted and replaced by more relevant and useful information. Section A of the adapted questionnaire gathered demographic information, while Sections B, C, D and E were designed to focus on the challenges. All the applicable questions were ranked on a seven-point Likert scale questionnaire, ranging from 7=strongly disagree to 1=strongly agree. Some amendments were made; thus, the final measuring instrument consisted of 48 statements relating to the challenges. In order to attain valuable insights and to realise the objectives, the questionnaire featured some open and closed-ended questions, based on extant literature. But also to evaluate the control variables (the entrepreneurial challenges) as indicated by the null and alternate hypotheses.

The overall Cronbach's alpha of this instrument was over 0.70. This implies that the instrument employed was reliable. To ensure an error free research instrument, the author conducted a pre-test of the instrument using fewer SME owners for final modifications to items on the research instrument (Cooper and Schindler 2008). Furthermore, the research instrument was pre-tested to ascertain the level of understanding by SME owners and interpretations of each item, as stated by the instrument. The author performed pre-testing of the instrument to determine that expectations were met in relation to every score that formed part of the research instrument (Schwab 2013). To ensure that the research instrument was valid and reliable, specific measures were taken by the author. Arasti (2011) states that business failure occurs because set objectives were not achieved; thus, the business's operations and activities close down. To counter this an extensive literature search and pre-testing of the instrument by conducting a pilot study to assess the internal validity. In addition, the author involved experts and statisticians with the relevant knowledge to ensure that the research instrument attained face, content, construct and criterion validity.

4. Data Analysis

The present study was designed to gather a cross-sectional and quantitative dataset, based on SME owners' views regarding entrepreneurial challenges in the two rural districts. Primary data was analysed through Microsoft Excel© by means of SPSS version 23. This version was utilised in this study to carry out various descriptive and inferential statistics data analyses. The descriptive approach was deemed suitable as it enables the collection of a large sample size for more information through several respondents (Easterby-Smith and Thorpe 2002; Fraenkel, Wallen and Hyun 2011). Moreover, the descriptive approach has the potential to highlight accurate and credible events regarding participants' responses based on the data collected within a specified time-frame. In this study, two statistical approaches, descriptive and inferential

tools, were employed to highlight empirical data interconnection for concluding meaningful information on underlining research issues (Denscombe 2007). Being a quantitative study, the author used descriptive and inferential statistical tools aided by cross-tabulation, an independent t-test and Pearson's chi-square test to make a determination on the significant differences between the dependent and independent variables the Pearson chi-square test was not only conducted for meaning on the primary dataset.

Testing Formulated Hypotheses: The formulated hypotheses were scientific theories of assumptions applied to understand the characteristics of population at the time of the study (McDaniel and Gates 2013). Testing the hypotheses in this study, the author conducted Pearson's chi-square test; a lesser p-value of 0.05 that depicts strong scientific evidence in relation to the stated hypothesis – as such, the null hypothesis is rejected (McDaniel and Gates 2013). On the other hand, cross-tabulation was employed to determine the severity of challenges in each district. Besides the agricultural and mining sectors, tertiary industry adds 68.2% to the local economy. Similar socio-economic conditions are experienced by the population of the JTG District. The rural nature of the JTG District is of concern; an estimated 80% of the inhabitants reside in rural areas. Hence, a larger p-value of 0.05 represents that the null hypothesis, as formulated in this study, is accepted (Pallant 2010) in sum, a p-value lesser than 0.05 means that the hypothesis **(H1 or H2)** is accepted, and vice versa. In order to test the formulated hypotheses, statistical tools of Pearson's chi-square test was utilised and the final outcomes are presented in the tables below.

Table 1: Cross Tabulation–Challenges versus Districts

		Districts					
		John Taolo Gaetsewe		Frances Baard		Total	
Challenges	Severity	Count	Row N %	Count	Row N %	Count	Row N %
Level of severity of BOP challenges	Low	3	75.0	1	25.0	4	100
	Moderate	82	82.8	17	17.2	99	100
	High	78	52.3	71	47.7	149	100
	Total	163	64.7	89	35.3	252	100
Level of severity of SCs	Low	29	90.6	3	9.4	32	100
	Moderate	104	81.9	23	18.1	127	100
	High	35	38.0	57	62.0	92	100
	Total	168	66.9	83	33.1	251	100
Level of severity of PCs	Low	53	98.1	1	1.9	54	100
	Moderate	69	75.8	22	24.2	91	100
	High	55	45.1	67	54.9	122	100
	Total	177	66.3	90	33.7	267	100
Level of severity of TCs	Low	16	88.9	2	11.1	18	100
	Moderate	101	93.5	7	6.5	108	100
	High	49	39.2	76	60.8	125	100
	Total	166	66.1	85	33.9	251	100

Table 1 above showed cross tabulation regarding the variable, BOP challenges, with a highest count 78 out of 163 indicating the value of 52.3% for the JTG District in contrast to 71 out of 163 for the value of 47.7%. Based on these results, it was clear that SME owners in the JTG District were more constrained in terms of BOP challenges than SME owners in the FB District. Table 1 above showed cross tabulation regarding the variable, SCs, with a highest count of 57 out of 163 indicating the value of 62% for the FB District in contrast to 35 out of 163 for the value of 38%. Based on these results, it was clear that SME owners in the FB District were more constrained in terms of SCs than SME owners in the JTG District. From the table above, the cross tabulation regarding the variable, PCs, revealed the highest count of 67 out of 163 indicating the value of 54.9% for the FB District in contrast to 55 out of 163 for the value of 45.1% in the JTG District. The results showed that SME owners in the FB District experienced more PCs in comparison to SME owners in the JTG District. The cross tabulation regarding the variable, TCs, indicated a highest count of 76 out of 163 indicating the value of 60.8% for the FB District in contrast to 49 out of 163 for the value of 39.2% in the JTG District. Thus, the results revealed that SME owners in the FB District are more constrained by severe TCs compared to SME owners in the JTG District.

Table 2: Pearson Chi-Square Tests-Challenges versus Districts

Level of severity of BOP challenges	**Chi-square**	**24.378**
	Df	2
	P-value	.000
Level of severity of SCs	Chi-square	55.644
	Df	2
	P-value	.000
Level of severity of PCs	Chi-square	52.785
	Df	2
	P-value	.000
Level of severity of TCs	Chi-square	80.812
	Df	2
	P-value	.000

The analysis, according to SME owners' viewpoints, as stated in Table 2 indicated significant differences in term of BOP challenges, SCs, PCs and TCs. The p-values=0.000 are less than 0.05. Thus, the null hypotheses in this study were rejected, implying significant differences between the JTG District and the FB District in terms of the four challenges under investigation. As the Pearson chi-square test is designed to show statistical significance, not the severity of the challenges, the group statistics (Table 3 below) were applied to determine the level of severity regarding the various challenges across the two districts.

Table 3: Descriptive Statistics of Challenges by Districts (JTG and FB)

Group Statistics

Challenges	Districts	N	Mean	Std. Deviation	Std. Error Mean
Business and operational challenges (BOPs)	John Taolo Gaetsewe (JTG)	163	84.43	8.295	.650
	Frances Baard (FB)	89	87.34	6.661	.706
Specific Challenges (SCs)	John Taolo Gaetsewe	168	79.86	9.658	.745
	Frances Baard	83	89.23	7.193	.790
Personal Challenges (PCs)	John Taolo Gaetsewe	177	41.86	13.722	1.031
	Frances Baard	90	54.97	7.138	.752
Typical challenge (TCs)	John Taolo Gaetsewe	166	80.01	12.918	1.003
	Frances Baard	85	93.58	8.091	.878

Based on statistical explanations in Table 3 above, the mean BOP challenges for the FB District (87.34) were greater than the mean (84.43) BOP challenges for the JTG District. Regarding SCs, the mean (89.23) was much greater in the FB District in comparison with the mean (79.86) in the JTG District. It further revealed that the mean (=54.97) was greater in the FB District in terms of PCs in contrast to the mean (41.86) in the JTG District. According to Table 3, the FB District showed a mean (=93.58) on TCs that was greater than the mean (=80.01) for TCs as experienced in the JTG District.

Table 4: Independent Sample T-Test for Challenges by Districts

		Levene's Test for Equality of Variances				
Challenges		**F**	**Sig.**	**T**	**df**	**p-value**
Business and Operational challenges (BOPs)	Equal variances assumed	5.128	.024	-2.843	250	.005
	Equal variances not assumed			-3.031	216.003	.003
Specific challenges (SCs)	Equal variances assumed	12.027	.001	-7.829	249	.000
	Equal variances not assumed			-8.632	210.958	.000
Personal challenges (PCs)	Equal variances assumed	90.548	.000	-8.488	265	.000
	Equal variances not assumed			-10.262	264.843	.000
Typical challenges (TCs)	Equal variances assumed	28.852	.000	-8.830	249	.000
	Equal variances not assumed			-10.180	239.055	.000

In order to test the homogeneity of variances between two districts for BOP challenges, a Levene's Test was conducted. Table 4 depicts BOP to be statistically significant (Sig=0.024<0.05); thus, the data revealed non-homogeneity of variances between the two districts. Therefore, the variances cannot be assumed to be equal. The t-test result corresponded to *"Equal variances not assumed".* An independent sample t-test was conducted for significant differences between two districts on BOP challenges at 5% level of significant (alpha of 5%). There are significant differences between the districts in terms of BOP challenges – a p-value less than 0.05, t (216) =3.031, p-value=0.003. Therefore, the stated hypothesis was not rejected at 5% level of significance. However, Table 3 above showed that the FB District (mean=87.33) appeared to experience more BOP challenges than the JTG District (mean=84.42). In order to test the homogeneity of variances between the two districts for SCs, a Levene's Test was conducted. Table 4 depicts SCs to be statistically significant (Sig=0.001<0.05); thus, the data revealed non-homogeneity of variances between the two districts. Therefore, the variances cannot be assumed to be equal. The t-test result corresponded to *"Equal variances not assumed".* An independent sample t-test was conducted for significant differences between the two districts on SCs at 5% level of significance (alpha of 5%). There were significant differences between the districts in terms of SCs, with a p-value less than 0.05, t (210.95) =8.63, p-value=0.000. Therefore, the stated hypothesis was not rejected at 5% level of significance. However, Table 3 above showed the FB District (mean=89.23) appeared to experience more SCs than the JTG District (mean=79.86). In order to test the homogeneity of variances between two districts for PCs, a Levene's Test was conducted. Table 4 depicted PCs to be statistically significant (Sig=0.000<0.05); thus, the data revealed non-homogeneity of variances between the two districts. Therefore, the variances cannot be assumed to be equal.

The t-test result corresponded to *"Equal variances not assumed".* An independent sample t-test was conducted for significant differences between the two districts on PCs at 5% level of significance (alpha of 5%). There are significant differences between the districts in terms of PCs, with a p-value less than 0.05, t (265) =10.262, p-value=0.000. Therefore, the stated hypothesis was not rejected at 5% level of significance. However, Table 3 above showed that the FB District (mean=54.96) appeared to experience more PCs than the JTG District (mean=41.86). In order to test the homogeneity of variances between two districts for TCs, a Levene's Test was conducted. Table 4 indicated the TCs to be statistically significant (Sig=0.000<0.05); thus, the data revealed non-homogeneity of variances between the two districts. Therefore, the variances cannot be assumed to be equal. The t-test result corresponded to *"Equal variances not assumed".* An independent sample t-test was conducted for significant differences between the two districts on TCs at 5% level of significance (alpha of 5%). There are significant differences between the districts in terms of TCs, with a p-value less than 0.05, t (239) =10.180, p-value=0.000. Therefore, the stated hypothesis was not rejected at 5% level of significance. However, Table 3 above showed that the FB District (mean=93.58) appeared to experience more TCs than the JTG District (mean=80.01).

Discussion: The primary objective of this empirical study was to explore the entrepreneurial challenges between two rural areas in South Africa. Having conducted thorough analyses to explore the entrepreneurial challenges between the two rural districts of JTG and FB, it is significant to provide an in-depth discussion on the empirical outcomes by means of different statistical tools. This discussion also includes testing formulated hypotheses using the Pearson chi-square test. Generally, the analysis revealed that FB experienced high levels of entrepreneurial challenges. Accordingly, all four entrepreneurial challenges were obstructive to SMEs operations FB district. This revelation bears similarities to past empirical studies that small businesses are confronted by several challenges (Biggs and Shah 2006; Barnard, Kritzinger and Kruger 2011; Salleh and Sidek 2011; Tahir, Mohamad and Hasan 2011; Stroyan and Brown 2012). In hierarchical order, entrepreneurial challenges that hinders SMEs are TCs (mean=93.58), SCs (mean=89.23), BOP (mean=87.33) and PCs (mean=54.96). Of the four entrepreneurial challenges, PCs were the least detrimental to SMEs success.

This finding is consistent with a similar study by Baron and Shane (2007) that indicated that SMEs found it difficult to attain success due to challenges. Given these findings, as shown in Table 3, the descriptive analysis showed that PCs were found to be less disruptive to rural entrepreneurial activities and the development of SMEs in the FB District. This implies that the stated hypotheses were not rejected. The cross tabulation further indicated that BOP challenges were more severe (52.3%) in JTG than in FB. This implies that SME owners in the FB District were less obstructed, meaning that these challenges did not impede operation

instead they provided a more favourable business climate than other entrepreneurial challenges in the JTG District. This finding that these challenges enabled successful operations is not in support of a survey by Schwartz and Hornych (2010) that confirmed that entrepreneurial challenges are stumbling blocks to business success. It emerged from Table 1 that SCs in FB (62%) were high, indicating the severity of SCs as impediments to SME owners across the District. (Ocloo, Akaba and Worwui-Brown 2014) reiterate that SCs, namely the lack of sufficient applications of technologies, create severe business constraints.

This implied that the SMEs in the FB District that experienced business failures were unable to utilise technology. Results to this effect have shown that in the FB District the existing business climate of SCs was exceptionally high (62%) in comparison with 38% in the JTG District. The results shown in Table 1 were as high as 54.9% in terms of PCs in the FB District, indicating more PCs for SME owners compared to SME businesses in the JTG District. Simply put, SME owners in the FB District operated in a highly constrained business climate. Should these challenges be left unchecked in the environment, SME owners will struggle to operate successful businesses (Fumo and Jabbour 2011). In a situation such as this, more is required from SME owners in the FB District in return for SME success. Regarding TCs, cross tabulation indicated 60.8% constraint for SME owners in the FB District. The result indicated that in the JTG District SME owners were more likely to operate successful businesses. Through the first hypothesis, an analysis was conducted on BOP challenges aided by the Pearson chi-square tests. The findings revealed (see Fable 2) significant differences on the four challenges in the two rural districts. In both JTG and FB it was found that challenges of BOP, SC, PC and TC impede SMEs' operations. Nonetheless, the level of severity differed among the districts. These findings are congruent with other empirical evidence (Fatoki and Garwe 2010 ; Agyapong, Agyapong and Darfor 2011).

The authors opines that the different challenges that SME owners experience are inhibiting factors in operating successful businesses. Based on the Pearson chi-square test, it emerged that the impact of entrepreneurial challenges differed (p-values=0.000 was lesser than 0.05) – thus, a rejection of the null hypotheses. Further revelations pointed to group statistics (refer to Table 3), which described the level of severity pertaining to these challenges across the two rural districts. It emerged that BOP challenges were more severe in FB (mean=87.34) than in JTG (mean=84.43). SCs were also more pronounced in FB (mean=89.23) than in JTG (mean=79.86), and PCs (mean=54.97) harshly impacted on SME owners in FB in comparison to PCs (mean=41.86) in JTG. Equally TCs (mean=93.58) in FB were found to be more severe than in JTG, where the TCs (mean=80.01) were less severe. In summary, the group statistics found that all the challenges, BOP, SCs, PCs and TCs, affected entrepreneurial activities and SMEs success in the FB District. Simply put, the implications were that SMEs were more likely to experience failures in FB than in JTG. Aside these challenges, SMEs failures in the FB District could be attributed to other environmental variables (Ooghe and De Prijcker 2008; Holt 2013), social variables (Arasti 2011), economic variables (Everett and Watson 1998; Hussain 2003), and political variables (Barringer and Ireland 2010; Frynas and Mellahi 2015).

Some of the key entrepreneurial challenges that obstructed SMEs' success in the FB District related to the fear of business failure referred in this study as PCs, which received extensive scientific coverage in the past (Singh Sandhu, Fahmi Sidique and Riaz 2011). The outcomes of this study are consistent with similar empirical evidence by Stewart and Roth (2001), which found high levels of business risks as one of the fundamental contributors to business failures. The findings by this study further confirmed (Timm 2011) that in an environment, such as the FB District, it is impractical to institute an effective policy framework to offer sufficient SME support systems. Further statistical tool namely the T-test was applied to analyse the significant differences between the districts in terms of BOP challenges. In line with earlier revelations, there is significant difference between the districts. The FB District emerged as the hardest hit by all the challenges stated in this study. Previous work resonates with the current study that SMEs lack adequate growth due to poor capital funding in South Africa. A similar empirical study by the WorldBank (2006) found that challenges, such as high business costs and inadequate collateral by SME owners, ruined their chances of receiving the necessary support from banks.

Implications for Rural Policy and Recommendations: Results arising from this empirical study disclosed varying implications. The rampant failure of entrepreneurial activities means increasing levels of unemployment. Simply put, literature states that striving entrepreneurship is connected to employment

opportunities (Kelly, Singer and Herrington 2016). Several empirical studies have indicated high levels of subdued entrepreneurial activities due to these challenges (Bretschger and Smulders 2007; Bear, Rahman and Post 2010; Chiloane and Mayhew 2010; Agbenyega 2013). Despite these problems, the focal point of the current study was to compare the entrepreneurial challenges in two rural districts of the Northern Cape Province. The result suggested that almost all the entrepreneurial challenges impacted adversely on entrepreneurial activities and SMEs' operations in the FB District in comparison to the same activities in the JTG District.

While these challenges could be attributed to several factors, entrepreneurial activities can do well when there are adequate infrastructure facilities and a conducive operating environment (Emery, Fey and Flora 2006; Audretsch and Belitski 2017; Roundy, Bradshaw and Brockman 2018). This implies that more attention must be paid to upgrade existing infrastructure to promote a healthy business climate in the FB District. Drawing from the empirical outcomes, important recommendations were put forward to minimise the entrepreneurial challenges in the FB District in order to alleviate the failure of entrepreneurial activities and SMEs' operations. Initially the study recommended that entrepreneurial activities in developing countries such as South Africa should be governed through *"centralised policy systems"* (CPSs). Challenges such as a lack of capital, insufficient collateral for funding, and high interest rates contributed to the failure of SMEs. This would enable more attention to be focused on the various challenges and provide relevant support systems.

Moreover, various stakeholders, including role players at national, provincial and local authorities, should create the necessary policy and regulatory frameworks in support of rural areas. This should be geared towards solving the rural entrepreneurial challenges across South Africa. The establishment of a more supportive entrepreneurial environment by local municipal authorities (LMAs) is essential for the survival of entrepreneurial activities. LMAs should be empowered through legislative instruments to provide educational materials in local languages to facilitate better understanding of policy on small businesses with the view of minimising the failure of entrepreneurial activities in the FB District. This means the general simplification of legislative materials in order to clarify the TCs in the District. Lastly, the national government should prioritise rural entrepreneurship education (REE) through local authorities as key rural intervention systems (RISs) in order to motivate rural owner-managers the services of community-based role models is very critical especially in FB district.

Ethical Considerations: The author was critical of every aspect of the study's ethical issues. Thus, every level of ethical standards relating to this empirical study was taken into account. The dataset for this study was kept confidential with further stricter measures of not revealing the participants' identities during the reporting phase. The author obtained written and signed consent forms from the SME owners prior to the commencement of the study. The SME owners were also provided with all the information and procedures leading up to the processes.

Study Limitations: This study was conducted in two rural settings. Similar to other empirical work, there were countless limitations to be taken into account in order to understand the findings. Initially, the population characteristics were very small. As a result, care had to be taken in the interpretation of the results. This empirical study involved only two rural districts; thus, it would be improper to generalise the results to broader rural districts in South Africa. Finally, the data obtained was of a cross-sectional nature. As such, there were limitations in terms of the specific time-frame within which the primary data was collected.

5. Conclusion

The results of this study indicated various entrepreneurial challenges. It revealed the reasons why rural entrepreneurial activities and SMEs' operations remained stagnant in terms of growth possibilities; thus, resulting in failures. While scientific evidence supports the notion that entrepreneurial activities create job opportunities (Wiklund and Shepherd 2005; Baliyan and Baliyan 2013; Lager 2015), results from this study pointed to varying challenges that impeded entrepreneurial activities, more in FB District than in JTG District. In a way, these findings were not surprising as in most developing countries where, according to entrepreneurial literature, entrepreneurial activities in rural areas are bound to face challenges (Kok and Collinson 2006). This study revealed not only the common knowledge of growing entrepreneurial activities

and SME failures in South Africa, but also advanced in broad terms how entrepreneurial challenges impacted more negatively on SMEs' operations in some areas than others. Thus, intervention programmes are highly critical in the management of SMEs (FinScope, 2010). The empirical outcomes of this study suggested that the different entrepreneurial challenges, including TCs, BOP challenges, SCs and PCs, severely constrained entrepreneurial activities and SMEs' operations. Moreover, the distinctive nature of rural environments could contribute either negatively or positively to entrepreneurial activities. The entrepreneurial challenges were highlighted through formulated hypotheses, in addition to statistical mean analysis.

The central objective of this study was to compare entrepreneurial challenges in the JTG District and the FB District. These challenges were probed extensively through formulated hypotheses in line with a conceptual framework. The findings that emerged from this study bore similarities to previous entrepreneurship research, which stated that entrepreneurial challenges negatively affected the operations of SMEs (Haron et al., 2013). This study concluded that entrepreneurial activities experienced increasingly higher levels of entrepreneurial challenges in the FB District. In line with this finding, specific recommendations in terms of policy implications were detailed to address these challenges and improve entrepreneurial activities in the FB District.

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Structural Changes of the 21st Century and their Impact on the Gold Price

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Abstract: Beginning in the trough of 2000 and culminating in the peak of 2012, gold prices have exhibited a spectacular and unparalleled increase. Based on annual averages, the price of gold did not decrease at all over this 12 year period. The paper considers the various factors that have shaped the surge of gold spot prices over the last two decades using quarterly data. The analysis considers the role of structural changes such as China's liberalization of the domestic gold market post-2003 and its impact on demand as well as other important economic factors such as risk, the role of quantitative easing and other fundamental factors in the gold market. The study investigates which of the macroeconomic and structural factors are responsible for the long term bullish trend in the gold price, of which China, global economic risk assessments along with quantitative easing have been crucial to understanding the almost uninterrupted price increase over the period.

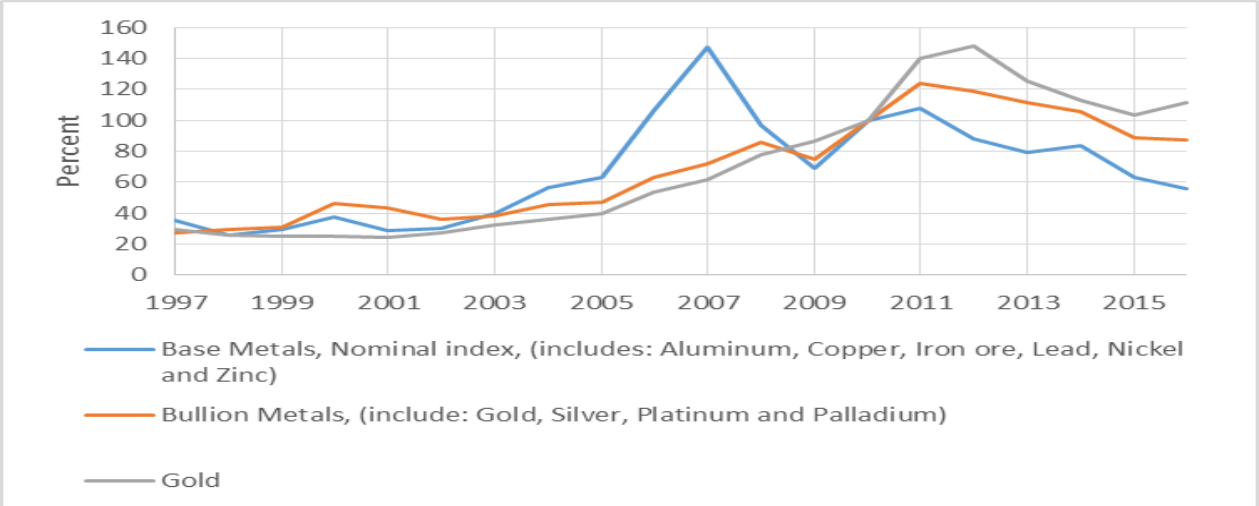
Keywords: *Gold price, China, intensity of use.*

1. Introduction & Background

The paper examines the long term gold prices over the last two decades and aims to determine the principal variables that best explain both the timing of the long bull market in gold and subsequent price fluctuations post 2011/12. Over the last two decades, the gold price experienced its longest nominal and real price increase since the end of the Bretton Woods system in 1973. In the case of base metals it was argued that there is a super cycle, which has generally been associated with the transformation and economic growth of China; or in the case of earlier cycles through the Schumpeter/Kondratieff transmission of changing technology, resulting in changing commodity demand that has in turn put pressure on commodity prices. It was generally noted that observed patterns of bullion[i] metal prices differ from that of base metals. This has been the case particularly because of the end uses and the difference in the use of the respective metal groups with bullion metals being used increasingly for investment purposes and base metals remaining predominantly used in industrial production. Figure 1 below illustrates the differences in the rise in gold prices from that of base metals though there have been similar trends over the last two decades. It is also apparent from the figure that the factors causing the price fluctuations and the timing of peaks and troughs for bullion metals are fundamentally different from that of base metals. These are volatility index, the exchange rate and quantitative easing. As gold is an internationally traded commodity, with its price relative to major currencies, which is an important factor thus, the study included it.

While there is indeed much in common, the common element in explaining both base and bullion metal prices over the last two decades is not short of the emergence of China as a consumer. This structural change, which has added 1.3 billion consumers with rising incomes to global markets has been the principal driver of both base (Garnaut, 2012; Eyraud, 2015) and billion prices; but this has remained so for quite different reasons. While there was clearly a rising intensity of use for base metals over the period under investigation, the opposite was the case for bullion metals, particularly for gold. Yet China appears to have played an important role in explaining the long term price of both. The rapid rates of economic growth since its membership of the WTO in 2002 which was followed by a 2004 liberalization[ii] of the gold market which permitted Chinese citizens to own gold, underpinned the expansion along of course with the rise is the uncertainty that came with the Great Recession in 2008/9. A long term upward trend, as well as volatility in the nominal prices of both metal groups, are illustrated below and it is more pronounced for base than for bullion markets. However, during the Great Recession, both groups of metals experienced a dip in prices – which is more pronounced in base metals than the bullion group due to the disproportionate significance of investment and hedging as a basis for the demand for bullion. However, of all the major exchange traded commodities, only gold experienced no price dip during the Great Recession and rose to even higher levels and more rapidly than the other metals before slowing down and declining in 2012 when a greater level of certainty returned to global currency and money markets.

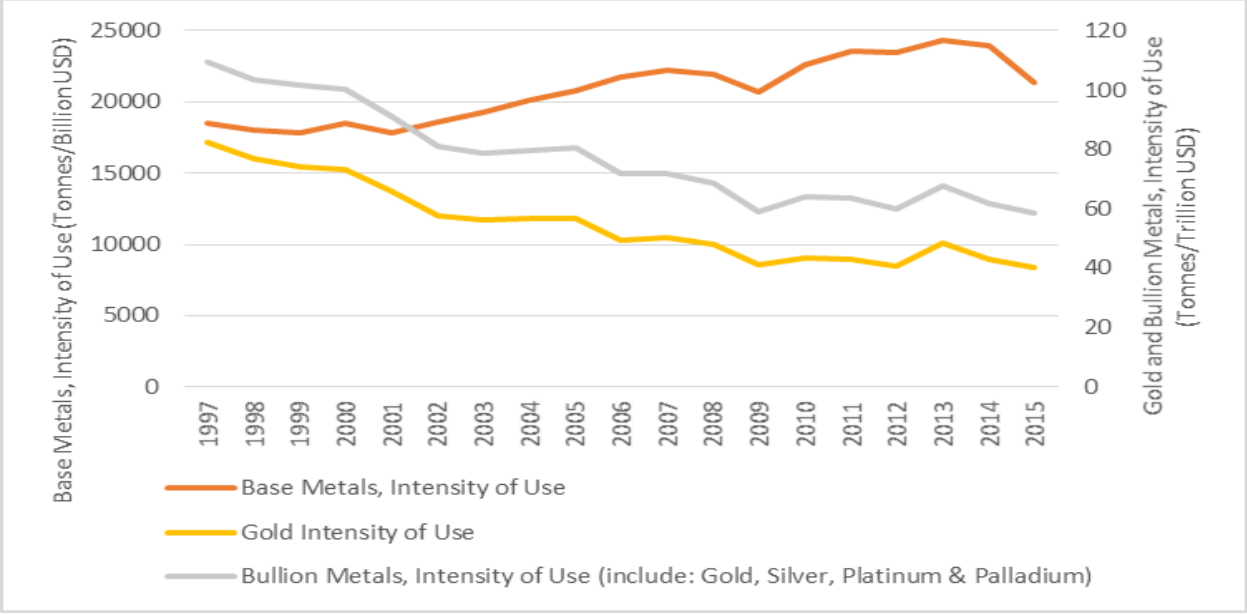
Figure 1: Nominal Price Index Comparisons of Bullion, Gold and Base Metals



Source: Authors' compilation of commodity prices (from the Federal Bank of St. Louis, Kitco.com and the World Bank commodity prices) into respective commodity indexes. With 2010 as the base year (2010=100).

The prices of base and precious metals have exhibited a similar trend, though the same cannot be said about the uses of the metals. It must be recalled that gold, silver and PGM are also industrial metals and in all cases, their industrial uses have been in rapid decline over the last two decades. This has been especially so for the electrical use of gold, as well as the medical and dental uses (GFMS Thomson Reuters, 2017). Similar trends in the de-industrialization of gold were observed in the case of both silver (GFMS, 2017; Metals Focus, 2017) and PGMs (GFMS Thomson Reuters, 2016) This is reflected below, as the intensity of use for base metals which has been rising over the last two decades, which is due in large measure, to the rise of the BRICs and China in particular, as opposed to what was observed for bullion metals where the opposite was the case.

Figure 2: Comparing the Intensity of Use of Gold, Bullion and Base Metals



Source: Authors' compilation of global metal consumption/fabrication demand as a ration of real global income (GDP - constant 2010 US$). NB: Sources of the data were extracted and compiled from various institutions (Gold - WGC & GFMS Surveys; Silver - GFMS, Thomson Reuters / The Silver Institute; Palladium & Platinum - Johnson Matthey; Copper - ICSG; Aluminum - ; Lead & Zinc – ILZSG; Crude steel -World Steel Association; and Nickel - WBMS) that specialize in the commodities.

The importance of this comparison stems from the fact that the intensity of use is an integral indicator (particularly from the demand side) of price behaviour[iii]. Therefore, if the intensity of use of a metal is in decline while its price is rising rapidly and consistently, then various questions regarding the explanation of the phenomenon are clearly warranted. The focus of this study is however, not on the differences of the metal groups per se, but rather on the gold price surge of the 2000s through the 2008/9 financial crisis and beyond. There are a number of scholarly articles on gold and the gold price that discuss factors that could explain the gold price behaviour, of which inflation and exchange rates in times of economic crisis have been commonly suggested. However, given the behaviour of the price of gold from 2003 to 2008 that rose more than double, cannot be well explained by the traditional economic arguments. One factor that has been discussed extensively and is believed to explain the gold price surge is the entry of China into the global gold market. China is currently regarded as the world's largest consumer of some "important" metals (Hammer & Jones, 2012; The Wall Street Journal, 2014), largely due to the country's transition to urbanization and industrialization from the early 2000's and, liberalization – particularly in the case of gold ownership around 2002-04 (The Wall Street Journal, 2014; Wang, Li, Zhang, & Zhang, 2018).

China has not only become the single largest consumer of gold, but it is now the biggest producer (World Gold Council, 2014). Furthermore, China's significance cannot be overlooked as even during times of slower economic growth, Chinese gold demand was still driven by rising disposable income rather than simple speculative investment as was witnessed in 2013 (Open Markets, 2015). Over the past 20 years or so, the price of gold among the major metals, saw a tremendous increase, driven predominantly by investors' perceptions of risk. As mentioned, this price increase is continually being influenced by the demands from emerging markets such as China - which is commonly considered a main driver of gold demand. However, others assert that while demand (from such emerging markets) has played an important role, the supply side (the lagged response of supply), has been of significance in explaining prices (Humphreys, 2010). Given the secular gold price increases described above, this 12 year period is sufficient to classify the bull market in gold as part of a super cycle, as a commodity super cycle is defined as approximately of 10-35 year duration[iv]. While the subject matter of gold prices and commodity cycles has received considerable attention, the empirical perspective explaining the recent and uninterrupted gold price surge are lacking. Furthermore, the various methodologies[v] that have been reviewed did not comprehensively address the causes of the price surge.

But merely what factors affect/affected the price of gold, its volatility or the properties of gold as a hedge. Hedging is one factor that all scholars are familiar with and one variable that is used to analyze the hedging property is the rate of inflation. The 12-year gold bull market was however, characterized by the lowest global inflation rates since the end of the Bretton Woods System[vi]. The declining inflation rates coupled with the declining intensity of use of gold eroded some of the definitive traditional emphasis that could have explained the gold price surge. The importance of this study therefore stems from its empirical analysis (as opposed to the mere discussion) of the structural changes of the 21st century and their impact on the gold price as opposed to the more traditional variables (e.g. inflation and intensity of use) which this study argues were not what drove the recent gold price surge. This study therefore seeks to examine the relative importance of both structural and macroeconomic factors in the determination of gold price in the 21st century. The paper asks what is the role of China, the Great Recession and risk perceptions in explaining the long bullish gold market? The subsequent section contains a thorough review of related research literature, which is followed by the methodology employed in the course of this study. Finally, the results are discussed before the conclusion.

2. Literature Review

This study explores the fundamental economic and structural reasons in relation to the price behaviour of gold over its super cycle. This section therefore discusses literature of interest in regards to factors that would fundamentally affect the gold price. Of all its attributes and uses, it is gold's investment property that sets it apart. In an early paper Macklup (1969), writing prior to the end of the Bretton Woods System undertook a study of the investment and speculative aspects of gold demand. Macklup sought to shed light on the demand and supply of gold and, to form an assessment of the prospects of future gold prices. He concluded incorrectly that the gold price would not hold without government intervention. Prior to the end of

the Bretton Woods System, the discussion on the gold price was on gold's role as a monetary asset. The discussion revolved around the price setting of gold and not its characteristics as a financial asset (Busschau, 1949; Johnson, 1950; Goodman, 1956). Following the collapse of the Bretton Woods System or otherwise known as the 'close of the gold window', more studies began to look at the other characteristics of gold. A major perspective being its ability to "hedge against inflation". Feldstein (1980) considered the theoretical reasons that relates the expected inflation with the price of gold. Feldestein, argued that the relationship exists because gold is like a currency whose value cannot diminish by sudden large increases in supply through printing as is the case of fiat currency (Feldstein, 1980).

Feldstein assumed that an increase in the expected inflation will lead to an increase in the gold price. This he postulated would happen as expected, since inflation causes nominal interest rates to increase and, assuming that investors are rational, the required rate of return on holding gold will increase, driving up the price of gold. Levin, Montagnoli and Wright (2006) provided a different channel of transmission, yet they proposed an increase in inflation would eventually lead to the rising price of gold. Radetzki (2006) in a study analyzing commodity booms, discusses the inflation issue. He alluded to the peculiar behaviour of inflation during commodity cycles, pointing out the ambiguity of a rising commodity price with very little inflation; rising commodity price with very high inflation; and rising commodity prices with very very low inflation[vii]. In relation to inflation and specifically the price of gold, Sjaastad (2008), found a small but negative relationship between gold and World inflation. Sjaastad's finding added more doubt in regards to the gold - inflation nexus. Whereas Batten, Ciner and Lucey (2010) found that between 1985 to 2012, there was no correlation between gold and the US CPI[viii]. The ambiguous relationship was best summarized and put into context by Zhu, Fan and Tucker (2018), who asserted that "once investors take into account the transaction costs associated with buying and selling of gold, they may decide that trading in gold is not worthwhile, and will stop treating gold as an inflation hedge".

Aside from its investment properties, gold has several industrial uses in dentistry, jewellery and various minor technological uses. The industrial uses are also significant since they provide another avenue of demand that could affect price through the intensity of use - the demand for commodities at different stages of economic development (Tilton & Guzmán, 2016). During the gold price surge, the demand for commodities was principally driven by emerging economies, of which China has been recognised as a significant actor in virtually all commodity markets[ix], particularly in the demand for base metals. However, at the same time, due to the liberalization of China's gold market, it became a significant player from both supply and the demand perspective. Though as mentioned earlier, others assert that while demand (from such emerging markets) has played an important role, the supply side (the lagged response of supply), has been of particular significance in explaining the price surge (Humphreys, 2010). Nevertheless, the magnitude of Chinese demand (World Gold Council, 2014; Wang, Li, Zhang & Zhang, 2018) cannot be ignored. Even with the increased demand of gold by such emerging economies like China, the commodity globally has been and is still significantly in decline with regards to its intensity of use. One relatively new aspect to the discussion of the determinants of the gold price is the role of Quantitative Easing (QE) – a form of monetary intervention.

While QE effects are similar to other general discussions of expectations and inflation, QE is unique as the central banks of several economies ventured on a large scale through unconventional methods to increase the liquidity of financial institutions in response to the great recession of 2008/09. QE, being a relatively new phenomenon has resulted in a significant outpouring of literature (Ugai, 2007; D'Amico & King, 2010; Krishnamurthy & Vissing-Jorgensen, 2011; Joyce, Lasaosa, Stevens and Tong, 2011; Neely, 2011; Wright, 2012; Zhu, Fan and Tucker, 2018). Such increase in liquidity, based on traditional theory, should have resulted in high inflation rates. However, the global inflation rate during the Great Recession was lower than in previous years, even though a slight increase was witnessed, inflation rates continued to fall shortly after. During this period, the price of gold soared. At the root of all these, uncertainty and mistrust in financial institutions than an inflation transmission channel. Various authors (Krishnamurthy and Vissing-Jorgensen, 2011; Wright, 2012) employed various methods, variables and periods; but did not negate the consensus that QE had a significant impact on various asset yields. However, the findings of Joyce, Lasaosa, Stevens and Tong, (2011), came to the opposite conclusion. The impact of QE on the price of gold has however, received little attention with the most noticeable exception being that of Zhu, Fan and Tucker (2018). Zhu, et al. conducted an event-study analysis of the impact of QE announcements.

Their findings were mixed: while they found that "the QE announcements of the US Federal Reserve and the European Central Bank exerted a strong and weak influence on gold, they also found that, the Bank of England and the Bank of Japan's QE announcements had no discernible impact on the price of gold." Despite the mixed and often inconclusive result, they argued that an announcement of QE should have a positive impact on the price of gold and vice versa given certain portfolio conditions (a condition being the replacement of gilts with gold as a result of QE– irrespective of the quantity of gilts previously held). Aside from the explicit issues discussed above, there are other different factors observed in regards to gold price determinants. These being "financial factors" such as – exchange rates, stock indices and US treasury bonds among others (Kagraoka, 2009; Toraman, Başarır, & Bayramoğlu, 2011; Jones & Sackley, 2014; Burkowski, 2016).

Other factors of interest considered are supply factors (Borensztein & Reinhart, 1994; Radetzki, Eggert, Lagos, Lima, & Tilton, 2008; Farooki, 2009) and alternative/complimentary commodity markets and prices (Zhang & Wei, 2010; Toraman, Başarır & Bayramoğlu, 2011). This section of the study explored several fundamental economic and structural reasons backing the price behaviour of gold over its recent super cycle. To have an even better grasp on the fundamentals of gold, see the seminal review article on gold by (O'Connor, Lucey, Batten, & Baur, 2015). The authors summarized a wide variety of literature, and began with a review of how the gold market operates, including the leasing market; physical gold demand and supply, gold mine economics and gold as an investment. They also included additional sections that provide context on the issue of gold market bubbles, gold's relation to inflation and interest rates, and on the behavioural aspects of the gold market.

3. Methodology

The period under review in this study is Q2, 2000 to Q3, 2017. The period was chosen as it coincides with the turn/beginning of the 21st century and because it also covers the full trade cycle for gold, which saw gold prices rise exponentially[1] and then eased but not to pre-boom levels. The data used was collected from various sources that include: the World Gold Council (WGC)[x], the Federal Reserve Bank of St. Louis[xi] and the London Bullion Market Association LBMA[xii]. Various methods have been applied in analyzing price determinants, but as Borensztein and Reinhart (1994) asserted, a majority of these methods are single equation frameworks with the Ordinary Least Squares (OLS) being of preference. The study therefore applied a multiple linear regression to observe what empirical impact if any, the select 21st century variables have had on the gold price. Other tests include pre estimation tests and post estimation diagnostic tests to ensure the validity of the results.

Therefore, the model applied in this study is:

$$lnGP_t = \beta_0 + \beta_1 lnCGD_t + \beta_2 lnVIX + \beta_3 lnQE_t + \beta_4 lnEXC_t + \xi_t \quad (1)$$

Where:

- GP - Gold price
- CGD - China gold demand
- VIX - Volatility index
- QE - Quantitative easing
- EXC - Exchange rate
- ξ - Error term

The Gold Price Data was Extracted from the London Bullion Market Association (LBMA): The gold price is an average between the average AM and PM LBMA price[xiii] from which an index was created with the base period Q4 2010. China gold demand was extracted from the World Gold Council and is the proxy for Chinese consumer demand. Whereas the volatility index, exchange rate index and quantitative easing variables were extracted from the Federal Reserve Bank of St. Louis. The volatility index was used as proxy for risk, and for

this the Chicago Board Options Exchange (CBOE) Volatility Index was used. This particular index was used as it is one of the most recognized measures of volatility and is closely followed by various market participants (Deepa, et al., 2017). For quantitative easing, a composite variable was created using the Central Bank Assets of the U.S FED, the Bank of England and the European Central Bank as a proxy. A Trade Weighted U.S. Dollar Index: Major Currencies[xiv] was used for the exchange rate variable.
Gold unlike other metals is predominantly a financial instrument, with approximately 45% of 2016 total demand coming from financial demand[xv]. Therefore, the model used in this research considered the appropriate financial factors of relevance during the period of interest. The period of interest Q2, 2000 to Q3, 2017 was characterized by the global financial crisis that saw several states look to monetary policy (increased liquidity of financial institutions) as a solution, from which, stems our consideration of quantitative easing. As the literature suggests, the impact of QE on the gold price has received little attention, with the most noticeable exception being that of Zhu, et al. (2018), in which an event-study analysis of the impact of QE announcements was conducted. It is worth noting that this study is however, not primarily concerned with QE announcements (which has short run effects), but rather deliberated on actual QE. The volatility index on the other hand, was considered and chosen as it is a forecast measure of risk.

'Forecasting', something numerous analysts try to do with little success but cannot be overlooked as the risk component is integral to investor preferences and behaviour. While previous literature suggests that Chinese demand has a significant effect on the gold price, there are some that believe that the Chinese market is not. This may seem a contradiction, however, given the market's relative isolation – Shanghai Gold Exchange - (Lucey, Larkin, & O'Connor, 2014) results supporting its insignificance have a degree of validity. However, even given the isolation, the magnitude of total Chinese demand (Wang, Li, Zhang, & Zhang, 2018; World Gold Council, 2014) cannot be ignored or considered as insignificant. It is worth noting that while the literature review of the study discusses inflation, during the period of interest, global inflation was low and on a downward trend. For these reasons, Inflation was not considered as a significant factor in explaining the gold price surge over the past two decades.

4. Estimation Results and Discussion

All the variables were converted to log form before any estimation was carried out. Thereafter, the descriptive statistics were checked as is illustrated below to provide further insight on the variables used.

Table 1: Descriptive Statistics

	LNGP	LNCGD	LNVIX	LNQE	LNEXC
Mean	4.043655	4.802590	2.913275	14.92634	4.536784
Median	4.250711	4.771454	2.858031	15.15441	4.515015
Maximum	4.833275	6.178152	4.070665	15.92883	4.753504
Minimum	2.958146	3.793239	2.332914	13.57763	4.356705
Std. Dev.	0.613952	0.663144	0.348246	0.785485	0.110078
Skewness	-0.499571	0.041161	0.723046	-0.246787	0.237097
Kurtosis	1.751187	1.520466	3.460179	1.577777	1.785965
Jarque-Bera	7.993187	6.861868	7.196702	7.082294	5.308568
Observations	75	75	75	75	75

Source: Author's compilation of Eviews output

From Jarque-Bera test, the results suggest that there is sufficient evidence to support the hypothesis that a majority of the series are normally distributed. This is also evident from the skewness statistic, with a majority of variables close to zero. From the Kurtosis statistics, it is evident that on the average, the distribution is relatively flat. To avoid spurious results moving forward, time series properties of the data are examined. The variables were therefore pre tested using the Augmented Dickey Fuller (ADF) for stationarity, and it was found that all the variables except the volatility index and geopolitical risk became stationary at first difference (See table 2).

Table 2: Unit Root Test

Variable	Unit Roots			Degree of Integration
	Level	1st Difference	0.05 Critical Value	
LNGP	-1.65	-8.37	-2.90	1
LNCD	-0.78	-8.54	-2.90	1
LNVIX	-3.02	-	-2.90	0
LNQE	-1.04	-8.98	-2.90	1
LNEXC	-1.72	-5.87	-2.90	1

Source: Authors' computations. After the unit root tests were estimated, the Johannsen cointegration test was used to observe if the cointegration property is supported.

Table 3: Johannsen Cointegration Test, Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.362861	99.03620	95.75366	0.0291
At most 1	0.325118	66.58094	69.81889	0.0882
At most 2	0.216057	38.26928	47.85613	0.2904
At most 3	0.128456	20.74311	29.79707	0.3739
At most 4	0.097380	10.84393	15.49471	0.2213
At most 5	0.047015	3.467268	3.841466	0.0626

Source: Author's compilation. **NB:** Trace test indicates 1cointegrating eqn(s) at the 0.05 level.* denotes rejection of the hypothesis at the 0.05 level (null hypothesis, that there is no cointegration).

Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None	0.362861	32.45526	40.07757	0.2787
At most 1	0.325118	28.31166	33.87687	0.1995
At most 2	0.216057	17.52617	27.58434	0.5350
At most 3	0.128456	9.899181	21.13162	0.7541
At most 4	0.097380	7.376659	14.26460	0.4456
At most 5	0.047015	3.467268	3.841466	0.0626

Source: Author's compilation. **NB:** Max-eigenvalue test indicates no cointegration at the 0.05 level. * denotes rejection of the hypothesis at the 0.05 level (null hypothesis, that there is no cointegration).

Regarding the Trace test (which is preferred over the Maximum Eigen test)[xvi] (Johansen & Juselius, 1990; Kasa, 1992; Serletis & King, 1997; Hubrich, Lütkepohl, & Saikkonen, 2001), the study surmised that cointegration was present among the variables and therefore, a long run relationship existed. Since cointegration existed, the Error Correction Model (ECM) was estimated. The results are presented in the table below.

Table 4: ECM Estimation Dependent Variable: Gold Price Index

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNVIX	0.037306	0.021519	1.733661	0.0874
D(LNEXC)	-1.068669	0.249175	-4.288828	0.0001
ECT(-1)	-0.145787	0.064444	-2.262228	0.0268
C	-0.088238	0.063024	-1.400078	0.1659
R-squared	0.252802	Durbin-Watson stat		2.145239

F-statistic	7.894445	Prob(F-statistic)	0.000131

Source: Author's compilation of Eviews output

The Error Correction Term shows and reiterates a long run relationship between the variables as it has a negative sign and is significant (p value < 0.05) at 0.0268. The coefficient shows the rate at which the disequilibrium of the system of the previous period will be corrected in one year; being at a rate of 14.07%. The model was found to be significant with the F-Statistic at 7.894445 and, not spurious as the R squared (0.252802) is less than the Durbin Watson statistic (2.145239). From the results, it was observed that the R squared is low and there is only one insignificant t ratio of importance, implying that multicollinearity may be present but may not be an issue. This is all the more important given the individual significance of the variables, and the joint significance of the model.

The Durbin Watson statistic (2.145239) shows that there is no autocorrelation which was confirmed by the Breusch-Godfrey Serial Correlation LM Test as F test statistic was in excess of 0.05, at 0.4665. The other diagnostic tests included a normality check and a Heteroskedasticity Test. From the normality test, it was found that the normality assumption of the residual term had been supported as the P value was greater than 10%, 5% and 1% (at 0.192685), with the skewness statistic less than zero (at 0.001730), though the kurtosis was leptokurtic in shape. Furthermore, there was also no evidence of the presence of heteroscedasticity. Both the F and Chi-square test statistics suggested the same conclusion that there is no evidence for the presence of heteroscedasticity, since the p-values were in excess of 0.05 respectively (0.7820 and 0.7711). The estimation of the short run model revealed that only consumer perception and exchange rate are of significance. Whereas a depreciation will not as Beckmann, Czudaj and Pilbeam (2015) assert. Furthermore, the Error correction term was found to be significant with the correct sign. However, as has been alluded in the objective of the study, the long run structural shift that has occurred is of principal interest. Therefore the long run estimation is of importance to observe what variables, of the macroeconomic and structural factors are responsible for the price rise. The long run results are presented in the table below.

Table 5: Long–Run Regression Estimates Dependent Variable: Gold Price Index

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNCGD	0.221272	0.069601	3.179143	0.0022
LNVIX	0.105487	0.041915	2.516682	0.0141
LNQE	0.515755	0.058704	8.785694	0.0000
LNEXC	-1.611487	0.129593	-12.43500	0.0000
C	2.286291	0.862289	2.651419	0.0099
R-squared	0.964450	Durbin-Watson stat		0.704427
F-statistic	474.7618	Prob(F-statistic)		0.000000

Source: Author's compilation of Eviews output

The initial estimation suggested that all the variables were significant in affecting the price of gold. With an R^2 of 0.964450 (approximately 96%), the goodness of fit is relatively high. Furthermore, it was observed that the F-statistic is 474.7618 which is greater than the Prob (F-statistic) = 0.0000 showing that the overall fit of the regression is good. However, with the Durbin-Watson statistic at 0.704427, the issue of autocorrelation is present, which warranted post estimation tests.

Post Estimation Analysis: The residual diagnostic tests for normality, autocorrelation and heteroscedasticity were used. From the normality test, it was found that the normality assumption of the residual term was supported as the P value was greater than 10%, 5% and 1% (at 0.156951). However, it was found that the model suffered from autocorrelation as evidenced from the D-Watson Statistic in Table 5 and as per the Breusch-Godfrey Serial Correlation LM Test since the F test statistic was less than 0.05, at 0.000. There was, however, no evidence of the presence of heteroscedasticity as both the F and Chi-square test statistics produced the same conclusion that there is no evidence for the presence of heteroscedasticity, since the p-values were greater than 0.05 respectively (0.0714 and 0.0726). To address the problem of autocorrelation, the study used the Newey-West standard errors that are robust to autocorrelation. Upon using the Newey-West standard errors, the model estimated provided significant variables (though the coefficients changed slightly) and unchanged variable signs just as before (See table 6). However, the R^2

decreased to 0.830551 from 0.964450. With consumer perceptions having a positive relationship with gold price. As expected, exchange rate has a negative influence on gold price, implying that an appreciation of the exchange rate will be detrimental to gold price. Furthermore, upon testing for normality, it was observed that the normality assumption of the residual term had been supported as the P value was greater than 10%, 5% and 1% which is the same as the case of the long –run post regression analysis above.

Table 6: Long –Run Regression Estimation With Newey-West Standard Errors
Dependent Variable: Gold Price Index

Variable	Coefficient	Std. Error	z-Statistic	Prob.
LNCGD	0.210780	0.075085	2.807200	0.0050
LNVIX	0.112568	0.045218	2.489469	0.0128
LNQE	0.525837	0.063330	8.303161	0.0000
LNEXC	-1.626019	0.139804	-11.63066	0.0000
C	2.233030	0.930236	2.400499	0.0164
R-squared	0.830551			

Source: Author's compilation of Eviews output

The inverse relationship between the composite exchange rate and the gold price is similar to that found by Sjaastad (2008). This indicated that an increase in risk/perceived risk, Chinese gold demand and quantitative easing will cause the gold price to rise: whereas, a decline in the exchange rate index will cause an increase in the gold price. Conversely, from the empirical results, the positive relationship between the variables (except the exchange rate) with changes in the gold price implies that decreases in risk/perceived risk, China gold demand and quantitative easing would lead to a decrease in the gold price. Of further interest is the "ranking" of the significance of the variables under study in terms of the long run 'Prob' Values. Implying the null hypothesis could not be rejected of a normal residual, with the skewness statistic fairly close to zero though the kurtosis was platykurtic in shape. This being the exchange rate first, followed by Quantitative easing, China gold demand, then risk. The finding that Chinese gold demand was significant, is simultaneously important, very much expected and adds to literature in regards to the phenomenon of the recent gold price "surge" as while it has been discussed in literature, empirical tests are minimal. This is the case even though it has been found that the Chinese gold market (Shanghai Gold Exchange) remains quantitatively insignificant (O'Connor, Lucey, Batten, & Baur, 2015).

The suggested finding that Chinese demand is significant also adds credence to the claims that Chinese gold demand is not reflected in the relative global significance of the Shanghai Gold Exchange. Other than Chinese demand, policy that affected the gold market and the risk component[xvii] associated with the commodity is of particular importance. The price behaviour of gold prior and during "the great recession" i.e. the upward trend with no dip - coupled with positive and significant outcome of the risk measure used, further highlight how speculative tendencies contributed to the upward pressure on gold price. The effect of Quantitative easing on the other hand, which is believed to contribute to gold price volatility, coupled with the timing of financial crisis is likely to have exacerbated the speculative tendencies of the gold market. The finding of quantitative easing putting pressure on commodity prices (in this instance the gold price) by increasing their volatility (Bernanke, 2012) and in turn price/value. The recession within the context of the large scale Quantitative Easing, increased the liquidity for banking institutions, whereas, inflation did not rise significantly as a result. Individually and collectively, there is no doubt that these issues contributed significantly to the gold price surge during this period of interest. It is worth noting that among other variables considered that may have affected the gold price surge, was geo political risk. However, as it was found insignificant and its exclusion did not affect the study's results it was eventually excluded.

5. Conclusion

The study sought to examine the long term gold price over the last two decades and to analyze certain fundamentals using principle variables that could explain both the timing of the long bull market in gold, through the "Great Recession" and subsequent post 2011 fluctuations. The results of the analysis, confirm that the structural and macroeconomic variables of interest are of significance in explaining the gold price. The positive relationship found between the risk index and the gold price, a common element in almost all studies of the gold price remains a timeless verity in the gold market. However, the relationship between

Chinese gold demand along with the extent of quantitative easing and the gold price are new developments that reflect structural market changes in the 21st century. Significantly, China has played a central role in explaining global gold prices. This however, had nothing to do with the increased intensity of use as has been the case with base metals. The long pent-up Chinese demand for gold as an investment instrument combined with the 2003 market liberalization in that country, are key to understanding the market pressures that have sustained gold prices in the 21st century.

The results further highlight how the traditional analysis of gold prices has changed over time. Moreover, economic policies such as the extensive use of quantitative easing aimed at facilitating the economic recovery post-2009, need careful consideration as its continuation clearly exacerbates commodity price bubbles such as has been observed with the price of gold. These structural changes have deepened our understanding of the gold price. This has meant that scholars, market participants and analysts need to re-evaluate the role played by these structural variables. Last but not least, it is clear from the analysis that neither inflation nor the intensity of use which have been traditional explanatory variables in our understanding of commodity prices in any way significantly contributes to our understanding of gold prices in the current century.

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[1] What metals constitute bullion are contested. However, the preference to call them bullion as opposed to precious metals is rooted in trying to emphasize the group metals investment characteristics. See: https://www.nzmint.com/about-gold-and-silver; http://www.businessdictionary.com/definition/bullion.html; https://www.bulliondesk.com/bullion-prices/ and https://www.quora.com/What-is-bullion among other sources.

[ii] See https://www.bullionstar.com/gold-university/the-mechanics-of-the-chinese-domestic-gold-market#enref-3154-1 and more specifically; Yunfei Wang, Xiaozhou Li, Zhichao Zhang & Zhuang Zhang (2018) Rise of the gold market in China: liberalisation and market development, *Journal of Chinese Economic and Business Studies*, 16:1, 17-38, DOI: 10.1080/14765284.2017.1378853

[iii] See: Warell, L. and Olsson, A. (2009) Trends and Developments in the Intensity of Steel Use: An Econometric Analysis. *Online at: http://pure.ltu.se/portal/files/3157773/ Paper.pdf*
who sought to analyze the trends and developments of steel consumption in the world by applying the Intensity of Use method, in which they allude to several factors that could affect intensity of use among which is long run price trends. Whereas; Garnaut (2012) asserts that high commodity prices are a result of an increase in demand for commodities and more specifically "resource intensity" in China, given the focus of his paper.
[IV] Commodities super cycle is approximately a 10-35 year trend of rising commodity prices and as earlier mentioned, Gold prices have experienced their longest nominal and real price increase since the end of the Bretton Woods system in 1973. For more on the length of commodity super cycles see: FrikEls. (2013). 160-year study of real commodity prices sees beginning of the end of the supercycle. Retrieved from: http://www.mining.com/160-year-study-of-real-commodity-prices-23066/; Bilge Erten and José Antonio Ocampo. (2012). Super-cycles of commodity prices since the mid-nineteenth century. DESA Working Paper No. 110. Downloaded from:http://www.un.org/esa/desa/papers/2012/wp110_2012.pdf; and Cuddington, J., Jerrett, D., 2008. Super cycles in real metal prices? IMF Staff Paper 55 (4) to mention just a few.
[V] For instance see: Batten, Ciner and Lucey (2010), in a study entitled "The Macroeconomic Determinants of Volatility in Precious Metals Markets" considered price volatility as opposed to price increase which the study believes to be something entirely different. Furthermore, their study looked at factors that affect precious metals (gold, silver, platinum and palladium), while the focus of this study is on the commodity gold. Last but not least, while this study agrees with some of the factors used especially ones that drive consumer perception, this study does not agree with one particular factor in regards to gold – which is inflation - as is later discussed. Also see: Burkowski (2016) to identify the main factors which influence the gold price in the international market and used a volatility model. It is worth noting that this is not a critique of their work but an example to illustrate the difference from this study.
[vi] See World Bank Development Indictors on World - Inflation, consumer prices (annual %) and World - Inflation, GDP deflator (annual %). It is however, worth noting that some authors use inflation volatility and not just inflation as a factor that would affect the gold price. See: Oxford Economics. (2011). The impact of inflation and deflation on the case for gold. Oxford Economics. Downloaded from: https://www.gold.org/sites/default/files/documents/gold-investment-research/the_impact_of_inflation_and_deflation_on_the_case_for_gold.pdf
[vii] It is worth noting that this analysis was not specific to gold and inflation. However, the third boom Radetzki analyzes does have very low inflation and the very same period was highly characterized with the gold price soaring.
[viii] Several studies use US inflation as a proxy given the significance of the US, but it is worth noting that gold is not bound to one currency or economy though it is commonly traded with the US dollar. It is a widely globally traded commodity hence, some studies as did Sjaastad, look at world inflation.
[IX] China's significance is documented across various commodities and metals. More so, base metals. However, China's has experienced significant reform in terms of gold and aside from increased production, China's demand has risen significantly too. See:Yunfei Wang, Xiaozhou Li, Zhichao Zhang & Zhuang Zhang. (2018). Rise of the gold market in China: liberalisation and market development; World Gold Council. (2014).*China's gold market: progress and prospects; and* Calista Cheung and Sylvie Morin. (2007). The Impact of Emerging Asia on Commodity Prices. *Working Paper/Document de travail 2007-55*.
[x] The statistical package Econometric Views 9 was used for all the analysis
[xi] See: https://www.gold.org/goldhub/data
[xii] See: https://fred.stlouisfed.org/
[xiii] See: http://www.lbma.org.uk/precious-metal-prices
[xiv] The LBMA Gold price was used for this as it is an important global benchmark. It is an important reference price for the market, used globally by various participants and is determined via an electronic auction process, which complies with global regulatory standards. See: http://www.lbma.org.uk/precious-metal-prices and World Gold Council. (2018). *Gold Market Primer, Gold Prices*.World Gold Council. UK, London. Downloaded from: https://www.gold.org/goldhub/research/market-primer/gold-prices
[xv] The currencies include: Euro Area, Canada, Japan, United Kingdom, Switzerland, Australia and Sweden.
[xvi] Financial demand includes: total bar and coin demand, ETFs & similar products and Central banks & other inst. See: https://www.gold.org/goldhub/data

[xvii] Results of the trace statistic and maximum eigenvalue statistic usually produce little contradiction. However, when they do, one should give more importance to the trace statistic.
[xviii] The hedging properties but not forgetting the increased speculative trading practice.

Evaluation of Owners' Characteristics and Succession Practice among Small and Medium Size Manufacturing Enterprises in Ekiti State, Nigeria

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Abstract: This study evaluated owners' characteristics and succession practice among manufacturing Small and Medium Enterprises (SMEs) in Ekiti State, Nigeria. It assessed the correlation between achieved characteristics (educational level and experience) of owners of manufacturing enterprises and choice of succession practice; and the extent to which owners' situational characteristics (health, spouse, children's readiness) influenced the choice of succession practice. The study employed descriptive design and the population comprised of 136 founders and succeeding owners of registered manufacturing SMEs in Ekiti State. To obtain a sample of 100 participants, stratified sampling techniques were used and Descriptive statistics were also used to profile the respondent's demography. Pearson Product Moment Correlation (PPMC) was employed to determine the association between the demographic and achieved characteristics of owners and succession practice. While multiple regressions were used to analyze learnable and situational characteristics and succession practice the study's findings revealed that owners' characteristics, expressed as: demographic characteristics, being female (r=0.315, p=0.012); achieved characteristics, higher education (r=0.300. p=0.017) and average experience (r=0.272, p=0.031); learnable characteristics, need for achievement (β=0.334, p=0.007) and leadership (β=0.288,p=0.035); and situational characteristics of wife (β=-0.256,p=0.04) and children (β=0.284, p=0.018), were significant variables that influenced succession practice among SMEs' owners. It concluded that practice and belief in succession practices among SMEs owners is strongly influenced by education, experience, and the desire to leave a legacy. Recommendations include that government should encourage graduates to establish SMEs and managers should strive for organized and dependable families and train their children, to ensure successful succession.

Keywords: *Family Internal Transfer, Medium Enterprises, Small Enterprises, Succeeding Owner, Succession Practice.*

1. Introduction

Economic growth, employment and revenue generation; and technological advancement are among various benefits associated with the activities of Small and Medium Enterprises (SMEs) in many developed nations, notably those operating in the manufacturing industries. Globally, this category of enterprises dominates the business sector (Kot & Brzezinski, 2018; Quartey, Abor & Iddrisu, 2017) and contributes to every sphere of human life in developing and developed economies (Blackburn & Hart, 2013; Mensah, 2012). However, a large proportion of SMEs fail after a few years of existence. In many cases, this is due to a lack of succession arrangements. When the owner dies or becomes incapacitated the enterprise thus either becomes moribund or closes (Akinbode & Imhonopi, 2014; Ofoegbu, Akanbi, & Joseph, 2013). A number of studies have investigated why SMEs do not survive beyond the first generation (Attahur & Saffu, 2005; Khurrum, Bhutta & Asad, 2008; Motwani, Levenburg; Quartey et al., 2017; Schwarz, & Blankson, 2006). A focus area has been the characteristics of owners. Many of such studies are conducted in the developed economies like the United States of America and the United Kingdom (Motwani, Levenburg, Schwarz, & Blankson, 2006; Hankinson, 2000) as well as developing countries (Khurrum et al., 2008). Hashim, Wafa, and Suliman (1999) described personal characteristics as the traits possessed by people which help them to do their jobs. Lucky, Minai, and Isaiah (2011) note, that, these include the unique qualities, features and personalities that differentiate one

individual from another. SMEs owner's characteristics thus refer to the personal attributes, qualities, and traits that assist them to successfully run their business enterprises.

The most common SME owner characteristics discussed in the literature are age, educational level and gender (Blackburn & Hart, 2013; Dobbs & Hamilton, 2007). Studies (Khurrum et al., 2008; Degryse, Matthews; & Zhao 2015) have focused on demographic, achieved, learnable and situational characteristics. Demographic characteristics include age and gender, among others; achieved characteristics refer to educational level, experience, and other factors; learnable characteristics include the need for achievement, control, and leadership; and situational characteristics include health, spouse, family, existence of children, children's readiness and others. For instance, many SMEs owners are surrounded by family members; this will influence the decisions they make in terms of succession planning and implementation. Succession in the first instance includes transferring a commercial investment of any kind from one owner to another (Ganu & Boateng, 2013). Ownership transfer is very essential for the growth and sustainability of SMEs (Scholes, Westhead & Burrows, 2008). In business, it is not necessary to wait until the owner dies before addressing succession issues and matters affecting. In the SME sector, the decision to transfer ownership rests in the hands of the owner. This is because most business owners regard their firms as extension of their personality and wants, which are intricately bound with family needs.

Succession practices include transfer within the family, the sale of the company to third parties, management, by company employees, sale to another company, initial public offer and liquidation (Maco, Csizmadia & Heldrich, 2015; Sawers & Whiting, 2009). Rather than close the business, many owners prefer to sell to potential external individual or transfer the stake to a family member or employee (Maco, Csizmadia & Heldrich, 2015; Martins, Martin & Mabbet, 2002). For instance, family business literature (Berns & Klarner, 2017; Joshi, Sinha, Dixit, & Shukla, 2018) describe succession plan as the transfer of business ownership and leadership from a predecessor to a successor. Garman and Glawe (2004) similarly described succession as "a structured process involving the identification and preparation of a potential successor to assume a new role". In SME manufacturing businesses, the common trend is transfer of both ownership and management (DeTienne & Cardon, 2012; Garg & Weelee, 2012). Transfer of ownership could be within the family but where this is difficult or problematic, alternative options are available. Selling the enterprise through management buy-in (MBI) or management buy-out (MBO) enables continued independent ownership that allows the owners to realize their investment (Scholes, Westhead & Burrows, 2008; Scholes, Mike, Paul, Andrew, & Hans, 2007). While MBO involves existing management purchasing a business, usually in conjunction with external financiers such as a venture capital firm, in MBI the enterprise is sold out to the external entity otherwise known as business managers.

This category of new management team obtains a substantive stake. Traits theory and upper echelons theory were found to be germane in discussing SME owners' characteristics that influence their decisions on a number of issues, including succession. While the effect of such characteristics on decisions relating to business succession can be examined in isolation, a combination of characteristics is assumed to influence the type of succession practice adopted. For instance, the decision to leave and enjoy the remainders of one's time after a busy employment life could be motivated by health considerations or one's children's readiness to take charge of the business entity. It should be noted that Nigerian SME owners rarely retire voluntarily. They usually dropped dead in 'active service' or are compulsorily retire due to health challenges caused by hypertension, stroke, diabetes, etc. This further compounds succession issues which Cowling, Liu and Zhang (2018) and Ortiz (2007) referred to as "the thorniest issues within family-owned businesses". Given such characteristics, most SMEs owners never foresee the need to plan an acceptable successor for their exit (Daspit, Holt, Chrisman & Long, 2016). It is against this background that this study considered the characteristics of SME owners operating in the manufacturing sector as the variable of interest including demographic, achieved, learnable and situational characteristics that influence succession practices such as family internal transfer, and business sale, including MBO and MBI.

Statement of the Problem: The literature notes, that, SMEs have a low survival rate and that, three out of five do not progress beyond first generation (Ngugi, 2013; Mensah, 2012; Bowen, Morara & Mureithi, 2009). A survey on SME succession carried out by a body known as the Canadian Federation of Independent Business (CFIB) estimates that 71% of SME owners expected to terminate their entrepreneurial engagement

within the next ten years (Bruce & Picard, 2006). Igwe, Onjewu and Nwibo (2018) and Onugu (2005) established lack of a succession plan as one major challenge confronting SMEs in Nigeria. Failure to formulate a succession plan has been attributed to ownership characteristics and philosophies which influence the continuity or discontinuity of enterprises (Khurrum et al., 2008; Everaert, Sarens & Rommel, 2006). Some studies have found that demographic characteristics such as the age of the SME owner negatively impact smooth transfer of ownership. Young owners are often opposed to the notion of succession while older ones feel that no one else can run the business the way they do.

The owner's gender has also been found to influence succession planning (Díaz-García & Jiménez-Moreno, 2010), with some scholars suggesting that male owners are more likely than female ones to ensure transfer to another owner due to a number of reasons. In most instances, the challenge has been the SME owner's inability to select a successor in a timely manner. Many owners find it difficult to learn new ways of managing their enterprise to ensure it outlives them. This could be due to the fact that they regard the business as a means of survival, rather than as a way to immortalize them. Others do not believe in managing the enterprise for the future. Finally, given the uncertain environment in which they operate, many SME owners are reactive rather than proactive, undermining the possibility of planning for succession (Bushe, 2019). The studies discussed above were conducted in developed and developing countries. While a few studies were done on succession plan and SME activities in Nigeria, there is a paucity of research on the relationship between owners' characteristics and succession practices, particularly in Ekiti State. This article seeks to fill this gap.

Objectives of the Study: The main objective this article was to examine the relationship between owners' characteristics and succession practices among SMEs in Ekiti State, Nigeria. Other objectives were to:

- Determine the relationship between the demographic characteristics (age and gender) of SME owners and the choice of succession practice;
- Assess the relationship between achieved characteristics (educational level and experience) of owners of SMEs and the choice of succession practice;
- Examine the extent to which learnable characteristics (locus of control, leadership and need for achievement) of SME owners influence the choice of succession practice;
- Evaluate the extent to which the situational characteristics (health, spouse, children's readiness) of owners of SMEs in the manufacturing sector impact the choice of succession practice.

Research Hypotheses: Four basic hypotheses were formulated to address these research objectives:

- The first hypothesis determines if the demographic characteristics (age and gender) of the owners of SMEs do not have any positive relationship with the choice of succession practice.
- The second hypothesis determines if SME owners' level of education and experience does not have any significant relationship with choice of succession practice.
- The third hypothesis determines if the need for achievement, locus of control and leadership among owners of SMEs do not have any significant influence on the choice of succession practice.
- Finally, the fourth hypothesis determines if the situational characteristics (health, spouse and children's readiness) of SME owners do not significantly influence the choice of succession practice.

2. Literature Review

The Small and Medium Enterprises are non-subsidiary type of business ventures, which are independent within a given number of workforces with this figure varying across nations. Universally there is no acceptable definition for SMEs (Beyene, 2002; Verdolin, Bak, Ruet & Venkatachalam, 2018). As the name suggests, much definitions consider size, namely, small and medium. Others take into account the numbers of staff and level of assets. Furthermore, different definitions have been proposed by different organizations based on their interest in this sector. Financial sector, public sector authorities, not for profit organization (NPO) international organizations, consultancy firms, researchers, industry chambers and other SMEs service providers have definitions based on their own criteria (Dasanayaka, 2008; Jain & Gandhi, 2016). They also affix various labels to this sector, including Cottage and Small Scale Industry (CSSI); Small and Medium Scale Industries (SMIs); Rural Enterprises (REs); Small and Medium Scale Activities (SMAs); Informal Sector

Activities (ISAs); Micro Enterprises (MEs) and Micro and Small Scale Activities (MSSA), among others. For instance, enterprise has been generically defined in the context of business entity or activity involving industrial activities and services either as a sole-proprietorship, partnership arrangement or corporate venture.

According to Acs, Audretsch, Lehmann and Licht (2016) and Dasanayaka and Sardana (2007), SMEs engage in in business activities ranging from agriculture such as fishing, animal husbandry, industry; or manufacturing, mining, urban and estate settings, construction, serving business eco-system, retail, wholesale and services in rural environments. SMEs are growing and active in different sectors such as agricultural input or output businesses in rural areas, manufacturing sectors such as computer sales and hardware repairs, business construction locally and in the foreign markets, chemical, apparel, machinery as well as food and beverages firms in cities. Both in developing and developed countries, numbers of SMEs also cut across business activities such as one man business or operated few entrepreneurs, family business, relations/friends or partners in business, who make business decision in one way or the other.

SME in Developing Countries: SMEs are extremely heterogeneous in nature that engaged in different kinds of business activities. As mentioned earlier, many of such SME business activities according to Cox, Murray & Round (2017) range from operating a coffee shops around neighborhoods, selling of automobile parts in along the streets or major markets, distributorship, artisanship or service providers, agricultural equipment: sales and repairs as well as software design, sales and marketing. Similarly, Augustine and Asiedu (2017) described the characteristics of SMEs operators around developing nations under broad headings, which include: gender of the owner and efficiency, labour characteristics and sectors. The issue of sector is closely related to those activities, namely, retailing, trading or manufacturing. Such activities vary according to cultural practices from country to country and whether or not the businesses operate within the ambit of urban or rural geographical area. While family members who are not on patrol system constitute a quarter of the workforce (Abor & Quartey, 2010).

Around many developing nations also, most SMEs employ labour intensive system of production and have management centralized and limit access to long term capital (Udechukwu, 2003). Many of these SMEs revolve around owner managers. According to Olorunshola (2004) assertion, such SMEs are dispersed all over the nation and can be found everywhere. Another characteristic is in the fact that most SMEs around developing nations are closely linked to the products that launched them to the market. The development of SMEs in Nigeria is lagging behind unlike in Asian and developed nations. Studies revealed that SMEs mostly died in Nigeria within the five years of start-up, while a few percentages close down between the sixth and tenth years of operation and only about five to ten percent of the new ventures thrive to grow, develop and sustain to maturity. Reasons were identified for this situation, including the lack of a succession plan. This scenario, perhaps, is one major cause of high rate of unemployment in the country. Indeed, Onwumere (2000) referred to lack of succession plan as one of the characteristics of SMEs in Nigeria.

SME Owners' Characteristics: While ownership is usually understood as a multidimensional construct, it centers on possession of an item. Eniola (2018) described ownership perspectives from two different angle– protection of possession and freedom of disposal. In the context of this investigation, ownership is associated with business ownership which is tangible, that is, based on equity capital or shares (DeTienne, 2010). Ownership according to Fatoki, (2011) spells out a status, a task and a role assigned to a given individual. Similarly, such a role includes responsibility assigned to a given individual, the elements of risk involved, the duties to perform and worries associated with accomplishing the tasks. SME ownership includes individual and group ownership. The former refers to men or women that established and managed a business for the principal aim of furthering their individual interest. Another determinant is the issue of consumption patterns, availability of raw materials and access to global markets.

Mostly, sole-proprietorship provides more than half the SME workforce in developing nations. The business often forms primarily the major source from where owners draw their incomes. The business, however, consumes high percentage of their ample resources and time. Similarly, the owner sees the business as an extension of his or her personality and pride, which intricately supporting the needs and desires of the family. This is the most common form of group ownership within SME sector, while some of the global large enterprises are also family businesses. Such businesses are built around parents, children, and relatives. The

family holds the majority of decision makings rights and they are passed from one generation to another (Degryse, Matthews, & Zhao, 2015). Cabrera-Suarez (2005) stated that, the family influences or controls both the issues relating to management of operations and ownership in a family business. A family owner is described by Casrud (1994) as "one in which both ownership and policy making are dominated by members.

Theoretical Literature

Traits Theory: The traits theory explains individuals' unique qualities which make them outstanding in their endeavours. It assumes that great men and women are born with distinguishing traits/characteristics that make them different from others. Individual traits are perhaps one of the most widely discussed areas in the human studies literature. Previous studies investigated the impact of business owners' individual traits on a number of issues (Ikavalko, Pihkala & Jussila, 2008; Barach & Gantisky, 1995), including the demographic factors that influence their decision-making. The assumption is that people with certain characteristics succeed in business. Some researchers (Khurrum et al., 2008; Timmons & Spinelli, 2008) have focused on psychological characteristics such as the need to achieve, locus of control and leadership that enables owners of enterprises to succeed (Ikhavalko et al., 2008).

Scharmer's Theory U Model: Scharmer (2007) developed model known as "Scharmer's Theory U Model" as a contribution to the second succession. Scharmer based his argument on the need for managers at senior level to embrace the tenets of succession plan. Initially, this model presents succession plan as beginning in the emerging future, with theory U having five levels of movements that make changes possible in management (Scharmer, 2007). The five movements are namely as: (1) Co-initiating stage–in this first stage, the organization initiates and discusses with all stakeholders a common purpose relating to a future event. (2) Co-sensing – the second stage of the movement involves collective recognition of organisational challenges and the suggestions of innovations and new ideas of addressing them. This is realizable through collective responsibility or general inputs. (3) The third stage known as presensing, involves leadership as a project to forecast as well as envisage the future as it emerges (Scharmer, 2007). The stage also initiates a foundation for a new way of doing things in a way that motivates business organization to realize the set objectives. Similarly at this stage, leadership lets-go the old/non-working idea and lets-in new idea and innovation as well as forging ahead to achieve a more realistic tomorrow.

(4) The fourth stage is 'co-creating' stage – according to Scharmer (2007) argument, this stage involves a kind of projection, where organisational leadership explores and crystalizes into the future. This also includes the determination of the prototypes of what the future might look like. Scharmer (2007) suggests that succession planning should be considered in the context of a long-term basis that will continuously address any emerging issues rather than immediate organizational requirements. Kartz (2006) argues that the company' strategy and policy needs be structured to accommodate the requirements for the successors so as to put a more sustainable and dynamic succession plan in place. (5) The fifth movement is known as 'co-evolving' state. The stage unveils and facilitates the implementation organization succession planning strategies bearing in mind the future as emerges (Scharmer, 2007). The traits theory however was underpinning theoretical foundation for the study as it explains more the significance of individual characteristics in decision making. This also includes those demographic characteristics such as age, gender, marital status, educational qualifications and the like impact on owners' decision making as regards a firm's succession plan.

3. Methodology

A descriptive survey design was employed in this research. The population comprised all the registered founders and succeeding owners of manufacturing SMEs in Ekiti State, Southwest Nigeria. Table: 1 lists the number of registered small and medium sized manufacturing enterprises. This list was obtained from the Ekiti State Ministry of Commerce.

Table 1: Registered Small and Medium Sized Manufacturing Enterprises in Ekiti State, Nigeria

S/N	Size of Enterprise	Total Number
	Small Enterprises	47
	Medium Enterprises	89

Total Number	136

Source: Small and Medium Enterprise Development Agency of Nigeria (SMEDAN) in Ekiti State, Nigeria (2018).

The table shows that, at the time of the study, there were 47 small scale enterprises and 89 medium scale enterprises in Ekiti State, amounting to a total population of 136. The study sample was derived using Yamane 1967 cited in Israel (2009) model that determines a sample that is representative and proportionate to the level of confidence required from a given population. This is shown below:

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

Where: n = Sample size, N = Total population, e = Margin of error.

Therefore; Given N = 600, and e is assumed to be 5%.

$$n = \frac{136}{1 + 136(0.05^2)} = 100$$

The sample size is =100

The research instrument administered to 100 SME operators in Ekiti State was a standardized questionnaire. Firstly, a stratified sampling technique using Kumaran 1976 model cited in Mini, Kumaran, & Jayasankar (2009) was adapted for the calculation of each stratum of sample size comprising selected SMEs in Ekiti State. The questionnaire was further subjected to face and content validity analyses.

Validity analysis in this case involves a psychometric property measurement suitable to establish the extent of validity of a given research instrument. Secondly, to ensure that the research instrument used in this research measured accurately the guided coefficients, a reliability analysis test was conducted using Cronbach's Alpha analysis for measuring the internal consistency. The personalities of the company's managers are also globally regarded as powerful factors that positively and negatively the performance (Zoysa & Herath, 2007). Thus, while no list exists of the traits that will ensure successful business succession, the influence of traits has been established. The use of Cronbach's Alpha according to (Pallant, 2010), is more significant while determining the internal consistency of research instruments. Cronbach's alpha coefficients show the significance of average correlation among all items of the scale. Some scholars (Hair, 2012; Pallant, 2010) suggested the measurement scale above .70 Cronbach's alpha coefficients as reliable. In another development, Sekaran (2013) opined that a Cronbach's alpha slightly lower than .60 is considered to be poor, one around .70 is acceptable and one over .80 is good as adopted in this research.

4. Results and Discussion of Findings

Table 2: Respondents' Demographic Profiles

Gender	**Frequency**	**Percentages (%)**
Male	44	69.8
Female	19	30.2
Total	**63**	**100**
Age (Years)	**Frequency**	**Percentages (%)**
36-50	13	20.6
51-65	41	65.1
66 & Above	9	14.3
Total	**63**	**100**
Marital Status	**Frequency**	**Percentages (%)**
Married	56	88.9
Divorced	7	11.1
Total	**63**	**100**
Educational Qualification	**Frequency**	**Percentages (%)**
Primary	4	6.8
Secondary	17	26.5
Tertiary	42	66.7

Total	**63**	**100**
Years of Experience	**Frequency**	**Percentages (%)**
11-20 years	51	79.7
21 years and above	12	20.3
Total	**63**	**100**
Health Status	**Frequency**	**Percentages (%)**
Very Good	11	17.5
Good		
Sound		
Stable		
Missing	52	
Total	**63**	**100**

Source: Field Work, 2018

Analysis in Table 2 indicates that a valid response rate of 63% was achieved for further analysis. The investigation also reveals that the majority (almost 70%) of the respondents were male population, with females in the minority at around 30%. Going by the respondents age brackets, about (65%) respondents (representing the majority) fell within the 51-65years age bracket. This might be connected to the years they have been in business. Around 89% of the respondents were married while about 7% were divorced. This is probably due to the fact that most of the respondents were of an age when it is common to be married in Africa. Around 67% of the research participants are educated to tertiary level of education, which includes university, college or a polytechnic in Nigeria. This suggests that they are well educated. Furthermore, most reported that they had between 11 and 21 years business experience, implying that they started their businesses in their late teens or early twenties. Of high significance is the result indicating that most respondents decided to decline answer to the question on individual health status and those that did respond classified it as good. The hypothesis one tested was designed to determine if the demographic characteristics (age and gender) of the owners of SMEs significantly do not have any relationship with the choice of succession practices.

The Pearson Product Moment Correlation (PPMC) was adopted to determine the extent of relationship between gender and succession practice on the one hand, and age and succession practice on the other. The results revealed that female owners ($r = 0.315$) had a stronger correlation relationship with succession practice than male owners ($r = 0.041$). Similarly, the results showed that female owners' relationship with succession practice was significant ($p=0.012 < 0.05$), while male owners was not ($p=0.752 > 0.05$). These findings are in line with Attahur and Saffu's (2005) study in Ghana, which established that the gender of a business owner is significant to the success of a firm. Similar study conducted by Martin (2001) asserted that male offspring were rather treated in a family business as 'heirs apparent' and not minding whether or not such male children were currently in employment of another firm. In terms of age and succession practice, the results showed that all age groups had a weak relationship with successions practice. The age group with the strongest correlation relationship with succession practice was that of 66 years and above ($r = 0.139$), followed by 51-65 years ($r = 0.133$), 21-35 years ($r = 0.11$) and 36-50 years ($r = 0.095$). However, none was significant. This suggests that, irrespective of their age, many owners of SMEs are not disposed to plan for the succession of their businesses.

This finding is in contrast to that of Lianjuan and Steven (2011) who found that an owner's age was highly significant in relation with choice of succession practice. They also found that an owner's age plays a negative role in choosing children as the successor. The second hypothesis stated that the achieved characteristics (educational level and experience) of the owners of SMEs do not have any significant relationship with choice of succession practices. In another development, PPMC scale was also used to determine whether or not any relationship exist between education level and succession practice on the one hand, and individual owner's experience and succession practice on the other. The results showed that tertiary education has a good positive relationship with succession practice and is significant ($r = 0.30$, $p<0.05$, $p=0.017$); whereas primary and secondary education were found to not be significant. This supports Khurrum et al. (2008), study that affirming issues such as the level of education, family generation, and the number of partners involving in a

business practice, have a significant relationship with the survival of SMEs. Similarly, Nielsen (2011) in another study established that fact the level of education of owners of the business significantly impact on succession planning decision making process.
While Nishi, Anne and Jana (2007) established that a firm owner's level of education had a significant influence on succession planning decisions making. Arising from this background, Akoja and Hasret (2010) established the fact that, while some owners of business in Ekiti State have some level of formal education, their low educational levels militate against SMEs making a meaningful contribution to industrialization in this state. The findings also showed that an owner's number of years' experience has a significant relationship with succession practices; those who had 11 to 20 years' experience resulted in (r = 0.344, p=0.006); this is significant at 0.05 significance level. Those with more than 21 years' experience resulted in (r = 0.272, p=0.031), and this is significant at 0.05 significance level. This is in consonance with Attahur and Saffu's (2005) finding that experience plays a significant towards achieving sustainable business firms. The third hypothesis stated that learnable characteristics, which include the SME owner's need for achievement, leadership style and locus of control, do not have significantly influence the choice of succession practices. The result of Regression Analysis indicated 20.2% variance in the choice of succession practice of selected SMEs. This means that change in succession practice is caused by the learnable factors of the need for achievement locus of control and leadership.

However, the need for achievement subscale statistically showed the strongest level of significance as well as unique contribution to explaining succession practice when the variance explained by the other subscales was controlled in the model (β=1.460, p=0.007); leadership (β=0.469, p=0.035). The locus of control subscale's contribution was weak and not significant (β=0.064, p=0.686). This finding is in agreement with Abor and Biekpe (2007) findings, which established issue such as the corporate governance (leadership) as significantly influencing the performances of Small and Medium Manufacturing Enterprises (SMMEs) by infusing improved management practices, stronger internal auditing, greater opportunities for growth and a new strategic outlook through non-executive directors. The fourth hypothesis stated that the situational characteristics (health, spouse and children's readiness) of owners of SMEs do not have any significant influence on the choice of succession practices. Based on the regression analysis, the results showed that 15.7% of the variance in succession practice is explained by the model comprising the situational factors of health, spouse and children's readiness. The coefficient output also revealed that children made the strongest statistically significant, unique contribution to explaining succession practice (β=0.398, p=0.015); while spouse (β=-0.332, p=0.049); and health did not make a statistically significant contribution.

Such findings as obtained in this research aligned with MacWhirter, Smith and Zerbinati's (2004) study, which also reported the availability of both a willing successor, the specific personal and family values as providing a significant influence on the exit route selected. A similar study by Bocatto, Gispert and Rialp (2010) also established failure of business owners to made provision for succession in advance was specifically responsible for the demise of family owned businesses. In another development, an early study conducted by Bachkaniwala, Wright and Ram (2001) established the situation whereby the business founder decided to choose eldest son as a successor as one specific case. On the other way round, Sten (2004) affirmed that while owners of family SMEs might have the desire to pass the business ownership to their offspring as successors, the offspring on the other hand feel relieved of this pressure and rejoice when the business is sold to outside members (transfer). Such a mindset is not totally different from the position of Palliam, Cader and Chiemeke (2011), who also concluded that family SMEs, which decide to keep management control within the family circle might not achieve this without family members who are trusted by the incumbent.

Table 3: Dependent Variable: Succession Practices

Model		Unstandardized Coefficients	Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.141	.573		7.232	.000
	Situational Factor(Health)	.182	.153	.152	1.189	.239
	Situational Factor(Wife)	-.332	.165	-.256	-2.006	.049

Situational Factor(Children)	.398	.164	.284	2.432	.018

Source: Field work 2018.

The hypothesis is thereby partially rejected and partially accepted. A summary of the hypotheses tested is presented in Table 4.

Table 4: Summary of Hypotheses Tested

Hypothesis	Independent Variable	Dependent Variable	R	Adj R^2	p < 0.05	Decision
	Male	Succession practice	0.041		0.752	Accept H_o
	Female	Succession practice	0.315		0.012	Reject H_o
H_o1	age 21-35	Succession practice	-0.110		0.389	Accept H_o
	age 36-50	Succession practice	0.095		0.458	Accept H_o
	age 51-65	Succession practice	-0.133		0.299	Accept H_o
	age>66 and above	Succession practice	-0.139		0.278	Accept H_o
H_o2	Primary education	Succession practice	-0.055		0.671	Accept H_o
	Secondary education	Succession practice	0.236		0.063	Accept H_o
	Tertiary education	Succession practice	0.300		0.017	Reject H_o
	Experience (1-10yrs)	Succession practice	-0.222		0.080	Accept H_o
	Experience (11-20yrs)	Succession practice	-0.344		0.006	Reject H_o
	Experience(21yrs& above)	Succession practice	0.272		0.031	Reject H_o
	Need for achievement	Succession practice		1.460	.007	Reject H_o
H_o3	Leadership	Succession practice		.469	.035	Reject H_o
	Locus of control	Succession practice		.064	.686	Accept H_o
	Health	Succession practice		0.182	0.239	Accept H_o
H_o4	Spouse	Succession practice		-0.332	0.049	Reject H_o
	Children	Succession practice		0.398	0.018	Reject H_o

Source: Field Work, 2018

Summary: This study evaluated ownership characteristics and succession practices among manufacturing SMEs in Ekiti State, Nigeria. Men made up the majority of the respondents and most fell within the 51–65 years age bracket. The majority of the respondents were married and around 67% had some level of tertiary education. Finally, the majority of respondents had 11-20 years' experience and most did not disclose their health status. With regard to objective one, there was a weak insignificant relationship between the male gender and succession practices and a fairly strong significant relationship between the female gender and succession practices. The 21-35 years age group had a weak and negative, insignificant relationship with succession practice, while those in the age group 36-50 years had a weak but positive and insignificant relationship. Finally, the 51-65 and 66 years and above age groups showed an insignificant, weak and negative relationship with succession practices. The study found that the owner's age has no relationship with succession practice.

In terms of achieved characteristics educational level and experience were tested. There was weak, negative and insignificant relationship between primary education and succession practices. Similarly, secondary education showed a weak, negative and insignificant relationship. However, there was a fairly strong and significant relationship between tertiary education and succession practices. Respondents with 1-10 years' experience had a fairly strong, negative and insignificant relationship with succession practice, but experience of 11-20 years, and 21 years and above showed a fairly strong, positive and significant relationship. Learnable characteristics were measured by owners' need for achievement, locus of control and leadership. Need for achievement and leadership had a significant effect on succession practices, while locus

of control had no significant effect. Finally, in terms of situational characteristics, personal health had an insignificant effect and children's readiness showed a significant positive effect, while spouse had a negative significant effect.

5. Conclusion and Recommendations

The overall conclusion is that belief in and adoption of succession practices among SME owners are strongly influenced by education, experience, the desire to leave a legacy, leadership style, having a spouse and children and being a woman entrepreneur. Irrespective of their age, the respondents were not disposed to plan for the succession of their business. Women entrepreneurs appear to be more concerned with succession practices than men. The desire to put a succession plan in place was strongly associated with experience. Educational level was also found to influence succession practices, i.e., the more educated an SME owner, the more likely he/she tends to think of making plan for succession. Having a wife and children also strongly influenced succession practices, as did the desire to leave a legacy and provide purposeful leadership strongly influence succession practices.

Recommendations arising from the Findings: Given that better educated owners of SMEs were found to be more likely to put succession plans in place, the government should encourage graduates to establish SMEs. Furthermore, their training exposes graduates to the need to leave a legacy and provide purposeful leadership, which strongly influence succession practice. SME owners should also strive to establish an organized and dependable family and train their children as this will provide the human resources that are essential for continuity of their enterprise. Finally, women entrepreneurs should ensure that their children are educated so that they are able to manage their enterprises when the time comes.

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Fostering a Culture of Performance Management in Municipalities: Perceptions of Municipal M & E Practitioners in Kwazulu Natal

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Abstract: Creating a culture that considers monitoring and evaluation as an essential tool for performance improvement is not an easy task. Some employees are likely to resist due to a lack of awareness of the value of monitoring and evaluation while others could do so due to fear of the accountability and transparency implicit in the implementation of such a system. Nonetheless, it is imperative that performance management is prioritised in municipal development interventions. This article is based on a doctoral study that used qualitative participatory research techniques to gather data from evaluation practitioners' municipalities in KwaZulu-Natal. It presents these practitioners' perspectives on fostering a culture of performance management in local government. The article expounds on their lived experiences that reflect on how performance management could facilitate an effective monitoring and evaluation culture within this sector. The study found that monitoring and evaluation practitioners were sloppy towards their responsibilities and this contributed to poor tracking of the impact of municipal interventions, thereby compromising their abilities to fulfil their constitutional mandates. Furthermore, the study found that there is no political will to enforce performance in most municipalities. The implication of this study is that a culture of performance management must be enforced by government as a critical institutional norm towards achieving accountable, effective, efficient and responsive developmental local government. Municipalities must harness the necessary political will for this to become a reality in municipalities towards promoting good governance in local government supported by a culture of performance.

Keywords: *Performance Management; Monitoring and Evaluation; South Africa.*

1. Introduction

Performance management is critical for developmental local government. It creates a performance culture that ensures that a municipality is doing what it is constitutionally mandated to do and is responsive to the needs of its constituents. Efficient and effective service delivery is critical in advancing democracy in South Africa and in ensuring that all citizens have access to basic services. This requires a performance system that facilitates continuous assessment of progress in achieving set targets as well as on-going monitoring and evaluation (M & E) of municipal systems and structures to ensure that they are responsive to citizens' needs. All these processes should be consistent with government development plans such as the Integrated Development Plan (IDP), the Provincial Growth and Development Strategy (PGDS) and the National Development Plan (NDP) together with operational budgets to ensure that set targets are realized.

Against this background, municipalities must be conscious of performance management to enhance their efficiency and efficacy. Any instances of under-performance or continuous non-performance must be addressed immediately, through legislated processes to ensure that the social contract between government and citizens is honoured. An organization's achievements depend on its employees' level of performance. However, given that the notion of managing performance in municipalities is relatively new, gaps remain in understanding its meaning, implementation and the challenges associated with the practice. The article begins by presenting working definitions of key terminology followed by an exploration of M & E practitioners' understanding of performance management in the second section. Section three discusses what is and what is not working as far as performance management is concerned. The fourth section devises a framework to facilitate useful engagement of performance management by M & E practitioners.

2. Definition of Key Terminology

Performance: For the purposes of this article, performance is defined as the art of managing public programmes to meet set objectives (Bussin, 2017). Other scholars such as Van der Waldt (2014) and

Sonnentag and Frese (2003) conceptualize performance as productivity, implying that the term connotes far more than doing work; it also incorporates the notions of efficiency and effectiveness, linking an intervention's strategic goals to customer satisfaction and measuring outcomes. However, Mercer (2015) argues that performance should not be limited to action (the behaviour of an individual) but should be extended to encompass the outcome. The behavioural aspect refers to what an individual does at work whilst the outcome involves judgement or evaluation of the quality of the work and the individual's demeanour while doing the work he/she is hired to perform. The evaluation should also consider external factors such as the work environment (supportive or non-supportive), and employee remuneration and job satisfaction, to mention but a few. This article adopts this multidimensional view of performance. While contextual factors may not directly affect the core of an individual's work, they contribute significantly to the achievement of overall organisational goals, vision and mission. They include an individual's capacity to work in a team and contribute to improved organisational procedures and practices.

Performance Management: In this article, performance management refers to a continuous process by which organizational leadership plans, monitors and reviews an employee's work to ensure that it contributes to the realisation of the organizational vision (Hellqvist, 2011). The main objective of managing performance is to ensure that employees' performance is made explicit. It ensures that employees receive on-going feedback on their work and are provided with continuous skills development to ensure that they are on track.

Benefits of Linking Performance Management to the Organisational Vision: Nixon (2011) notes that, when employees' performance is linked to the organizational vision and mission, this often leads to:

- Enhanced motivation among employees to work better and in a more dedicated manner;
- Increased self-esteem among employees;
- Increased organizational support for employees through on-going feedback, mentoring and coaching;
- Improved leadership practices as management gains insights into their junior colleagues;
- Employees gain insights on what it takes to be an effective individual in their organisation, especially in terms of job clarity and management expectations;
- Employees also gain insights about their capabilities and can develop their own professional development plans, thereby enhancing their competencies;
- An effective performance management system enables management to determine aspects such as salary increases based on merit, promotions and transfers as well as contract termination if there is consistent under-performance;
- Connected to the above, over time, as an organisation improves its performance management system, its goals are made clear and supervisors' feedback is communicated more clearly and timeously. In turn, employees can make sense of how their individual performance contributes to organisational success;
- Protection from potential litigation. An established performance management system gathers data that can demonstrate compliance with labour legislation. In the absence of such systems, performance assessments are arbitrary opening the organisation to the risk of litigation should an employee be dissatisfied with the process, especially if it leads to termination of their services.

Dangers of Weak Links Between Performance Management and the Organisational Vision: Aquinas (2013) identifies the following consequences of weak links between performance management and the organisational goals and vision:

- High staff turnover, especially if employees perceive that performance management is discriminatory. They withdraw emotionally or psychologically and reduce their efforts whilst searching for better employment;
- As noted earlier, where there is no performance management system, arbitrary performance assessments can expose the organisation to unnecessary litigation, especially if the assessment adversely affected an employee;
- Interpersonal relationships at work can be severely strained as employees associate performance evaluation with punishment and discrimination. The relationship between supervisors and subordinates can be strained resulting in inability to deliver on the organisational mandate;

- Personal biases can replace organisational standards, negatively affecting the legitimacy of the entire performance management system;
- Connected to this point, poorly managed systems waste time and resources as by their very nature performance assessments are time consuming and expensive;
- Employees' motivation to perform at maximum level is reduced or even lost over time;
- Thereafter, job dissatisfaction sets in, resulting in reduced organisational performance and capacity to deliver on its vision. An organization is only as great as its workforce. Demoralised human resources will not deliver high quality services;
- Connected to the above point, organisational standards may start to fall, resulting in negative branding among its peers and possibly decreased funding to implement interventions.

Table 1: Benefits of Linking Performance Management Systems to the Organisational Vision/Mission and Weak Links Consequences

Benefits	Consequences of Weak Links
Improved enthusiasm towards better performance	Lower self-esteem
Enhanced confidence	Wasted time and money
Managers gain insight about their assistants	Damaged relationships
Job definitions and criteria are clarified	Decreased motivation to perform
Enhanced self-insight and development	Employees suffer job burnout and job dissatisfaction
More fair and appropriate labour practices	Heightened possibilities of being sued by employees
Organisational goals are made clear	Administrators use an unjustified amount of resources
Employees become more competent	Standards and ratings vary and are unfair
Better protection from any forms of litigation	Biases can replace standards
On time distinction between good and poor performers	Mystery surrounds how ratings were derived
Organizational leaders' views of performance are communicated explicitly	False or misleading information may be used
Enhanced appetite for change in the organization.	

Source: Aquinas (2013)

Performance Management in Local Government: Underpinning Concepts: In the past decade, South African local government's performance has been severely dented by growing maladministration, characterized by chronic corruption, high staff turnover and poor service delivery (Kariuki, 2017). This is an antithesis to the development envisioned in various development plans. The social contract between citizens and the state can only be fully realised if local governance delivers on its mandate as enshrined in the Constitution. The key question is thus, in assessing the effectiveness of local governance, how should its performance be measured? Stated differently, what should be evaluated to determine that a municipality is effective in its work? Van der Waldt (2006) identifies the following crucial elements in analysing the role of local government:

Persuasion: Encompasses information, research and communication. The assumption is that the role of local government in disseminating information is never unbiased.
Finances: Entails revenue collection as well as financial strategies, all of which are authoritative policy instruments.
Rules: Encompass making rules and enforcing them.
Organisation: Necessitates direct delivery of goods and services provision by government or through partnerships with the private sector.

In executing the above responsibilities, local government is expected to perform at the optimal level. The Constitution, Act 106 of 1996, stipulates that all spheres of governance, including local government, should abide by the following principles in delivering services to citizens:

- Government services must be responsive to citizen's needs;
- Services must be provided fairly and impartially;

- Government resources must be used resourcefully, effectively and economically;
- Public participation ought to be at the centre of all engagements to ensure that citizens' voices are heard and they are meaningfully involved in decision making;
- Government at all levels must remain accountable, transparent and development-oriented.

Given this background, citizens' expectations of local government performance are:

- Government services will be provided expediently and equitably;
- Accountability and transparency will remain the guiding pillars of good governance in all spheres of governance;
- Under-performance, including poor performance, will not be tolerated;
- Maladministration including corruption, nepotism, and cadre deployment of unqualified people, to mention but a few, will not be embraced as a norm in the public service;
- Citizens will be served per the *Batho Pele* principles, and receive high quality customer services;
- Wasteful expenditure due to poor financial planning, corruption, financial mismanagement and other malpractices will be curbed;
- Government structures will provide tangible evidence of good use of tax payers' money by improving citizens' experiences of government services including basic services provision.

In this context, performance in local government is strictly underpinned by the principles of service excellence and good governance. Public servants in local government must observe the framework described above to ensure optimal performance and fulfil the government's social contract with its citizens as prescribed in the Constitution.

Regulatory Framework for Performance Management in South African Local Government: The Constitution provided the basis for a plethora of statutes that deal with performance management in local government. The Local Government: Municipal Systems Act 32 of 2000 requires that municipalities execute their responsibilities in the most proficient manner possible. It stipulates that municipalities must establish performance management systems to fulfil their constitutional mandate as well as guide them in designing developmental interventions that are responsive to citizens' needs. In so doing, the Act seeks to promote a culture of performance across local government.

The Constitution Act 108 of 1996: Chapter 7 of the Constitution provides the legislative foundation for local government. Section 152 (1) describes its objectives (Davids, 2011). According to Broumels (2014), these are:
(a) To provide an elected inclusive, representative and answerable administration to ordinary citizens;
(b) To provide public services in an equitable manner to all citizens without prejudice;
(c) To advance civic and economic growth;
(d) To develop secure and flourishing living habitats;
(f) To promote public participation in matters of local governance.

While these objectives are useful in guiding local municipalities' development agenda, they require intergovernmental interaction and cooperation. A "culture of cooperation, based on mutual respect and trust" as well as adequate capacity development regarding "financial, technological and human resources" must be established if the set objectives are to be achieved (Reddy, 2001).

White Paper on Local Government: The White Paper on Local Government (1998) provides a framework for performance management to guide municipalities in integrated development and citizen-oriented planning with clear objectives that can be tracked and evaluated over time. It also provides a platform for active public participation in ensuring that municipalities are achieving their targets as per the performance indicators and if this is not the case, to hold them accountable.

Local Government: Municipal Systems Act 32 of 2000: This Act provides an operational framework for local government and sets out the systems that enable it to improve citizens' socio-economic status, by ensuring that they can access essential basic services at an affordable price (Ndlela, 2008). It also details the scope through which local municipalities exercise their power and authority that enables them to determine the framework to deliver essential basic services. The Act specifies vital municipal organisational, planning, participatory and service delivery systems and covers the constitutional rights and responsibilities of

municipal councils and citizens. From a performance management point of view, the Local Government: Municipal Systems Act, enacted in November 2000.

Requires all municipalities to develop a performance management system set targets, and monitor and review performance based on indicators linked to their IDP publish an annual report on performance for councillors, staff, the public and other spheres of government incorporate and report on a set of general indicators prescribed nationally by the minister responsible for local government conduct an internal audit on performance. Before tabling the report has their annual performance report audited by the Auditor-General involve the community in setting indicators and targets and reviewing municipal performance. The Act envisages that municipalities will work resourcefully, be efficient and effective in their work, and meet set performance targets, ultimately leading to excellent service provision that meets citizens' needs and expectations.

The Local Government: Municipal Systems Amendment Act 32 of 2000: This Act became operative after being signed into law in 2011. It envisages a performance management system that aligns municipalities' work with their IDPs and the financial resources necessary to deliver on such plans as well as with the constitutional mandate of serving citizens efficiently and effectively. The Act's objectives are (De Visser, 2011):

- Provide guidance for appointing municipal managers and managers directly answerable to them;
- Set the prerequisites for such appointments including strategies to mitigate any ramifications that may arise because of the process;
- Establish timeframes to conclude performance agreements for municipal managers and managers directly accountable to them;
- Make further provision for the evaluation of the performance of municipal managers and managers directly accountable to them;
- Ensure that all employment and performance contracts are aligned with this Act and regulations made by the Minister of COGTA;
- Ensure that all employee systems and procedures are aligned with the stipulations of the Act as required by the Minister.

Given this background, municipalities are expected to monitor, assess and report on their performance according to set performance targets each financial year. This implies that they must establish performance review mechanisms as per Section 40 of the Act.

Municipal Finance Management Act: This Act was developed to promote effective processes to manage all municipal financial affairs, including those of related institutions in the local government sphere (Kariuki, 2017). Furthermore, the Act strives to inculcate treasury standards for all financial and related matters at the local government level. The purpose of the Act is five-fold (Van der Waldt, 2014): To control municipal fiscal administration to establish prerequisites for resourceful management of the income and expenditure of municipalities and their agencies; to determine responsibilities regarding municipal fiscal administration; to establish a fiscal administration governance structure for municipal entities; to set a frame of reference for municipal financing.

From a performance management point of view, the Act sets the broad framework for financial management at local government level. It also caps expenditure, especially in relation to items not provided for in the annual budget to ensure that local municipalities operate within the prescribed limits. Moreover, it sets parameters to address financial mismanagement within local government and stipulates the consequences for municipal officials who violate any clauses or fail to comply with any of its sections and procedures. One of the Act's shortcomings is that it does not stipulate the minimum qualifications that accounting officers and other municipal personnel should hold to ensure efficient financial management. Skilled personnel are necessary to improve financial administration.

Batho Pele: Customer Service Excellence in the Public Sector: The 1997 White Paper on Transforming Public Service Delivery (Batho Pele) set out citizen-centred principles aimed at ensuring that the government

provides relevant services that meet the expectation of the public. The eight principles are (Department of Public Service and Administration, DPSA, 2014:1):
Consultation: Citizens should be consulted about the level and quality of public service they receive, and, where possible, should be given a choice about the services, which are provided.
Service Standards: Citizens should know what standard of service to expect.
Access: All citizens should have equal access to the services to which they are entitled.
Courtesy: Citizens should be treated with courtesy and consideration.
Information: Citizens should be given full and accurate information about the public services they are entitled to receive.
Openness and Transparency: Citizens should know how departments are run, how resources are spent, and who oversees services.
Redress: If the promised standard of services is not delivered, citizens should be offered an apology, a full explanation and a speedy and effective remedy; and when complaints are made citizens should receive a sympathetic, positive response.

Value-for-Money: Public services should be provided economically and efficiently to give citizens the best possible value-for-money." The Batho Pele principles thus envisage an active partnership between citizens and government as far as basic services provision is concerned. Municipalities ought to be receiving constant feedback from citizens and other clients so that they can improve their work and build a strong service culture. This requires that they conduct regular customer surveys and feedback meetings to hear citizens' concerns and to report on progress in addressing the challenges. Through these structured feedback mechanisms, municipalities can identify service gaps and address them timeously. Consistency in responding to citizens' concerns is highly likely to minimise civic protest.

Performance Management in Local Government: Current Practice: At present, performance in South African local government is primarily measured on completion of projects (Pollitt, 2013). Most municipalities do not have comprehensive performance management systems (Van der Waldt, 2014) and there are thus no explicit performance objectives except employee performance appraisals (Naff and Riccucci, 2012). Walker and Andrews (2013) contend that such appraisals are limited to job evaluation and are not linked to the employee's contribution to municipal service delivery. To mitigate challenges the Department of Provincial and Local Government (DPLG) published the Performance Management Guide for Municipalities (Department of Provincial and Local Government, 2001). While it provides a framework for performance management processes, it is not implemented by most municipalities (Isaacs, 2016). Compliance is perceived as burdensome and unnecessary, yet municipalities continue to underperform in their service delivery mandate due to a lack of adequate planning and consistency across departments. Thus, addressing socio-economic, socio-political and institutional challenges becomes increasingly difficult for most municipalities. The result is increasing civic protect and a disillusioned citizenry, which does not fully trust their local municipalities to deliver high-quality basic services efficiently and effectively. To remedy this situation, performance management must be strictly adhered to by all municipalities.

Performance Management Challenges in South African Local Government: According to Isaacs (2016), the following challenges beleaguer performance management in local government:
a) Systemic Factors: Which include weak intergovernmental relations, a limited revenue base, and backlogs in basic service delivery?
b) Legislative Factors: Including non-compliance with procedures and protocols;
c) Capacity and Skills: Increased incompetence among personnel in local government;
d) Accountability Systems: Increased corruption, poor community participation mechanisms and poor oversight, especially regarding supply chain management and procurement processes;
e) Political Factors: Inter- and intra-political conflict and polarisation, factionalism, leadership lapses and cadre deployment. Unless these factors are intentionally addressed by municipal leadership supported by the provincial and national departments of cooperative governance (COGTA), they will stifle municipalities' ability to deliver on their constitutional mandate.

Towards Improved Municipal Performance in South Africa: Since the dawn of democracy in South Africa, significant municipal restructuring has occurred to enable local government to optimally serve citizens. This

process began in the early 1990s, supported by a plethora of legislative instruments which saw the number of municipalities decrease from 843 to 283 (Reddy et al., 2012). Furthermore, the Demarcation Board has incorporated some areas with others for ease of administration and the provision of essential services (Meyiwa et al., 2014). Kariuki (2017) argues that other statutes such as the Local Government: Municipal Systems Act 32 of 2000 and Local Government: Municipal Structures Act 117 of 1998 has been instrumental in creating a standardised performance-oriented municipal framework. Whilst it is largely acknowledged that local municipalities have played a significant role in entrenching the benefits of democracy, the hierarchical arrangement of the three spheres of governance reinforces the notion of autonomy. Municipalities perceive that they can chart their own path independent of their provincial and national counterparts.

This autonomous nature of local municipalities weakens their capacity to meet citizens' needs and establish programmes that match their aspirations (Minnaar, 2010). Given continued poor performance and maladministration, citizens' confidence in local government is waning fast. If local government is to retain its authenticity, it will need significant political support to ensure that its performance is not compromised. Reddy et al. (2012), case study of Mandeni Municipality found that even though the municipality enjoys autonomy, it is facing substantial developmental challenges. With a minimal revenue base and a rapidly growing population as well as strained socioeconomic conditions, this local municipality is barely able to achieve basic developmental goals and other performance-related targets. The case study provides useful lessons on municipal performance in South Africa. These include *inter alia*:

a) Merging smaller municipalities with larger municipalities should be carefully considered as it can hamper the wellbeing of the local populace, especially where revenue is not shared proportionately, ultimately affecting the performance of the municipalities involved;

b) The provincial department responsible for local government should provide adequate resources to local municipalities, especially human resources. Like many municipalities, Mandeni Municipality lacks skilled personnel to execute its mandate effectively, which compromises its capacity to perform optimally. Financial and technical challenges need to be addressed;

c) Connected to the above point, the provincial department and local municipalities must endeavour to retain skilled and competent personnel by ensuring a conducive, organisational culture. Organizational cultures that value competency and hard work are known to attract and retain highly skilled personnel;

d) Robust M & E systems should be adopted to track the implementation of municipal projects and related activities and feedback mechanisms should be set up to inform project improvement and overall municipal performance and governance;

e) Revenue collection mechanisms should be strengthened to ensure that all local municipalities, irrespective of their size, have the necessary financial resources for their operations; otherwise their performance will be compromised. Ultimately, ordinary citizens bear the brunt.

3. Methodology

Research Design: The study adopted qualitative approaches to collect data from M & E practitioners in selected municipalities in KwaZulu-Natal. This yielded a valuable snapshot of the various dynamics at local government level in terms of M & E personnel's capacity to deliver on their mandate, that is, providing quality information from various government programmes to assess municipal performance in equitably delivering citizen-responsive basic services. The two approaches were deemed appropriate as they provided critical information for triangulation purposes. Triangulation of data provides a sound understanding of human behaviour, problems and characteristics and thus enhances confidence in the validity of the findings (Jesperson and Wallace, 2017).

Sampling of Respondents: To generate a representative sample, the following criteria were adopted to guide the selection of participating municipalities:

a) Geographical size of the municipality;

b) Functionality of M & E units/departments;

c) Availability and functionality of service delivery departments providing a range of public services such as education, health, water and sanitation;

d) Population of the municipality;

e) Geographical characteristics of municipalities – urban, rural and peri-urban areas;

f) Revenue base;
g) Audit report – good or bad.

Using these criteria, 16 municipalities were chosen to participate in the study and comprised of a metro (Category A), five district municipalities (Category C) and ten local municipalities (Category B). The primary reason for choosing municipalities across the spectrum was that the study sought to understand M & E skills capacity within M & E units across a range of local government departments in municipalities in the Province of KwaZulu-Natal. This Province was purposively selected because it has a combination of municipalities with varying dynamics in terms of geographical, economic and social factors. This combination provided a rich tapestry for the study in its efforts to understand M & E practices in these municipalities. Both probability and non-probability sampling methods were used to select an appropriate sample for the study.

In terms of the probability sampling technique, multi-stage sampling was applied to generate a list of local municipalities. This enabled the researcher to select a sample of municipalities that he believed to be representative and unbiased, thereby enhancing the validity and reliability of the data gathered. A list of all M & E personnel from the selected municipalities was obtained from COGTA and the same technique was utilized to generate a list of M & E personnel working in M & E departments and units performing M & E functions at the selected municipalities. The functionaries were first stratified according to their educational qualifications and the number of years they had served in their capacity as M & E officers. A systematic sampling technique was then applied to distinguish the selected M & E personnel according to their age, gender, race, education levels, and years of service as municipal functionaries and experience as M & E practitioners.

Data Collection: For the purposes of this article, qualitative data is utilised. This data was gathered via documentary review, and semi-structured and in-depth key informant interviews as well as participatory research techniques such as focus group discussions and Venn diagrams. This was important in ensuring that the perspectives of M & E personnel with different levels of experience and educational credentials were captured, and provided equal chances to male and female M & E officers from various population groups (Whites, Black Africans, Indians and Coloureds) to be selected to participate in the study. Venn diagrams are useful visualisation techniques that enable researchers and respondents alike to recognize any relationships that exist on an issue, problem or situation including the power relations among respondents, institutional arrangements between organisations and decision-making processes in an institution (Radhakrishna et al., 2016).

Data Analysis: Once collected, the qualitative data was analysed thematically, where data was coded according to emerging themes. Interviews and focus group discussions were digitally recorded and transcribed immediately. The transcribed information was stored safely and confidentially in a pass-word controlled computer only accessible to the researcher.

4. Findings

Laxity among Municipal Functionaries and its Impact on Municipal Performance in Fulfilling its Constitutional Mandate: Failure to enforce performance management processes has led to laxity and limited interest in excelling among municipal functionaries. One respondent claimed: "You know our PMS (performance management system) was established long ago…but who knows about it here …so we're not worried about performance as such…we know we must do our job…but excelling is not in the equation….so we relax and just flow with the flow…and that relaxing has made most of us lazy…caring for nothing other than themselves." Whilst most of the municipalities involved in the study have a performance management system, it is relatively unknown by most employees. In terms of Section 55(1) of the Local Government: Municipal Systems Act of 2000, municipal managers should ensure that municipal performance is enforced. Failure to take this responsibility seriously has severe implications for the execution of a municipality's constitutional mandate. These include: Inability to measure progress towards realizing the objectives and targets set in the IDP; Limited oversight of the monitoring and technical support mechanisms designed to guide organizational and individual performance within the local municipality; Limited remedial action from municipal leadership to sanction non-performance or poor performance; Non-alignment of budget

information to outputs that can measure the municipality's performance. There is a dire need to ensure that performance management is consistently enforced in municipalities and for municipal leadership to follow through with the practices required to reduce incidences relating to non-performance and poor performance.

Lack of Clarification on the Roles and Responsibilities of Municipal Functionaries: Because of inconsistent enforcement of performance management, some municipal functionaries are unaware of their roles and responsibilities. According to one respondent, "measuring individual performance is challenging when colleagues are unclear about their duties." Regulation 7 of the 2001 Performance Regulations requires that every municipality develop a performance management system. It comprises a performance framework that describes how the municipality's cycle and processes of performance planning, monitoring, measurement, review, reporting and improvement will be conducted, organized and managed, and sets out the roles and responsibilities of different stakeholders, including employees. If municipal functionaries do not understand their roles and responsibilities, it is difficult to plan and monitor their work, whilst at the same time periodically measuring and reviewing performance in terms of key performance indicators and other targets for efficiency and effectiveness.

Performance Management is not taken seriously in Municipalities: There was overwhelming agreement among the M & E practitioners that participated in the study that performance management is not taken seriously in municipalities. According to one respondent, most employees perceive that performance management is a quick way to obtain rewards: "Staff feel that they are obliged to receive a reward for performance, even though they are being paid to do their jobs this is not correct because it creates a culture of entitlement in the organization…as the desire to do more as an employee and excel beyond their present performance." Whilst it is important to recognize individual efforts that enhance overall unit or departmental performance, the processes for recognition of outstanding efforts should be clearly communicated to staff. This is important to avoid expectations that cannot be fulfilled, especially if performance is not linked to rewards as a norm in the organisation.

Challenges Due to Lack of Adequate Supervision and Management of Staff: Connected to the above it was claimed that supervisors do not adequately manage staff performance. Municipal staffs are permitted to set their own key performance areas, without aligning with the organizational strategy. This creates performance measurement challenges. Due to limited supervision, staffs are left to decide what constitutes performance and in most cases, it is about the work they do and there is no motivation to go the proverbial extra mile. As noted above, key performance indicators are often not aligned with the overall organizational strategy. It is thus challenging to measure a staff member's contribution to organisational effectiveness and efficiency. One respondent claimed: "Staffs are not motivated to do more than what is in their contracts there is no incentive to go the extra mile, so when performance is kind of left to the individual's idea of key performance area, measuring our collective performance is almost impossible." Considering the above, it can be argued that there should be a single performance management system for all levels of staff, which must be aligned to the strategies of the organisation and strictly enforced through supervision.

Internal Organizational Factors Impeding Effective Performance Management in Municipalities: According to the M & E practitioners, the following internal organisational factors impede effective performance management in municipalities.

Abdication of Responsibilities: Municipal managers do not strictly enforce performance management in most KwaZulu-Natal municipalities.

Limited Supervision of Staff: Departmental heads do not provide consistent and adequate supervision to their subordinates, thereby leaving them to their own description of what constitutes excellence;

Misalignment of Supervision Plans for an Individual with the Organisational Plan: When an individual's performance plan is not aligned to the organisational strategy, it is impossible to correctly measure how he/she is contributing to the realisation of organizational goals.

Misconception of the Meaning of Performance Management: Performance management is perceived to be a way to obtain rewards rather than a tool to enhance results through effective accountability.

Limited Consistency in Enforcing Performance Management by Senior Municipal Political Leadership: Given the increasing evidence of maladministration, corruption and wasteful expenditure due to bad planning among other aspects, municipal leadership, meaning Executive Mayors and their deputies are not sufficiently concerned about performance management. If municipal leadership were to be consistent in ensuring zero tolerance for non- or poor performance, individual employees' level of responsibility for their performance is likely to improve. These internal factors need to be addressed by senior municipal leadership in collaboration with departmental heads to enhance performance management in municipalities.

How Can the Internal Challenges Experienced by Municipalities Be Mitigated to Foster a Culture of Performance Management: According to the study participants, the internal issues can be addressed as follows: Design performance management applications, and improve reporting requirements to Auditor-General standards. Apply performance management as a strategic management technique that links various organisational elements of performance in municipalities and local government in general. Enforce performance management by creating a culture of performance, which comes from an understanding of the work staff are doing and how it fits into the bigger picture (the overall municipal strategy). Design and implement turn-around strategies that can be monitored for key performance indicators in areas where poor/non-performance has been noted; Establish an automated Performance Management System linked to the financial system. This is critical because the financial resources used to enhance employees' professional capacity can be tracked to establish the impact of the investment on overall organisational performance. Any gaps in terms of investment made and performance results should be addressed.

Importance of Enforcing Performance Management in Municipalities: From the municipal M & E practitioners' perspective, performance management facilitates consistent tracking of the extent to which the objectives of government interventions have been achieved. Shortcomings can be identified and remedial action can be developed and implemented. Other benefits of performance management in the context of M & E include: High level performance of individual municipal staff; An improved organisational culture where performance is accepted as the norm; Limited instances of non-performance and poor-performance among municipal staff; Accurate presentation of municipal results as different units in the municipality collaborate with the M & E unit to enable data collation and analysis leading to truthful reporting of the state of affairs; Improved morale among municipal staff as they enhance their individual performance, leading to the achievement of the municipality's overall goals; Improved management of municipal interventions, especially in relation to measuring the implementation and impact of public policies such as those relating to service delivery.

5. Conclusion

A performance management system is advantageous to a municipal M & E system as it detects any institutional challenges impeding operational efficiency whilst providing direction towards better planning of developmental goals. It also provides a mechanism to manage expectations and enhances the municipality's accountability to local citizens. It also provides early cautionary indications to recognize challenges in implementing development plans and offers suitable evidence-based information for enhanced and qualitative decision making. It is important to ensure the alignment of individual key areas of performance with those of the municipality and to harmonize such efforts to accomplish the ultimate objective. This will assist municipal employees to understand the expectations of their employer and the quality of work expected. It also enables them to comprehend key areas of accountability.

A performance management system helps to determine whether performance goals are being realized and take informed decisions within employees' scale of aptitudes. Citizens and other stakeholders utilising municipal services are becoming increasingly interested in determining how well municipalities are executing their functions. The objective is to transit from basic fiscal commentary towards an all-inclusive reporting on organizational performance and development. Performance reports provide a mechanism for management to report to the organization's investors on its resourcefulness and operational efficacy. A culture of performance management has to be instilled and legally enforced in local government in South Africa to ensure that the desired municipal objectives are attained. Fundamental to the process is the

mandatory political and management will to ensure a vibrant performance management system in the expansive context of good governance.

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Assessment of Bank Technology Machine and Mobile Banking as Market Strategies to Raising Performance of Banks in Nigeria

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Abstract: The market challenge in form of increasing competition for success in the banking sector calls for market strategies that are customer- based towards raising the performance of Nigerian banks. The use by banks, of Automated Teller Machines and Mobile banking are at the centre stage of this market strategy. Existing knowledge on this aspect of marketing is inadequate. This study assessed the empirical effects of Automated Teller Machine and Mobile banking as marketing tools on return on equity of banks in Nigeria. Both primary and secondary data were used in the study. The data were fitted to Panel regression models of Fixed and Random effects. Findings support increasing distribution of Teller machines and raising awareness on Mobile banking as result-oriented marketing strategy for banks.

Keywords: *Market Strategy, ATM, Mobile Banking, Return on Equity, Banks.*

1. Introduction

The 2004 Nigerian banking sector reforms were aimed at achieving an efficient and sound financial sector. The launching of the reforms led to a favourable competition in the banking sector. The necessity for banks to deliver high quality service with a view to surviving in the newly created competitive atmosphere becomes imperative. The use of service delivery technology was considered an ideal tool of business diversification to achieve this objective. Up to this period of reforms, banks largely utilized branch network as the major service delivery channel. Rapidly, options for various delivery channels were opened up through technological innovation. Products, for example, the automated teller machine (ATM) and mobile banking, gave the banks and the customers a number of service options to run banking business. While the use of ATM as a bank technology machine has become widely accepted in the Nigerian banking market, the Mobile banking system of delivery is still diffusing as the use of mobile technology in the form of smart phones spread among the Nigerian populace. Particularly, the advent and adoption of sophisticated mobile phones has led to rising demand for mobile banking.

Products and the need for banks to take advantage of this innovative service to boost their service delivery to customers (Shaikh & Karjaluoto, 2015 as a result of the increasing competition in the banking industry, the primary objective of raising performance through increasing return to banks requires effective understanding of customer needs and the appropriate channels to meet their transactional goals. This is more pertinent considering the spate of bank failure in the Nigerian banking space (Onyekwelu & Onyeka, 2014). For example, the Nigerian banks' performance outlook reflects high level of instability and volatility over the years (Table 1). Since the period following the year 2004 reforms, commercial banks' performance outlook has shown unstable trend up till 2017. As at 2009, the performance outlook was high relative to the previous years and reached its peak in 2010. Since then, the trend has been unstable by falling and rising intermittently till the year 2017. This performance outlook of the banks implies that banks need to shift focus and embrace practices that will assist in identifying consumer needs and provide services for better performance. This necessitated the need for clearer understanding of sound marketing approach in form of service delivery for a stable policy direction.

Table 1: Performance Outlook of Banks in Nigeria

Period	ROA
2005	2.096
2006	1.754
2007	2.669
2008	2.105
2009	2.748
2010	3.800
2011	0.419
2012	3.269
2013	2.051
2014	1.753
2015	1.639
2016	2.838
2017	3.123

Source: CBN statistical report, 2017

Several studies have analysed service delivery channels in Nigeria. However, findings on impact of product distribution outlets on bank performance in Nigeria are inconclusive. Ali and Emenike (2016) found that ATM transactions have positive effect on current account holding by individuals and companies in Nigeria. However, their time and savings accounts are not significantly affected. Further, Abaeneve, Ogbulu and Ndugbu (2013) found that delivery channels have no impact on performance, whereas Adewoye (2013) concluded that channels had significant effect. Findings from later studies such as Tijani and Ilugbemi (2015); Jegede (2014); Oginni, Mohammed, El-maude and Arikpo (2013) on the subject matter are also mixed with some of the studies finding negative effect and others positive effects of service delivery channels on performance. It is instructive to note that while all the foregoing studies were carried out in Nigeria.

The results of other studies carried out in Kenya (Awinja, 2015; Kombe & Wafulu, 2015; Mazwile, 2014; Mukhongo, Maokomba & Musiega, 2014) and India (Malhotra & Singh, 2009) aligned with Nigeria's. Furthermore, specific focus on ATM and mobile banking which adequately represent the modern service delivery modes remains limited. An evaluation of the two delivery channels with their peculiarities to the Nigerian banking environment represents an important milestone in positioning the banking sector for a stable development and a good insight into the field of bank marketing. This study also provides an up-to-date insight into the marketing effect of the delivery channels to bank performance. This study is particularly significant since the findings of existing studies are in contradiction to one another. Accordingly, this study is carried out to broaden the understanding of service delivery channels with specific focus on ATM and Mobile banking technologies by examining their effect on return on equity of banks in Nigeria.

2. Literature Review

Service delivery channels options are increasing with advancement in technologies. They represent platform through which banks interface with their numerous customers (Imafidon, 2013). Service delivery channels, according to (Karmarkar & Pitbladdo, 2009) imply any delivery methods through which financial services can be provided to customers. Delivery channel could therefore be viewed as service distribution outlet whereby organizations offer its services to customers. Banks' service delivery channels consist of branch networking, ATMs, online channels such as e-banking, m-banking across the existing multi-channel mix in the financial market, the channels require no physical or one-on-one interaction with employees and management of banks. Thus, they are referred to as promoters of sales growth and improved satisfaction of consumers target with the benefit of reducing business risks. As noted by Oloruntoyin and Olanloye (2012), the channels are apparatuses for safe and efficient transfer of monetary value in exchange for tangible and intangible products and financial securities.

Specifically, Okafor, (2008) perceived the ATM is an electronic gadget that offers customers easier and safer right to their accounts; enables them make cash deposit, withdraw and obtain account statements without physical presence at the banking hall through cards. According to Karmarkar and Pitbladdo (2009), service delivery channel is any delivery method through which organizations offer their services to customers. Depending on peculiarity of an organization, this collection of delivery outlets is commonly referred to as the organization's multi-channel mix. For instance, banks' service delivery channels being routine banking product or service from the bank to the customer consists of ATMs, branch networking, agency, online channels such as e-banking, m-banking et cetera. Awinja (2015) argued those channels which do not require physical contact with bank staff are referred to as 'direct channels. Multi-channel distribution has several advantages ranging from enhancing sales growth, improving customer satisfaction and reducing cost (Lovelock & Young, 2011).

It replaces erstwhile high for low cost channels, improves means of connecting banks with market, decreases banking risk exposure and diversifies scope of bank business and thus leads to enhanced business operation. Additionally, Dzombo, Kilika and Maingi (2017) evaluated the individual and combined impact of branchless banking, agency banking and online service channels on banks' profitability in Kenya. They submitted that, in isolation, electronic and agency banking have inverse effects on profitability. However, the combination of electronic and agency methods have increasing impact on business outcome. Similarly, Kiragu, (2017) evaluated the impacts of e-banking on bank profitability in Kenya. Using probability sampling which entailed simple but random and stratified sampling, a sample of sixty (60) respondents was obtained and primary data were collected using questionnaires. Secondary data were also collected from banks financial statements. Analysis carried out using descriptive statistics showed that online banking had positive influence on service delivery and bank performance. Further, Ali and Emenike (2016) in a similar study observed that demand deposit has a direct and significant relationship with ATM transactions while savings and time deposits are not significantly affected by ATM.

Furthermore, Awinja (2015) evaluated the extent of usage and cause-effect relationship between service delivery channels and bank operational efficiency in Kenya. Findings reveal that ATMs give customers easier access to bank services and also enhanced the efficiency of banks in service delivery. In addition, mobile banking is found to lower operational costs, enhance convenience, and save time for customers. In addition, branch banking enhances geographical market, increases the size of the banks and attracts new customer while online services provided extra expediency and flexibility to users, eliminating the barriers of distance/time for unimaginable distant customers. Additionally, Tijani and Ilugbemi (2015) studied the effect of electronic payments outlets on economic development via investigation of demand and savings deposits holders in Ado–Ekiti metropolis. The results of the chi-square analysis revealed that online payment outlets have positive effect on national development and economy. In Kenya, Kombe and Wafula (2015) examined the effects of electronic banking on bank operation using a descriptive survey design targeting thirty one (31) employees of KCB. The study showed that ICT adoption positively impacted the banking sector performance mainly through services time reduction and quality improvement, as opposed to reductions in costs. Additionally, Mazwile (2014) investigated the effect of online banking on product distribution and customer satisfaction.

The study showed that electronic financial products have attendant benefits in terms ease of usage, cost effectiveness and speed with which services are delivered. These benefits lead to high customer satisfaction. Mukhongo, Maokomba and Musiega (2014) also investigated the effects of different service channels on bank profitability in Kenya by obtaining data from bank staff, customers and agents. The study observed the need for banks to design faster and customer-friendly services in order to attract the unbanked segment. Jegede (2014) investigated the link between ATM related challenges, the concomitant financial loss and bank performance in Nigeria. Questionnaires were administered on staff of sampled banks in Lagos metropolis. The results of chi-square analyses showed that the employments of automatic banking machines have averagely improved bank performance but imposed pains on the banks going by the alarming rate of ATM fraud. Findings further revealed that there is low relationship between ATM service quality and user's security and privacy. Abaeneve, Ogbulu, and Ndugbu (2013) evaluated the link between online banking and bank performance in Nigerian. Analyses were carried out on pre- and post-implementation of online banking.

The study showed that returns on shareholders' equity is significantly and positively influenced by the implementation of internet banking in Nigerian.

Conversely, effect of e-banking is not reflected on returns on assets. Moreover, Oginni, Mohammed, El-maude and Arikpo (2013) also investigated the impact of e-banking on the profitability of Nigerian banks between 2000 and 2010. Regression results show that it takes averagely two years for e-banking to have positive impact on bank performance whereas the effect of e-banking is negative in the first year of adoption. The primary data was obtained through structured questionnaire to gauge the advantage obtained by the banks from the usage of service delivery channels in the selected banks. By administering questionnaires to staff of commercial banks in Lagos metropolis, Adewoye (2013) examined the effect of mobile banking on distribution of bank products in Nigerian. Findings from the Chi- square analyses disclosed that the positive effect of mobile banking on service delivery evidently through ease and speed with which transaction are conducted prompt transaction notification and reduced service cost resulted in improved customer satisfaction. Moreover, Malhotra and Singh (2009) analysed the impact of electronic banking on risk and performance through a survey of Indian banks. Results show that banks offering internet products are bigger and efficient compared to others.

3. Methodology

This study adopted a quantitative research design. Primary and secondary data were used for the study, specifically focusing on Southwestern geopolitical zone which is the economic hub of Nigeria. In addition, internet banking has a significant and inverse relationship with banks' risk rating. The secondary data covers variables on return on equity to measure performance, numbers and volume of ATM and mobile banking transactions. A total eight (8) systematically important banks (SIBs) in Nigeria were purposively selected for the study. They include: First Bank of Nigeria plc. Diamond Bank Plc. Eco bank Plc. United Bank for Africa, Guaranty Trust Bank Plc. Access Bank Plc. Polaris Bank Plc. and Zenith Bank Plc, the selected banks account for over 71 % total banking sector business in Nigeria (Business Day, June 10, 2016). The secondary data covers the period between 2005 and 2016. A total of 1200 bank staff and 300 bank customers were randomly sampled out of the 1204 commercial bank branches of the eight commercial banks in Southwest Nigeria using Yamane (1967) formula. The primary data collected were analysed using descriptive statistics while panel regression techniques were employed for analyses of the secondary data over the period under investigation. The panel regression models estimated in this study are presented below.

Pooled Panel Regression Models: It is assumed under Pooled panel model that any heterogeneity across banks has been averaged out. As such, the pooled effect model is specified thus:

$$ROE_{it} = \beta_0 + \beta_1 ATM_{it} + \beta_2 MBK_{it} + \beta_3 SIZ_{it} + \varepsilon_{it} \quad (1)$$

Fixed Panel Regression Model: It is assumed under fixed effect model that heterogeneity of individual firm is captured by the constant term. It implies that each firm was assigned a constant α_i whereas the slope coefficients are not different, and the heterogeneity is associated with the independent variables. In equation (2), a dummy is assigned to each bank, such that:

$$ROE_{it} = \beta_0 + \beta_1 ATM_{it} + \beta_2 MBK_{it} + \beta_3 SIZ_{it} + \sum_{i=1}^{15} \alpha_i idum + \varepsilon_{it} \quad (2)$$

Where $\alpha_i idum$ represents a dummy variable and a_i is an unobserved effect

Random Effect Model: It is assumed under random effect model that the individual bank heterogeneity is uncorrelated with all the observed variables. Consequently, the Random effect model is specified thus:

$$ROE_{it} = \beta_0 + \beta_0 + \beta_1 ATM_{it} + \beta_2 MBK_{it} + \beta_3 SIZ_{it} + V_{it} \quad (3)$$

Where, $V_{it} = \alpha_i + \varepsilon_{it}$ is often called the composite error.
ROE = Return on equity
ATM = number of ATM machines distributed by banks
MBK = Volume of Mobile banking
SIZ = Bank size.

4. Results and Interpretations

Descriptive Statistics of the Data: Results in Table 2 show the descriptive statistics of the data to describe the relevance of the ATM and Mobile banking to banks' marketing efforts. Provision of ATM services is an important marketing strategy in the banking firms. The respondents from the banks' management staff were asked to indicate the extent to which they agreed with statements in relation to this. The standard deviation of the ROE was relatively low, suggesting stability of the banks' return on equity over the study period. The responses which were rated on five Likert scale were descriptively assessed and the results presented in Table 2. Provision of ATM services being utilized by banks ensures effective service delivery to customers. The respondents agreed that bank investment in ATM services ensures effective service delivery to customers with the mean rating of 3.74.

This is likely since the use of ATM by customers generally reduce queues inside the banking halls and also offers customers opportunities to access banking services round the clock at convenient locations. The respondents agreed (3.89) that marketing efforts are made easier through ATM deployment. The respondents also agreed (Mean = 4.01) that ATM services provided by banks contribute to the banks' profit through different charges arising from the use of ATM. The charges could come as a result of transaction notification messages sent to customers, transaction charges and other coded charges. The agreement of respondents (M = 3.86) that banks deploy ATM as part of strategic marketing channels underscores the importance of opening different transaction channels to customers in order to enhance the strategic marketing efforts of banks aimed at achieving improved performance.

Table 2: ATM Service Provision by Banking Firms

	Mean	Std. Dev.
Our bank investment in ATM transactions ensures service delivery to our customers	3.74	1.413
The bank service delivery is more enhanced through ATM service	2.97	1.365
ATM transactions contribute more to the bank profit	4.01	1.219
Our marketing efforts are made easier through ATM transactions	3.89	1.119
The bank made us of ATM as part of strategic marketing channels	3.86	1.040

Source: Authors' computation (2019)
Key: 5 = Strongly Agreed, 4 = Agreed, 3 = Not true, 2 = disagree, 1= strongly disagree.

The relevance of mobile banking to marketing strategies of the banks and performance is descriptively assessed based on the response of the respondents (Table 3). Most of the respondents agreed (Mean = 4.13) that Mobile banking channel contributes to marketing initiatives of the bank. Further, the respondents agreed that mobile banking channel enhances the bank market efficiency (4.01), market expansion and contributes to profit level of the banks. This is expected since mobile banking is known to facilitate the provision of better services and products, which enhance customer satisfaction and at the same time, minimize operational costs of the banks. In addition, respondents agreed (3.48) that mobile banking contributes to customer retention strategy of banks.

Table 3: Mobile Banking Service Provision by Banking Firms

	Mean	Standard deviation
Mobile banking contributes to strategic marketing initiatives of the bank	4.13	1.215
Mobile banking is an effective marketing channels for our banks	3.04	1.293
Mobile banking contributes significantly to performance outcome of our banks	3.65	1.121
Mobile banking enhances the bank market efficiency, market expansion and banking technology improvement	4.01	1.140
Mobile banking contributes to our customer retention strategy	3.48	1.293

Source: Authors' computation (2019)
Key: 5 = Strongly Agreed, 4 = Agreed, 3 = Not true, 2 = disagree, 1= strongly disagree

Findings from Secondary Data Analysis: Table 4 highlights the usage of ATM and mobile banking as service delivery channels including the performance measure which is represented by return on equity of the sampled banks. The average value of return on equity (ROE) of banking firms was 14.93%. The bank with the least ROE had 0.40%, while the bank with the highest ROE over the sample period had ROE of about 30.00%. Statistics of mobile payment system show that the average value of mobile payment system over the sample period is ₦146.409 billion at a maximum of ₦477.180 billion for the bank with the highest mobile transaction over the period. The minimum value of mobile payment system was ₦1.270 billion. The ATM transaction recorded the highest value over the sample period with an average value in billions of ₦2244.886. The Jarque-Bera test of normality presented in the Table show that the null hypothesis of normality for the variables should not be rejected. Thus, all the variables are generally suitable for further regression analysis.

Table 4: Description of Variables Service Delivery Channels and Performance

	ROE	MPAY(₦b)	ATM (₦b)
Mean	14.931	146.409	2244.886
Median	17.600	31.510	1984.660
Maximum	30.000	477.180	4710.670
Minimum	0.400	1.2700	399.710
Std. Dev.	7.805	179.659	1499.847
Skewness	-0.033	0.896	0.294
Kurtosis	2.212	2.156	1.837
Jarque-Bera	0.9115	5.723	2.475
Probability	0.634	0.0572	0.290
Sum	522.6000	5124.300	78571.00
Sum Sq. Dev.	2071.475	1097424.0	76484421

Source: Authors' computation (2019)

The Hausman Test of the Study Variables: The decision on whether to use fixed or random effect for the estimation of the model was reached by conducting Hausman test. The standard deviation value (N179.66) of the variable suggests volatility or instability of mobile payment transaction over the sample period. The result presented in Table 5 indicates that fixed effect is appropriate for the estimation of the model to study service delivery channels and bank performance after rejecting the null hypothesis of random effect. The model was estimated using fixed effect because the result of the Hausman test showed a p-value of 0.0051 that is less than 5%.

Table 5: Correlated Random Effects - Hausman Test

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	12.791705	3	0.0051

Source: Authors' computation (2019)

The Estimated Model: This sub-section reports the estimated model of the effect of ATM and Mobile banking on bank performance. The result is presented in Table 6. The results show that ATM distributions to serve customer interest has a positive and significant effect on performance of banks ($\beta = 0.048$, $P < 0.05$). The result suggests that raising performance in banks has a direct link with accessibility of products and services which is provided by proximity of transaction machines to customers. It is expected that proximity of service to customers would bridge distant barrier to banks most especially in areas with insufficient number of banks and where physical branches do not exist. Also, mobile payment ($\beta = 0.870$, $P < 0.05$) has a positive and significant effect on performance of banks; suggesting that performance of banks could be enhanced through mobile banking channel. Okiro and Ndungu (2013) defined mobile banking as the provision of bank financial services to customers through the help of mobile telecommunication.

Panel regression model was used to analyse the effect of the delivery channel variables on return on equity of the banks.This, according to Schofield and Kubin (2002), ensures convenience of banking to customers. The relative convenience brings about frequency of banking transaction and greater return to the banks. The

findings of this study corroborate Lovelock and Young (2011) who found that each independent service delivery channel contributes to the performance objective of aggregated banks' sales growth, cost reduction, and increased means of linking the banks' products and services to the market, thus increasing return on equity. The parameter estimate of size included as a control variable also shows positive and significant (β = 0.059, $P < 0.05$) influence on bank performance. Size of the bank as represented by its asset can facilitate utilization of different service delivery channels which enables banks to reduce cost of operations, attract more customers and generate more revenue to boost its return on equity.

Table 6: Panel Regression Estimates of the Model

	Fixed effect			**Random Effect**		
	Coefficient	**Std. error**	**t-stat**	**Coefficient**	**Std. error**	**t-stat**
C	17.181	3.036	5.658**	21.008	3.489	6.021**
ATM	0.048	0.007	6.857**	0.016	0.014	1.143
Mobile	0.870	0.189	4.603**	0.617	0.167	3.695**
Size	0.059	0.007	8.429**	1.054	0.218	4.835**
R-squared	0.793			0.594		
Adjusted R^2	0.752			0.581		
Log likelihood	-173.917					
F-statistics	19.210			45.33249		
Prob(F-statistic)	0.000			0.000000		
Hausman	12.792					
	(0.0051)					

Source: Authors' computation (2019)

5. Conclusion and Recommendations

This study examined the effect of marketing strategy involving the use of ATM and mobile payment on performance of banks in Nigeria. Both the ATM and mobile payment system are service delivery channels that are meant to attract and facilitate customer-bank relationship through ease of transaction and interaction with bank facilities and services. The descriptive analysis of the data from primary sources showed that bank management considered both the ATM and Mobile payment system as important marketing initiatives to raise the profit level of the banks. The overall findings of the study support the need for increased utilization of both the ATM and mobile payment system as service delivery channels. The results lead to the conclusion that both ATM and mobile payment system are significant marketing strategy to increasing return on equity of banks. Hence, Nigerian banks are encouraged to develop and introduce more efficient mobile banking products to serve customers without physical presence in the banking hall. Distribution of more ATMs at strategic locations such as markets and commercial centers will also be a step in the right direction. In addition, efficient provision of these banking services would require further investment in internet facilities to avoid failed transactions. Moreover, the provision of ATM and mobile banking services should be made at minimal cost if Nigerian banks will play meaningful roles in ensuring cashless economy.

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