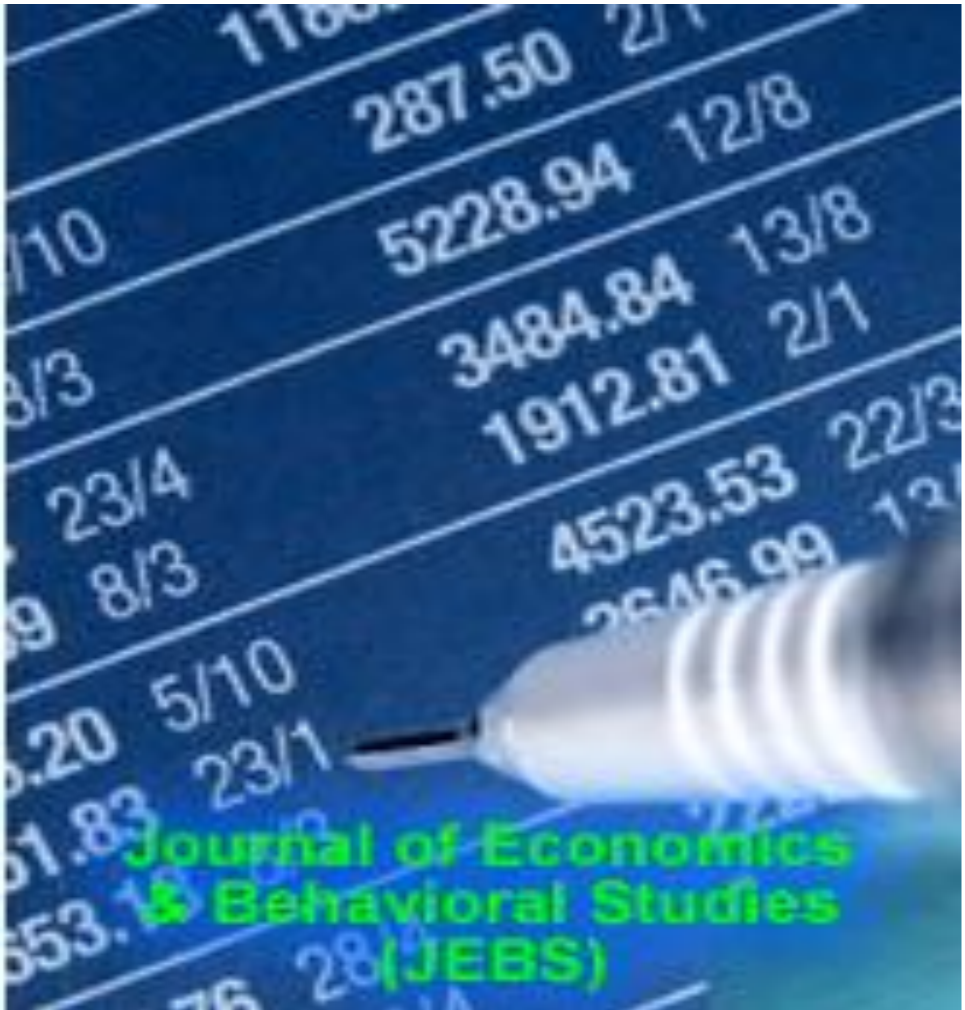

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Editorial

Journal of Econmics and Behavioral Studies (JEBS) provides distinct avenue for quality research in the ever-changing fields of economics & behavioral studies and related disciplines. Research work submitted for publication consideration should not merely limited to conceptualisation of economics and behavioral devlopments but comprise interdisciplinary and multi-facet approaches to economics and behavioral theories and practices as well as general transformations in the fileds. Scope of the JEBS includes: subjects of managerial economics, financial economics, development economics, finance, economics, financial psychology, strategic management, organizational behavior, human behavior, marketing, human resource management and behavioral finance. Author(s) should declare that work submitted to the journal is original, not under consideration for publication by another journal, and that all listed authors approve its submission to JEBS. Author (s) can submit: Research Paper, Conceptual Paper, Case Studies and Book Review. Journal received research submission related to all aspects of major themes and tracks. All submitted papers were first assessed by the editorial team for relevance and originality of the work and blindly peer reviewed by the external reviewers depending on the subject matter of the paper. After the rigorous peer-review process, the submitted papers were selected based on originality, significance, and clarity of the purpose. The current issue of JEBS comprises of papers of scholars from South Africa, Zimbabwe, Nigeria, Namibia and Indonesia. Internet banking adoption, influence of firm specific determinants on financial performance, weak form market efficiency, effective strategies to curb corruption, antecedents of employee intention to stay, measurement employee engagement, income diversification, inequality and poverty among rural households, host community participation in informative consultation and decision-making processes, sucrose quality in sugar: determinants and empirical implications, food inflation and passenger vehicle purchases, market orientation and performance of SMEs, endogeneity effects of conservation agriculture adoption, military and peacekeeping efforts, monetary policy transmission mechanism, human capital reputation as an antecedent of FDI, influence of packaging elements on buying behaviour, impact of ethical practices on the performance of SMEs, understanding the theory of consumption, work intensification, structural transformation in agricultural sector and plastic money & electronic banking services were some of the major practices and concepts examined in these studies. Current issue will therefore be a unique offer where scholars will be able to appreciate the latest results in their field of expertise, and to acquire additional knowledge in other relevant fields.

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

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PAPERS

Internet Banking Adoption in South Africa: The Mediating Role of Consumer Readiness

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Abstract: The recent rapid development of Internet banking (IB) around the world is not without certain challenges. For instance while a majority of banking SSTs (Self Service Technologies, e.g. ATMs and debit cards) have been well received by the South African market, consumers seem sceptical towards Internet banking. This paper seeks to test various conceptual frameworks of consumer adoption patterns of IB with the view of a framework with the greatest explanatory power for the South African market. To achieve the stated objective of a framework for IB adoption in South Africa, this paper suggests an approach not yet undertaken, according to the literature review conducted, within the South African retail banking industry – investigating a comparison of the predictive efficacy of two common groupings of variables most cited in the consumer behaviour literature as important determinants of adoptive behaviour in SSTs. These are: perceptions of innovation characteristics and consumer readiness (CR) variables. Therefore, the primary objective of this article is the consideration of this gap within the body of knowledge around South African consumers' IB adoption behaviour. Through a descriptive quantitative analysis of 1516 large sample size, innovation characteristics as consumer's perceptions (complexity, perceived risk notably) or views (endogenous variables) were found with greatest predictive power over IB adoption, in the South African consumer market context. This finding is therefore for marketers (particularly in South Africa) a set of useful tools that can be relevant to promote the adoption of IB.

Keywords: *Internet banking, Consumer choice behaviour, Innovation characteristics, Consumer readiness, South Africa*

1. Introduction

In the last two to three decades, the South African banking industry has undergone significant reforms. The current state of retail banking in the country has been largely shaped by the on-going progressive deregulation of the financial services sector that began in the early 1990s (Falkena, Bamber, Llewellin and Store*,* 2001; Shambare, 2012). According to Falkena et al. (2001:80), the global trend of banking deregulation reached South Africa in the early 1990s; resulting in the removal of several previously-imposed restrictions and monopolies. For instance, financial institutions were no longer required to specialise in only one product line, meaning that insurance companies could say also offer banking services, which naturally increased competitive pressure in the industry. To maintain market share, banking institutions turned to innovations such as electronic banking systems and the rapid diffusion of technology-based product distribution channels (Falkena, Bamber, Llewellin and Store*,* 2001:390). Numerous SSTs were introduced in this period, such as IB in 1996 and cell phone banking in 2000 (Nel, 2013:45). While a majority of banking SSTs (e.g. ATMs and debit cards) have been well received by the South African market, consumers seem sceptical towards IB (Maduku, 2013:78). World Wide Worx (2013) found that IB remains the least adopted SST within the South African retail banking market. Consequently, there have been increasing efforts to encourage consumer patronage of IB (Maduku, 2013:94). In the quest to increase IB usage, financial institutions have, however, experienced challenges in formulating effective marketing strategies. There seems to be a general lack of marketing intelligence and in particular, limited knowledge on the diffusion and adoption patterns of the Internet and IB (Sabi, 2014:17). Overall, within developing countries, including South Africa, there has been a lack of academic research in the area of IB adoption (Maduku, 2013:76; Shambare, 2012:79). Thus, without the guidance of sound scientific research, financial institutions will experience difficulties in developing strategy to shift consumer behaviour towards IB adoption. Therefore, the primary objective of this article is the consideration of this gap within the body of knowledge around South African consumers' IB adoption behaviour. Against this background, this study seeks to test various conceptual frameworks of consumer adoption patterns of IB with a view to a framework with the greatest explanatory power for the South African market. The remaining part of this paper is as follows: Discussion on IB in South Africa as following section. Then, IB adoption framework is presented. Further the methodology and findings sections is made followed with results and discussion on summary findings, managerial implications, limitations and recommendations regarding future research.

2. Literature Review

Internet banking in South Africa: Since the early 1990s, the global trend towards deregulation, the rise of global financial services conglomerates, rapid technological developments and South Africa's reintroduction into the global economy contributed to the reshaping of the South African financial sector (Falkena et al., 2001:80). Today, all South African banks together with the 'big four' (ABSA, FNB, Standard Bank and Nedbank) provide e-banking services (Redlinghuis & Rensleigh, 2010:2). According to World Wide Worx (2013), South Africa's IB user rate is still remarkably low at only about 23 per cent. IB, similarly to e-banking uses the Internet to access bank accounts and perform various functions as inter account-transfers, third-party payments and checking balances. Internet banking as defined by Yiu, Grant and Edgar (2007:337), is the delivery of banking services to customers through the Internet network. Consequently, it is a process which allows a consumer to perform banking functions online. In South Africa particularly, very little research has been conducted in terms of enhancing marketers' knowledge of consumers' decisions to adopt (or reject) banking SSTs. Therefore, conducting further research on predictors of internet banking (IB) adoption is imperative. Moreover, the approach taken by this study will contribute new knowledge within the consumer behaviour, internet banking adoption and consumer perception towards use of technology. To achieve the stated objective, the study developed a framework for innovation characteristics and consumer readiness, predictive power over internet banking adoption in South Africa.

Internet banking adoption framework: Rogers's (1962) IDT explains how over time, an idea or product gains momentum and diffuses through specific population. Rogers (1995:16) enriched the same idea by arguing that potential users make decisions to adopt or reject an innovation based on beliefs that they form about the innovation. It includes five significant characteristics: compatibility, relative advantage, complexity, observability and trialability (Rogers, 1995:265-266). But other characteristics, mainly perceived risk, have been also added to those listed as reported by Kassangoye, De Jager and Rugimbana (2013:378). This paper is focused on IB, an SST adoption case, which involves knowledge on consumer readiness, attitudes or behaviours which are developed. Meuter, Bitner, Ostrom and Brown (2005:64), stated that CR is the "state in which consumers are prepared and likely to use an innovation for the first time". Consequently, consumer readiness variables form part of the study framework. Meuter et al. (2005:62) argue that "there are certain innovation characteristics or individual differences that vary in direction and significance across different contexts". Therefore, they suggest that the way to clarify the inconsistencies is through the use of mediating variables to explain relationships between variables. A consumer readiness variable is introduced to mediate between the innovation characteristics variables and the behaviour of trial (of the innovation) as the first step of consumer adoption. In order to identify the predictive power of innovation characteristics and consumer readiness, this paper draws on Meuter et al. (2005) model. The innovations characteristics are first of all defined followed by consumer readiness.

Relative advantage: Relative advantage is defined as, "the degree to which an innovation is perceived as being better than the idea it supersedes" (Rogers, 1995:212; 2003:15).
Compatibility: Compatibility refers to the extent to which individuals perceive that new products or services have no conflict with their needs, beliefs, values and experiences (Rogers, 1995:224; 2003:15-16). According to Rogers (2003:240), compatibility is defined as "the degree to which an innovation is perceived as consistent with the existing values, past experiences, and the needs of potential".
Trialability: Trialability is defined as, "the degree to which an innovation may be experimented within a limited basis, which allows individuals to test drive an innovation before it is being adopted" (Rogers, 1995:243; 2003:16).
Observability: Observability, defined as "the degree to which the results of an innovation are visible to others" (Rogers, 1983:244; 2003:15-16). The degree to which an innovation is perceived as being difficult to understand and/or to use, is defined as complexity of an innovation (Rogers, 1995:242; 2003:16)

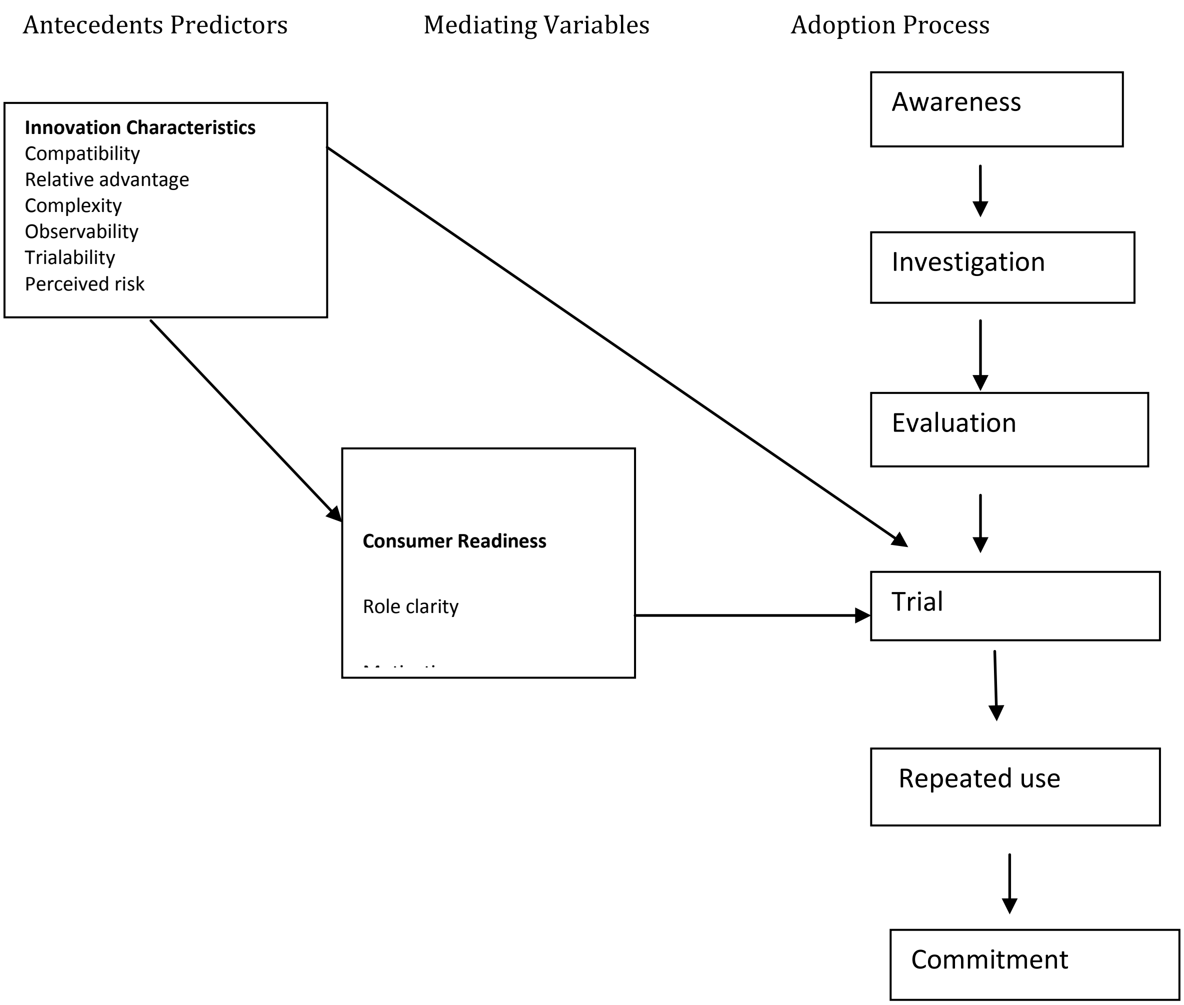
Complexity Perceived risk: "Risk" refers to a hazard that involves a cost (Paulino, 2011:5). Perceived risk originated from the motivation of consumers to process information. It is also about Perceived risk is known as the negative attribute, and perceived benefit, the positive one. Consumer readiness includes role clarity, motivation (intrinsic and extrinsic) and ability. A customer's behaviour towards a product depends on his readiness to use it. People who lack knowledge, understanding, motivation or skill on Internet banking, may never become a potential user of this technological banking innovation product. Meuter et al. (2005:76) findings show that consumer readiness variables have greater influence on consumer adoption of self-service technologies (SST) than the other variables.

Role clarity: Role clarity is about customers' knowledge and comprehension of the kind of participation which needs to take place. In true, customers' knowledge on what to do and performance expectations have a greater tendency to do things that are needed.

Motivation: Motivation is the "forerunner of any tangible achievement in life" (Adeboye, 2015). Oyserman and Sorrenson (2009:253), by linking identity to motivation, stated that "identity-based motivation results in the readiness to take action, even when the action is not beneficial to the participant or is unlikely to have been chosen outside of the specific context."

Ability: In the views of Meuter et al. (2005:64), ability is about the extent to which the consumer possesses the necessary skills and needed equipment to perform a particular task (or to use new innovations).

Figure 1: IB adoption proposed conceptual model



Source: Adapted from Meuter et al. (2005:63)

In conclusion, two sets of variables namely innovation characteristics and consumer readiness variables, are combined together in this article model to aim for credible and accurate research findings results.

Research questions and hypotheses: The following research question was formulated:
In South Africa, what is the predictive power of exogenous and endogenous variables on Internet banking adoption among consumers?
Consequently the research hypotheses are formulated as follows and offered basis for data collection and data analysis:
H_1: Role clarity mediates the relationship between:
Innovation characteristics variables and trial
H_2: Extrinsic motivation mediates the relationship between:
Innovation characteristics variables and trial
H_3: Intrinsic motivation mediates the relationship between:
Innovation characteristics variables and trial
H_4: Ability mediates the relationship between:
Innovation characteristics variables and trial
H_5: The consumer readiness variables are better predictors of trial than:
Innovation characteristics variables

3. Methodology

A descriptive single cross-sectional design according to Malhotra (2010:108) is the applied methodology for this study. From self-completion structured questionnaire respondents, data was collected. For data analysis, the analysis of statistics was made in line with the collected quantitative data.

Sample: The quantitative method of empirical inquiry, using the descriptive survey research design, was employed for investigation related to the present study (Malhotra, 2010:108). Collecting data from respondents took place by using self-completion structured questionnaires with a 'drop and pick' collection technique method. This research is one with tested existing theories which "explains the precise relationships between variables" according to Perry (2002:26); research design therefore is an explanatory (causal) in nature as reported by Nel (2013:78-79). The sample size of 1 516 which largely surpassed the recommended minimum of 590 participants recommended by Pallant (2010), and 385 according to Raosoft (2016) was largely sufficient and able to generalise the findings of the study for a total of 7 000 000 Gauteng's province adults population. A stratified sampling technique was used to ensure the selection of a sample whose characteristics are in line with the population of the Gauteng Province. The measured constructs influencing choice behaviour factors known as 'real-life' phenomena (Healy and Perry, 2000:120) in past research, were identified and tested (Berndt, Saunders and Petzer, 2010; Black, Lockett, Winkhlofer and Ennew, 2001; Laukkanen, Sinkkonen, Kivijarvi and Laukkanen, 2007; Parasuraman, 2000; Rugimbana, 1998; Shambare, 2012). Except for studies such as Mallat (2007), Szmigin and Bourne (1999) that utilized qualitative approach, quantitative methods was used in the vast majority of studies to measure IB adoption. It is for this reason that quantitative techniques are used in this study. A large sample size of 1516 (70.51%) students questionnaires respondents was completed and used during the present study compares to the total of 2 150, distributed for the present investigation. It was desirable to use a homogenous sample (i.e., students) as they are a homogeneous sample. Using homogenous samples, according to Calder et al. (1981:200) is preferred for theory testing.

***Questionnaire adaptation*:** The instrument of data collection is about questions measuring diverse aspects in relation to respondents' demographic characteristics, banking profiles and the parameters. Table 1 presents the structure and questionnaire rationality. Testing the predictive power of antecedent predictor variables (innovation characteristics) and mediating predictor variables namely consumer readiness variables, in order to predict consumer choice behaviour, is the present study's objective. In the conceptual model which is proposed in the area of Internet banking choice, three main elements are highlighted: Innovation characteristics, consumer readiness and adoption, operationalised by trial representing those parameters. A Likert scale (1 = Strongly Disagree; 5 = Strongly Agree) and structured questions were utilised. The first two variables are continuous and were measured by using a 5-point Likert scale anchored at 1 = Strongly Disagree and 5 = Strongly Agree. As measured by trial, adoption is a discrete (nominal) value. In sum, the questionnaire was eight pages long, comprising three parts: the respondents' banking profile, measurement scales and demographic sections (Table 1).For 2 150 questionnaires collected from respondents, 1 516 responses were used for the present study as total sample size for the survey that was conducted with 45,80% as male and 54,20% as female; 69,90% of these students age is between 21-30 years with 93.70% as undergraduate. 78, 70% among them are with monthly income less than 5000 (ZAR), 62,10% as full time students. Table 2 below illustrated participant demographic characteristic. Different statistical analyses were performed using SPSS v. 23 (Field, 2009).

Table 1: Data collection instrument format

Section	Section summary	Scale development	Rationale
A	Respondents' banking profile: Information in the banking profile area. This encompasses the types of bank accounts utilised and also how often these were utilised.	Brown, Cajee Davies and Stroebel (2003); Rugimbana (1998)	To determine respondents' banking patterns
B	Antecedent predictors' scales: Measure independent and mediating variables.	Meuter et al. (2005); Parasuraman (2000); Rogers (1995)	Measuring TR, perceptions and CR
C	Respondents' demographic characteristics: Demographics	Developed for this research from the literature review	To describe demographic characteristics of the sample

Source: Researcher's own construct

Data analysis: As a result of the quantitative data collected, different statistical analyses were done. SPSS v. 23 was used to perform analysis as followed (Field, 2009):

- Descriptive statistics for samples' demography description and banking-related Profiles (Daniel & Terrel, 1995:42).
- Chi-square tests for association identification among variables (Field, 2009:269).
- *Reliability analysis* – through Cronbach's alpha, the internal consistency (reliability) related to measurement scales is assessed (Emory & Cooper, 1991:187).
- Factor analysis –variables' reduction to latent variables smaller groups, as well as validity tests (Field, 2009:629; Malhotra & Birks, 2007:125).
- Multiple regression and logistic regression – for the proposed model and hypotheses testing (Hair et al., 1998:90).

4. Results

Table 2: Demographic profile

Demographic characteristic		South Africa (%)
Gender	Male	45.80
	Female	54.20
Age	< 20 years	21.80
	21 - 30 years	69.90
	31+ years	8.30
Study level	Undergraduate	93.70
	Postgraduate	6.30
Monthly income	<R5 000	78.70
	R5 001 - R10 000	11.30
	R10 001 - R15 000	2.90
	R15 001 +	7.10

Source of income	Employed full-time	6.50
	Employed part-time	5.30
	Self employed	2.70
	Full-time student	62.10
	Part-time student	12.90
	Unemployed/retired	10.50

Source: Own construct

In total, 2 150 questionnaires were distributed to respondents to the investigation. As result, only 1 516(70.51%) completed questionnaires were collected and used for the present study. The male respondent participant rate of 45.8 % was smaller than their female counterparts which is 54.20 % as described on Table 2. Significantly, the proportion of 69.9 % is representative of the age group 21 to 30 years. 21.80% and 8.30% per cent represent respectively respondent age group for less than 20 years and more than 30 years according to present investigation (Table 2). Table 2 depicted also that the biggest percentage (78.7%) of participants are undergraduate with an income of not more than R5 000 per month, while the remaining of 6.30% are postgraduate. As presented by Table 2, only 7.10% of respondent earn more than R15 000 per month, while 11.30% monthly earning, is not more than R10 000. The fewest 2.90% respondent monthly earning is between R10 001 and R15 000. Full time student with 62.10%, constitutes the highest rate of this present research participant, while the lowest rate of 2.70% refers to self-employed student participant. The remaining, 6.50%, 5.30%, 12.90% and 10.50% are respectively full-time employed students, part-time employed students, part-time students and unemployed or retired as shown in Table 2. This provides the key demographic characteristics of the study sample.

Respondents' banking profile: Table 3.1a and table 3.1b summarize banking profile.

Table 3.1a: Bank institutions use

Bank	Count	Percentage (%)*
Capitec	558	30.05
Standard Bank	382	20.57
FNB	332	17.88
ABSA	315	16.96
Nedbank	190	10.23
Do not have a bank account	35	1.89
Post Bank	19	1.02
Other banks	7	0.38
African Bank	6	0.32
Bidvest	5	0.26
Mercantile	4	0.22
Bank of Athens	4	0.22

Source: Own construct; *% based on total number of respondents

Table 3.1b: Extent of channel use (1=never; 6=daily)

Banking channel	Mean	Std Dev.	users %
Bank branch	2.82	1.76	53.30
EFTPoS	2.77	1.82	50.20
Cell phone banking	2.77	1.82	50.20
Bank App	1.78	1.39	23.30
Telephone	1.78	1.38	23.20
ATM	1.58	1.27	16.10

Source: Own construct

Scale Measurement

Construct reliability: The measuring of the multi-item scales questionnaire reliability was done by using Cronbach's alpha (Mazzocchi, 2011; Bryman & Cramer, 2001:71). Reliability is about multiple variables' measurements, accuracy, precision and consistency (Hair et al., 2010). Internal consistency as reliability is a commonly used measure to ascertain in a set of questions, how well items are positively inter-correlated. According to Field (2009:677), the setting of the minimum alpha standard practice threshold to consider, is 0.7.

Table 4: Cronbach's alpha (α) for the subscales

Multi-item scale	Internet banking
Relative advantage	.775
Complexity	.798
Observability	.827
Compatibility	.854
Trialability	.465
Perceived Risk	.897
Role Clarity	.764
Ability	.700
Extrinsic Motivation	.830
Intrinsic Motivation	.882

Source: Own construct; (Study sample) <.4 cut off

Table 5: Variables KMO / Barlett's test of sphericity values

Multi-item KMO / Barlett's test of sphericity (p-values)	Internet banking
Relative advantage	.688 (.109)
Complexity	.710 (.000)
Observability	.693 (.000)
Compatibility	.850 (.000)
Trialability	.594 (.008)
Perceived Risk	.914 (.000)
Role Clarity	.658 (.020)
Ability	.711 (.515)
Extrinsic Motivation	.718 (.000)
Intrinsic Motivation	.878 (.000)

Source: Own construct; Cut off point < 0.5 (Field, 2009:660)

Construct validity: As a result, the validity of the independent variables was determined employing factor analysis which is a multivariate statistical method characterised by three keys functions (Stewart, 1981). The first key function consists on reducing to smaller size variables, the number in case information analysis amount is maximised. The second one is by searching in case of data being too large, qualitative and quantitative data distinction. The last key function is about hypotheses testing relative to distinction numbers or undergoing data set. Specifically, Oblimin rotation with principal components analysis (PCA) was used not only for determining the items factors loading, but also for the inter correlation of factors themselves (Hair et al., 2010). Proceeding with PCA involved the use of Kaiser-Meyer-Olkin (KMO) for the measure of sampling adequacy (MSA) and the Sphericity Bartlett's test (Shiu, Hair, Bush and Ortinau, 2009).

Table 6: PCA loadings of independent variable constructs

Independent variable		**Banking channel Internet banking**
IDT (X^2 = 1.702; p = .0192)	Factors retained	2
	% variance	61.296%
CR (X^2 = 10.205; p= .001)	Factors retained	1
	% variance	55.054%

Source: Own construct

The KMO index range is from 0 to 1. Value 0.90 + is marvellous, while value 0.60+ is mediocre and below .50, unacceptable (Field; 2009:647). For this study, KMO index range is higher than 0.7, which is acceptable. Secondly, for proceeding with factor analysis as scientifically recommended, the statistical probability, proof of the existence of correlation matrix with significant correlations among variables, is generated by Bartlett's Test of Sphericity index (> 0.6), which is viewed a minimum tolerance. Lastly, in all cases the Bartlett's Test yielded p-values ($p < 0.05$), which are significant and high. Overall, 10 components of items' total had Eigen values over Kaiser's criterion of 1 explain in combination more than 62.020% of the variance. Barlett's test of sphericity $X^2(1516)$ =292449.950, p < 0.001, indicating for PCA, that correlations between items were sufficiently large (Field, 2009:672). KMO index range for this study is 0.934 higher than 0.90, which is marvellous value. The factor structures, regarding both scales (IDT and CR) loaded in conformity to the theory content (Table 6).

Test of model and hypotheses: For the test related to IB trial, mediated effects could not be concluded between CR and both independent variables. For variable ability for instance, the effect on dependent variable according to Table 7 is not significant at all [coefficient = -21.169; (*p* = .998)]. The meaning of this fact is that no any independent variable is mediated by the factor ability. Additionally, though the other three mediating variables, role clarity, extrinsic motivation and intrinsic motivation respectively[B = -1.661; p = .000], [B = -1.551; p = .000] and [B = -1.259; *p* =. 000] have effect on dependent variable, not all items of both independent variables are mediated by at least one mediating factor. Role clarity alone, among all four CR variables, mediated complexity, compatibility, trialability and perceived risk, but without effect on relative advantage. Overall, not all antecedent predictors of both independent variables that have direct effect on trial, were found mediated by at least one mediating factor. It was deducted therefore that CR doesn't mediate the independent variables (innovation characteristics) for IB product.

Table7: Results of tests of mediation: IB

Description of test	**Significance of mediator: Step 1 B (p-value)**	**Change in effects of independent variables (predictors) with the introduction of mediating variables (Steps 2 – 4)**			**Conclusion**
		Predictor (Innovation characteristic)	**Step 2 B (p-value)**	**Step 4 B (p-value)**	
Role of clarity as a mediator between innovation characteristics and adoption	Role clarity: -1.661(.000)	Relative advantage	-.490 (.112)	-.315 (.381)	No direct effect on adoption
		Complexity	1.498 (.000)	1.429 (.000)	Partial mediation
		Observability	-1.594 (.000)	-1.269 (.000)	Partial mediation
		Compatibility	-1.755 (.000)	-1.363 (.001)	Partial mediation
		Trialability	-.668 (.009)	-.335 (.242)	Complete mediation
		Perceived risk	1.227 (.000)	1.185 (.000)	Partial mediation
Ability as a mediator between	Ability: -21.169(.998)	Relative advantage	-.490 (.112)	-.151 (.695)	No mediation, failed in Step 1
		Complexity	1.498	1.420	No mediation,

innovation characteristics and adoption			(.000)	(.000)	failed in Step 1
		Observability	-1.594 (.000)	-1.168 (.008)	No mediation, failed in Step 1
		Compatibility	-1.755 (.000)	-.832 (.072)	No mediation, failed in Step 1
		Trialability	-.668 (.009)	-.120 (.721)	No mediation, failed in Step 1
		Perceived risk	1.227 (.000)	1.090 (.000)	No mediation, failed in Step 1
Extrinsic motivation as a mediator between innovation characteristics and adoption	Extrinsic motivation: -1.551 (.000)	Relative advantage	-.490 (.112)	-.125 (.726)	No direct effect on adoption
		Complexity	1.498 (.000)	1.510 (.000)	No mediation, failed in Step 4
		Observability	-1.594 (.000)	-1.444 (.000)	Partial mediation
		Compatibility	-1.755 (.000)	-1.422 (.002)	Partial mediation
		Trialability	-.668 (.009)	-.201 (.483)	Complete mediation
		Perceived risk	1.227 (.000)	1.205 (.000)	Partial mediation
Intrinsic motivation as a mediator between innovation characteristics and adoption	Intrinsic motivation: -1.259(.000)	Relative advantage	-.490 (.112)	-.012 (.972)	No mediation, failed in Step 4
		Complexity	1.498 (.000)	1.492 (.000)	No mediation, failed in Step 3
		Observability	-1.594 (.000)	-1.390 (.000)	Partial mediation
		Compatibility	-1.755 (.000)	-1.166 (.005)	Partial mediation
		Trialability	-.668 (.009)	-.396 (.160)	Complete mediation
		Perceived risk	1.227 (.000)	1.275 (.000)	No mediation, failed in Step 4

Table 8: Hypotheses testing results

Hypotheses	Supported
H1: Role clarity mediates the relationship between: Innovation characteristic variables	supported
H2: Extrinsic motivation mediates the relationship between: Innovation characteristic variables	supported
H3: Intrinsic motivation mediates the relationship between: Innovation characteristic variables and trial	supported
H4: Ability mediates the relationship between Innovation characteristic variables	not supported
H5: The consumer readiness variables are better predictors of trial than: Innovation characteristic variables	not supported

Source: Own construct

Past findings demonstrated that complexity, perceived risk and role clarity are related to adoption (Ngandu, 2012; Shambare, 2012; Wu, 2005) which also is confirmed in this paper. Ngandu (2012), on how factors prompting electronic banking adoption; Shambare (2012) on comparing the role of consumer perception and personality variables in predicting consumer preference for remote banking services; Wu (2005) on investigating attitudes of retails banking over customer in South Africa. Similarly to present study findings, all these cited authors, earlier underlined by one way or other the remarkable influential role of variables complexity, perceived risk and role clarity on consumers' decision over banking products' adoption in South Africa. As previously defined, complexity is about degree to which an innovation is perceived as being difficult to understand and/or to use, is defined as complexity of an innovation (Rogers, 1995:242; 2003:16). Complexity as well as perceived risk are negatively related to innovation adoption (Black et al., 2001:392). Except relative advantage, innovations' complexity as concluded Black et al. (2001:392) was more highly related to their adoption rate than any other innovation characteristics.

Discussion: Meuter et al. (2005) conducted similar study among USA consumers regarding banking Self Service Technologies in general and underlined consumer readiness variables predictive power over innovation characteristics variables. By contradiction with Meuter et al. (2005) findings, this paper "In South Africa, consumer's perceptions (endogenous variables) like complexity and perceived risks variables notably provide better explanatory power in describing IB as SST adoption" (Rogers, 1995; Ngandu, 2012:117; Shambare, 2012:178). Innovation characteristics outperform consumer readiness predictors for classification accuracy compared to CR. Two variables among the six innovation characteristics, namely complexity and perceived risk and one of consumer readiness (role clarity), were highly significant ($p< 0.01$). Complexity with the strongest Wald score is the biggest contributor within the predictor. The present study, by conducting the related investigation, established the fact that perceptions variables are irrefutably vital for IB adoption as other SSTs, relevant antecedent predictors of consumer choice behaviour. In other words, as employed in studies like IDT referring Rogers (1962; 1983; 1995), TRI Parasuranam (2000), Meuter et al. (2005) and stressed by Kelly, Lawlor and Mulvey (2010) and Dhurup, Surujlal and Redda (2014), the related study's conceptual frameworks are not only usable in a country like South Africa, but can be suggested for use by the body of knowledge for wider applicability.

The present paper's survey findings are proof that South Africa's country-specific conditions can efficiently be explained within research work, and therefore must be seen as a useful and encouraging tool for both bank managers and researchers. Obviously, research needs to be extended to other SSTs with regard to the present study framework. Studies which focused only on one common grouping of variables as the determinant of adoption behaviour, involved good empirical research (Akinci, AksoyandAtilgan , 2004:212; Cai Yang and Cude, 2008:151; Hoppe et al., 2001:1; Maduku, 2013:76) that is applied to IB, mostly within a South African context. But there are some phenomena that could not be explained, due to inconsistencies on some findings as stated by Meuter et al. (2005:62). This is the motive of this paper, for better explanation of phenomena one should consider two sets of variables simultaneously. As stated by Meuter et al. (2005:62), "to date, the question of why innovation characteristics influence adoption behaviour has been left largely unexplored". Though encouraging, the present study results leave unexplored fields for better explanation phenomena which are still to be conquered. That is why the need for future research is still pending. This research was conducted using a university student sample, which according to Calder, Phillips and Tybout (1981:200), is a homogeneous sample as indicated. But a wider consumer range could have been associated; this is seen as a limitation through the relatively validated scales of the large sample size (n=1 516). The theory model applied referred exclusively to innovation characteristics, whereas other theories such as TRA, TPB and TAM could also have been employed. Finally, the study is limited in this investigation by only considering the Gauteng Province, while investigation could have covered the whole country.

5. Conclusion

The attempt to provide an answer to the above objective concluded first of all that all two mentioned variables significantly predict IB adoption in South Africa. Secondary results also brought evidence for the fact that consumer readiness was found with mediating effects between explanatory variables (perceptions) and trial. Finally, comparing the predictive power of both variables as in the objective, perceptions (endogenous variables) were found in South Africa with greater predicting power over IB consumer choice behaviour and decision-making (Ngandu, 2012:117; Shambare, 2012:178; Wu, 2005:131-132). Future studies are encouraged to cover other provinces beside Gauteng in order to compare the investigations results with the present one. By doing so, bank marketers and the body of knowledge can really be provided with factors influencing the nation's IB consumer choice behaviour and decision-making. Factors predicting other SSTs like ATM, cell phone banking and telephone banking also using Meuter et al. (2005), can also be explored in order to give useful tools to bank decision-makers and also filling the related research gap within the domain.

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The Influence of Firm Specific Determinants on Financial Performance in the Power Industry

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Abstract: This study concentrates on the impact of firm specific determinants on financial performance in the power industry. The firm specific determinants used in this study as independent variables were capital structure, firm size and liquidity whilst ROA, ROI and profitability were used as proxies of financial performance. Modigliani and Miller (1958) argue that capital structure has no impact on financial performance whilst the Trade-off theory suggests that the ideal capital structure that helps firm remain financially healthy is the trade-off between cost of leverage and the advantages of debt. Beyond that trade-off point, a firm will start making losses. The target population included 60 employees from all the 5 subsidiaries of the Holding company and researchers used 40 respondents as sample size to enhance reliability. A relationship was established between firm specific determinants and financial performance as measured by ROA, ROI and profitability. The results showed a negative but significant relationship between capital structure and financial performance and they support the pecking order theory which suggests that capital structure is a significant determinant of financial performance. Firm size and financial performance were also negatively related. However, a significant positive relationship was established between liquidity and financial performance. From the findings the researchers concluded that firm specific factors have a significant impact on financial performance. Researchers therefore recommend that ZESA holdings should use its internal funds such as retained earnings and more equity than debt when financing its activities so as to reduce leverage costs which lead to poor performance.

Keywords: *Capital Structure, Firm Size, Return on Assets, Return on Investment, Financial Performance*

1. Introduction

Given the dynamism that characterise today's business environment, the corporate financial performance of any business, not only plays the role of increasing its market value, but also leads towards the growth and prosperity of the economy as a whole (Mehari and Aemiro, 2013). Financial performance is a key concept in today's economic environment shaped by fast changes, stiff rivalry and globalization. The financial performance of a firm is represented by a firm's profitability, return on assets, and return on investment, sales turnover, earnings per share and dividend growth amongst others. The prominence of financial performance has of late gained momentum and has enticed the attention, interests and comments from researchers, the public, management of corporate entities and financial gurus. Nonetheless, it has received little attention especially in developing economies as indicated by a plethora and unprecedented challenges that has seen many Zimbabwean companies going under judiciary management because of poor financial performance (Hawawini, Subramanian and Verdin, 2003).

Despite the fact that ZESA holdings is a monopoly in the electricity industry and has no immediate contenders it has been financially underperforming. Even though electricity tariffs were adjusted such that a dollar buys a couple of units of electricity hence exacerbating consumers predicament off and the corporate better off, the power utility remains bankrupt. The situation was heightened in the hyperinflation and price control period which left the utility almost insolvent and unable to pay either its trade creditors (electricity imports) or to service its external debt. The holding utility has external obligation amounting to USD 426 million and about USD 98 million of trade creditor arrears for power imports (News Day October 18 2010). The adoption of multi-currency usage regime in 2009, receivables negotiations with large consumers and the rollout of prepaid metering program in 2010 helped the utility to earn revenues of about USD 40 million per month when contrasted with USD 6 million per month earned in the earlier year (2009). A top priority therefore was to increase electricity revenue collection by strengthening and intensifying the prepaid metering program and the general billing system to improve the liquidity of the utility (News Day October 18 2010). According to the financial gazette of 2013 the power utility, ZESA Holdings, was burdened with an outrageous debt amounting to US$800 million. This rendered the state's power supply position unsafe, and obstructed endeavours to improve the struggling economy. In its financial statements for the year to December 2013 debt for the power generation and supply group amounted to US$774.7 million. What makes it more stressing is that the group had defaulted on principal and interest reimbursements on all foreign loans amounting to US$750.2 million. The financial statements indicated that some of the organizations' debts have gone for almost two decades without being repaid and are long overdue (Financial Gazette, June 2014).

The utility and its subsidiaries has been incurring negative working capital for a long time, and this implies that the company does not have the ability to meet its current liabilities and long term liabilities as they fall due. The enormous ZESA obligation has resulted in a feeble statement of financial position, presenting a major challenge to the group which is unable to leverage on its balance sheet to raise funding to effectively maintain and restore its infrastructure. There is now a growing concern that the debt obligation could affect the utility's financial soundness. The situation also presents a major challenge in attracting funding, for planned capital projects. This would be difficult as it portrays a low credit rating for the utility. A stronger ZESA would help anchor confidence in Zimbabwe's power industry. The situation, however, has been exacerbated by government, the utility's sole shareholder, whose coffers are almost empty. Government has not been able to bailout ZESA to facilitate the utility's recovery. ZESA a strategic parastatal which government should ensure is operationally and financially sustainable has failed to end a run of operating losses and now needs more fiscal support than previously thought. However, there is a need to determine the causes for its underperformance and recommend solutions to improve its state. In literature there are however diverging views on the factors that determine financial performance. The study therefore seeks to establish the determinants of financial performance in the holding company.

Statement of the Problem: Previous literature has not yet come to a sound conclusion as to what factors determine financial performance. Hawawini, Subramanian and Verdin (2003) argue that external factors are major determinants of firm's financial performance. However, Opler and Titman (1994) are of the view that firm specific internal factors are the major determinants of financial performance. The relationship between micro environmental factors and firm financial performance in the power industry still remains unclear. It is still not certain whether micro environmental factors such as capital structure, liquidity and firm size are indeed the determinants of financial performance of the power utility, otherwise financial performance is a function of other external variables. Neither theoretical nor empirical studies to date have clearly revealed the actual relationship.

Research Objectives:
- To establish the relationship between capital structure and ROI.
- To determine the impact of size of the firm on ROA.
- To find out if liquidity affects profitability.

Research Questions:
- What is the impact of capital structure on ROI?
- Does firm size affect ROA?
- Is there a relationship between liquidity and profitability?

Statements of Hypothesis:
- H_0: There is a negative relationship between capital structure and financial performance.
- H_1: There is a positive relationship between capital structure and financial performance.
- H_0: There is no positive relationship between size of the firm and financial performance.
- H_1: There is a positive relationship between size of the firm and financial performance.
- H_0: Liquidity has a negative relationship with financial performance.
- H_1: Liquidity has a positive relationship with financial performance.

2. Literature Review

Financial Performance: Nirajini and Priya (2013) suggest that the concept to financial performance has diverse meanings depending on the stakeholder's point of view. All company stakeholders have different interests in the affairs of the same firm. Management is highly interested in excelling beyond their profit targets while company owners seek to maximize their wealth by increasing the firm's market value. For shareholders, the perception of financial performance is solidly founded on the ability to distribute dividends for re-investments. Credit organizations and commercial partners are concerned with the solvency and the stability of the firm, its ability to repay advances when they fall due. Authors further argue that employees value job security. To them, financial performance is the firm's ability to award them satisfactory wages. Finally the government considers that a firm which is able to meet its tax obligations is that which is financially performing well.

Firm Specific Determinants of Financial Performance: Hawawini, Subramanian and Verdin (2003) opine that financial performance is a function of multi variable determinants ranging from macro to micro environmental factors and this study centres on the firm specific determinants of financial performance. Internal factors that determine financial performance include among others, growth opportunities, capital structure, business risk, tangibility, firm size, corporate social responsibility and corporate governance (Muneer et al., 2017). To attain the objective of the study, researchers used capital structure, liquidity and firm size as determinants of financial performance.

Effects Capital Structure on financial performance: Capital structure is defined as how the business is financed, primarily the proportions of debt (leverage/gearing) and equity that a business uses to finance its assets, day to day actives and future growth (Jensen and Meckling, 1979; Iqbal et al., 2012). Nirajini and Priya (2013) define capital structure as how a firm is funded, thus it is a combination of both long term capital and short term liabilities. Nirajini and Priya (2013) did a research attempting to analyse the relationship between capital structure and financial performance during 2006 to 2010 financial years of listed trading companies in Sri Lanka. They extracted data from the annual reports of sample companies and used correlation and multiple regression analysis. The results revealed that there was a positive relationship between capital structure and financial performance. Maina and Kodongo, (2013) undertook a research to examine the relationship between capital structure and financial performance of firms listed at the Nairobi securities exchange. They used debt to equity ratio as one of the capital structure proxies used to measure leverage. The results showed that there was a negative but noteworthy relationship between debt to equity ratio and financial performance of firms listed at the Nairobi securities exchange. The results harmonize with the discoveries of Mwangi et al. (2014) who also attempted to find out the relationship between capital structure and financial performance. Authors found out that, there was a negative but significant relationship between debt to equity ratio and financial performance as measured by return on assets (ROA) and return on equity (ROE).

Effects of Firm Size on financial performance: The size of a firm is the volume and the diversity of production capacity and skill a firm holds or the amount and range of facilities a firm can offer concurrently to its consumers (Papadogonas, 2007). The size of a firm is a crucial aspect in defining the profitability of a firm in line with the concept of economies of scale found in the neo classical view of the firm. It suggests that items can be produced on much lower costs by bigger firms than with smaller firms. Amato and Burson (2007) argue that a positive relationship is expected between the size of the firm and financial performance. Papadognas (2007) conducted investigation on a sample of 3035 Greek manufacturing firms for the period 1995-1999 wanting to find out if there was a relationship between firm size and firm's profitability. He used regression analysis which showed that for all size classes, firms' profitability is positively influenced by firm size. Using a sample of 1020 Indian firms, Lee (2009) studied the relationship that firm size has with firms' profitability in US publicly held firms. An analysis on a sample of more than 7000 firms was performed. The results indicated that firm size is vital in explaining profitability. However, this relationship was nonlinear meaning that gains in profitability were lower for larger firms. Amato and Burson (2007) tested size-profit relationship for firms operating in the financial services sector. The authors examined both linear and cubic form of the relationship. With the linear specification in firm size, the results revealed negative influence of firm size on its profitability. However, this influence wasn't statistically significant.

Effect of Liquidity on Financial Performance: Begg and Rudiger (1991) define liquidity as the rate in terms of swiftness in which an asset can be converted back into money when ever needed. The most liquid asset of all is cash. Investors define liquidity as the ability to change an investment portfolio into cash with little or no loss in value. In accounting, liquidity is the ability of current assets to meet short term obligations. Many theories have been developed to explain the impact of liquidity on financial performance. Fambozzi and

Drake (2007) argue that a firm with high liquidity is considered to be financially strong nevertheless. The level of liquidity should be based on the ideal levels of liquidity of each and every company. This issue has been a subject of many theoretical and empirical studies. It should therefore be noted that although many scholars have researched on this issue diverging views have emerged. Liquidity however is important and necessary for company's existence and Teruel and Solano (2007) support this idea using the results they obtained from the Spanish small to medium enterprises. They studied effects on working capital management on Spanish small to medium enterprises' profitability and concluded that additional value can be created by reducing inventories and the number of day's accounts outstanding. Shortening the cash conversion cycle can also be a means to improve firm's profitability.

Working Capital Management: Block, Hirt and Short (2000) define working capital management as the administration of current assets and current liabilities of a firm. Working capital is also referred to as fluctuating capital of an organization because they change daily due to decisions by management. Working capital is made up of various components such as cash, inventories, receivables and payables. The success of a business is guaranteed by balancing the components of working capital (Gitman, 2009; Muneer et al., 2016). Filbeck and Krueger (2005) support this view when they argue that the success of a business depends on the ability of management to manage inventory, receivables and payables effectively. Horne and Wachowicz (2000) argue that keeping too much current assets can affect the profitability of the firm and keeping too little current assets may lead to failure in meeting the day to day needs of an organization.

Theoretical Literature: This segment discusses the various theories introduced by different scholars in trying to appreciate the determinants of financial performance. It also presents empirical findings from various scholars who carried out studies trying to validate the proposed theories.

Capital Structure Theories: Capital structure decision is one of the most important finance decisions a company has to undertake if a firm is to perform well in the industry. The relationship between capital structure and firms financial performance has been a confusing issue in the accounting and corporate finance literature since the invention of the Modigliani and Miller theorem in (1958).They are of the view that since under the perfect capital market there are no capital market frictions, taxes are neutral and if there is no bankrupt cost, then the value of the firm is independent of capital structure. From then a number of theories have been developed to give enlightenment on the relationship between capital structure of a firm and its financial performance. The theories developed are the Pecking order theory, Static Trade-off theory, signalling theory and agency cost theory among others. The decision made by a firm about its capital mix has major effects on its competitiveness in the industry it operates (Myers, 2001). Therefore, to maximize profits managers need to make right leverage decisions and companies should use an appropriate capital mix.

Modigliani-Miller Theorem: The capital structure theory was founded from the publications of Modigliani and miller in 1958 when they tried to explain the relationship between capital structure and financial performance. The theorem is an irrelevance proposition and argues that the value of the firm is not affected by how it is financed that is debt or equity. It offers circumstances in which financial performance is not affected by capital structure. Their study suggests that if firms are operating in a perfectly competitive market, firm's financial performance will not be related to capital structure. Thus they were suggesting that there is no significant relationship between a firm's capital structure and financial performance.

Trade-off Theory: The debate over the Modigliani - Miller theorem led to the invention of the trade-off theory model. The addition of tax to the first irrelevance proposition led to the observation of the benefits of debt as it saves earnings from taxes. The trade-off theory suggests that the ideal capital structure is the trade-off between the costs of leverage (that is financial distress and agency costs) and the advantage of debt thus, the interest tax shields (Brigham and Houston, 2004).

Pecking Order Model: The theory was developed by Myers (1984) and is believed to be an alternate theory to trade-off theory where a firm has perfect hierarchy of financing decisions. The pecking order theory is of the view that companies are financed following a hierarchy in order to reduce information asymmetry between the parties involved. The pecking order theory unlike the trade-off theory does not assume that there is a peak level of capital structure. Rather it assumes that firms follow a hierarchy when financing thus they begin with internal financing, then debt financing and finally equity financing when raising funds.

Agency Cost Theory: The agency cost theory was initially developed by Berle & Means (1932) and they argued that the gap between ownership and control was increasing due to the decrease in equity ownership. This leads to managerspursuing their own interests instead of maximizing shareholders wealth.It is the duty of top managers to run the company in a way that shareholders wealth is maximized by increasing cash flows and profits (Chang-AikLeng, 2004; Muneer et al., 2013). However managers always act the exact opposite of what they are expected of, thus they do not always maximize returns to shareholders (Jensen & Meckling, 1976).

The Signalling Theory: Spence (1973) developed the signalling equilibrium theory and suggests that healthy firms can be distinguished from underperforming firms by the signals they send to capital markets. The pecking order theory suggests that firms that are healthy and profitable prefer using internal funds to finance its capital structure. However it does not explain the importance of sending quality signals to the capital market. This theory therefore explains the performance of a firm using the signals it sends to the market (Ross, 1977; Muneer et al., 2013). This is only effective if the bad firm cannot copy the good firm by sending the same signal again. Ross (1977) suggests that debt can be used as a costly signal to separate good firms from underperforming firms, and health firms use more debt that unhealthy firms. As suggested by Poitevin (1989) to single out potential rivalry of new firms entering the industry debt can likewise be utilized. Harris and Raviv (1985) contend that calling firm's convertibles can be a kind of signal and Bhattacharya & Dittmar (1991) show that stocks repurchase is another sort of signal to represent firm value.

3. Methodology

Descriptive research design was employed as it allows the application of both the quantitative and qualitative data. The descriptive research design becomes more appropriate for this research because the study is quantitative in nature.Italso aids in finding solutions to the real causes of financial performance in ZESA holdings. The database was obtained from management, bulletins, audit reports on financial performance, annual reports and published financial statements of ZESA holdings from 2010 to 2014. The holding company constitutes of 5 subsidiaries. The questionnaires were completed by ZESA holding officials who occupied middle and top managerial positions. The researchers chose these respondents because they had information necessary for the study. Subsequently, they are believed to be financially literate and hence they are in a better position to understand the causes of the Power utility's financial performance. Ghauri & Gronhaung (2005) suggest that one of the major advantages of questionnaires is that the respondents can complete the questionnaire at their free time when they are relaxed with no pressure hence it reduces the pressure given by interviews which most respondents do not want. However, a total of 40 closed ended questionnaires were retrieved for the final data analysis representing a response rate of 67 percent.

The study used both probability and non-probability sampling methods. Purposive sampling was used as a non-probability sampling method to choose the respondents because it enabled the researchers to focus on particular characteristics of a population that was of interest. Probability sampling was also used because it enabled the target population to be represented in the sample and it is more accurate than non-probability sampling techniques. Saunders et al (2009) suggests that if the study is using statistical analysis probability sampling is ideal in order to have generalizability for the results. The researchers used stratified random sampling. The population was divided into stratas (Finance managers, Commercial managers, Sales managers, and senior Accountants) and from the strata; individuals were randomly selected to be in the sample. Using stratified random sampling ensured that all groups concerned are fairly represented in the sample. It also increased the chances of getting more precise information about the variable under study. Hair et al. (2006) supports the use of stratified random sampling because it ensures that the population is truly represented unlike using simple random sampling.

Reliability and validity: To ensure Reliability and validity the study used a sample size that was a true representation of the population. The questionnaires were pretested in order to assess the clarity of the questions and to remove irrelevant questions. This ensured that the data generated had the information required in the study. Questionnaires were then distributed to respondents who were well acquainted with the area under study hence the results produced were reliable. The study also made use of secondary data from Audited financial statements of the holding company. It means the data used was a true representation of the holding company. Data was also analyzed using statistical tools such as Eviews 8 and Stata version 13. This ensured the accuracy of results got and hence the data was reliable

Model for Data Analysis: The data collected was analyzed using simple linear regression model because it is more accurate and produces more reliable results. A statistical analysis of data was done using the Microsoft excel and STATA version 13.The purpose of using STATA was to test if financial performance of the power utility measured by ROI and ROA relates to capital structure decisions, firm size and liquidity measured by questionnaires (Keller, 2005).

Model Specification: The study adopted a model by Ongori (2013) who sought to examine the determinants of financial performance of commercial banks in Kenya. The model was modified by dropping the unnecessary variables on this study.
The model took a linear regression form as follows:

$$Y = \beta_0 + \beta_1 x_{1t} + \beta_2 x_{2t} + \beta_3 x_{3t} + \mu_t$$
$$Z = \beta_0 + \beta_1 x_{1t} + \beta_2 x_{2t} + \beta_3 x_{3t} + \mu_t$$
$$W = \beta_0 + \beta_1 x_{1t} + \beta_2 x_{2t} + \beta_3 x_{3t} + \mu_t$$

Where $Y =$ financial performance measured by ROA
$Z =$ financial performance measured by ROI
$W =$ financial performance measured by profitability
$x_{1t} =$ firm size
$x_{2t} =$ capital structure
$x_{3t} =$ liqudity
$\beta_0 =$ intercept
$\mu_t =$ error term

Dependent variables: The dependent variable in this study is financial performance. The study used Return on assets, Return on Investment and profitability as proxies for financial performance

Return on assets (ROA): ROA is a management ratio that measures profits against the assets used to generate revenue. It is considered a measure of efficiency as it measures revenue earned for every dollar invested in Assets. A firm with a good ROA means that it is translating its assets into profits effectively (Casteuble, 1997). It is calculated as follows
ROA = Net profit after tax /Total assets

Return on Investment (ROI): It is a performance measure used when evaluating the efficiency of an investment. It is a ratio that aids in decision making such as assert purchase decisions, approval and funding decisions for projects and programs of different types. The definition and formula of return on investment can be modified to suit the circumstances depending on what is included as returns and costs. For example to measure the profitability of a company the following formula can be used to calculate return on investment.

$$\text{Return on Investment} = \frac{\text{Net profit after interest and tax}}{\text{Total Assets}}$$

Profitability: It is a measure of a firm's ability to generate revenue as compared to the expenses it incurs. It is measured as below
Net profit margin = net income/net sales

Independent variables: Independent variables in this study are firm size, capital structure and liquidity and are explained below:

Firm Size: Most studies express firm size as a logarithm of total assets. This indicator is the most suitable measure of a firm's size as it has been validated by many scholars. Total assets are defined as the sum of net fixed assets, total intangibles, total investments, net current assets, and other assets. However Titman & Wessels (1988), state that there is a high correlation between the logarithm of total assets and the logarithm of sales (about 0.98), and therefore choosing any of them is a substitute to the other therefore for the purposes of this study total assets will be used as a measure of firm size

Liquidity: Liquidity is the ability of a firm to meet its short term obligations as and when they fall due (Horne and Wachowicz 2000).For a firm to run its day to day operations efficiently it should hold liquid assets. These include assets that can be easily converted into cash for example inventory and debtors. Cash is the most liquid assets of all. There are various ratios used to measure liquidity such as quick ratio and acid test ration but this research, uses the current ratio to measure liquidity. The ratio of current assets to current liabilities is the most suitable measure, as it truly reflects the firm's liquidity. It is a widely used ratio to reflect the firm's solvency. It is calculated as follows
Current ratio = current assets÷ current liabilities.

Capital Structure: It is defined as the financing mix of the business thus the proportions of debt to equity used to finance a firm’s operations (Fambozzi & Drake, 2007).it is calculated as follows
Capital structure = debt/ equity

4. Findings

Effect of liquidity on financial performance: The possible reasons why majority of the respondents agree that liquidity has an impact on financial performance is that there are many companies in Zimbabwe that went bankrupt and closed due to lack of liquidity, and for some it was failure in managing liquidity. A case can be got from TN holdings a Zimbabwean company that was promising to perform well but it grew too fast yet it had no funds to sustain its day to day operations. It later ended up in huge debt of which it failed to meet its debt obligations. Municipalities in Zimbabwe are failing to deliver proper service to communities due to lack of liquidity. This affirms the possible reason why the majority of the respondents said liquidity has an impact on the performance of the company. The results concur with the findings of Maina & Kondongo (2013) who studied the impact of liquidity on non-financial firms listed on Nairobi stock exchange. The findings from their results indicated that there was a significant positive relationship between liquidity and financial performance.

Effect of Firm Size on Financial Performance: However, 92% of respondents believe that firm size has an impact on profitability. They also argued that larger firms perform better than small companies due to advantages from economies of scale which lead to higher profits. Moreover, large companies have stronger negotiating power which enables them to get better financing options. Large firms usually diversify as a way of growth as in the case of ZESA holdings which diversified to telecommunication industry by opening a subsidiary company called Powertel.

Impact of Capital Structure on Financial Performance: The majority of the respondents showed that a firm’s financing option has no impact on financial performance. This concurred with the Modigliani-Miller irrelevance theorem of (1958) which states that a firm’s performance is not related to how it is financed. Subsequently 28 out of 36 respondents showed that capital structure has no impact on financial performance whilst 8 accepted that financial performance of ZESA holdings is affected by its capital structure. The possible reason why 78% of the respondents indicated that capital structure has no impact on financial performance is that what matters is not how the firm is financed but the strategies used by management to remain competitive in the market.

Pearson Correlation Matrix: The study used Pearson correlation to test for collinearity among independent variables used in this study. This is so because collinearity can misrepresent the real relationship between independent variable and dependent variable. Ghauri & Gronhaug (2005) argue that variables are considered to be correlated when there is a linear relationship between them.

Table 1: Pearson Correlation Matrix Table

Variable	Firm Size	Capital Structure	Liquidity	ROA	Profitability	ROI
Firm Size	1.000					
Capital Structure	-0.0834	1.000				
Liquidity	0.2854	0.5762	1.000			
ROA	0.3545	-0.0572	0.7802	1.000		
Profitability	0.1105	-0.1725	0.5284	0.9304	1.000	
ROI	0.2237	0.0298	0.8050	0.9791	0.9546	1.000

Source: Secondary Data Results

Indications from the table shows that liquidity positively correlate with ROA, profitability and ROI by 0.7802, 0.5284 and 0.8050 with the highest correlation being found between ROI and liquidity. Firm size positively correlate with ROA, profitability and ROI by 0.3546, 0.1105 and 0.2237 with the highest correlation being found between ROA and firm size. ROA and profitability are however negatively correlated with capital structure by -0.0572 and -0.1725 whilst capital structure positively correlates with ROI by 0.0298. The results show that an increase in capital structure leads to a decrease in financial performance because obligations to pay dividends and interests will rise also. An increase in liquidity and firm size increases the financial performance of the utility.

Regression Results: Regression Results as Measured by ROA; the equation shows 0.047 as the intercept or constant. It is the expected mean when all X variables are equal to zero. It further explains that a percentage increase in capital structure and firm size leads to a decrease in financial performance by 4.5% and 6.7% respectively. Whilst an increase in liquidity leads to an increase in financial performance by 2.5%.Regression Results as Measured by Profitability; the equation shows 0.266 as the intercept or constant. It is the expected mean when all X variables are equal to zero. It further explains that a percentage increase in capital structure and firm size leads to a decrease in financial performance by 5.9% and 35% respectively when measured by profitability. Whilst an increase in liquidity leads to an increase in financial performance by 2.8%. Regression Results as Measured by ROI*; t*he equation indicated 1.3616 as the intercept or constant. It is the expected mean when all X variables are equal to zero. It further explains that a percentage increase in capital structure and firm size leads to a decrease in financial performance by 39% and 186% respectively when measured by ROI, whilst an increase in liquidity leads to an increase in financial performance by 23%.

Discussion of the Results-Capital Structure: The results show that capital structure has a negative and significant impact on the financial performance of ZESA holdings. The results are shown by negative regression coefficients of -0.0455496, -0.0597873, -0.3921915, t static of -84.12, -17.72, -22.16 and P values of 0.000 for ROA, Profitability and ROI. This means that an increase in capital structure leads to a decrease in financial performance. This study concurs with the trade-off theory which argues that as debt increases above the optimum level performance decreases because of distress costs which are paid out of profits. It also validates the null hypothesis which assumed a negative relationship between capital structure and financial performance. Theoretical literature has no conclusion on the relationship between capital structure and performance, the Trade-off theory suggests that profitable firms should borrow more so as to enjoy the benefits brought about by using debt. The pecking order theory argues that profitable firms do not need to borrow funds for financing but firstly use internal funds for financing thus it assumes firms prefer internal financing over external financing. The results from this study concurs with the views of Jensen (1976) who argues that higher levels of debt leave little or no funding for managers to use for investments which ultimately leads to poor performance.

Additionally, Harris & Raviv (1991) propose that the negative relationship between capital structure and financial performance may be because of the substantial interest costs identified with debt obligation. They suggested that if a firm has high leverage and its rate of profit for the organization's benefits is lower than the debt obligation then the firm will yield low profits. The reason for a negative relationship in this study is maybe ZESA holdings uses more debt than that which is ideal for financing which then is influencing its performance negatively. Chang-Aikleng (2004) further argues that debt burdens are caused by a higher leverage ratio. This then hinders the firm to undertake more risky investments even if they are profitable.

This is consistent with the agency cost theory which states that if firms are highly leveraged lenders discourage investment in risky investments even if they are profitable because they want to make sure the firm does not default paying its debt obligation. This ultimately leads to highly leveraged firms underperforming.

Firm Size: The results from this study shows that firm size has a negative and significant relationship with performance of ZESA holdings with coefficients of -0.06731, -0.3584 and -1.866 measured by ROA, profitability and ROI respectively. The researchers therefore accept the null hypothesis which says there is a negative relationship between firm size and financial performance. This result concurs with what other theories of the firm suggest. They argue that large firms have a negative relationship with performance because they are controlled by managers who end up pursuing their own goals instead of maximizing profits. Therefore profit maximization might be replaced by their managerial utility maximization. ZESA is a large company and there exists separation of ownership from the shareholders as there are many managers running the utility and hence this might also be the reason why there is a negative relationship between the size of ZESA holdings and its performance. This is consistent with the studies of Gordard, Tavakoli & Wilson (2005) who studied the relationship between firm size and profitability in four European countries for the period of 1993-2001. Their results indicate that an increase in firm size leads to a decrease in profits.The results from the study contends the findings of Vijayakumar & Tamizhselvan (2010) that did a research in South India analyzing the impact of firm size on the profitability of manufacturing firms. The findings present a positive relationship between firm size and profitability.

Liquidity: The regression results show a significant positive relationship between the performance of ZESA holdings and liquidity with coefficients of 0.0251887, 0.0281544, 0.2399972 and t –statistic of 129.13, 23.17 and37.64 for ROA, profitability ROI respectively. The coefficients indicate that an increase in liquidity leads to an increase in financial performance. The possible reason for this positive relationship is that ZESA has been effectively managing its debtors. Failure to comply with their repayment conditions leads to disconnection of electricity and no funds would be tied up. It has also introduced a prepaid metering system in which one has to pay first before they are given electricity units; this has significantly improved the liquidity position of the firm. The results are consistent with the studies of Shama & Kumar (2011) who also found a positive relationship between liquidity and performance. This then means that if ZESA manages its liquidity well performance will increase. The researchers therefore accept the alternate hypothesis that there is a positive relationship between liquidity and financial performance.The results from this study on the impact of liquidity also oppose the findings of Mathuva (2009) who investigated the effect of working capital measured by cash conversion cycle on profitability. His findings show a significant negative relationship between cash conversion cycle and profitability.

5. Recommendations

From the discoveries and conclusion, the study suggests that there is requirement for ZESA holdings to expand their current assets in order to increase their liquidity as it was found that an expansion in current proportion unquestionably influence financial performance positively. The research further suggests that there is requirement for ZESA holdings to increase their operating cash flow, through lessening of their credit reimbursement period keeping in mind the end goal to decidedly impact their financial performance. The holding company should also reduce their debt to equity ratio as the results pointed out that an increase in capital structure negatively impact the financial performance of the utility. This should be done by financing its investments using retained earnings and equity so as to reduce the costs associated with debt. This will help improve the performance of the utility as no debt obligations will have to be paid yearly. With equity dividends may not be declared in times of low profits. This concurs with the pecking order theory which states that firms should use internal funds first as a way of financing so as to reduce costs associated with external financing. In concurrence, Brigham & Hoston (2004) on their empirical findings on the performance of Ethiopian companies, they found out that firms that used internal funds and equity were more profitable that those that used debt.

The results of the impact of firm size as measured by total assets showed that an increase in firm size leads to a reduction in financial performance. This may be due to the fact that ZESA is not operating at full capacity.

Therefore an increase in assets would be an expense as the assets will remain idle and will not be used to generate revenue. The firm is therefore advised to increase its capacity utilization so as to maximize revenue generated from already existing assets. If the assets are obsolete it is advised to dispose and buy new assets which are advanced and cost efficient. This will help increase generation of income in the firm. The firm should also retrench incompetent management and those pursuing personal interest it will ensure that revenue generated will be used for fulfilling the interests of the company only. The recommendation is consistent with what Goddard, Tavakoli & Wilson (2005) suggested when they investigated the impact of firm size on financial performance. They found out that as firms grow their performance declines. They therefore suggested that large firms should dispose assets that a lying idle so as to reduce costs associated with holding idle assets. They also suggested that firms should strive by all means to operate at full capacity thus improving profitability of the firm.

The study also found that as liquidity increased financial performance also increased. ZESA holdings should therefore engage in activities that increase liquidity in the firm such as reducing their cash conversion cycle; this will reduce the probability of the firm's cash being tied up in inventory and debtors. They should put prepaid metering system to companies which are their maximum demand customers. These firms owe ZESA a lot of money and if they are put on prepaid metering they will have to purchase electricity first before consumption and hence liquidity will increase which will ultimately leads to higher levels of performance. These results concurs with the findings of Arnold (2008) who argues that firms that sell their good on cash basis perform better than those who offer credit as their money is always tied up in debtors.

Areas for further research: This study sought to establish the effects of micro environmental factors on the financial performance of ZESA holdings a monopoly in the electricity industry. The study recommends a further study on the effects of micro environmental factors of other companies in the power industry such as fuel companies and generator companies. Since there is no wide spread literature in Zimbabwe concerning firm specific determinants and financial performance in the power industry. Future studies can use other determinants for the same indicator and re assess the relationships.

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Weak Form Market Efficiency of the Johannesburg Stock Exchange: Pre, During and Post the 2008 Global Financial Crisis

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Abstract: The importance of the efficiency of the stock market cannot be underestimated, given the critical role the stock market plays through brings together those who demand and supply development finance. It is against this background that this study focused on analysing the weak form efficiency of the Johannesburg Stock Exchange for the period 2005 to 2016 utilising several methodologies which include unit root tests, autocorrelation test and variance ratio. The empirical results from unit root tests indicated that the null hypothesis of a random walk could not be rejected. The same also applied to the autocorrelation test and variance ratio test except for a few instances. Thus irrespective of the few instances which represent the inefficiency of the market, to a greater extent there is evidence of the market being weak form efficient. Thus even though the work done towards ensuring that the market is efficient is commendable, there is need to ensure that further steps are taken to enhance the efficiency of the market. This is, to some extent suggest that investors are able to make abnormal profits from the market.

Keywords: *JSE, unit root tests, autocorrelation test, variance ratio*

1. Introduction

Background to the Study: The efficiency of the stock market is considered to be a very important aspect in the financial markets considering the role that it plays in the mobilisation and allocation of development capital to the broader economy. Fama (1970) defines market efficiency as the speed with which security prices reflect all the available information. There are three different forms of market efficiency: the weak form, semi-strong form and the strong form. The weak form emphasises the role of the historical information in the determination of stock prices. In the semi-strong form, the emphasis is on the role played by the historical information as well as all the publicly available information. Lastly with regards to the strong form, security prices will be reflecting the historical, publicly available as well as privately available information. In this regard there is no possibility of someone 'beating' the market. Studies which have examined the importance of the stock market highlight the important role it plays in promoting economic growth (Fama, 1970; Yartey and Adjasi, 2007; Ovat, 2012; Owusu, 2016). These studies highlight that an efficient and liquid stock market is able to efficiently generate and allocate development capital to productive sectors of the economy. This therefore enhances the prospects of a long-term growth of the economy. There are a number of studies which have highlighted the importance of the stock market efficiency in general. These studies include Bonga-Bonga (2012); Appiah-Kusi and Myenyah (2003) and Simons & Laryea (2005), though conclusions have been varied. There is another strand of literature which has highlighted the extent to which a well-established and integrated stock market may propagate a financial crisis. These studies include Jethwani and Acthuthan (2013), Todae and Lazar (2012), Abraham, Seyyed & Alsakran (2002). These studies highlight that the stock market may transmit a crisis from one country to another.

It is interesting to note that South Africa is one of the countries in Africa that has a well-established financial system. According to Strate (2015) South Africa's stock market (Johannesburg Stock Exchange) was ranked number 12th in terms of financial market development amongst 140 countries, ranked second for regulation of securities exchanges, ranked sixth for availability of financial services and lastly ranked eighth for soundness of banks. This has played a very important role in the growth of the country. A number of steps have been carried out to enhance the efficiency of the JSE. This includes the establishment of the Stock Exchange News Service (SENS) in August 1997 with the aim of facilitating the release of information which is regarded as price sensitive. However, despite all the developments which have taken place in the stock market, the efficiency of the stock market is still a cause of concern. The report in the Business tech of the 10th of April 2017 highlight that the exchange was investigating suspicious trading activities after the removal of Mr Gordhan as the finance minister which may suggest that there are investors who may make abnormal profits from the exchange. Thus, this study examined the efficiency of the JSE, specifically focusing on whether the market is efficient in the weak form. Unlike the previous studies which have analysed this kind of relationship, the study contributes to a greater extent by analysing three different periods, namely before, during and after the Global financial crisis.

2. Literature Review

The bulky of the available literature on the efficiency of the stock market is concentrated mostly in developed countries due to the development of stock markets in those countries as compared to the emerging and developing countries. The majority of these studies largely utilised serial correlation and runs tests. However, recently the variance ratio test has also featured as a method of analysis in the literature. Of the studies carried out in developed countries, Worthington and Higgs (2004) carried out a study on 16 developed countries and four emerging economies utilising four methods of analysis. The results indicated that in developed European markets the random walk hypothesis cannot be rejected. This implies that investors cannot predict and profit from previous prices of the stock market. In a separate study, Lima and Tabak (2004) found that the random walk hypothesis could not be rejected for the Hong equity market, whilst for Singapore it was rejected.

On the other hand, studies carried out on emerging stock markets presents mixed results. There are studies which have established both the presence and absence of the random walk (Appiah-Kusi & Menyah, 2003; Smith & Ryoo, 2003). On the other hand, there are studies which have established the presence of the random walk (Gilmore & McManus, 2003; Abrosimova et al., 2005; Tas & Dursonoglu, 2005). Lastly there are those studies which have established the absence of the random walk (Akinkugbe, 2005; Okpara, 2010). Chung (2006) highlight that the mixed results on emerging economies are not surprising considering that emerging economies stock markets are not efficient as compared to developed countries stock markets. There are a number of challenges with emerging economies such as high levels of illiquidity and thin trading activity (Khaled and Islam, 2005). Emerging economies also lack market depth, there is high information asymmetry coupled with a weak infrastructure.

In South Africa there are also a number of studies which have been carried out examining the efficiency of the stock market (Affleck-Graves, 1975; Smith and Jefferies, 2002; Magnusson and Wydick, 2002; Appiah-Kusi & Menyah, 2003; Mabhunu, 2004; Cubbin et al., 2006; Jefferies & Smith, 2008; Smith, 2008; Bonga-Bonga and Mwamba, 2011; Bonga-Bonga, 2012; Van Heerden et al., 2013). The studies also established mixed results. The difference in results was largely attributed to the different methodologies used in the studies. Van Heerden et al. (2013) highlight that there are methodological issues with the previous studies in that they assumed a linear relationship which is not always the case. The majority of these studies established that the JSE is weak form efficient. This study improves on the previous studies through employing more than one technique under three different periods.

3. Data and Methodology

The data utilised in the study was obtained from the Bloomberg database. The data comprises of the FTSE/JSE All Share Index, FTSE/JSE Financials, FTSE/JSE Resources and FTSE/JSE Industrials data from 2005 to 2016 in monthly series. Three different sample periods were utilised in the study, namely before the Global financial crisis (2005– 2007), during the crisis (2008–2011) and after the crisis (2012–2016).

Theoretical Framework: The study is based on the random walk hypothesis which is attributed to Fama (1965). The author suggests that the random walk can occur under two hypotheses. The first hypothesis suggests that changes in stock prices should be independent of each other. The second hypothesis suggests that price changes should be subjected to some probability distribution. Based on the random walk model, the model used in the study is estimated in equation 1 as follows:

$$R_t = \ln(\frac{P_t}{(P_t - 1)}) x100 \qquad (1)$$

Where R_t is the market at month *t*. P_t is the market index at month *t* and P_{t-1} is the stock market index at month t_{-1}. The model suggests that the price of the stock does reflect all the available information which includes the previous value of the stock so that investors cannot make any abnormal profits through technical analysis. However, in the event that such a condition does not hold, that will be an indication of inefficiency in the market.

Estimation Techniques: Several methods have been utilised to examine the random walk model in a bid to obtain robust results. These methods include the unit root tests, the autocorrelation functions, and the variance test ratio. These tests are discussed in this section.

Unit root Tests: Random walk requires time series to comprehend a unit root and the unit roots tend to be non-stationary or tend to have a stochastic trend indicating a random walk. The unit root test is normally tested using three methodologies, namely the Dickey-Fuller test, Phillips-Perron, and Kwiatkowski, Phillps, Schmidt and Shin (KPSS). The unit root test is constructed to determine whether the series contain a unit root or is non-stationary. The study utilised the Augmented Dickey Fuller test and the Phillips-Perron test. The Augmented Dickey-Fuller tests utilise the following models (Alsayed, 2012):

$$\Delta P_t = \beta p_{t-1} + \gamma_j \sum_{j=1}^{k} \Delta P_{t-j} + \varepsilon_t \qquad (2)$$

$$\Delta P_t = \mu + \beta p_{t-1} + \gamma_j \sum_{j=1}^{k} \Delta P_{t-j} + \varepsilon_t \qquad (3)$$

$$\Delta P_t = \mu + \alpha_1 t + \beta p_{t-1} + \gamma_j \sum_{j=1}^{k} \Delta P_{t-j} + \varepsilon_t \qquad (4)$$

Where Δ represents the first difference and P_t represents the variable being tested for unit roots, (μ) represents the constant,β denotes the regression coefficients. The model incorporates the lagged term of the dependent variable represented by *k, t* is the trend, *j* is the lag length determined by the Akaike Information Criterion, α_1 is the estimated coefficient for the trend, and ε_t represents the random error term which is normally distributed with a mean of 0 and variance σ^2 which assumed to be white noise. The hypothesis to be tested by the model can be stated as follows:

H_0: $\beta = 0$ (Non-stationary or unit root)
H_1:$\beta < 0$ (Stationary or no unit root)

The equation (2) is the first model, which does not include a constant and trend terms. The second model includes a constant term (μ), and the third model includes both a constant (μ) and the trend term ($\alpha_1 t$).
The second methodology used to test the unit root test is the Phillips-Perron (PP) non-parametric model established by Phillips and Perron (1988) in order to control the problem of serial correlation in the error terms when testing the unit root test. The authors constructed a non-parametric test with the following specification:

$$\Delta y_{t-1} = \alpha_0 + \gamma y_{t-1} + e_t \qquad (5)$$

Autocorrelation Function: For robust results, autocorrelation tests were also employed in this study. The autocorrelation is used for checking randomness in a data set. This randomness is determined by computing autocorrelations for data values at varying time lags. If random, such autocorrelations should be near zero for any and all time-lag separations. Therefore, if the autocorrelation is non-random, it means the autocorrelation is non-zero significant (Brooks, 2002). A mean reversal in the data series indicates that autocorrelation is negative, and that the null hypothesis is accepted, whereas if autocorrelation is positive the null hypothesis will not be accepted (Campbell et al., 1997). The equations estimated in estimating the correlation functions are specified as follows:

$$p(k) = \frac{Cov(rt, rt-k)}{\sqrt{Var(rt)}\sqrt{Var(rt-k)}} = \frac{Cov(rt, rt-k)}{Var(rt)} \tag{6}$$

$$P(k) = \frac{\frac{1}{N-k}\sum_{n=k+1}^{N}(Z_t - \overline{Z})(Zt - k - \overline{Z})}{\frac{1}{N}\sum_{n=1}^{N}(Z_t - \overline{Z})^2} \tag{7}$$

Variance Ratio Test: The variance ratio tests were also employed in the study so as to distinguish dependency of stock return series. It is used to test the heteroscedasticity and autocorrelation of the return series. Heteroscedasticity occurs when the variance of the error terms differ across observations. It is important to note that the null hypothesis of the white test is called homoscedasticity and if the null hypothesis is rejected, one can conclude that there is heteroscedasticity which represents a random walk process in the time series. Therefore, if there is heteroscedasticity of the residual, it suggests that the variance ratio test is not the same between price changes which is a basic assumption of the random walk hypothesis (Brooks, 2002). The hypothesis to be tested is stated as follows:
H_0: No heteroscedasticity (meaning the series is homoscedastic)
H_1: There is heteroscedasticity (no homoscedasticity of variance)

The null hypothesis will be accepted if the probability value (p-value) is greater than 0.05 or 5% significant level and the conclusion is that there is heteroscedasticity in the errors of the series.

4. Results

This section reports on the empirical evidence of the study, taking into account the analytical framework and model estimation techniques presented in the previous section. The first part of the analysis focuses on describing the descriptive statistics of the data and then describes the unit root tests using the augmented Dickey-Fuller test and Phillips-Perron, autocorrelation and lastly the variance ratio test.

Descriptive Statistics: Table 1(a) and 1(b) presents descriptive statistics for monthly returns of the Johannesburg Stock Market indices (FSTE/JSE All-Share, FTSE/JSE Resources and FTSE/JSE Financials) for the period 2005–2016. This includes mean, maximum, minimum values and standard deviation, whereas N represents the number of observations. The descriptive statistics indicates that on average the All share market is volatile as depicted by the standard deviation. On the other hand, Table 1(a) also shows that resources the resources market is less volatile as compared to the financials.

Table 1(a): Descriptive statistics (2005–2016: January–March)

Series	Mean	Maximum	Minimum	Standard deviation
Jalsh	34334.23	54440.43	18096.54	10610.41
Resources	26138.34	40194.63	13397.41	5093.625
Financials	26347.00	46641.91	13068.88	8905.352

Source: Author's computation based on Eview 9

Table 1(b): Descriptive statistics (2005–2016: January–March)

Series	Skewness	Kurtosis	Jarque-Bera	Jarque-Bera probability
Jalsh	0.466147	1.936431	10.41849	0.855466
Resources	-0.120924	3.290312	0.743603	0.689491
Financials	0.819099	2.453899	15.53083	0.250424

Source: Author's computation

Table 1(b) shows that all the series employed in the study are normally distributed as indicated by the Jarque-Bera test of 1041849 (prob 0.855466), 0.743603 (prob 0.689491) and 1.553083 (prob 0.250424) respectively. The returns for All Share (0.466147) and Financials (0.819099) are positively skewed, indicating a probability of frequent small increases whereas for Resources returns are (-0.120924) negatively skewed, indicating a greater probability of a large decrease in returns than rises. The kurtosis in all indices returns are not large, ranging from 1.936431 for All Share (JALSH) to 3.290312 for Resources.

Unit Root Tests: The Augmented Dickey-Fuller and Phillips-Perron tests were utilised in order to test the null hypothesis of the unit root. The results are reported in table 2(a, b, c and d) for Augmented Dickey Fuller and table 3 (a, b, c and d) for Phillips Perron.

Table 2(a): Augmented Dickey-Fuller test results for the full period

Series	**ADF (Level Series)**		
	None	**Constant**	**Constant and Trend**
FTSE/JSE ALSH	1.9719	-0.5542	-1.7907
Resources	-0.4094	-2.1067	-2.3979
Financials	1.7348	-0.0397	-1.4124
ADF (First Difference Series)			
	None	Constant	Constant and Trend
FTSE/JSE ALSH	-12.153***	-12.620***	-12.579***
Resources	-11.3015***	-11.2561***	-11.3826***
Financials	-11.1700***	-11.4106***	-11.4698***

Notes: ***, 1% level **, 5% level *, 10% levels
Sources: Author's computation

Table 2(b): Augmented Dickey-Fuller test results sample period (2005–2007)

Series	**ADF (Level Series)**		
	None	**Constant**	**Constant and Trend**
FTSE/JSE ALSH	2.4153	-1.4046	-1.7687
Resources	1.7573	-1.3381	-3.1791
Financials	0.8628	-1.7553	-1.2939
ADF (First Difference Series)			
	None	Constant	Constant and Trend
FTSE/JSE ALSH	-3.780***	-4.4604***	-4.4395***
Resources	-4.931***	-3.5146***	-3.2087***
Financials	-4.593***	-4.5951***	-4.6724***

Notes: ***, 1% level **, 5% level *, 10% levels
Sources: Author's computation

Table 2(c): Augmented Dickey-Fuller test results sample period (2008–2011)

Series	**ADF (Level Series)**		
	None	**Constant**	**Constant and Trend**
FTSE/JSE ALSH	0.2976	-1.0365	-1.6754
Resources	-0.4867	-1.7197	-1.6859
Financials	0.2149	-1.1421	-2.4169
ADF (First Difference Series)			
	None	Constant	Constant and Trend
FTSE/JSE ALSH	-7.1211***	-7.0317***	-7.2076***
Resources	-6.8531***	-6.8069***	-6.8919***
Financials	-7.6076***	-7.5271***	-7.7199***

Notes: ***, 1% level **, 5% level *, 10% levels
Sources: Author's computation

Table 2 (d): Augmented Dickey-Fuller test results sample period (2012–2016)

Series	ADF (Level Series)		
	None	**Constant**	**Constant and Trend**
FTSE/JSE ALSH	1.5876	-1.3440	-1.7952
Resources	-1.3262	-0.8596	-1.4970
Financials	1.5802	-1.3669	-1.7848
ADF (First Difference Series)			
	None	Constant	Constant and Trend
FTSE/JSE ALSH	-8.5718***	-9.2116***	-9.2579***
Resources	-7.7129***	-7.8542***	-7.8155***
Financials	-6.9014***	-7.2941***	-7.3086***

Notes: ***, 1% level **, 5% level *, 10% levels
Sources: Author's computation

The results from unit root test indicate that for all the sub-periods as well as the full period the null hypothesis of a unit root could not be rejected at level series. However, at first difference the results indicate that all the series are stationary. Thus the null hypothesis of a unit root could not be rejected at first difference. These results highlight that there is evidence of a random walk based on the ADF test. However, the unit root tests were also undertaken utilising the Phillips-Perron (PP) test. Almudhaf and Alkulaib (2013) highlights that the PP test is an improved version of the ADF as it takes into account the problem of autocorrelation.

Phillips-Perron test results: The Phillips-Perron test was also conducted so as to obtain robust results. The results of the PP test are discussed in the next section.

Table 3(a): Phillips-Peron test results for the full period

Series	PP (Level Series)		
	None	**Constant**	**Constant and Trend**
FTSE/JSE ALSH	2.1215	-0.5042	-1.8171
Resources	-0.4538	-2.4829	-2.6496
Financials	1.8399	-0.0366	-1.3586
PP (First Difference Series)			
	None	Constant	Constant and Trend
FTSE/JSE ALSH	-12.107***	-12.540***	-12.502***
Resources	-11.352***	-11.312***	-11.413***
Financials	-11.169***	-11.423***	-11.490***

Notes: ***, 1% level **, 5% level *, 10% levels
Sources: Author's computation

Table 3(b): Phillips-Peron test results sample period (2005–2007)

Series	PP (Level Series)		
	None	**Constant**	**Constant and Trend**
FTSE/JSE ALSH	2.5478	-1.4317	-1.9619
Resources	2.0279	-1.3508	-3.2278
Financials	0.9108	-1.7555	-1.2939
PP (First Difference Series)			
	None	Constant	Constant and Trend
FTSE/JSE ALSH	-3.8045***	-4.4121***	-4.4394***
Resources	-4.9401***	-5.9827***	-5.6992***

Financials	-4.593***	-4.5858***	-4.6682***

Notes: ***, 1% level **, 5% level *, 10% levels
Sources: Author's computation

Table 3(c): Phillips-Peron test results sample period (2008–2011)

Series	**PP (Level Series)**		
	None	**Constant**	**Constant and Trend**
FTSE/JSE ALSH	0.2442	-1.3083	-1.7899
Resources	-0.5001	-1.9606	-1.9121
Financials	0.2929	-1.1421	-2.3259
PP (First Difference Series)			
	None	Constant	Constant and Trend
FTSE/JSE ALSH	-7.0875***	-7.0083***	-7.1682***
Resources	-6.8388***	-6.7941***	-6.8873***
Financials	-7.6076***	-7.5271***	-7.7056***

Notes: ***, 1% level **, 5% level *, 10% levels
Sources: Author's computation

Table 3(d): Phillips-Peron test results sample period (2012–2016)

Series	**PP (Level Series)**		
	None	**Constant**	**Constant and Trend**
FTSE/JSE ALSH	1.9790	-1.3824	-1.5653
Resources	-1.3199	-0.9052	-1.5646
Financials	1.7975	-1.3872	-1.8043
PP (First Difference Series)			
	None	Constant	Constant and Trend
FTSE/JSE ALSH	-8.4966***	-9.1864***	-9.8400***
Resources	-7.6863***	-7.8120***	-7.7774***
Financials	-6.9014***	-7.3688***	-7.4582***

Notes: ***, 1% level **, 5% level *, 10% levels
Sources: Author's computation

The PP test results for all the periods are consistent with the ADF tests. These results indicate that at level series the null hypothesis of a unit root could not be rejected. However, at first difference the series is stationary. The results indicate that for both the ADF and the PP tests all that was required was to difference the indices to make them stationary. As in Chung (2006) the results shows that there is evidence of random walk in all the series utilised in the study. These results are consistent with Smith and Jefferis (2002) and Magnusson and Wydick (2002). However, Chung (2006) highlight that the existence of a random walk may not necessarily imply that returns are unpredictable. In other words, the unit root tests results are not able to detect predictability in returns. Thus further tests were carried out which takes this into account.

Autocorrelation function: The results from autocorrelation functions are reported from table 4 (a) to table 4(d). Positive autocorrelations indicate that returns can be predicted in the short-horizon. On the other hand, negative autocorrelation highlight that there is mean reversion. In other words, negative autocorrelation is in line with an efficient market.

Table 4(a): Autocorrelation test results

	All Share	Resource	Financials
	AC	AC	AC
P_1	-0.077	-0.029	-0.056
P_2	0.120	-0.009	0.219
P_3	0.090	-0.022	0.015
P_4	0.086	0.185	0.063
P_5	0.009	0.043	-0.079
P_6	-0.055	-0.045	-0.039
P_7	0.045	0.013	-0.048
P_8	-0.097	0.052	-0.099
P_9	0.022	0.129	0.019
P_{10}	-0.111	-0.096	-0.069
P_{11}	0.070	0.047	0.162
P_{12}	-0.120	-0.029	-0.045
Q-stat	**Q-stat**	**Q-stat**	**Q-stat**
Q(1)	0.7454*(0.388)	0.1043** (0.530)	0.3942* (0.747)
Q(2)	2.5777*(0.276)	0.1145*** (0.039)	6.5136* (0.944)
Q(3)	3.6284*(0.304)	0.1742***(0.088)	6.5427* (0.982)
Q(4)	4.5976*(0.331)	4.6360* (0.133)	7.0554* (0.327)
Q(5)	4.6075*(0.466)	4.8832* (0.164)	7.8665* (0.430)
Q(6)	5.0073*(0.543)	5.1488* (0.233)	8.0707* (0.525)
Q(7)	5.2803*(0.626)	5.1715* (0.301)	8.3739* (0.639)
Q(8)	6.5457*(0.586)	5.5423* (0.287)	9.6913* (0.698)
Q(9)	6.6128*(0.677)	7.8167* (0.372)	9.7428* (0.553)
Q(10)	8.3073*(0.599)	9.0786* (0.406)	10.400* (0.525)
Q(11)	8.9935*(0.622)	9.3818* (0.232)	14.019* (0.587)
Q(12)	11.004*(0.529)	9.4982* (0.282)	14.299* (0.660)

Notes: ***, 1% level **, 5% level *, 10% levels
Sources: Author's computation

Table 4 (b): Panel A autocorrelation test results for the full period and Ljung Box Q-statistics sample period (2005–2007)

	All Share	Resource	Financials
	AC	AC	AC
P_1	-0.044	-0.025	-0.246
P_2	-0.140	-0.099	0.016
P_3	-0.109	0.124	-0.236
P_4	-0.084	-0.108	0.057
P_5	0.192	-0.198	0.073
P_6	0.051	0.241	-0.017
P_7	0.089	-0.030	0.034
P_8	-0.258	-0.188	-0.203
P_9	-0.031	-0.025	-0.032
P_{10}	-0.083	-0.022	-0.098
P_{11}	0.031	-0.104	0.188
P_{12}	0.018	0.109	-0.013
Q-stat	**Q-stat**	**Q-stat**	**Q-stat**
Q(1)	0.0515* (0.821)	0.0175* (0.200)	1.6452* (0.895)
Q(2)	0.6046* (0.739)	0.2977* (0.438)	1.6529* (0.862)
Q(3)	0.9550* (0.812)	0.7526* (0.346)	3.3146* (0.861)
Q(4)	1.1754* (0.882)	1.1177* (0.491)	3.4146* (0.891)

	All Share	Resource	Financials
Q(5)	2.3824* (0.794)	2.4071* (0.610)	3.5897* (0.790)
Q(6)	2.4712* (0.872)	4.4148* (0.731)	3.5999* (0.621)
Q(7)	2.7626* (0.906)	4.4482* (0.820)	3.6421* (0.727)
Q(8)	5.3627* (0.718)	5.8243* (0.731)	5.2457* (0.667)
Q(9)	5.4038* (0.798)	5.8498* (0.809)	5.2881* (0.755)
Q(10)	5.7086* (0.839)	5.8708* (0.838)	5.7190* (0.826)
Q(11)	5.7536* (0.889)	6.3879* (0.765)	7.4112* (0.846)
Q(12)	5.7705* (0.927)	7.0090* (0.829)	7.4202* (0.857)

Notes: ***, 1% level **, 5% level *, 10% levels
Sources: Author's computation

Table 4 (c): Panel B autocorrelation test results for the full period and Ljung Box Q-statistics sample period (2008–2011)

	All Share	Resource	Financials
	AC	**AC**	**AC**
P_1	-0.008	0.032	-0.107
P_2	0.102	0.184	-0.078
P_3	0.180	0.072	0.011
P_4	0.101	0.036	0.131
P_5	-0.094	-0.246	0.050
P_6	-0.110	-0.078	-0.106
P_7	-0.019	-0.093	0.047
P_8	-0.207	-0.260	0.065
P_9	-0.130	-0.005	0.017
P_{10}	-0.171	-0.139	-0.180
P_{11}	0.010	0.104	0.035
P_{12}	-0.089	-0.069	-0.086
Q-stat	**Q-stat**	**Q-stat**	**Q-stat**
Q(1)	0.0036* (0.952)	0.0525* (0.819)	0.5764* (0.448)
Q(2)	0.5407* (0.763)	1.7815* (0.410)	0.8903* (0.641)
Q(3)	2.2316* (0.526)	2.0555* (0.561)	0.8966* (0.826)
Q(4)	2.7785* (0.596)	2.1242* (0.713)	1.8163* (0.770)
Q(5)	3.2652* (0.659)	5.4392* (0.365)	1.9561* (0.855)
Q(6)	3.9457* (0.684)	5.7772* (0.449)	2.5902* (0.858)
Q(7)	3.9661* (0.784)	6.2797* (0.507)	2.7152* (0.910)
Q(8)	6.4932* (0.592)	10.283* (0.246)	2.9640* (0.937)
Q(9)	7.5172* (0.583)	10.285* (0.328)	2.9811* (0.965)
Q(10)	9.3396* (0.500)	11.486* (0.321)	4.9930* (0.892)
Q(11)	9.3455* (0.590)	12.185* (0.350)	5.0697* (0.928)
Q(12)	9.8636* (0.628)	12.495* (0.407)	5.5592* (0.937)

Notes: ***, 1% level **, 5% level *, 10% levels
Sources: Author's computation

Table 4 (d): Panel C autocorrelation test results for the full period and Ljung Box Q-statistics sample period (2012–2016)

	All Share	Resource	Financials
	AC	**AC**	**AC**
P_1	-0.264	-0.149	-0.049
P_2	0.060	0.174	-0.133
P_3	-0.002	0.015	0.012
P_4	-0.161	-0.116	-0.050
P_5	0.034	-0.114	0.082
P_6	0.035	0.012	0.003
P_7	-0.131	-0.149	-0.050
P_8	0.107	0.061	0.186
P_9	0.180	0.008	-0.008
P_{10}	-0.084	-0.027	-0.249
P_{11}	0.124	0.177	0.020
P_{12}	-0.105	0.020	-0.004
Q-stat	**Q-stat**	**Q-stat**	**Q-stat**
Q(1)	4.6098*** (0.032)	1.4762** (0.224)	0.1575* (0.691)
Q(2)	4.8551*** (0.088)	3.5086** (0.173)	1.3417* (0.511)
Q(3)	4.8553* (0.183)	3.5239** (0.318)	1.3520* (0.717)
Q(4)	6.6527* (0.155)	4.4612** (0.347)	1.5250* (0.822)
Q(5)	6.7350* (0.241)	5.3771** (0.372)	2.0053* (0.848)
Q(6)	6.8222* (0.338)	5.3874** (0.495)	2.0061* (0.919)
Q(7)	8.0716* (0.326)	7.0032** (0.429)	2.1919* (0.948)
Q(8)	8.9210** (0.349)	7.2827** (0.506)	4.7690* (0.782)
Q(9)	11.366** (0.251)	7.2875* (0.607)	4.7739* (0.854)
Q(10)	11.909** (0.291)	7.3433* (0.693)	9.5720* (0.479)
Q(11)	13.119** (0.286)	9.8177** (0.547)	9.6033* (0.566)
Q(12)	14.005** (0.300)	9.8493* (0.629)	9.6048* (0.651)

Notes: ***, 1% level **, 5% level *, 10% levels
Sources: Author's computation

The results in table 4 (a) highlight that for the entire period on average the autocorrelation functions are negative which suggest that the market if efficient. However, there are periods in which the autocorrelation functions are positive. The autocorrelation coefficient results indicate that even though the market to a greater extent is regarded as efficient, there are periods in which the returns are predictable. These results corroborate the findings of Hubbard and O'Brien (2012), Hassan et al. (2006). These authors highlight that emerging markets exhibit strong serial correlation highlighting the imperfections inherent in these markets.

Variance Ratio Test: The results of the variance ratio test are reported on table 5(a) to table 5(d). The variance test was conducted for various lags (2, 4, 8 and 16) for each index. The variance of the returns are represented by VR(q). On the other hand Z(q) and Z*(q) represents the statistics of the variance ratio under the assumption of homoscedasticity and heteroscedasticity respectively.

Table 5(a): Panel A: Full period 2005–2016 variance ratio test

Time series	N		2	4	8	16
JALSH	124	VR(q)	0.9251	1.0827	1.3479	1.3361
	124	Z(q)	-1.3720	-0.2934	0.2565	0.4081
	124	Z*(q)	-0.5910	0.3692	1.019	0.6803
Resources	124	VR(q)	0.1028	0.2008	0.3067	0.4353
	124	Z(q)	-0.0854	1.3206	1.1592	0.5225
	124	Z*(q)	-0.4916	0.8345	0.9548	0.4995

Time series	N		2	4	8	16
Financials	124	VR(q)	0.9775	0.9608	1.2134	1.5317
	124	Z(q)	-0.3247	-0.4786	0.3857	1.0016
	124	Z*(q)	-0.2005	-0.1926	0.6411	1.0820

Notes: ***, 1% level **, 5% level *, 10% levels
Sources: Author's computation

Table 5(b): Panel B: 2005–2007 variance ratio test results

Time series	N		2	4	8	16
JALSH	124	VR(q)	0.8744	0.4987	0.6879	1.0591
	124	Z(q)	-0.6151	-1.3126	-0.5167	0.0658***
	124	Z*(q)	-0.5249	-1.2250	-0.5537	0.0818***
Resources	124	VR(q)	0.7008	0.3363	0.3669	0.3595
	124	Z(q)	-1.4654	-1.7378	-1.0484	-0.7127
	124	Z*(q)	-1.7318	-2.0715	-1.2437	-0.9095
Financials	124	VR(q)	0.9828	0.9390	1.1322	1.0001
	124	Z(q)	-1.4654	-1.7378	-1.0484	-0.7127
	124	Z*(q)	-0.0659	-0.1389	0.2186	0.0002***

Notes: ***, 1% level **, 5% level *, 10% levels
Sources: Author's computation

Table 5(c): Panel C: 2008–2011 variance ratio test results

Time series	N		2	4	8	16
JALSH	124	VR(q)	0.9784	1.2663	1.7562	1.0876
	124	Z(q)	-0.1479	0.9760	1.7527	0.1365
	124	Z*(q)	-0.1445	0.9604	1.7582	1.7582
Resources	124	VR(q)	1.0117	1.3505	1.5125	0.8872
	124	Z(q)	0.0803***	1.2847	1.1880	-0.1755
	124	Z*(q)	0.0864***	1.0983	1.0195	-0.1601
Financials	124	VR(q)	0.9121	0.8506	1.0618	0.9113
	124	Z(q)	-0.6023	-0.5471	0.1433	-0.1380
	124	Z*(q)	-0.5743	-0.5345	0.1340	-0.1341

Notes: ***, 1% level **, 5% level *, 10% levels
Sources: Author's computation

Table 5(d): Panel D: 2012–2016 variance ratio test results

Time series	N		2	4	8	16
JALSH	124	VR(q)	0.7573	0.7114	0.5519	0.6869
	124	Z(q)	-1.9257	-1.2242	-1.2021	-0.5645
	124	Z*(q)	-1.6598	-1.0842	-1.1061	-0.5509
Resources	124	VR(q)	0.8653	1.0098	0.936768	1.1484
	124	Z(q)	-1.0686	0.0417***	-0.1696	0.2677
	124	Z*(q)	-0.9740	0.0388	-0.1655	0.2756
Financials	124	VR(q)	0.9716	0.8555	0.8094	0.6142
	124	Z(q)	-0.2248	-0.6129	-0.5113	-0.6955
	124	Z*(q)	-0.1803	-0.4915	-0.4084	-0.5879

Notes: ***, 1% level **, 5% level *, 10% levels
Sources: Author's computation

The results from the variance ratio as reported on table 4.4.1 (a) indicate that the null hypothesis of a random walk cannot be rejected at all lags since all the associated probability tests are greater than 10% level of significance. On table 4.4.1 (b) the null hypothesis could not be rejected also except for JALS at lag 16 and for financials under Z*(q). These results suggest that even though to a greater extent the JSE is efficient in the weak form, there are periods in which investors are able to predict returns. The same applies in table 4.4.1 (c) under resources at lag 2 and lastly on table 4.4.1(d) at lag 4. The overall findings, based on the variance ratio test, even though there are few periods in which the test statistics were significant, indicate that the indices have become more efficient over time. These results are consistent with Hubbard and O'Brien (2012).

5. Conclusion

The study examined the weak form market efficiency of the JSE, specifically looking at the extent to which the market follows the random walk model. The study was motivated by the important role which the stock market plays in mobilising and allocating development finance which is a very important driver of economic growth. Unlike the previous studies in the area, three estimation techniques were utilised in examining the efficiency of the JSE. Firstly, the unit root test results indicate that the null hypothesis of a random walk could not be rejected at first difference series. However, for the autocorrelation tests and variance ratio tests the results are mixed. This suggests that even though the market is efficient in the weak form, to a greater extent, there are some periods where the market is not efficient and investors are able to exploit and come up with arbitrage portfolios based on trading rules. The key issue which emerges from the study is that the efficiency of the stock market is of paramount importance to the broader economy. However, even though the effort which the JSE authorities have done towards ensuring efficiency of the market is commended, much still needs to be done. It is therefore recommended that there should be further implementation of polices targeted at curbing insider trading and market regulation so as to enhance the efficiency of the stock market. There is need to also improve market conduct and financial market infrastructure. These approaches are likely to enhance the efficiency of the stock market.

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The Most Effective Strategies to Curb Corruption and Improve Water Service Delivery in Zimbabwe

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Abstract: The main objective of this study was to find the most effective strategies to curb and eradicate corruption and improve water service delivery. The study also aimed to present the type, causes, and effects of corruption. A mixed-methods questionnaire survey design was used to collect quantitative and qualitative data. 220 questionnaires were distributed to providers and users of water services in Zimbabwe. 149 respondents returned the completed questionnaires. Data were analysed using descriptive statistics and content analysis. The Analysis of Variance was used to test the significance of mean scores. The study revealed that corruption is highly prevalent in Zimbabwe. The main factors that cause corruption in the water sector are poor governance, economic hardship, and weak accountability. Corruption leads to economic stagnation and poor foreign investments. Organisations such as the Zimbabwe National Water Authority must improve systems and structures, enhance the auditing process, and educate staff on good ethical standards and effective governance to effectively fight against corruption and improve service delivery. They must also put in place strong governance and accountability frameworks and work closely with communities and policy makers to eradicate corruption. The availability of water should be the same across all the suburbs, and the country needs to adjust its water bill rates in line with regional rates. Service providers should make use of mobile technology to promote citizenry participation in sharing ideas and making decisions on water sustainability. This study reaffirms the need to fight corruption and improve water service delivery.

Keywords*: Corruption, water service delivery, bribery, governance, economic growth*

1. Introduction

Corruption is one of the most prevalent and least confronted challenges faced by public service institutions particularly in developing countries (Davies, 2004). Tizor (2009) observed that corruption in Zimbabwe had been normalisedin the public sector mainly due to economic problems. Civil servants go to work not only because they are paid wages but also because of the corrupt activities that enhance their paltry income. In water services, Sithole (2013) found that a client may pay a council worker in the form of a bribe to speed up a water reconnection or bribe to stop water disconnection for non-payment. As a result, the council is deprived of the funds that it could use to improve its service delivery.Bribery is one of the most common forms of corruption in the water sector. The water sector is characterised by several complex factors such as high demand for water services and monopoly, which increase the risk of corruption (Selamawit, 2015).Corruption has been getting worse over the years in Zimbabwe. The country was ranked 154 out of 175 countries by the Corruption Perception Index (CPI) in 2016 (Transparency International, 2016). The major problem of corruption is that it cripples the developmental efforts of African countries (Ijewereme, 2015). Seligson (2006) highlighted that corruption has serious effects on economic growth and democratic development. Corruption prevents potential investors from investing, distorts public expenditure, increases the cost of running businesses, the cost of governance and diverts resources from the poor to the rich among many other consequences (Ijewereme, 2015). Park & Blenkinsopp (2011) posited that reducing corruption must, therefore, be of urgent priority to governments.

The main aim is to present empirical findings regarding the most effective strategies to curb and eradicate corruption and improve water service delivery. Also, the study aims to present the type, causes, and effects of corruption in the water sector. The study will also create greater awareness of corruption, improve transparency and accountability, and emphasise the need to tackle this pathological phenomenon. The most notable studies to highlight the need to research on corruption within the water sector include Hove & Tirimbori (2011), Makanyeza et al. (2013), and Sithole (2013). This current study is of great importance because it is conducting a research specifically on corruption in water services in Harare and aims to make specific recommendations that deal with corruption.

Background to Study: The World Bank (1997) defined corruption in detail as an illicit behaviour by officials in the private and public domain in which they improperly and unlawfully enrich themselves by abusing their job positions and misusing public power entrusted to them. This often leads to the embezzlement of funds, theft of corporate or public property, kickbacks in public procurement, nepotism as well as corrupt practices such as bribery, and extortion (Svensson, 2005). Van der Merwe (2006) argued that the abuse of public power is viewed as behavioural or structural. The behaviouraldimension refers to corruption committed by individuals or group of individuals through bribery, fraud and other forms of corrupt behaviour.This is referred to as personally corrupt behaviour because it benefits individuals, normally at the cost of an organisation (Banfield, 1975). The structural dimension refers to social, economic structures and processes in which corruption occurs (Van der Merwe, 2006). State enterprises and parastatals facilitate service delivery to both the public and corporate institutions and thus, influence economic activities and growth in various sectors (Moyo, 2012). According to Nsereko & Kebonang (2005), aservice delivery of water, electricity, health, education, and housing is crucial to the growth and development of African economies. However, Makanyeza et al. (2013) discovered that corruption and lack of accountability and transparency were among the main causes of poor service delivery. Selamawit (2015) argues that lack of awareness, commitment, and understanding to apply anticorruption methods are some of the obstaclesfaced in fighting against corruption in the water sector. Attempts to improve water service delivery in Zimbabwe have been unsatisfactory mainly because of the water shortages that are prevalent across the country. Quite often, most suburbs in Harare do not have running water on weekends dueto either shortages or repairs (Nherera, 2016).

Water service availability is better in western suburbs than in eastern suburbs in Zimbabwe (Hove & Tirimboi, 2011). Zimbabwe National Water Authority (ZINWA) argues that a substantial amount of unpaid water bills by individuals, mines, agricultural estates, government departments and local authorities are crippling the operations of the parastatal and preventing equitable access to essential water by all (Muvundusi, 2015). The Zimbabwean government's efforts to provide clean and efficient water supplies have been marred by allegations of corruption and lack of transparency. To date, debates on how best to improve efficiency and reliability of water supplies, while curbing corruption, are still raging on (Sithole, 2013). Selamawit (2015) suggested the involvement of the community, the private sector, and civil societyto collectively fight corruption and minimise the monopolistic nature of the service.

Research Questions: Defined questions make it possible to find evidence-based solutions to the problem of corruption in the water services (Davies, 2011). Question 1 is the main research question. Questions 2 to 5 are the sub-questions that this study is attempting to answer.

- What are the most effective strategies to curb and eradicate corruption and improve water service delivery?
- Which types of corruption are the most common in the water sector?
- What factors or circumstances influence corruption in the water sector?
- What are the effects or consequences of corruption?

2. Literature Review

Theories of Corruption: Corruption is characterised by a range of factors such as economic and social and is the result of dynamic relationships between individuals, groups, institutions, the private sector, the public sector and the state (Department for International Development, 2015). It is for this reason that Breit et al. (2015) believed that undertaking more theoretical reflections on corruption can help to understand the meaning of it as well as findbetter ways to eradicate it. Marquette & Peiffer (2015) also suggested that anti-corruption interventions need to better understand, from a theoretical perspective, why corruption can be usedby people as a problem-solving approach, particularly in weak institutional environments. According to Persson et al. (2013), the principal-agent theory explains the conflict that arises between principals who look after the public interest and agents who engage in corrupt activities. Booth (2012) observed that with this theory, agents undermine the principal's interest in pursuit of their interests through corruption. A principal is unable to monitor an agent effectively, normally due to lack of information. Chakrabarti (2000) tested the agent-based theory of corruption and found that corruption at the individual level leads to corruption at a societal level.

The predominant theoretical approach to corruption has always been based on a principal-agent model discussed above. More recently, corruption has been viewed from a collective action perspective, whereby all stakeholders including bureaucrats, rulers, and citizens are participants of corruption (Department for International Development, 2015). These stakeholders weigh the rewards and costs of corruption such that, for example, a citizen may be corrupt because the costs of not being corrupt or acting in a more principled manner far outweigh the benefits (Persson et al., 2013). A collective action theory purports that the same corrupt behaviour and decisions made by individuals occur but within a wider society. When corruption occurs collectively, it becomes systemically pervasive and difficult to monitor and control as people may lack the will to act (Marquette & Peiffer, 2015). The public choice theory is when an official makes a choice to act corruptly, and the organisational culture theory is when a group culture and aspects of the workplace encourage an official to act corruptly (De Graaf, 2007).

Forms of Corruption: Corruption exists in many forms at various levels of service delivery. Corruption normally occurs in the form of embezzlement, procurement scam, extortion, bribery, fraud, kickback, gifts and tips, nepotism and tribalism in recruitment, appointment, or promotion, misappropriation of public funds, institutionalized, and leaking tender information to friends and relatives (Nsereko & Kebonang, 2005; Ijewereme, 2015; Selamawit, 2015). In Zimbabwe, Makumbe (2011)found that bribery is the most common form of corruption whereas extortion is the least form of corruption.Bribery is payment in the form of money or kind given to or taken by state officials engaged in corrupt activities (Selamawit, 2015). Davies (2004) found that clients were paying bribes directly to employees from as little as US$2 for a repair request to US$22 for a new connection. Seligson (2006) argues that some bribe payers may not be victims as they claimsince they willingly participant in such transactions to advance their aims.

Causes of Corruption: Corruption is a complex and multi-faceted phenomenon characterised by a range of economic, political, administrative, social and cultural factors as shown in Table 1. Centralisation of power, poor governance, weak accountability and incomplete economic liberalisation enable and foment corruption (Mills, 2012; Department for International Development, 2015). Treisman (2000) established some hypotheses which state that corruption is typically lower in democratic and, or economically developed countries, and countries with a freer press and more vigorous civic associations. Corruption is higher in countries with greater political instability. Furthermore, corruption is typically lower in countries with common law systems. According to Saki & Chiware (2007), Zimbabwe's legal system is made up of common law as well as customary and legislation law.In that light, we will establish whether the hypotheses by Treisman (2000) hold in the case of Zimbabwe.Goel & Nelson (2008) also found that countries using acommon-law system seem to have lower corruption. This is because a legal framework provides a systematic set of auditing as well as severe repercussions for people involved. They also discovered that economic prosperity and democratic tendencies in a country leads to lower corruption.

Table 1: Factors which optimise the occurrence of corruption

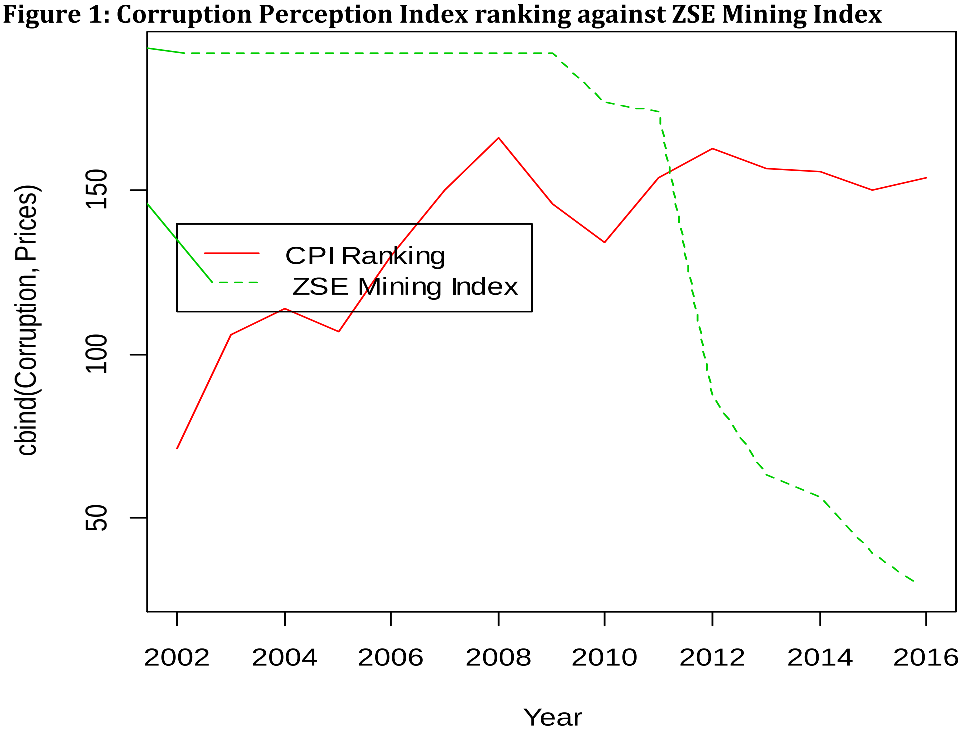
Poor governance	Weak accountability
Individual beliefs	Low salaries
Addiction of alcohol/drugs/gambling	Democratic countries
Employee dissatisfaction	Legal system
Work pressures	Political instability

Source: Treisman (2000); Mills (2012) and Department for International Development (2015)

Causes of Poor Service Delivery: Makanyeza et al. (2013) discovered that corruption and lack of accountability and transparency were among the main causes of poor service delivery. The other major causes were councillor interference, political manipulation, poor human resource policy, lack of employee capacity, inadequate citizen participation, substandard planning, and poor monitoring and evaluation. Mtisis (2008) found that the underlying causes hindering the provision of clean water to Zimbabwe's urban areas include corruption, economic stagnation, political interference, population growth, dilapidation in water infrastructure, and not following water quality standards and laws. Of importance were the findings by Hove & Tirimbori (2011) who found that poor water service delivery was mainly due to low production and high non-revenue water, which stood at almost 40 percent. In addition, lack of a satisfactory regulatory board which can deal with residents' complaints on water issues affecting them is a major factor. Lastly, water bills in Zimbabwe were higher when benchmarked against those of developed and developing countries, which made some residents struggle to pay their monthly bills.

Effects of Corruption: The common effects of corruption in the water sector are worsening poverty, reduced productivity, poor quality of service and lack of accountability and transparency (Selamawit, 2015). Corruption undermines the provision of clean water and effective water service delivery (Mtisis, 2008) and stalls progress towards an inclusive society, both economically and socially (Nsereko & Kebonang, 2005). According to Hove & Tirimbori (2011), poor water service delivery in Harare saw residents getting supplied with only a third of the total demand, consequently forcing residents to use unhygienic strategies such as drinking water from unsafe boreholes. In the past, unrelenting water problems have brought the cholera epidemics that led to many people dying from using contaminated water. Corruption is a stumbling block to Zimbabwe's development as well as Southern African Development Community (SADC) region's development. Corruption in one country exacerbates all the other problems that beset the region. Corruption has a negative impact on the well-being and welfare of the general populace (Nsereko & Kebonang, 2005), as its effects include the abuse of national resources, underdevelopment, high unemployment and poor standard of service delivery (Ijewereme, 2015).

Figure 1: Corruption Perception Index ranking against ZSE Mining Index



Authors' figure using data from ZSE and Transparency International (2016)

Figure 1 shows a steep downward trend for the Zimbabwe Stock Exchange (ZSE) Mining Index and a relatively upward trend for Zimbabwe's corruption rating. As corruption has been getting worse, the index has also been increasingly performing badly. Zimbabwe was ranked 71 in 2002, 107 in 2005, 146 in 2009 and 154 in 2016 for corruption. On the other hand, the yearly averaged price of the ZSE Mining Index was US$192 in 2009, US$87 in 2012, US$56 in 2014 and US$28 in 2016. We could not compute the prices of the index from 2002 to 2008 because they were quoted in Zimbabwean dollars and part of that period had hyperinflation. We argue that corruption is one of the main factors influencing the underperformance of the index because investors become bearish and risk averse in sectors or countries with rampant corruption. Our argument is supported by the findings ofTransformation Index (2016) who found that the mining sector in Zimbabwe is particularly affected by high-level corruption and patronage. Selamawit (2015) postulated that corruption in the public service prevents both domestic and foreign investors from investing in an economy. This is because corruption erodes trust and confidence of a nation (Seligson, 2006). Davies (2004) also found that corruption stifles development opportunities available to developing countries as investments become less productive and the cost of capital increases.

Strategies to Curb Corruption & Improve Service Delivery: The fight againstcorruption requires well-coordinated efforts and teamwork from all stakeholders, including the community and civil society groups (Selamawit, 2015). According to Mills (2012, p.1), "social psychology, organisational theory, social theory, business ethics, criminology and behavioural economics, among others, all have something to offer the corruption prevention endeavour". Employing information technology to decrease discretion, engaging non-governmental organisations (NGOs) and communities to monitor projects (Davies, 2004), ensuring customers participate in the decision-making process and improving systems and structures are some of the strategies that can be used to reduce incidences of corruption (Selamawit, 2015). Ncube & Maunganidze (2014) concurred by suggesting that maintaining good ethical standards and good governance should make leaders in parastatals positively turn the fortunes of the country. Countries need leaders of substance who possess good leadership qualities and unbridled commitment to public good. If leaders are not trustworthy, this will cascade to the bottom of the organisation and lead to a decline in the business as well as the country's economy. The management of Harare City Council (HCC) rewarded itself hefty salaries and allowances despite poor water service delivery, a poor economic performance (Ncube & Maunganidze, 2014) and paltry employee income (Zhou, 2012).

Auditing can help to curb corruption because auditors can take appropriate action if they find facts which give them areason to believe that a corrupt activity amounting to an irregularity has been committed. The possible effects of the corrupt activity will also be documentedin the audit report (Labuschagne & Els, 2006). Unfortunately, Bussell (2010) found that policy initiatives intended to reduce corruption are least likely to be implemented in countries that have high levels of corruption. Dealing with corruption is one way of improving water service delivery. The other primary strategies to improve service delivery include timely response to client complaints, partnership with the community, citizen participation in the affairs of the local authority, ensuring that clients pay their bills on time, strategic public service planning, solid human resource policy, outsourcing services, improving accountability, segregation of duties between councillors and management of the local authorities (Makanyeza et al., 2013).

3. Methodology

Research Method: This study used a mixed-methods questionnaire survey design to collect both qualitative and quantitative data. Two questionnaires with semi-structured (closed and open-ended) questionswere designed for service providers and service users within the water service sector in Zimbabwe. The qualitative approach aims to give a detailed description whereas the quantitative approach aims to explain what is observed with regards to corruption (Leedy & Ormrod, 2013).

Sampling Method& Sample Size: A total of 110 questionnaires were distributed to clients, and 110 questionnaires to ZINWA staff based on anon-response rate of 10 percent. Clients were carefully chosen using the probability method known as stratified random sampling where each person of the target populace had anequal chance of being selected (Kelly et al., 2003). The sampling method used to select service providers was the non-random, purposive sampling method. Purposive sampling was used to purposely provide diverse perspectives and data on the issue of corruption from experienced ZINWA staff (Cresswell, 2007). The inclusion criteria for service users was that they should be aged over 20 years, homeowners or tenants responsible for paying water bills, and English literate. The inclusion criteria for staff was that they should be working for ZINWA, aged over 20 years, English literate, and with no formal disciplinary against corruption.The sample size of clients (n = 77) gave a response rate of 70 percent. The sample size of service providers (n = 72) gave a response rate of 65.4 percent. One of the disadvantages of using a questionnaire is that it can have low response rate (Synodinos, 2003). In this study, the relatively good response rates might have been a result of the simplicity of the questionnaires. Also, the potential problem of low response rates was initially addressed by clearly explaining the nature and purpose of the research to participants. Participants were also told of the estimated time to complete the questionnaire to encourage participation.

Data Collection: Aquestionnaire survey was used to collect rich data and assess the thoughtsand experiences of participants (Bryman & Bell, 2007). This data collection instrument had both close-ended Likert-type questions and open-ended questions targeted at staff and customers. This instrument collected both numerical and categorical data from respondents. The following literature played a crucial role in formulating the research questions and survey questions (Davies, 2004; Nsereko & Kebonang, 2005; Seligson, 2006; Hove & Tirimboi, 2011; Mills, 2012; Makanyeza, et al., 2013; Ncube & Maunganidze, 2014; Department for International Development, 2015; Ijewereme, 2015; Selamawit, 2015).

Data Analysis: The Likert-type questions are best analysed using descriptive statistics. Descriptive statistics were created by calculating a composite score (mean) for central tendency from the five Likert-type items (1 = strongly agree to 5 = strongly disagree) (Likert, 1932). The Analysis of Variance (ANOVA) test was used to test whether mean scores were significantly different from 3, the score for neutrality (Boone Jr & Boone, 2012). A mean score below 3 and significantly different from 3 meant that the overall view of respondents was not neutral and was either closer to 1 for strong agreement or closer to 2 for just in agreement. A mean score above 3 and significantly different from 3 meant that the overall view of respondents was not neutral and was either closer to 4 for just in disagreement or 5 for strongly in disagreement. The qualitative data wereanalysed using content analysis. Content analysis is an approach which objectively and systematically identifies and summarises written or spoken communication into fewer content categories (Steve, 2001).

Ethical Considerations: The study was approved by the University of South Africa (UNISA) Research Ethics Committee and by the management of Zimbabwe National Water Authority. Participants were provided with a questionnaire and a clear verbal explanation of the purpose of the study. They were not asked for their names to ensure confidentiality. Participants were assuredofconfidentiality and integrity and that they had the right to decline to participate or withdraw from the study at any time. Consent of staff and service users was implied from thereturn of the completed questionnaire. Other ethical principles adhered to in this study include honestly reporting data, methods, and results and avoiding careless errors. As emphasised by Resnick (2015), fairness, honesty, trust, respect, accountability, and making rational decisions were observed throughout the study.

4. Results & Discussion

Profile of Respondents: The profile of the service users and service providers with regards to gender, age and qualifications are summarised in Table 2.Most clients (55 percent) were males, and 45 percent were females. Much of service providers (64 percent) who participated in the survey were male, and 36 percent were female.Most of the clients (31 percent) who participated in the survey were in the group aged 20-29 years, and the same proportion was in the group aged 30-39 years. About 21 percent of surveyed clients were aged 40-49 years, and 17 percent were above 50 years of age. The results indicate that majority of the service users are in their early adulthood. About half of the service providers surveyed were aged 30-39 years, 23 percent were aged 40-49 years, 14 percent were aged 20-29 years, and 11 percent were above 50 years of age. The results indicate that majority of the staff at ZINWA are in their young and middle adulthood.

Table 2: Main respondent characteristics (valid responses and %)

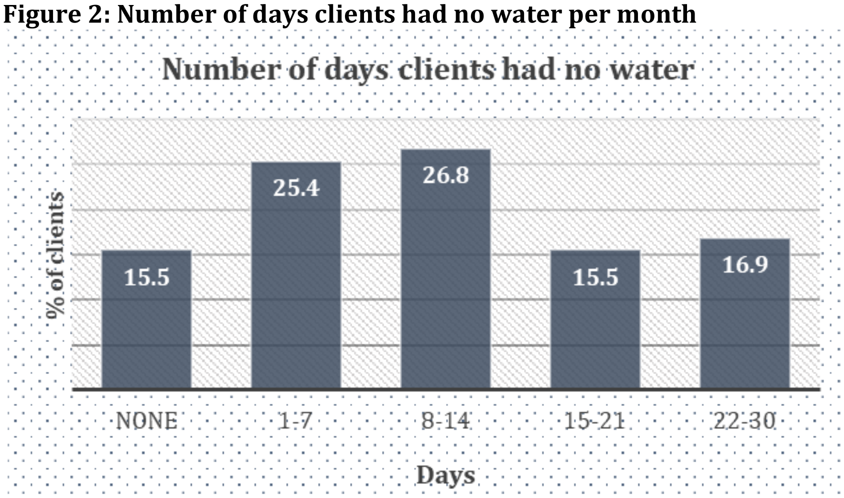
	Clients		Service Providers	
	Frequency (*n*)	**Percentage (%)**	**Frequency (*n*)**	**Percentage (%)**
Gender				
Male	42	55	46	64
Female	35	45	26	36
Age				
20-29	24	31	10	14
30-39	24	31	37	51
40-49	16	21	17	23
Above 50	13	17	8	11
Qualifications				

High school	13	17	4	6
Diploma	27	35	22	31
Bachelor's degree	32	42	29	40
Master's degree	5	6	17	24

Most of the surveyed clients (42 percent) had a first degree, 35 percent had a diploma, 17 percent had completed high school, and 6 percent had a Master's degree. Many of the service providers (40 percent) had a first degree, 31 percent had a diploma, 24 percent had a Master's degree, and 6 percent had completed high school. The results indicate that employees of ZINWA aremore educated as evidenced by more postgraduate studies, which is important in providing good quality service to the public.

Availability of Water: High-density suburbs such as Glen View, Budiriro, and Ruwa have poor availability of water. The results in Figure 2 show that majority of clients (27 percent) did not have water for 8-14 days, 25 percent did not have water for 1-7 days, 17 percent did not have water for 22-30 days, and 16 percent did not have water for 15-21 days per month. Overall, the average number of days that households did not receive water was 11 days per month. A minority of clients (15 percent) reported that they were not experiencing any water cuts.

Figure 2: Number of days clients had no water per month



Causes and Effects of Corruption: Clients and service providers were asked to indicate the extent to which they agreed with the statement that each identified risk factor contributes to a high level of corruption. As shown in Table 3, the ANOVA test revealed that clients were strongly in agreement with the suggestion that poor governance, economic hardship, weak accountability and low salaries contribute to high levels of corruption in the water sector since the mean scores were less than 2 and significantly below 3 (p value=0.000). The ANOVA test also revealed that service providers strongly agree that poor governance, weak accountability, economic hardship and employee discontent promote high corruption in the water sector since the mean scores were less than 2 and significantly below 3 (p value=0.000).

Table 3: Views of respondents on factors that contribute to corruption

	Clients		**Service Providers**	
	Mean of Likert scores	***p-value on statistical difference from 3***	***Mean of Likert scores***	***p-value on statistical difference from 3***
Poor Governance	1.60	0.000	1.76	0.000
Economic hardship	1.62	0.000	1.65	0.000
Weak Accountability	1.87	0.000	1.66	0.000
Low Salaries	1.90	0.000	2.14	0.000
Political Instability	2.31	0.000	2.24	0.000

Employee Dissatisfaction	2.32	0.000	1.87	0.000
Work Pressure	3.62	0.000	3.32	0.011

Clients also concurred that political instability and employee dissatisfaction contribute to high levels of corruption since mean scores from the ANOVA test were significantly less than 3. Service providers were also in agreement that low salaries and political instability contribute to high levels of corruption since mean scores from the ANOVA test were significantly less than 3. Clients and service providers disagreed with the suggestion that work pressure contributes to high levels of corruption since mean values from the ANOVA test where found to be significantly above 3.The results of this study are in line with the findings by the Department for International Development, (2015), Treisman (2000) and Mills (2012), who also found that poor governance, low salaries, economic hardship, weak accountability, political instability and employee dissatisfaction are factors that enable the occurrence of corruption.Porkess (2011) explained that work pressure does not necessarily lead to a corrupt culture, a reasoning which is shared by participants in this study. However, the author further asserts that work pressure can be a critical first step to corrupt behaviour if other conditions permit so. Once corrupt behaviour takes hold, it is difficult to control it and will have disruptive consequences to service delivery and the business.

Service providers were asked to indicate the extent to which they agreed with the statement that each identified effect of corruption had the suggested effect. Mean scores less than 2 and p-values much less 0.05 from the ANOVA test revealed that service providers strongly agreed with the view that corruption has a negative effect on economic growth, potential investors, costs of running businesses, public expenditure, quality of service and worsens poverty (see Table 4). Although service providers agreed that corruption hinders democratic development, it is the least they think can be affected by corruption.Just like our findings, Seligson (2006) and Selamawit (2015) also found that corruption stalls economic growth. Seligson (2006) asserts that if corruption is the cause of poor economic performance, then anti-corruption programs become relevant to use to fight corruption unlike if it was the other way around. Nsereko & Kebonang (2005) and Ijewereme (2015) also support our finding that corruption interrupts a conducive environment for potential investors to invest in the economy of a country. It is imperative that corruption across all sectors is managed effectively considering that most of the firms in Zimbabwe rely on external investors for financing (Jambawo, 2014) and those investments bolster economic growth of the country in return (Zivengwa et al., 2011).

Table 4: Views of service providers on some of the most damaging effects of corruption

	Mean of Likert scores	***p-value on statistical difference from 3***
Economic growth	1.55	0.000
Scares potential investors from investing	1.57	0.000
Increases cost of running businesses	1.73	0.000
Distorts public expenditure	1.87	0.000
Poor quality of service	1.87	0.000
Worsens poverty	1.90	0.000
Democratic development	2.47	0.000

Forms of Corruption: Clients and service providers agreed with the statement that each identified type of corruption is common in the water sector. As shown in Table 5, the ANOVA test revealed that clients were strongly in agreement with the suggestion that bribery is a common type of corruption in the water sector since the mean score was found to be less than 2 and significantly below 3 (p value=0.000). Service providers were also in agreement with the suggestion that bribery is a common type of corruption in the water sector since a mean score of 2.14 was found to be significantly below 3. The ANOVA test also revealed that clients and service providers agreed with the suggestion that fraud, kick-backs, gifts and tips, embezzlement and institutionalised corruption are common types of corruption in the water sector since the mean scores were significantly below 3 (p value=0.000).

Table 5: Views of respondents on common types of corruption in the water sector

	Clients		Service Providers	
	Mean of Likert scores	***p-value on statistical difference from 3***	***Mean of Likert scores***	***p-value on statistical difference from 3***
Bribery	1.68	0.000	2.14	0.000
Fraud	2.03	0.000	2.26	0.000
Institutionalized	2.19	0.000	2.00	0.000
Kick-back	2.21	0.000	2.07	0.000
Embezzlement	2.27	0.000	2.48	0.000
Extortion	2.38	0.000	2.74	0.077
Gifts and Tips	2.56	0.001	2.11	0.000

A p-value well below 0.05 from the ANOVA test showed that clients viewed extortion as a common type of corruption in the water sector, but a p-value above 0.05 showed that service providers did not view extortion as a common type of corruption in the water sector. Similarly, Makumbe (2011) found that bribery is the most common form of corruption and extortion is the least form of corruption. Extortion is probably unpopular because it happens when service providers extract payments from unwilling clients (Gray& Kaufmann, 1998). Our findings on fraud differ with the findings by Selamawit (2015) in that a small proportion (3 percent) of their participants believe fraud is a recognised form of corruption in the water supply and sanitation sector in Ethiopia. In our sample, fraud was the second most common type of corruption in the water sector.Clients were asked to indicate the extent to which they agreed that bribery was most likely to occur in each identified situation in water service delivery. Mean scores less than 2 and p-values much less 0.05 from the ANOVA test revealed that clients were strongly in agreement with the suggestion that bribery is most likely to occur when avoiding a water cut after failing to pay water bills, when speeding up a new connection and when speeding up a reconnection (see Table 6). A p-value less 0.05 from the ANOVA test revealed that clients agreed with the view that bribery is most likely to occur when there are service repairs. Sithole (2013) explained that employees in the public sector create delays to manufacture a crisis, which often leads to a bribe being paid by clients to speed up various processes or to get services.

Table 6: Views of clients on when bribery is most likely to occur

	Mean of Likert scores	***p-value on statistical difference from 3***
When avoiding water cut after failing to pay water bills	1.49	0.000
When speeding up a new connection	1.92	0.000
When speeding up reconnections	1.87	0.000
When there are service repairs	2.73	0.022

Strategies to Curb Corruption: Service providers were asked to indicate the extent to which they agreed with the statement that each identified strategy was the most effective in curbing corruption and improving service delivery. Mean scores less than 2 and p-values much less 0.05 from the ANOVA test revealed that service providers strongly agreed with the suggestion that maintaining good ethical standards and good governance, auditing and improving systems and structures are the most effective strategies to curb corruption and improve service delivery. P-values less 0.05 from the ANOVA test showed that service providers agreed with the suggestion that implementing Information Technology, ensuring customers participate in decision making and, engaging NGOs and communities to monitor projects are effective strategies that can reduce corruption and improve service delivery (see Table 7).

Table 7: Views of service providers on the most effective strategies

	Mean of Likert scores	***p-value on statistical difference from 3***
Maintaining good governance and ethical standards	1.30	0.000
Auditing	1.70	0.000
Improving systems and structures	1.70	0.000

Implementing Information Technology	2.04	0.000
Ensuring customers participate in decision making	2.17	0.000
Engaging NGOs and communities to monitor projects	2.68	0.000

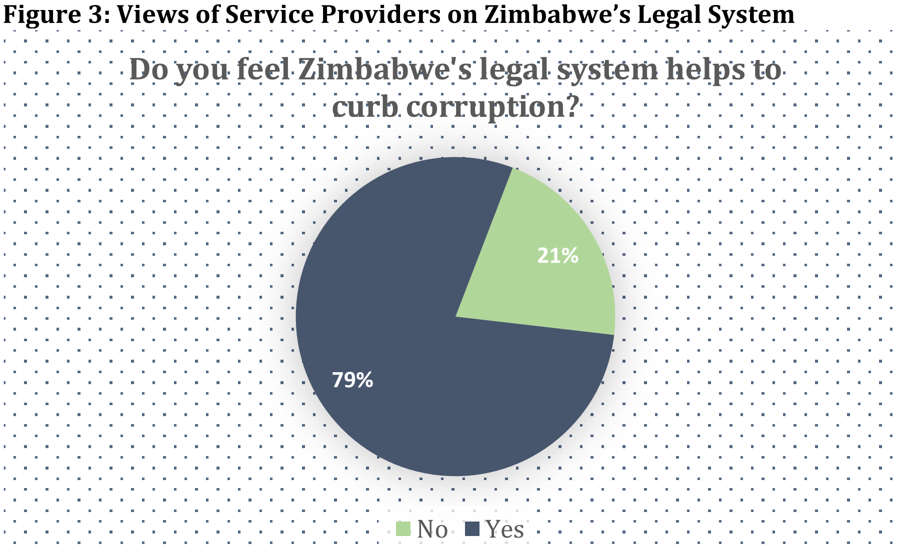
The obstacles that staff face in fighting corruption effectively include lack of commitment, lack of combined effort by all stakeholders, nepotism, late payment of salaries, low salaries, kickbacks, fear of victimisation and lack of modern management systems as shown in Table 8. A summative content analysis revealed that lack of commitment was the major obstacle faced bystaff in eradicating corruption. Fear of victimisation and receiving kickbacks if you report, particularly senior persons, were also common challenges.

Table 8: Factors which makes it difficult to fight corruption

Lack of commitment	Nepotism	Kickbacks
Lack of modern management systems	Poor coverage of water services	Compromised systems
Late payment of salaries	Low salaries	Fear of victimisation
Low morale at work	Political interference	Concealment of the act

As shown in Figure 3, 79 percent of the service providers feel that the legal system in Zimbabwe must be helping to curb corruption. This finding is in line with the findings by Moyo (2012) who found that Zimbabwe has a concrete legal and constitutional framework to fight corruption but lacks the political will to address the problem. People do not hesitate to commit a crime if they know they can get away with it (Treisman, 2000). The Prevention of Corruption Act 1983 criminalises all forms of active and passive corruption in both the public and private sectors. This legislation punishes guilty agents through hefty fines, or imprisonment (Gan Integrity, 2017). Other legislations that deal with corruption offences include the Anti-Corruption Commission Act 2004 and the Criminal Procedure and Evidence Amendment Act 2004 (Chene, 2015). Given that Zimbabwe's legal system is made up of common law, the country must be having lower corruption like other countries using the same system (Goel & Nelson, 2008).

Figure 3: Views of Service Providers on Zimbabwe's Legal System



Service Delivery: Clients were asked to indicate the extent to which they agreed with the statement that each identified factor was a cause for poor water service delivery. Clients were strongly in agreement with the view that lack of accountability, dilapidation in water infrastructure and failure to follow quality standards and laws are factors that cause poor service delivery in addition to corruption since Likert scores were less than 2 and p-values from the ANOVA test were well below 0.05 (see Table 9).

Table 9: Views of clients on factors that cause poor water service delivery

	Mean of Likert scores	*p-value on statistical difference from 3*
Lack of accountability and transparency	1.84	0.000
Dilapidation in water infrastructure	1.95	0.000
Not following quality standards and laws	1.99	0.000
Low production	2.00	0.000
Lack of planning	2.08	0.000
Lack of regulation	2.23	0.000
Economic challenges	2.30	0.000
Lack of payments due to high water bills	2.31	0.000
Political Interference	2.39	0.000
Inadequate citizen participation	2.51	0.000
Population growth	2.77	0.130
Lack of employee capacity	2.78	0.063

As shown in Table 9, clients agreed with the view that low production, lack of regulation, lack of planning, economic challenges, non-payment of water bills, political interference and inadequate citizenry participation are factors that cause poor service delivery in the water sector in addition to corruption since mean scores were found to be significantly below 3. On the other hand, clients were relatively neutral on the suggestion that population growth and lack of employee capacity are factors that cause poor water service delivery in addition to corruption since the mean scores were found not to be significantly below 3.

5. Conclusion & Recommendations

Limitations: The main limitation of this study is that it was only conducted on services users and staff in Harare. This may affect the generalizability of the results to other regions of Zimbabwe. Although the response rate for service users and service providers was relatively good (68 percent), it might have been better if the length of time required to fill in the questionnaires was not that long.

Conclusion: The results on the research questions are revealed in this paragraph. Bribery is the most common type of corruption in the water sector, and it normally occurs when avoiding water cut after failing to pay a water bill, and when speeding up a reconnection or a new connection. Fraud, kick-back, institutionalised, embezzlement and gifts and tips are also popular in the water sector. The results revealed that poor governance, economic hardship, weak accountability, low salaries, employee dissatisfaction and political instability are risk factors of corruption in the water sector. Both clients and service providers do not view work pressure as a contributory factor of corruption. The results revealed that corruption has a negative effect on economic growth, potential investments, costs of running businesses, public expenditure, quality of service and the public's well-being and prosperity. However, maintaining good ethical standards and good governance and improving systems and structures are effective strategies that can curb corruption and improve service delivery. Furthermore, implementing information technology and ensuring inclusivity in making decisions on water projects are strategies that can help manage corruption and improve service delivery. Service providers cited lack of commitment, lack of teamwork, nepotism, late payment of salaries, low salaries, kickbacks, fear of victimisation and lack of modern management systems as obstacles they face in fighting corruption effectively.

The principal-agent theory and public choice theory are linked to the study findings because employees (agents) choose to undermine their organisation's (principal) interest in pursuit of their interests by behaving corruptly (Booth, 2012). This behaviour does not only affect the principal, but it also discourages investorsfrom investing and slows theeconomic growth of the country. Apart from corruption, the results revealed that lack of accountability, dilapidation in water infrastructure and failure to follow quality standards and laws are also major factors causing poor water service delivery. Also, low production, lack of regulation, lack of planning, economic challenges, non-payment of water bills, political interference and inadequate citizenry participation are factors that cause poor service delivery in the water sector. Attempts to improve water service delivery in Zimbabwe have been exacerbated by the water shortages that are prevalent in the country. This research found that water availability is poorer in high-density suburbs compared to western and northern suburbs. Overall, the average number of days that households do not have water is 11 days per month. Most suburbs in Harare do not have running water mostly on weekends due to either shortages or service repairs.

Implications for Practice & Policy: Water service providers and local authorities across the country must put in place strong governance and accountability frameworks to minimiseand eradicate corruption practices by their employees.Service providers also need to address obstacles, such as poor teamwork, lack of commitment, nepotism, late payment of salaries, low salaries and fear of victimisation, that honourableemployees face in trying to fight corruption effectively. An incentive that rewards employees who show commitment to fight corruption might be worth introducing.Given that bribery is likely to happen when avoiding water cut off due to non-payment or when speeding up a new connection or reconnection, measures should be put in place to prevent this form of corruption from occurring. Measures may include anonymous hotlines where clients can phone to report such matters. These lines may be run by an audit firm to ensure accountability of reported cases and identity protection of whistleblowers.Employees should receive punitive punishmentfor violating company ethics and public laws on corruption. Policy makers must address the impediments that frustrate the Zimbabwean justice system indealing with corrupt officials. This should help reduce corruption across all sectors in the country and consequently attract the much-needed local and foreign investments.

Recommendations: The availability of water should be the same across all the suburbs of Harare. Areas that do not have the provision of council water must urgently be prioritised to have a water service in place. Also, Zimbabwe needs to adjust its water bill rates in line with regional rates. High water bills are one of the reasons why service users struggle to pay water bills.ZINWA and HCC must improve their systems and structures, enhance their auditing process, and educate their staff on good ethical standards and good governance to effectively fight against corruption and improve water service delivery.ZINWA must closely work with Transparency International as a way of strengthening stakeholder collaboration in the fight against corruption. Councils are recommended to review their revenue collection systems and introduce efficient systems that boost revenue collection. This will enable the councils to effectively deal with cash flow problems that contribute to low salaries and late payment of salaries which have been highlighted as some of the determinants of corruption.Service providers must make use of mobile technology to promote citizenry participation in sharing ideas and making decisions on water sustainability.There is an urgent need to deal with corruption, improve transparency and accountability, improve water infrastructure, follow quality standards and laws and increase the production of water to improve service delivery.

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Antecedents of Employee Intention to Stay: A Study of Employees in Zimbabwean SMEs

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Abstract: Most research conducted on the influence of employee perception of equity (EPE), organisational citizenship behaviour (OCB), organisational commitment (OC) and turnover intention (ITS) has been on large organisations and little attention has been paid to SMEs. Studies on EPE and OCB have not filtered down to SMEs in developing countries. The primary objective of the study is to investigate the influence of OCB, EPE and OC on ITS in Zimbabwe's SME sector. It also sought to ascertain the kind of relationships between OCB and OC, EPE with OC, OCB with ITS, EPE with ITS and finally OC with ITS. Structured questionnaires were distributed to SMEs in five major cities. A quantitative method using Smart PLS was employed to test the relationships among the three hypotheses. The results showed that there is a positive relationship between the three proposed hypotheses. Based on the findings, recommendations will be made to both the government policy makers and SME owners. The proposed study is expected to have practical and theoretical implications to both the policy makers in the government and the owners of small businesses in Zimbabwe. In addition, it will provide added insights and new knowledge to the existing body of literature on human resource management, hitherto not studied extensively in developing countries of Southern Africa and Zimbabwe in particular.

Keywords: *Equity theory, SMEs, Organisational citizenship behaviour, Employee perception of equity, Organisational commitment,*

1. Introduction

Background of the study: The main objective of the study is to investigate the influence of organisational citizenship behaviour (OCB), employee perception of equity (EPE) and organisational commitment (OC) on employee intention to stay (ITS) in Zimbabwe's SME sector. SMEs are the mainstay of economies and societies of many countries around the world. Over the years, research has shown that these enterprises are critical to the economy because of the way in which they contribute to the gross domestic product (GDP) and their ability to provide goods and services, which large enterprises depend upon (Kapoor, Mugwara & Chidavaenzi, 1997; Machipisa, 1998; Nyoni, 2002; Chipika & Wilson, 2006). In many countries, SMEs play a significant role in local communities by providing employment opportunities, social stability and economic welfare (Biggs & Shah, 2006). Research on OCB and equity concerns has developed as a worthwhile body of systematic investigation during the past twenty years (Yoon & Sur, 2003; Ravichandran & Gilmore, 2007; Park, Ellis, Kim & Prideaux, 2010; Nicklin, Greenbaum, McNall, Folger & Williams, 2011). Researchers have debated extensively that OCB is an endemic phenomenon in organisations and that it deserves more consideration and practical scrutiny (Cho & Johanson, 2008; Podsakoff, Whiting, Podsakoff & Blume, 2009). The importance of OCB lies in its prospective positive consequences and effects on work results. Research has provided substantial proof that OCB, among others, breeds positive perceptions of equity, enhances OC and finally prompts employee ITS in the organisation (Ferris, Adams, Kolodinsky, Hochwarter & Ammeter, 2002; Rosen, Chang, Johnson & Levy, 2009; Park et al., 2010).

On the other hand, the known wisdom in the human resource management literature is that most labour disputes emanate from workers' perception of inequity (Nicklin et al., 2011). This is because perceived inequity can affect attitudes and behaviours in a variety of ways, which eventually precipitates labour disputes or even strikes (Colquitt, Conlon, Wesson, Porter & Ng, 2001). It is argued further in the literature that perceived inequities at the work place also negatively impact on job performance, cooperation with co-workers, work quality and commitment to employers (Cropanzano, Howes, Grandey & Toth, 1997). Notable in the literature is the fact that when workers' commitment to their organisation is lacking, turnover intention or turnover is prevalent (Gono, 2009, Chinomona & Dhurup, 2016). Moreover, it is argued in the extant literature that turnover intention or turnover should be reduced or shunned by organisations since it is more costly to replace an employee than to retain one (Carson & Gilmore, 2000). In view of that, research interests on the effects of OCB, perception of equity and OC on employee ITS are substantial and growing

(Andrews, Witt & Kacmar, 2003). Regrettably, the majority of the research has concentrated on large firms, with little concern to the small and medium enterprise (SME) sector in developing countries of Africa.

Problem Statement*:* According to Chinomona, Lin, Wang and Cheng (2010:110), "the SME sector in both developed and developing countries is considered the engine of economic growth and a vehicle for employment generation". However, it is surprising that the impact of OCB, EPE and OC on employee ITS in the SME sector has been largely neglected by researchers. Indeed, such an inquiry is imperative and is likely to contribute to a deeper understanding of the relationship between these constructs. Notably, there is growing evidence indicating that large firms and SMEs characteristics are different (Sieger, Bernard & Frey, 2011). Thus, it can be expected that the findings from large firms and SMEs might be different. This necessitates an empirical confirmation or disconfirmation of previous findings in the context of SMEs, hence the need for this study. Equally alarming is the fact that a plethora of such studies on large firms was based on developed countries (Chinomona & Pretorius, 2011:170, Chinomona & Dhurup, 2015). "It has been argued in previous research from developing countries that it is naive and not judicious to assume a-priori that findings from developed countries apply in developing countries such as those in Southern Africa" (Chinomona et al., 2010:111; Chinomona, 2012; Chinomona, 2016). The effects of OCB, perception of equity and OC on employee ITS in the context of SMEs in Zimbabwe is long outstanding and imperatively warrants further academic and in-depth scrutiny.

2. Literature Review

Social Identity Theory (SIT): Social identity theory (SIT) has been used in this study to explain the relationships between OCB, EPE, OC and ITS in Zimbabwean SMEs. This is because social identification leads to loyalty, belongingness, support for the organisation and ultimately ITS. SIT leads to outcomes that are traditionally associated with group formation and reinforces the antecedents of identification. Organisational identification has long been recognised as a critical construct in the literature of organisational behaviour affecting both the satisfaction of the individual and the effectiveness of the organisation (Ashforth & Mael, 1989). In this regard, social identities often are developed through social interactions (Li, Xin & Pittutla, 2002), therefore, can be used to explain commitment in organisations. According to SIT, people tend to classify themselves and others into various social categories. These categories include organisational membership, religious affiliation, gender and age cohort. Ashforth and Mael (1989:20) define social identification as a "perception of oneness with a group of persons". This stems from the categorisation of individuals, the distinctiveness and prestige of the group, the salience of out groups and the factors associated with group formation. This leads to activities that are congruent with the identity, support for institutions that embody the identity, stereotypical perceptions of self and others and outcomes that traditionally are associated with group formation (Ashforth & Mael, 1989). According to SIT, an individual does not have a single personal identity, but multiple social identities (Tajfel & Turner, 1979; Terry, Hogg & White, 1999; Hogg & Vaughn, 2002). One's social identity is formed as an individual places oneself into distinct social categories based on similarities with these groups, such as students, Christians, or females (Scott, 2007). It is also through this process that individuals develop their organisational identities, a specific type of social identity through comparing themselves with others in their organisations and reflecting on these comparisons over time.

Relating SIT to the current research context, this study submits that, for instance, workers in SMEs can develop organisational identities to their current organisation based upon their comparisons of their SME and other SMEs (Carmon et al., 2010). This implies that when employees find their group identity with an SME to be important to them, an attempt is made to distinguish themselves from other SMEs (Abrams, Hogg, Hinkle & Otten 2005). Thus, a group of employees belonging to one SME may feel more attached to their SME, hence their overall organisational identity (Hogg, Abrahams, Otten & Hinkle, 2004). It, therefore, is submitted in this study that the more favourable the comparisons of an organisation an employee perceives of his or her SME or the more distinct it is from other SMEs, the stronger the expected foundation of a positive social identity. It is anticipated also that stronger organisational identity in SMEs is forged when individual employees perceive their values to match that of the organisation. In this case, workplace interactions and organisational value congruence fosters organisational identity in the SMEs context (Pratt 1998). However, when an employee does not identify with an organisation, it can lead to distrusting organisational information or to interpretation of information in a way that reinforces feelings of disidentification (Dukerich, Kramer & Parks, 1998:245).

"Organisational identification, therefore, seems to be a specific type of social identification that elicits perceptions of shared values, belonging and loyalty to an organisation" (Cheney, 1982:33). This sense of commitment in SMEs is based partially on an obligation to continue employment with an organisation and the perception that staying with an organisation is the right thing to do (Meyer & Allen, 1991; Fields, 2002). As organisational identification increases, it positively influences a variety of work attitudes, behaviours and outcomes. Organisational identification is linked theoretically and empirically to motivation, decision making, employee interaction and length of service (Cheney, 1983); turnover and turnover intentions (Mael & Ashforth, 1992; Van Dick, Christ, Stellmacher, Wagner, Ahlswede & Grubba, 2004) and job satisfaction and performance (Carmeli, Gilat & Waldman 2007). Organisational identification plays an important role in employees' well-being, satisfaction and productivity (Gautam, van Dick & Wagner, 2004), therefore, has promising potential for increasing OC (Scott et al., 2007; Van Dick et al., 2004). Becker (1992) noted that one of the primary goal for commitment to an organisation is identifying with the organisation. Individuals who embrace their organisation's goals and missions through identification processes are more likely to remain committed and stay in the organisation than individuals who do not (Van Dick et al., 2004:354).Therefore, if an employee begins to identify with an organisation, particularly if they perceive they are a member of the in-group then it is likely they will also begin to feel more committed to the organisation and stay within the organisation. Social identification ultimately results in good OCB, equity in the organisations and loyalty to the organisation, resulting in employees remaining with the organisation.

Organisational Citizenship Behaviour: Kinicki and Kreitner (2008:165) define OCB as "behaviours consisting of employee behaviours that are beyond the call of duty. Examples include gestures as constructive statements about the department or organisation, expression of personal interest in the work of others, suggestions for improvement, care for organisational property, training new people, punctuality and attendance well beyond standards or enforceable levels". OCB positively correlates with customer satisfaction, OC and performance ratings (Bateman & Organ, 1983). There is a broader impact of OCBs on organisational effectiveness (Bolino & Turnley, 2005). It is important to note that when employees are being treated fairly at work, they are more willing to engage in OCB and managers are encouraged to make and implement employee-related decisions in an equitable fashion (Chiang & Hsieh, 2011, Chinomona & Dhurup, 2016). Therefore, SME employees' citizenship behaviour refers to that behavioural motivation that goes beyond the normal call of duty through cooperation among colleagues, self-improvement and creating a positive organisational image (Cho & Johanson, 2008). The extant organisational behaviour literature indicates that such innovative and spontaneous behaviour by employees can contribute greatly to the cooperation and performance of an organisation (Stamper & Van Dyne 2003). Different dimensions are used to measure and evaluate OCB. Chiang and Hsieh (2012:374) used five dimensions to evaluate OCB, namely altruism, conscientiousness, sportsmanship, courtesy and civic virtue. William and Anderson (1991:600), on the other hand, categorise OCB into two dimensions, namely OCB of individuals and OCB toward organisations. Podsakoff, Ahearne and MacKenzie (1997:262) propose three dimensions of OCB, namely helping behaviour, sportsmanship and civic virtue. Van Dyne and LePine (1998:108) categorise OCB into two dimensions, namely helping behaviour and voice behaviour. However, Podsakoff et al. (2009:122) points out that although researchers use different evaluative dimensions, the most common measurement methods are the five dimensions, which were first proposed by Organ (1988:3 & 1990:43). These dimensions are altruism, conscientiousness, sportsmanship, courtesy and civic virtue.

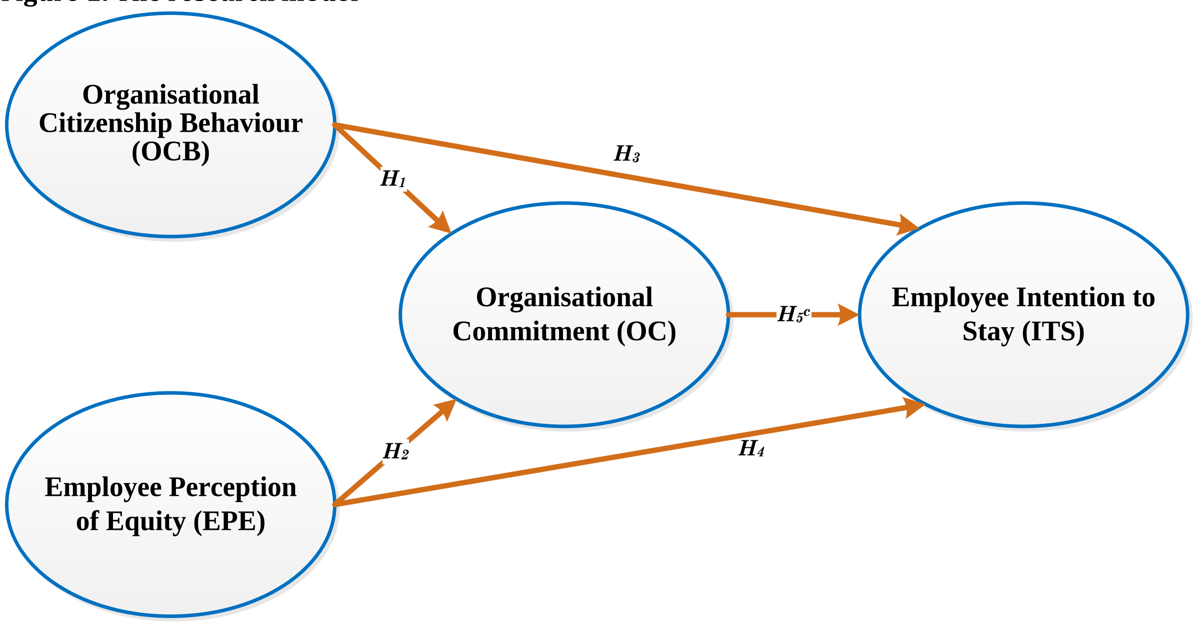
Employee Perception of Equity: Scholars and practitioners have progressively recognised the relevance of equity as a determinant of organisational efficiency and effectiveness (Greenberg, 2009; De Cremer, Van Dijke & Mayer, 2010; Van Dijke, De Cremer, Mayer & Quaquebeke, 2012). Plato and Socrates are being recognised as the gurus on justice or fairness. The scholarship on justice and fairness has been a topic of philosophical interest that extends back at least as far as Plato and Socrates (Colquitt, Colon, Wesson, Porter & Ng, 2001). The existing spate of literature consistently finds that people care about fair treatment and when individuals perceive that they are treated fairly, they express greater satisfaction with social relationships (Kanopaske & Werner, 2002; Almar, 2005; Parket al., 2010; Nicklin et al., 2011; Robbins & Judge, 2011). Kinicki and Kreitner (2008:163) define equity as the perception of being treated fairly at the work place. Equity is also defined as "fairness, rightness, or deservingness in comparison to other entities, whether real or imaginary, individual or collective, person or non-person" (Kwon & Jang, 2012:1236). Accordingly, EPE are premised on their expectations that the proportion between efforts spent and rewards received at work should be justifiable. As a phenomenon, employees always anticipate fair treatment at the workplace and respond in a certain way if they perceive unfairness. Unfairness results in labour disputes, strikes and high turnover ratio (Cohen-Charash & Spector, 2001; Colquitt, Conlon, Wesson, Porter & Ng, 2001). It is further argued that perceived inequities at the work place also impacts negatively on job performance (Park et al., 2010), cooperation with co-workers (Kanopaske & Werner, 2002), work quality (Cardy, Miller & Ellis, 2007; Tufail et al., 2016) and commitment to employers (Balsam & Miharjo, 2007). Research studies have also confirmed that it is more costly for firms to recruit a new worker than to retain an existing one (Almar, 2005; Balsam & Miharjo 2007; Park et al., 2010). For example, employees will work as hard as other workers will or will not think of quitting the job if they are given an equal reward. Cater and Zabka (2009) postulated that treatment by an organisation would be felt as fair when it is appropriate according to the employee's perceptions, expectations and attitudes. Thus, when workers perceive the ratio to be equal to that of others then a state of equity is said to exist and this will consequently result in OC. However, if the proportion is unequal then the employees experience equity strain. Consequently, when workers see themselves as under rewarded, the resultant tension creates wrath (Janssen, 2001). Inequity contributes to negative consequences within the organisation and equity results in smooth running and functioning of the organisation (Park et al., 2010). Kanopaske and Werner (2002:406) identify three types of equity, namely external, internal and employee.

Organisational Commitment: Researchers from either a psychological perspective or sociological thrust have also defined OC. For example, those who subscribe to the psychological view submit that OC acts as a psychological bond to the organisation and influences individuals to act in ways that are consistent with the interests of the organisation. These researchers suggest that low levels of OC may be dysfunctional to both the organisation and the individual, while high levels may have positive effects that lead to higher performance, greater satisfaction and low turnover. Another school of thought has differentiated OC definitions according to how the construct has been conceptualised by organisational behaviour researchers and social psychologists (Razali, 2004:465). For instance, organisational behaviour researchers use the term to describe the process by which employees come to identify with the goals and values of the organisation and desire to maintain membership of the organisation. On the other hand, social psychologists have focused on behavioural commitment. This approach draws heavily on the works of several social psychologists and focuses on how an individual's past behaviour serves to bind the organisation. However, despite all the other definitions, this paper will define OC as an employee's strong beliefs in the organisation's goals and values, a willingness to work on behalf of the organisation and a desire to maintain membership in the organisation (Porter et al., 1974:604). This sense of commitment among employees could be used not only to preserve the longevity of their businesses, but also to create a positive working environment for employees (Yamaguchi, 2013). Scholars have discovered three components involved in OC, which are affective or emotional commitment, continuance or calculative or instrumental commitment and normative or moral commitment (Allen & Meyer, 1990; Meyer & Allen, 1997; Jones & Mclntosh, 2010).

Intention to Stay in an Organisation: Many questions have been asked concerning ITS. Why do SMEs employees in Zimbabwe opt to stay at a company or to leave? What makes SME employees contemplate leaving an organisation? How can employers recruit valued SME employees who will stay longer in an organisation? These questions have been asked for decades as employers face a decreasing pool of talent to meet increasing business needs. The turnover rate is one of the most persistent challenges faced by organisations (Joseph, Kok-Yee, Koh & Ang, 2007). In some cases SME employees would prefer working for the SME no matter what, to show respect and loyalty. Turnover has negative and positive outcomes in an organisation. The negative outcomes are more obvious, such as direct recruiting and training costs as well as indirect costs due to disruptions in organisational processes (Thatcher, Stepina & Boyle, 2003; Thatcher, Liu, Stepina, Goodman & Treadway, 2006).The cost of hiring new employees, lower work quality by new employees and putting a company's reputation at stake are among the other negative consequences of SME personnel leaving a workplace. Furthermore, turnover has the potential to lead organisations to lose individuals with relevant and valuable work experience, as well as their tacit knowledge about how internal systems operate (McKnight, Phillips & Hardgrave, 2008). Brown (2000) suggests that SME hiring costs, lost salaries, training investments, benefits and tax payments could cost a company US$ 100,000 per senior SME employee who quits the organisation within 180 days of joining. Because of high rates of turnover and associated costs, employers have shifted from perceiving SME employees as a replaceable commodity to considering them as valued and essential assets (Thatcher et al., 2003:233). The paybacks of SME turnover, on the other hand, are less well understood. Replacement workers often are paid lower salaries than those that they replace. Recruiting new blood results in the infusion of new knowledge, ideas and experience into the company and enhanced opportunities for promoting those who stay (Ghapanchi & Aurum, 2011; Ucho et al., 2012). Overall, SME turnover costs organisations money. Although some turnover is unpreventable, such as employees leaving for medical reasons, many other reasons for leaving a job generally are considered avoidable. Hence, it is important for company management to understand what factors influence SME employee turnover in order to control turnover in their organisations.

The proposed research model: Drawing from the literature review, in particular the theoretical and empirical literature aforementioned, a research model is conceptualised. Hypothesised relationships between research constructs are developed thereafter. In the conceptualised research model, OCB and EPE are proposed to be the predictors of OC and employee intentions to stay. Employee ITS will be the outcome variable while OC is posited to be a mediating variable. Furthermore, the model proposed has one-directional causal effect, in other words it is a recursive model. OCB and EPE serve as exogenous latent factors and OCB and ITS as endogenous latent factors. Figure 1.1 illustrates this conceptual research model.

Figure 1: The research model



Hypotheses:

Relationship between organisational citizenship behaviour and organisational commitment: Bolino and Turnley (2005) acknowledge that there is a wider effect of OCBs on organisational effectiveness, which leads to OC at workplaces. It is important to note that when employees perceive to be treated fairly at work they are more willing to engage in OCBs, therefore, managers are encouraged to make and implement employee-related decisions in an equitable fashion (Chiang & Hsieh, 2011:181). Successful organisations need employees who will do more than their usual job duties, who will provide performance beyond expectations. Employees who engage in "good citizenship" behaviours help others on their team, volunteer for extra work, avoid unnecessary conflicts, respect the spirit as well as the letter of rules and regulations and gracefully tolerate additional work (Cho & Johanson, 2008:307). Empirical evidence from the organisational behaviour literature indicates that organisations that have employees with good citizenship behaviour outperform those that do not have such employees (Greenberg, 2009; Jain & Cooper, 2012; Jung & Yoon, 2012). In the same vein, good OCBs are reported in extant literature to precipitate reduced workplace absenteeism, turnover intention and deviant workplace behaviour (Bolino & Trurnley, 2005). According to Jung and Yoon (2012), organisational behaviours such as reduced workplace absenteeism, turnover

intentions and deviant workplace behaviour are associated with OC. Jain and Cooper (2012) echoed the same sentiments and found that OCB leads to OC. Because of OCBs, SME employees who bring their entire selves (physical, mental, emotional and spiritual) to the company, regard their work as a mission and more than as a mere job (Jain & Cooper, 2012). Eventually, this in turn will likely equip them with the enthusiasm to pursue extra citizenship behaviours at work (Moxley, 2000). Thus, an association between SME employees' citizenship behaviour and their OC can be conjectured. Previous studies have also provided support for the positive influence of OCB and OC (Milliman, Czaplewski & Ferguson, 2003). Accordingly, it is expected in this study that employee organisational behaviours are likely to lead to OC in the SME sector in Zimbabwe. Therefore, drawing from this deliberation, H1 is proposed as follows:
H1: Organisational citizenship behaviours have a significant strong positive effect on their organisational commitment in the Zimbabwe SME sector.

Relationship between employee perception of equity and organisational commitment: Employees are likely to develop a strong positive view towards their organisation if they perceive fairness at the workplace. Such a strong positive attitude is likely to arouse employees' emotional attachment to their organisation. Consequently, the stronger the perceived fairness, the stronger the positive attitude and emotional attachment the employee has to the organisation, hence the stronger OC. It is believed that when workers put effort into their workplace and that effort is fairly rewarded, commitment to that organisation will result (Mowaday, Porter & Steers, 1979; Almar, 2005). Such employee perception of fair play is likely to motivate and induce them to be loyal to that organisation and eventually lead to long-term OC. The equity theory has been used in numerous human resources studies to substantiate this reasoning (Kotabe, Dubinsky & Chae, 1992; Shelley, 2001). On top of this, prior empirical studies have supported a positive linkage between EPE and OC (Laschinger, Shamian & Thomson, 2001; Lemons & Jones, 2001; N'Goala, 2007). Likewise, when SME employees perceive their rewards to be fair or equitable when compared to their effort they are likely to be committed to that organisation. Therefore, based on the aforementioned theoretical reasoning and empirical evidence, it is posited that:
H2: Employees' perceptions of equity have a significant strong positive effect on their organisational in the Zimbabwe SME sector.

Relationship between organisational citizenship behaviour and employee intention to stay: The questions that challenge academics and human resource practitioners alike are: Why do people leave their jobs? Why do they stay in their jobs? Over the years, researchers have developed partial answers to these questions (Mitchell, Holtom, Lee, Sablynski & Erez, 2001). Perhaps, given alternatives, people stay if they are satisfied with their jobs and committed to their organisations and leave if they are not. However, empirical evidence indicates that work attitudes play a relatively small role in employee tenure or turnover intention (Hom & Griffeth, 1995; Griffeth, Hom & Gaertner, 2000). On the other hand, empirical evidence entails that employees with OCB always feel wanted and act as part of the organisation and will opt for staying on the job (Mitchell et al., 2001:1102). The extant organisational behaviour literature indicates that, such innovative and spontaneous behaviours by employees can greatly contribute to the cooperation and performance of an organisation and ultimately high ITS on the job (Stamper & Van Dyne, 2003:33). Various theories have been developed to authenticate the above assertion such as the relational exchange theory, affect theory, power-dependence theory, relational cohesion theory and leader member exchange (LMX) theory. In this study, social exchange theory (SET) provides the theoretical ground for LMX theory, which were used because of their relevance to the current study in that OCB leads to employees opting to stay on the job and reduces turnover intention. Therefore, based on the aforementioned theoretical reasoning and empirical evidence, it is posited that:
H3: Organisational citizenship behaviour has a significant positive effect on intention to stay on the job in Zimbabwe SME sector.

Relationship between employee perception of equity and employee intention to stay: A cross analysis of the existing empirical human resources literature indicates that EPE leads to low turnover intention (Ranida 2005). The reasoning is that when employees feel well treated, they feel motivated to stay in an organisation, therefore, it reduces their intention to leave and the opt to stay with the company (Fishbein & Ajzen 1975; Griffeth, Hom & Greater, 2000; Price, 2001). The reasoning in equity theory as well as justice judgment theory also supports this argument. Consequently, when SME employees perceive equity in their

organisation, they are happy and become loyal to that organisation. Finally, the employees would not opt for leaving the job (Currivan, 1999; Solinger, Olffen & Roe, 2008). In such a case, they are motivated to leave the organisation; hence, their turnover intention is reduced. Therefore, this research postulates that:
H4: Employees' perceptions of equity have a significant strong positive effect on their intention to stay in the Zimbabwe SME sector.

Relationship between organisational commitment and employee intention to stay: The relationship between OC and ITS has been revised and scrutinised extensively by researchers and academics (Meyer & Allen 1997; Cater & Zabkar (2009). Most of these studies argue that OC is an indication of employee satisfaction with their workplace and as a result of this satisfaction, their turnover intention is reduced. Besides, equity and justice judgment theories agree in that an employee who feels fairly treated, motivated and committed to the job is unlikely to contemplate leaving an organisation for another organisation. Furthermore, substantial empirical evidence has supported the positive linkage between OC and employee ITS on the job (Meyer & Allen, 1991; Meyer & Herscovitch, 2001; Rhoades, Eisenberger & Armeli, 2001; Meyer, Stanley, Herscovitch & Topolynytsky, 2002). Hence, when workers are committed to their organisation because they feel motivated and fairly treated, they are inspired to stay on the job. Therefore, drawing from the aforementioned arguments, it is posited that:
H5: Employees' organisational commitment has a strong significant positive effect on their intention to stay in the Zimbabwe SME sector.

3. Methodology

Sampling design technique: There are two types of sampling designs, which is probability and non-probability sampling techniques. The study made use of a probability sampling method. With stratified sampling, the population was divided into mutually exclusive groups (industry sectors) and random samples were drawn from each group (Hair, Babin, Anderson & Tatham, 2010). This procedure placed the SMEs into specific industry sectors (manufacturing and service).

Target Population: The database of the Ministry of Small and Medium Enterprises was used to collect information from employees in non-managerial positions in SMEs in Zimbabwe. The sample was drawn from the major cities in Zimbabwe (Chitungwiza, Bulawayo, Bindura, Chinhoyi and Harare). Non-managerial employees provided the information that was needed in this study because they are paid least and have many grievances in comparison with those who are in managerial positions, who tend to be secretive, happy and are highly remunerated (Gono, 2009). 275 SMEs were surveyed. Out of 275, 224 usable questionnaires were returned yielding a valid response rate of 81 percent.

Measurement Instruments: Research scales were operationalised mainly based on previous work. Minor adaptations were made in order to fit the current research context and purpose. Seven-item scales, which were adapted from the previous works of Jung and Yoon (2012) were used to measure OCB. Six questions were adapted from Janssen (2001) to measure employee EPE. A nine-item scale adapted from Powell and Meyer (2004) was utilised to determine OC. A five-item scale was adapted from Wayne, Shore and Liden (1997) to measure employee ITS on the job. All the measurement items were measured on a seven-point Likert-type scale that was anchored by 1=strongly disagree to 7=strongly agree, to express the degree of agreement.

Results of Tests of Measures and Accuracy Analysis Statistics: Statistical Package for Social Sciences (SPSS) 22.0 and AMOS 22.0 were used to carry out the statistical analysis. Confirmatory factor analysis (CFA) was performed to examine the reliability and convergent and discriminant validity of the multi-item construct measures. All the factor loadings are above 0.5, which shows a high validity of the measurement instruments used. Overall acceptable CFA model fit indices used in this study included the $\chi^2/(df)$ (chi-square/degree of freedom) value equal to or less than 3.00, the CFI (comparative fit index) value equal to or higher than 0.90, Tucker and Lewis index (TLI) value equal to or higher than 0.90, the incremental index of fit (IFI) value equal to or higher than 0.90 and the root mean square error of approximation (RMSEA) value equal to or less than 0.08. Recommended statistics for the final overall model assessment showed an acceptable fit of the measurement model to the data, namely $\chi^2/(df) = 2.69$; GFI= 0.91; AGFI= 0.86; CFI = 0.98; TLI = 0.97; TLI = 0.97 and RMSEA = 0.061.

Reliability and Validity: Cronbachth alpha test (Cronbach α), composite reliability test (CR) and average value extracted (AVE) test were used in the study to check the reliability of the research measures. Table 1 shows the results of these three tests.

Table 1: Accuracy analysis statistics

Research constructs	Cronbach's test Item-total	α Value	C.R.	AVE	Factor loading
OCB-1	0.919				0.927
OCB-2	0.932				0.943
OCB-3	0.922	0.985	0.985	0.822	0.937
OCB-4	0.933				0.945
OCB-5	0.915				0.928
EPE-1	0.940				0.942
EPE-2	0.935				0.938
EPE-3	0.910	0.989	0.990	0.831	0.919
EPE-4	0.926				0.941
EPE-5	0.918				0.939
EPE-6	0.947				0.949
OC-1	0.907				0.921
OC-2	0.920				0.941
OC-3	0.911				0.952
OC-4	0.947				0.962
OC-5	0.935	0.991	0.992	0.837	0.947
OC-6	0.925				0.959
OC-7	0.947				0.968
OC-8	0.936				0.948
OC-9	0.929				0.950
ITS-1	0.970				0.977
ITS-2	0.970				0.977
ITS-3	0.945	0.966	0.966	0.804	0.959
ITS-4	0.953				0.964
ITS-5	0.968				0.976

*Note: OCB=Organisational citizenship behaviour, EPE=Employee perception of equity, OC=Organisational commitment, ITS=Employee intention to stay C.R.=Composite reliability; AVE=Average variance extracted; S.V=Shared variance; *significance level $p<0.05$; ** significance level $p<0.01$; *** significance level $p<0.001$ Measurement CFA model fits:$\chi^2/(df)$=2.69, GFI=0.91, AGFI=0.86, CFI=0.98, TLI=0.97 and RMSEA=0,061.*

The internal reliability of each construct was measured using the standardised Cronbach coefficient alpha. A higher level of Cronbach's coefficient alpha demonstrated a higher reliability of the scale. The results of scale reliability tests are shown in Table 1. Further, the item-to-total correlation values ranged from 0.939 to 0.980, which were above the cut-off point of 0.5 as recommended by Anderson and Gerbing (1988). A Cronbach alpha value that is equal to or greater than 0.7 indicates satisfactory reliability (Blunch, 2008). Table 1 indicates that the Cronbach alpha coefficients ranged from 0.983 to 0.993. The reliability of each construct also was evaluated using the composite reliability (CR) index test. According to the literature, a composite reliability index that is greater than 0.7 depicts an adequate internal consistency of the construct (Hair, Anderson, Tatham & Black, 2006). The results in Table 1 indicate that CR indexes were between 0.983 and 0.993. The CR indexes range from 0.979 to 0.992. These values exceeded the estimate criteria used by the previous literature (Hair et al., 2010); thus, affirming satisfactory composite reliability.

In this study, the average variance extracted estimate reflected that the overall amount of variance in the indicators was accounted for by the latent construct. Higher values for the variance extracted estimate (greater than 0.40) revealed that the indicators represented the latent construct. Overall, all average variance explained (AVE) values were above 0.5 (refer to Table 1), thus accepted according to the literature (Fraering & Minor, 2006). Discriminant validity of the research constructs was evaluated on the basis of whether the correlations among latent constructs were less than or equal to 0.6 (Sin, Tse, Heung & Yim, 2005). In Table 2, the inter-correlation values for all paired latent variables are less than or equal to 0.6, therefore, indicating the existence of discriminant validity. The correlation values of OCB and EPE = 0.600; OC and OCB = 0.572; OC and EPE = 0.586, ITS and OCB = 0.558, ITS and EPE = 0.543 and ITS and OC = 0.592 were less than 0.6 or equal to 0.6, which is within the recommended threshold (Bryman & Bell, 2007), thus affirming discriminant validity.

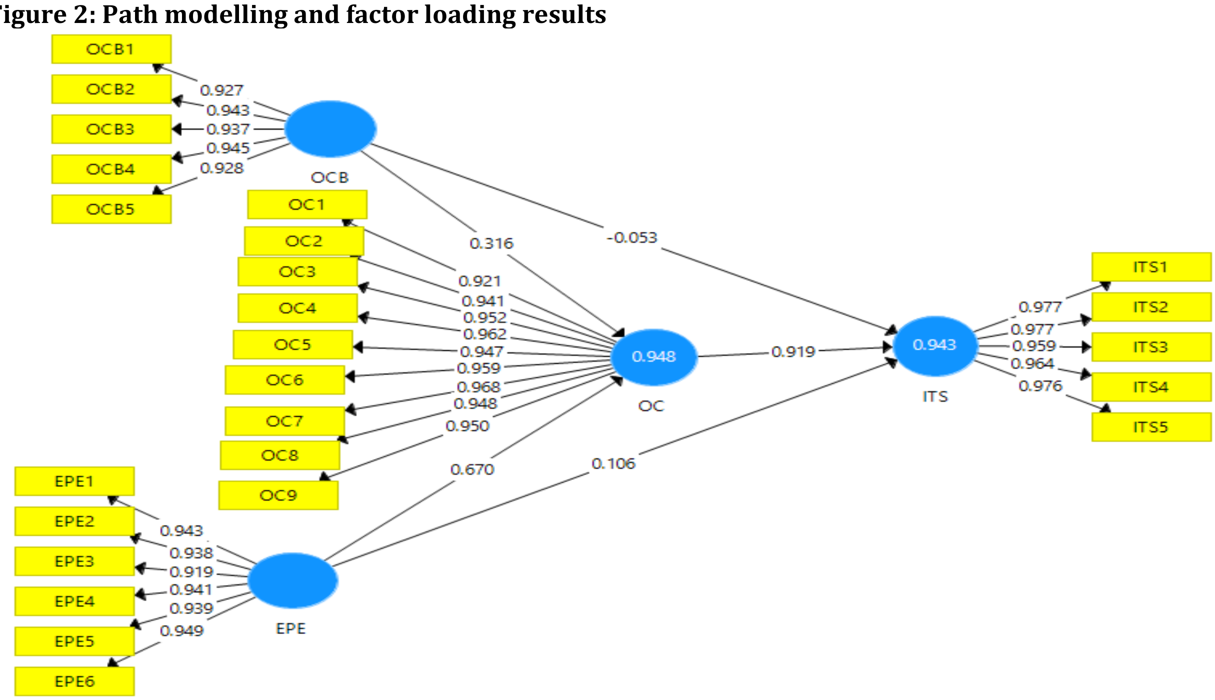
Table 2: Correlations Matrix Table

RESEARCH CONSTRUCT	OCB	EPE	OC	ITS
OCB	1.000			
EPE	0.580	1.000		
OC	0.562	0.576	1.000	
ITS	0.550	0.541	0.569	1.000

OCB=Organisational citizenship behaviour, EPE=Employee perception of equity, OC=Organisational commitment, ITS=Employee intention to stay

Therefore, discriminant validity further was established by checking if the AVE value was greater than the highest shared variance (SV) value (Sin et al., 2005).The average variance extracted (AVE) and the SV values were examined. Discriminant validity was established by checking and confirming that the AVE values were greater than the highest SV values (Nunnally, 1998). Table 2 affirms that all the AVE values are above the SV values for the research constructs; therefore, further confirming the existence of discriminant validity. An acceptable CFA measurement model fit was obtained, the study then proceeded to the hypothesis testing stage using structural equation modeling with AMOS 22.0 software programme. Recommended statistics for the final overall-model assessment showed acceptable fit of the measurement model to the data. The ratio of chi-square over degree-of-freedom was 2.80. This value is less than the recommended threshold of less than 3.0, therefore, confirms the model fit. Additionally, GFI, AGFI, CFI, TLI and RMSEA values were 0.89; 0.88; 0.96; 0.98 and 0.060 respectively. All these model fit measures were above recommended accepted threshold value of greater than 0.8 for GFI, AGFI, CFI, TLI and less than 0.8 for RMSEA (Anderson & Gerbing, 1988), which suggested that the proposed conceptual model converged well and could be a plausible representation of the underlying empirical data structure collected in Zimbabwe. Since the model fit is acceptable, the study proceeded to test the research hypotheses. The equivalent coefficients of the research hypotheses that posited the existence of positive relationships between the variables and outcome consequences then were obtained.

Figure 2: Path modelling and factor loading results



Path modelling results: The study proceeded to test the proposed hypotheses. In total, there are five hypotheses that are tested. In the path model, OCB and EPE are the independent variables, OC is the mediator and ITS is the outcome/dependent variable. Figure 2 provides the proposed hypotheses and the respective path coefficients. The same results of the path coefficients are tabulated in Table 1 depicting the item to total correlations, average variance extracted (AVE), composite reliability (CR) and factor loadings.

Path modelling and factor loadings: Figure 2 indicates the path modelling results and as well as the item loadings for the research constructs. In the figure, OCB stands for organisational citizenship behaviour; EPE is the abbreviation for employee perception of equity; OC stands for OC and ITS stands for employee intention to stay.

Table 3: Results of path modelling analysis

Hypothesis statement	Hypothesis	Path coefficient	T-Statistics	Results
OCB→ Organisational commitment	H1	0.316***	5.656	Supported
EPE →Organisational commitment	H2	0.670***	10.099	Supported
OCB →Employee intention to stay	H3	0.053***	2.033	Supported
EPE → Employee intention to stay	H4	0.106***	2.675	Supported
OC →Employee intention to stay	H5	0.919***	25.098	Supported

Structural model fits: χ^2/df=2.80; GFI=0.89; AGFI=0.88; CFI= 0.96; TLI=0.98; RMSEA=0.060. *Note: 1. ***p-value<0.001, **p-value<0.05, *p-value<0.1; using a significance level of 0.05, critical ratios (t-value) that exceed 1.96 would be called significant.2. The parameter compared by others is set as 1, therefore, no C.R. It is determined as significant.*

As can be deduced from Table 3, all the hypotheses are significant and strong because all the path coefficients are greater than 0.5. The highest path coefficient is EPE and OC, which is 0.958, showing statistical significance indicating that in organisations where employees perceptions of equity is high, OC is also high (Almar 2005). The lowest path coefficient is OCB and OC, which is 0.819 slightly lower than the highest path coefficient. This shows that all the path coefficients are significant. In Table 3, the standardised coefficient values of these variables are used when explaining the relationship between independent and dependent variables. The higher the standardised coefficient value, the greater the effect the independent variables have on dependent variables. The critical ratio (CR) values, which represent the t-value, must be higher than 1.96. In this model, all the variables meet this requirement because they are greater than 1.96. The p-values are all less than 0.001, which shows a strong relationship between the variables, therefore, all five hypotheses were supported.

Discussion of the Results: There is a significant positive impact of employee OCB on OC in Zimbabwean SMEs. From the result of the path, there is a strong relationship between these two constructs (p-value <0.001).It can be observed in Figure 1 and Table 3 that perceived OCB exerted a positive influence (r =0.316) and was statistically significant (t=5.656) in predicting OC. Robbins and Judge (2011) emphasised that successful organisations need employees who will do more than their usual job duties and who will provide performance beyond expectations, which ultimately leads to OC. Such innovative and spontaneous behaviours by employees can contribute greatly to the cooperation and performance of the SMEs (Yoon & Suh, 2003; Yildrim et al., 2012). Therefore, high OCB is associated with high OC. Hypothesis 2, posited that there is a significant strong positive influence of EPE on OC (p-value <0.001).This hypothesis was supported in this study. Figure 1 and Table 3, indicate that perceived EPE, H2 was supported. Perceived EPE exerted a positive influence (r= 0.670) on OC and was statistically significant (t= 10.098). Research consistently finds that people care about fair treatment and when individuals perceive that they are treated fairly, they express greater satisfaction with social relationships and consequently greater commitment (Park et al., 2010; Nicklin et al., 2011; Robbins & Judge, 2011). Therefore, the greater the EPE, the greater the OC in return. As for hypothesis 3, there is a significant positive relationship between employees OCBs and their ITS in Zimbabwe's SME sector. The path p-value shows there is a significant relationship between these two factors (p-value < 0.001).It is reported in Figure 1 and Table 3 that H3 perceived OCB exerts a positive (r=0.053) influence on ITS and that this influence is statistically significant (t=2.033). Evidence indicates that organisations that have such employees with strong OCB outperform those that do not have such employees (Greenberg, 2009; Jain & Cooper, 2012; Jung & Yoon, 2012). Managers need to reduce absenteeism, turnover and deviant workplace behaviours and instil a strong sense of OCB. In this way, employees, in the long run, will feel wanted and a part of the organisation and will opt for staying in an organisation.

The fourth hypothesis posited that there is a strong positive significant relationship of EPE with employee ITS (p-value <0.001). As can be deducted from Figure 1and Table 3, EPE exerted a positive and significant influence (r=0.106; t=2.675) on ITS. This result depicts that EPE is associated with higher ITS. It is argued further that perceived inequities at the workplace also impact negatively on job performance (Park et al., 2010), cooperation with co-workers (Kanopaske & Werner, 2002) and work quality (Cardy, Miller & Ellis, 2007). The last hypothesis, which is 5, posited that there is a strong positive relationship between OC and ITS in Zimbabwean SMEs (p-value < 0.001). It is reported in Figure 1 and Table 3 that H5 perceived OC exerts a positive (r=0.919) influence on ITS and that this influence is statistically significant (t=25.098). Low levels of OC may be dysfunctional to both the organisation and the individual, while high levels may have positive effects that lead to higher performance, greater satisfaction and low turnover (Currivan, 1999). Drawing from the extant literature it is noted that, by and large, committed individuals believe in and accept organisational goals and values. This means that the individuals will be willing to remain with their organisations and provide considerable effort towards the achievement of their organisation's goals (Mowaday et al., 1979; Cater & Zabka, 2009). Perceived OC (r=0.919) emerged as the highest scoring construct amongst the three factors influencing ITS. Perhaps, this result could be attributed to the fact that most employees do not want to leave organisations in which they are committed to. A study by Currivan (1999) affirms that OC leads to employees' ITS on the job. In summary, the results show that the five hypotheses are supported in the entire model as hypothesised.

5. Conclusion and Recommendations

Recommendations to SMEs Managers and Government: The paper provides both theoretical and practical contributions. This is the first paper to the best knowledge of the researcher that applied the Social Identity Theory (SIT) in organisational behaviour literature; which means the theory added new knowledge to the existing literature on organisational behaviour. The paper has practical contribution to managers or owner of SMEs to practice good management relations to have greater OCBs, EPE, OC and ITS in SMEs organisations. It is recommended that policy makers and academics assist SME owners/managers through free education and entrepreneurial programs that will equip them to draft plans and strategic policies to position themselves for competitive advantage in the business world. Owners/managers of SMEs seeking to improve their performance, therefore, constantly need to monitor and evaluate the progress in goal achievement. This will help them to address problems in strategy implementation and to raise employee morale because employees achieve gratification if the set goals are achieved. To secure increased employee motivation levels, SMEs need to make use of more diversified incentives that could include salary raises, promotions, titles, trophies, holiday assistance, and house and car purchase assistance. The owners/managers also need to inform and involve many employees in the decision-making process, as their participation leads to motivation and, hence, commitment to goal achievement. A more participative process will ensure cooperation and positive relationships among employees, therefore, leading to OC and, ultimately, reducing turnover intention (Cardy et al., 2007). The results of this study are likely to benefit the government of Zimbabwe at large. The government of Zimbabwe is also encouraged to help SMEs, which are in financial difficulty as their survival contributes to employment and the country's GDP. Based on the current study findings, trade unions in the SME sector also are encouraged to represent their members' grievances with their employers and the government. Finally, the government of Zimbabwe is encouraged to adopt policies that are likely to provide a stable socio-economic stability in the country such that the SMEs may improve their performance.

Limitations and Propositions for Future Research: Significant contributions were singled out in this study. Even though due care was taken to achieve thoroughness, there are some limitations, which open up avenues for further research. Subsequent research could replicate this study in broader sampling contexts that include all the SMEs in Zimbabwean cities or a comparative analysis between Zimbabwe and another country such as South Africa, Malawi and Tanzania. The other limitation is that the data were cross-sectional, which makes it difficult to generalise the findings, unlike longitudinal data. Looking on the other side of the coin, future research efforts should investigate outcomes of OCB and EPE such as job satisfaction, workplace spirituality and organisational support. The proposed model is a mediation model. In other words, OC mediates the relationship between OCB and ITS; and OC mediates the relationship between EPE and ITS. However, these were not discussed in the study. There needs to be hypotheses focusing on the mediation. Future research might test the mediation using regression analysis. In research there is no best theory, which is applicable to any study. Future research should try to include other theories for this same model such as justice judgment theory and social exchange theory in order to evaluate the outcomes. Another implication is that future work should consider the role of time. Indeed OCBs, OC and employee EPE changes over time. Comprehensive understanding of these behaviours could be obtained over time. Extending this type of research through longitudinal studies that capture patterns or changes in OCBs over days, weeks, months or years would provide insight into the emergence and variation of OCB in the presence of different interpersonal and contextual factors. Longitudinal data would likely enable a more accurate assessment of the interactive effects of OCB, employee EPE, OC and employee ITS.

Conclusion: This paper sought to investigate the influence of EPE and OCB on employee OC and employee ITS. The equity theory was used to explain the relationships between the four variables in which employee ITS is the ultimate variable. Structural equation modelling was used to analyse the data using Amos 22.0. The study showed that there is a positive relationship between all five hypotheses. The results of this study show that there is a strong positive relationship between OCB, EPE, OC and, ultimately, employee ITS. Therefore, it means that the more SMEs increase their equity perceptions, OCBs and OC, the more the employee will be satisfied and decide to remain in the employment.

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Measuring employee engagement of low-income workers either working at or visiting Marabastad Mall in the City of Tshwane Metropolitan Municipality

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Abstract: The purpose of this study is to measure employee engagement of low-income workers either working at or visiting Marabastad Mall in the City of Tshwane Metropolitan Municipality (CTMM). The literature review revealed that in the South African context there is a dearth of research on predictors of employee engagement. The research design was a survey and the sample size was six hundred and forty-nine (n=649). The descriptive statistics show that the respondents were moderately disengaged, disaffected, and committed. The descriptive statistics also revealed that respondents moderately disagreed that they had training opportunities and they had a good quality of work life. The inferential statistics showed that males were more engaged than their female counterparts, part-time employees were slightly more engaged than full-time employees and employees who were unionised were more engaged than the non-union members. It was also found that job satisfaction was the highest predictor of employee engagement ($\beta = 0.28$, $p<0.05$). The study has implications for policymakers that employees earning between R1 000.00 and R10 000.00 are less engaged and committed and their job satisfaction levels were low. The implication for managers is that they must be aware that development and recognition of employees and job satisfaction predict employee engagement. Quality of work life and labour relations did not predict employee engagement.

Keywords: *Employee engagement, job satisfaction, organisational commitment, talent management, and quality of work life*

1. Introduction

Employee engagement is important when a business endeavours to improve its performance and efficiency. It is a broad construct that affects many human resource management (HRM) outcomes. Therefore employee engagement is the one HRM construct that seems to result in employees' ability to perform beyond their employment contract (Markos & Sridevi, 2010). A Gallup (2013) study showed that 87% of employees are not engaged in their work. In different studies, researchers indicated that the majority (i.e. 85%) of employees who were not engaged in their work (Lu, Lu, Gursoy & Neale, 2016; Karanika-Murray, Duncan, Pontes & Griffiths, 2015) were also dissatisfied (Chandarot & Dannet, 2009). It therefore transpired that employees, who are not engaged, end up being paid lower salaries and therefore cannot afford to pay their rent, transport fees to work, and fulfil their basic commitments (Ghosh, Rai & Chauhan, 2016; Anitha, 2014). In their study, Robyn and Du Preez (2013) pointed out that employees who are not engaged in their jobs seem not to be committed to their work. Viljoen, a prominent HRM scholar in South Africa, found that the relationship between employees and management at ThabaNchu Transport soured because the former were excluded from decision-making (Nienaber & Martins, 2016). A South African study, conducted in the education sector, comprising mainly high-earning employees, revealed that employee and organisational commitment are related and employees were moderately engaged (M=3.78; SD=0.33) (Moshoeu & Geldenhuys, 2015). A global study showed that 44% of the respondents rated career development as one of the key drivers of employee engagement (Hewitt, 2015). It can thus be surmised that low organisational commitment, job dissatisfaction, not offering employees training opportunities, and not paying employees well may contribute to their disengagement.

Research on employee engagement has been conducted globally (Olivier & Page, 2017); however, in the South African context most research on employee/work engagement was based on middle-income earners (Nienaber & Martins, 2016; Tladinyane & Van der Merwe, 2016). Therefore, the primary objective of this study is to investigate the predictors of the engagement of low-income employees either working at or visiting Marabastad Mall. The contribution of the study lies in the fact that there is a vast amount of low-income workers in the South African context. It is essential to determine the predictors of employee engagement of these workers to be able to understand what is important for them to be engaged. With this article, the authors endeavour not only to add to the body of knowledge on lower-income workers in the

South African context but also to focus managers' attention on the predictors of employee engagement that may advance their competitive edge. With regard to the contribution to the body of knowledge, this paper endeavours to:

- Determine the predictors of employee engagement using linear regression; and
- Collect data from an understudied sample (low-income workers in the South African context) who visited or worked at the Marabastad Mall in the CTMM.

The research objectives of the study were:

- to determine how employees (in terms of gender, union membership, and type of employment) rate employee engagement; and
- to determine which variables, have an effect on employee engagement.

In the next section the theoretical framework will be discussed followed by the methodology, data analysis, conclusion and recommendations.

2. Literature Review

In the literature, work -and employee engagement are used interchangeably (Makhoa, 2016). For the purpose of this study, employee engagement is a "positive, fulfilling, work-related state of mind that is characterised by vigour, dedication, and absorption" (Schaufeli, Salanova, González-Romá & Bakker, 2002, p.71). There are different theories of employee engagement (see Nienaber & Martins, 2016); however, in this study, the theoretical framework of Schaufeli et al. (2002) was deemed appropriate. The researchers were interested in individual factors (i.e. job satisfaction, talent management, commitment, quality of work life, and co-worker) that predict employee engagement. Schaufeli and Bakker (2003) compared the occupational differences of managers and low-level employees and found that the former were more engaged. This finding is consistent with the research conducted by Nienaber and Martins (2016) in the South African context. However, in our study, we had only one occupational category, hence the interest was in determining which groups (i.e. males or females, unionised or non-unionised, and part-time or full-time) were more engaged. Another research study in South Africa conducted by Janse van Rensburg, Boonzaier and Boonzaier (2013) found that call centre employees had a lower level of engagement. Nienaber and Martins (2016) found that South African males were more engaged than females and union members were more engaged than non-union members. Therefore it is hypothesised that:
H1A: Male employees are more engaged than female employees.
H1B: Union members are more engaged than non-union members.
H1C: Employees employed on a full-time basis are more engaged than employees employed on a part-time basis.

Variables that affect employee engagement: According to Markos & Sridevi (2010, p.92), most variables that affect employee engagement are not necessarily financial in nature. It can therefore be assumed that a business wanting to improve its level of employee engagement can do so at a lower cost, although the authors warn that financial aspects should not be ignored. These authors noted that the major consequences of disengaged employees includes less productive workforce and employees that miss an average of 3.5 days per year. Engaged employees are willing to show discretionary effort and therefore the following predictors of employee engagement are discussed below: organisational commitment, job satisfaction, quality of work-life, talent management, and employees' relations. One of the variables that affect employee engagement is organisational commitment. Organisational commitment can be defined as the psychological state that determines an employee's relationship with the organisation (Meyer & Allen, 1991) and willingness to stay in the organisation (Cohen, 2007) because the employee is committed to the organisation's values and ethos (Memari, Mahdieh & Manani, 2013). The study undertaken by Beukes and Botha (2013) indicated that organisational commitment and employee engagement had a positive correlation ($r = 0.42$, $p < 0.01$). Other research, both in South Africa and internationally, revealed that organisational commitment is a predictor of employee engagement (Albdour & Altarawneh, 2014; Nienaber & Martins, 2016; Jackson, Rothmann & Van de Vijver, 2006) but these studies were not conducted on low-income workers. Based on this discussion, it can be hypothesised that:
H2: Organisational commitment has a positive effect on employee engagement of low-income workers.

Another human resource variable that has a positive effect on employee engagement is job satisfaction. Job satisfaction is the feeling employees have about their job, co-workers, and the work environment (Locke, 1976). Garg and Kumar (2012) highlighted the meaning of job satisfaction as an important driver of engagement, as their research was focused on certain aspects of working issues such as pay and benefits, customer service values, employment opportunities for advancement, satisfactory working environments in terms of the relations between workers and supervisors, internal communication effectiveness, and reasonable workload. Their findings led them to the conclusion that job satisfaction is a key driver of employee engagement within an organisation. Zikouridis' (2015) study indicated that employee engagement is positively related to job satisfaction ($r= 0.715$, $p<0.01$), which means that high job satisfaction leads to high levels of engagement but low-income workers were not part of this study. It can therefore be hypothesised that:
H3: Job satisfaction positively affects employee engagement of low-income workers.

According to Dessler (1984), quality of work life refers to the degree to which employees in an organisation are able to satisfy important needs through their experience in the organisation. Islam (2012) argued that quality of work life essentially describes an employee's preference in terms of working conditions, remuneration, opportunity for professional development, the role of work-family role balance, safety, and social interaction. Alqarni's (2016) findings showed that quality of work life positively correlated with engagement and that two factors, "development of human capabilities" and "social relevance", were the only significant predictors of engagement. The results of Anitha's (2014) study showed a significant positive relationship between workplace wellbeing and therefore regarded it as a determinant of employee engagement. Galea, Houkes and De Rijk (2014) highlighted the fact that employers are becoming increasingly aware of how critical it is for their businesses to avail work-life balance opportunities for their employees. It can thus be hypothesised that:
H4: Quality of work-life positively affects employee engagement of low-income workers.

Other than the quality of organisational commitment and quality of work life, talent management has been found to affect employee engagement (see Halbesleben, 2010). Mensah (2015) added that talent management is the implementation of integrated strategies designed to increase workplace productivity by developing improved processes for attracting, developing, retaining, and utilising people with the required skills and aptitude to meet current and future business needs. Hughes and Hog (2008) argued that "the benefits of an effectively implemented talent management [...] include improved [...] retention rates, and enhanced employee engagement". Theoretically, it is proposed that training and development management and recruitment and selection (i.e. talent management dimensions) are the antecedents of employee engagement (Albert, Baker, Gruman, Macey & Saks, 2015). Another study showed that there was a significant positive correlation ($\beta = 0.36$; $p<0.05$) between trained employees who performed well and employee engagement (Halbesleben, 2010). The following hypotheses are therefore brought forward:
H5a: Talent recognition has a positive effect on employee engagement of low-income workers.
H5b: Talent development has a positive effect on employee engagement of low-income workers.

It was noted earlier that union members are more engaged than non-union members. Madlock and Booth-Butterfield (2012) claimed that employees' relations are important in providing support to co-workers and have a positive effect on employee satisfaction. Employees develop a friendship relationship with co-workers and in some instances are engaged or energised if they are given the opportunity to participate or are given a voice by management (Slabbert, Parker & Farrel, 2015). Recently in Tshwane, a capital city in South Africa, low-income workers who were not engaged by management as they were not part of unions, embarked on an illegal strike that closed two universities (Makhubu, 2016). Employees who feel a friendship with co-workers experience good mental and physical health (Ariani, 2015). A study undertaken by Ariani (2015) indicated a positive correlation between employee engagement and co-workers' relations. Hence it is hypothesised that:
H6: Co-workers relations have a positive a positive effect on employee engagement of low-income workers.

Based on the above discussion, it can be argued that engaging employees is a global issue. The literature shows that the majority of employees are not engaged. It is clear from the literature review that different predictors of employee engagement exist. The research gap here is that it is not clear what the predictors of employee engagement of low-income workers are, and this study addresses this gap. Discussed in the next section is the research methodology that the authors followed to address the primary objective mentioned in the introduction.

3. Methodology

Discussed in this section are the research design, population and sampling, data collection, questionnaire design, statistical analysis, validity and reliability, and ethical considerations.

Research design: The research design was cross-sectional survey design. The latter assisted the authors to quantify (Leedy & Ormrod, 2015) the predictors of employee engagement of low-income workers visiting or working at the Marabastad Mall in the CTMM. Since the study design was a survey, the researchers' epistemology was positivism and the researchers' ontological stance was objectivism (Bryman, 2012). This study was also exploratory since similar research has not been conducted before at the Marabastad Mall.

Economic status of respondents: According to Maleka (2017), as well as Carr, Maleka, Meyer, Barry, Parker, and Haar (2017), low-income workers earn between R1 000.00 and R10 000.00 per month. Therefore, employees who earned above R10 000.00 were excluded from the dataset. After excluding the participants earning above R10 000.00, the actual sample size was five hundred and forty-nine (n=559). The present study sample size is above 500, which, according to Leedy & Ormrod (2016), is a sufficient sample size if the population is more than 5 000.Four research assistants (RAs), conversant with the local language, were trained in March 2016 to collect data. The actual data collection took place from April to June 2016 at Marabastad Mall in the CTMM. Prior to the completion of questionnaires, the RAs informed the respondents that their participation was voluntary. The RAs also informed the respondents about the purpose of the study and that they had the right to withdraw their participation if they did not feel comfortable whilst completing the questionnaires. After each questionnaire was completed, the RAs thanked the respondents for their participation. The population for this study was low-income workers working at or visiting Tshwane's Marabastad Mall. Initially, 1 000 questionnaires were printed and participants were purposefully selected outside Marabastad Mall to complete them. The response rate was 87.4%. Table 1 presents the biographical information. Most of the respondents were female (n=351) and most respondents (n=158) reported that they lived with six or more people in their household. Also, the majority (n=489) of the respondents were not unionised. A total of 489 respondents' ages ranged from 25 to 44 years.

The questionnaire: The questionnaire comprised two sections; viz.: Section A collected biographical information and Section B comprised different scales. The nine items to measure employee engagement were taken from a scale developed by Schaufeli et al. (2002). Examples of questions are as follows: "At my work, I feel bursting with energy"; "My job inspires me"; and "I am proud of the work that I do". Nine items were taken from a job satisfaction scale (three items were supervision satisfaction, three items were co-worker satisfaction, and three items were rewards satisfaction) developed by Spector (1985). Some of the items are: "My supervisor shows little interest in the feelings of subordinates"; "I don't like the people I work with"; and "There are few rewards for those who work here". Nine items from the organisational commitment questions were adapted from Meyer and Allen's (1997) scale. Herewith are some of the items from the scale: "I really feel as if this organisation's problems are my own"; "Right now, staying with my organisation is a matter of necessity as much as a desire"; and "I think that people these days move from company to company too often". Nine items of talent management were adapted from the questionnaire developed by Van Hoek (2014). Examples of questions are as follows: "I receive relevant feedback on my performance"; "Acknowledgement for my work done is a motivating factor to remain in the organisation"; and "The organisation provides opportunities for further training and development". Nine items of the quality of work life were adapted from the scale developed by Walton (in Timossi, Pedroso, De Fransico & Pilatti, 2008). Some of the items are: "It is difficult to concentrate on work because of home matters"; "My extra/fringe benefits (such as transport, doctor, dentist, cafeteria, etc.) are good"; and "I am satisfied with the number of hours I have to work weekly". The respondents evaluated job satisfaction, organisational commitment, talent management, and quality of work life on five-point scales where "1=strongly disagree", "2=disagree", "3=neutral", "4=agree", and "5=strongly agree". The respondents evaluated employee engagement on a six-point scale where "0=never", "1=almost never", "2=rarely", "3=sometimes", "4=often", "5=very often", and "6=always".

Table1: Reliability Statistics

Cronbach's alpha	Cronbach's alpha based on standardised items	N of Items
.90	.90	46

Validity and reliability: Prior to data collection, the questions' face validity was achieved by pre-testing the questionnaire on 20 respondents. Content validity was achieved by requesting research, industrial relations and HRM experts to review the questionnaire (Spector, 2012). From Table 1 it is clear that the Cronbach's alpha is displayed and since it is closer to 1, it can be argued that the items used in the study are reliable (Bless, Higson-Smith & Sithole, 2013; Maree, 2016).

4. Results

Descriptive statistics: The discussion below comprises the descriptive and inferential statistics. The data were coded in Microsoft Excel and was exported into SPSS version 24. As can be observed from the table, there were more females (54.4%) than males (45.3%) who participated in the study. The data also showed that 62.1% of employees were in full-time employment and 73.2% were not unionised.

Table 2: Biographical information

Variable		Frequency	Percentage
Gender	Male	253	45.3%
	Female	302	54.4%
Employment status	Employed full-time	338	62.1%
	Employed part-time	206	37.9%
Member of the union	Yes	141	25.2%
	No	406	73.2%
	Missing	9	1.6%

Inferential statistics: In order to test biographical differences (i.e. gender, employment status, and member of the union), a T-test was conducted. The data showed that males were more engaged than their female counterparts. Also, Nienaber and Martins (2016) found that males were more engaged than female employees; part-time employees were slightly more engaged than full-time employees. As in the study conducted by Nienaber and Martins (2016), employees who were unionised were more engaged than the non-union members. Even though there were biographical differences, the effect sizes were very small because they were less than 0.06 (Pallant, 2016). Based on the study's results, H1A and H1B are supported and H1C is not supported.

Table 3: Employee engagement: Biographical differences

Variable		Mean	T-statistic	P-value	Cohen d
Gender	Male	3.53	7.96	0.00	0.23
	Female	3.21			
Employment status	Employed full-time	3.72			
	Employed part-time	3.73	8.20	0.00	-0.00
Member of union	Yes	3.61	2.29	0.02	0.23
	No	3.27			

Level of significance * $P<0.05$.

Before the linear regression analysis was conducted, certain assumptions were tested. The tolerance values were < than 0.10 and there was a variance inflation factor (VIF) which was > than 10. This seems to suggest that the assumptions of multicollinearity were not violated. The results were not surprising since there was no Pearson correlation between predictors that was 0.7 or above (Pallant, 2016). The Normal P-P Plot (i.e. not displayed in the paper) showed that the data centred around the solid line, moving straight from the bottom left to the upper right. This suggested that the linearity assumption was not violated (Pallant, 2016). It can be observed from Table 4 that the model was a good fit ($F = 64.65$; $p < 0.00$) and the independent variables explained 42.7% of the variance in employee engagement.

Table 4: Predictors of employee engagement

$R2$ = 0.427 Dependent variable: Employee engagement
F = (64.563; Sig= .000b) p = 0.00

		Unstandardised coefficients		Standardised coefficients		
Model		**B**	**Std. error**	**Beta**	**t**	**Sig.**
1	(Constant)	2.087	.232		8.976	.000
	QWL	-.217	.045	-.193	-4.847	.000
	TR	.275	.066	.193	4.162	.000
	TD	.151	.042	.143	3.576	.000
	JS	.432	.067	.284	6.426	.000
	CR	-.236	.051	-.162	-4.627	.000
	OC	.073	.047	.060	1.544	.123

QWL=quality of work life, TR= talent recognition, TD=talent development; JS=job satisfaction, CR= co-worker relations, and OC=organisational commitment.

As can be observed from Table 4, five variables were statistically significant; with the exception of organisational commitment. Therefore H2 is not supported. Talent recognition, talent development, and job satisfaction had a positive effect on employee engagement. This is in line with the literature review (Halbesleben, 2010; Society of Human Resource Management (SHRM), 2107; Zikouridis, 2015). Based on the study results, H3, H5A, and H5B are supported. The data showed that quality of work life and co-worker relations had a negative effect (i.e. inverse relationship) on employee engagement. This may imply that when employee engagement increases the need for quality of work life and co-worker relations may decrease. Therefore, the researchers took Hair, Black, Babin and Anderson's (2014) advice that variables with negative Beta scores should not be analysed. This finding is in contrast with the literature review (Anitha, 2014; Slabbert et al., 2015). Based on the study results, H4 and H6 are not supported.

5. Conclusion and Recommendations

Based on the study results, it can be concluded that males and employees who were unionised were slightly more engaged and employees hired on a part-time basis were more engaged. It was also evident that their mean scores were below 4, suggesting that they were less engaged. These were the variables that have a positive effect on employee engagement (job satisfaction, talent development, and talent recognition). It can therefore be concluded that an increase in these variables will result in an increase in employee engagement. It can be argued that an increase in one point in employees' job satisfaction will result in .284 in employee engagement. Also, an increase in one point of talent recognition will result in .193 in employee engagement, and an increase in one point in talent development will result .143 in employee engagement. In light of these study outcomes, the following recommendations are made:

- Employers can maximise employee engagement by improving the job satisfaction of their employees. They should also know the low-income employees for who they are, not just what they do.
- If the talent of low-income employees is recognised and developed by their employers, they will be more engaged. It is therefore clear that employers must put in effort to liaise with these workers and give credit to high-potential employees.

The results of study provide the management of companies an incentive to develop strategies to effectively engage low-income workers. The effect of labour relations and quality of work life was not certain and reverse scored. Future studies may explore the reasons for this result. In terms of further research, it is recommended that similar research be conducted where a probability sampling technique is utilised. A longitudinal study can also be conducted. It is also recommended that researchers should use a mixed-methods research design because it produces rich and credible data (Bryman, 2012; Leedy & Ormrod, 2015). Another recommendation for future research is to use confirmatory factor analysis (CFA) and a structural equation model (SEM) to develop a non-linear model for employee engagement. CFA will assist researchers to achieve discriminant validity (Ravand & Baghaei, 2016; Tladinyane & Van der Merwe, 2016) and SEM will assist researchers to determine the direct and indirect relationship between independent variables (i.e. job satisfaction, talent management, etc.) and employee engagement. Since the authors did not explore biographical significant difference in the present study, they recommend that in the future researchers should undertake such a study. The study has implications for policymakers that employees earning between R1 000.00 and R10 000.00 were less engaged and committed and their job satisfaction levels were low. The implication for managers is that they must be aware that development and recognition of employees and job satisfaction predict employee engagement and quality of work life and employee relations did not predict employee engagement.

This study had different limitations. It used a cross-sectional and non-probability sampling technique. In terms of the latter, the results cannot be generalised to all low-income workers. The authors had to use their research account; hence the non-probability sampling technique was deemed the most cost-effective option. The other limitation was the research instrument. Unlike other employee engagement research in South Africa (see Nienaber & Martins, 2016, p.66), it did not cover all the industries in which low-income workers are hired. Since exploratory factor analysis (EFA) was used in the present study, some items did not load on the original factors or variables (Babbie, 2013). In conclusion, if employees truly are an organisation's best asset, employers should be more compassionate towards lower-income workers and focus more attention to their needs. This could be an opportunity to transform their employees' work experiences to be more fulfilling and meaningful. Every interaction with an employee has the potential to influence his or her engagement and inspire discretionary effort. This study has contributed to a better understanding of what is important regarding employee engagement of low-income workers in the CTMM in South Africa.

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Income Diversification, Inequality and Poverty among Rural Households in Oyo State, Nigeria

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Abstract: The study examined income diversification, inequality and poverty among rural households in Oyo state, Nigeria. Cross-section data were generated from the survey conducted on a sample of 200 households with the aid of structured questionnaire using multi-stage sampling procedure. Descriptive statistics, diversification index, Gini coefficient, FGT poverty index, and the Probit regression model were used to analyze data. Mean income diversification index of 1.22 shows that majority of the respondents had multiple streams of income but crop farming had the largest share (90%) in total income. Mean income of respondents was ₦77,613.2±83575.01, and Gini coefficient of 0.48, 0.46, and 0.39 were obtained for total income, non-agricultural income, and agricultural income respectively. The poverty line was ₦6,490.50 and mean per capita expenditure was ₦9,735.74. The head count ratio showed that 53.5% of the households were poor while 46.5% were regarded as non-poor, and poverty gap was 0.214. From probit results, age, secondary occupation, and farm size had significant inverse relationship with poverty status. Having primary and secondary income sources is poverty reducing, therefore, rural households should be encouraged to remain in farming, especially crop farming, and motivated through skill acquisition to diversify into other income generating activities.

Keywords: *Income diversification, Inequality, Poverty, Income sources, Non-agricultural activities*

1. Introduction

Poverty is lack of job, hunger, poor health, low education, low self-esteem, lack of adequate housing, lack of land, low economic status, and inability to clothe oneself and family (Adigun et al., 2011). According to Lawal et al. (2011), poverty creates frustration, loss of hope/prospects and value for life, loss of meaning for life and purpose of living. Poverty also creates disillusionment about morality as it makes people compromise on moral values or abandon moral values completely. Okafor (2004) affirmed that the success or failure of any government is measured by the degree of attainment of human development or the level of poverty prevalent among the people. The notions of income distribution have been a subject of immense concern to economists for a long time. This is because high level of income inequality produces an unfavorable environment for economic growth and development (British Council, 2012). Previous studies have shown that income inequality has risen in many developing countries in the last two decades, leading to pockets of poverty situation across the world (Clarke et al., 2003). In Nigeria, though there has been multiplicity of programs and projects with poverty reduction mandate implemented over the years, it appears they were tinkering at the edges rather than the root causes of poverty since its incidence and severity had continued to deepen (Nwachukwu and Ezeh, 2007).

According to British Council (2012), Nigeria is a country with the largest population on the African continent with 162.5 million people, and it is among the thirty most unequal countries in the world with respect to income distribution, where the poorest half of the population holds only 10% of national income. More disturbing is the fact that 54% of Nigerians still live in poverty and the proportion has doubled since 1980, when about 28% were classified as poor. Human development indicators are also worse than those of comparable lower middle-income countries; 42% of Nigerian children are malnourished (Idowu et al., 2011). The average poverty incidence in Nigeria increased from 0.28 to 0.42 between 1980 and 1992 respectively, and by 1996, the situation worsened to an average of 0.66. By implication, out of every 100 Nigerians, 66 were dwelling below the poverty line with great difficulties (Nwachukwu and Ezeh, 2007; National Poverty Alleviation Program, 2006). The Nigerian economy is characterized by a large rural, mostly agriculture based traditional sector, which is home to about three-quarters of the poor. According to the International Fund for Agricultural Development (IFAD, 2009), the farm sector employs about two-thirds of the country's total labor force and provides livelihood for about 90% of the rural population. Agriculture is plagued with various problems, and as a result, most of the rural households are poor, and are diversifying their livelihoods into non-farm activities as a relevant source of income (Adepoju and Obayelu, 2013). This implies that despite agriculture being the major occupation, non-farm sector plays several roles in the development of the rural sector (Lanjouw, 2001).

The rural economy is not based solely on agriculture but rather on a diverse array of activities and enterprises. Diversification has been defined by Kimenju and Tschirley (2008) as the number of economic activities an economic unit is involved in and the dispersion of those activities' shares in the total economic activities of the unit. The focus on livelihood is relevant, in particular with the discussion on rural poverty reduction. With prevalent poverty in most rural areas, rural development has been an important policy goal for many developing countries (Hyewon, 2011).Africans diversify their livelihood strategies, including on-farm (crop, livestock and fisheries) and off-farm activities, or market and non-market activities, to mitigate risks inherent in unpredictable agro-climatic and politico-economic circumstances (Bryceson, 2002). Off-farm activities have become important component of livelihood strategies among rural households in most developing countries. According to Lanjouw and Lanjouw (2001), many smallholder farm households complement their farm income with income from non-farm sources. This strategy has several advantages, especially for poorer households. Their agricultural resources are often too limited to allow the productive use of all household labor, and non-farm activities offer an alternative remunerative allocation, especially during the lean agricultural season. Moreover, income from agriculture is subject to high risk due to climatic factors, price fluctuations, pests, and diseases. Earnings from non-farm employment may help to buffer the resulting income fluctuations and improve livelihood security.

In Nigeria, the rate of poverty reduction achieved from various poverty reduction strategies adopted is far below what is required to achieve the poverty reduction goal of the Millennium Development Goals (Nuhu, 2007). Burgeoning literature on livelihood diversification across the developing world has pointed to the increasing role of non-farm incomes in poverty reduction (Bryceson, 1996). Therefore, the concept of livelihood diversification as a survival strategy of rural households in developing countries (Ellis, 1999), and exploiting these off-farm opportunities could offer pathway out of poverty for the rural poor (Barrett et al., 2001). As diversification is not an end by itself, it is essential to connect observed patterns of income to resulting income distribution and poverty. According to Jonasson (2005) and Awoyemi (2004), the contribution of non-farm economic activities in rural economy cannot be neglected because it has grown substantially from 30% to 50% in the developing economies during the last two decades. In this respect, the behavior of rural households towards diversifying their sources of income and employment in favor of non-agricultural activities could be considered as an important requirement for rural poverty reduction in Nigeria. It is therefore imperative to examine the contribution of non-farm economic activities to household income and also look into the relationship among income diversification, inequality and poverty. The broad objective of this study is to examine income inequality and the effect of income diversification on poverty status of rural households in Oyo state. The specific objectives are to examine the sources of income generating activities, analyze income diversification and inequality, and poverty status of the households, and determine the effect of income diversification on the poverty status of rural households. Through the results emanating from this study, policy makers would be informed on steps to take in alleviating poverty among rural households. Also, non-governmental organizations will have better knowledge on where to focus their efforts.

2. Methodology

The study was carried out in Oyo state, Nigeria. It belongs to the western region since the days of the British colonial rule in Nigeria. From the census results of the National Population Commission (2006), Oyo state has an estimated population of over 5,591,589 million people. The state is located in the rain forest vegetation belt of Nigeria within longitude 70 23'47" N and 30 55'0". It is bounded in the south by Ogun state and in the north by Kwara state, in the west by the Republic of Benin while in the east by Osun state. As stated by Oyo State Agricultural Development Program (OYSADEP, 2001), the state has a land area of approximately 28,454km^2, and there are four ADP Zones; Saki, Ogbomoso, Oyo and Ibadan/Ibarapa. Oyo state exhibits the typical climate of averagely high temperature, high relative humidity, and generally two rainfall maxima regimes during the rainfall period of March to October.

A multi-stage (four-stage) sampling procedure was used to select the respondents. A total of 200 households were involved in the study. The first stage was the random selection of Ogbomoso and Ibadan/Ibarapa Zones. The second stage was the simple random selection of Oriire and Ogo-Oluwa local government areas from Ogbomoso zone, while Akinyele and Ido local government areas were selected from Ibadan/Ibarapa zone. Five villages were randomly selected from Ogo-Oluwa local government area; Ajaawa, Eleepa, Otamakun, Ayegun-Yemetu, and Ayegun-Araromi. Also, five villages were randomly selected from Oriire local government area; Tewure, Ikoyi-ile, Adafila, Abogunde and Iluju. Seven villages were randomly selected from Ido local government area; Olokogbooro, Abegunrin, Adegbolu, Koguo, Alapata, Eleshinfunfun and Abigbinde, and six villages were randomly selected from Akinyele local government area; Ajeja, Alaro, Alabata, Elekun, Olorisa-Oko, and Ijaye. Finally, fifty households were randomly selected from each local government area. Primary data were collected with the use of structured questionnaire which was administered to the respondents.

Analytical Techniques: Data collected were analyzed using descriptive and inferential statistics. The socio-economic characteristics of the respondents were analyzed using descriptive statistics such as frequency distribution and percentages, and the result are presented in frequency distribution tables. The objectives were analyzed as follows:

Sources of income generating activities: The descriptive statistics such as mean, frequency distribution and percentages were used to summarize and describe the sources of income generating activities among rural households

Income Diversification: Shares of household income derived from various farm and non-farm sources as well as the inverse of the Herfindahl index of overall income diversification was obtained, following Oyewole et al., (2015), Kaija (2007) and Ersado (2006) as Follows;

$D = \left[\sum_{j=1}^{n} S_j^{\alpha}\right]^{1/1-\alpha}$ …………………………………… (1)

$Y_{J} = \sum_{j=1}^{n} y_j$ ……………………………………………. (2)

α is the diversity parameter such that $\alpha \geq 0$ and $\alpha \neq 1$ for $\alpha = 2$, the index D becomes the inverse of herfindhahl index which is commonly used as income diversification index. The income diversification index used in the study was defined as the inverse of the herfindahl index as follows;

$D = \frac{1}{\sum_{j=1}^{n} S_j^2}$ ……………………………………………. (3)

Where

D = Diversity index

Sj = Share of income source with respect to the total income

Yj = Total income from source j

$Y = \sum_{j=i}^{n} Yj$ is total household income from all sources; j= 1, 2, 3…..n.

α =Diversity parameter, such as $\alpha \geq 0$ and $\alpha = 1, 2$ and 3.

The diversification index ranges between 0 and 1. If there is lack of diversity, the index is unity. So the degree of diversification depends on the amount by which diversity index exceeds unity.

Income inequality: This was used to show the degree of income inequality, between different households in the population. The Gini coefficient is a precise way of measuring the position of the Lorenz curve. It has a value between 0 and 1 and it is worked out by measuring the ratio of the area between the Lorenz curve and the 45° line to the whole area below the 45° line. If the Lorenz curve is the 45° line, then the value of the Gini coefficient would be zero. In general, the closer the Lorenz curve is to the line of perfect equality, the less the inequality and the smaller the Gini coefficient. The Gini coefficient is computed as:

$$I_{gin}(Y) = \frac{2\sum_{i=1}^{n}}{n^2 \mu} i\left[-\frac{n+1}{2}\right] Yi$$

Where; n = number of observations, μ = mean of the distribution

y_i = income of the household, I_{gini} = Income Gini

A gini coefficient of 0 expresses perfect equality, where all values are the same (that is, everyone has an exactly equal income). A gini coefficient of 1 expresses maximal inequality among values (where only one person has all the income). The determination of income inequality by gini coefficient was done using DASP Software on Stata. The Gini Coefficient formula is in line with Wilson et al. (2010), Madu (2006) and Damgaard and Weiner (2000). For this study, the gini coefficient for total income (gotten from agricultural activity, non-agricultural activity and remittances), income from agricultural activities only, and income from non-agricultural activities only, were obtained.

Poverty status of farm households: FGT poverty index was employed to ascertain the poverty status of the respondents and this was used to disaggregate them into poor and non-poor categories. It has become customary to use the P_α measures in analyzing poverty. Following the adoption of Foster, Greer and Thorbecke FGT (1984) class of poverty measures, households' total monthly expenditure was used to determine households' poverty status. The poverty line was constructed as two-thirds of the mean monthly per-capita expenditure of all households. This approach has been used by individuals and institutions, for example, Alawode et al. (2016), Yusuf and Oni (2008) and NBS(2005). Hence, non-poor households are those whose monthly expenditure is above or equal to two-thirds of the mean per capita expenditure of all households while those whose per capita expenditure was below two-thirds of the mean monthly per capita expenditure were classified as poor. The measures relate to different dimensions of the incidence of poverty. P_0, P_1 and P_2 were used for head count (incidence), depth and severity of poverty respectively. The three measures were based on a single formula but each index puts different weights on the degree to which a household or individual falls below the poverty line. The mathematical formulation of poverty measurements as derived from Foster, Greer and Thorbecke (1984) is estimated as:

H=q/n

Where; H= head count ratio (poverty incidence)

q=number of poor households that fall below the poverty line.

n=total number of rural household

Poverty gap index usually measures poverty depth and the formula below was adopted

$$p\alpha = \frac{1}{N}\sum_{i=1}^{q}\frac{Z_{-Y}}{Z}$$

where ;

p_α= poverty gap

Z =poverty line estimated using mean household expenditure

Y= average expenditure of the poor rural farm household

If α =0, then FGT measures the incidence of poverty

If α = 1, then FGT measures the depth of poverty

If α =2, then FGT measures the severity of poverty

The headcount index (P_0) simply measures the proportion of the population that is counted as poor. The poverty gap index adds up the extent to which individuals on average fall below the poverty line, and expresses it as a percentage of the poverty line. The poverty gap (P_1) is specifically regarded as the poverty line (z) less actual income (y_i) for poor individuals; the gap is considered to be zero for everyone else. It shows how much would have to be transferred to the poor to bring their incomes or expenditures up to the poverty line (as a proportion of the poverty line).The poverty severity is a weighted sum of poverty gaps (as a proportion of the poverty line), where the weights are the proportionate poverty gaps themselves, this is in contrast with the poverty gap index, where they are weighted equally. Hence, by squaring the poverty gap index, the measure implicitly puts more weight on observations that fall below the poverty line. Hence, the higher the value of α, the greater the weight placed on the poorest individual. The higher the FGT statistics, the more poverty there is in the rural household.

Effect of income diversification on poverty status of rural households: The probit regression model was used to determine the effect of income diversification on poverty status among rural households. It examined the relationship between the probability of a rural household being poor or non-poor with a number of explanatory variables. Following Rahji and Fakayode (2009), the model is specified as:

$Y^*_{ji} = \sigma_j + \beta_{j1}z_{1ij} + \beta_{j2}z_{2ij} + \ldots\ldots\ldots\ldots \beta_{jk}z_{kij} + \varepsilon_{ji}$

$Y^*\sigma_j$ remains constant across alternatives

β_{jk} is a regression coefficient associated with the jth explanatory variable and the kth outcome for j= 1,2,3,……….j-1

ε_{ji} is a random error term reflecting intrinsically random choice. Where:
Y = Poverty status of households (Poor = 1, 0 otherwise).
The independent variables include:
Z_1 = Age of the respondents (years),Z_2= Household size (number), Z_3= Primary occupation of the respondent (agricultural = 1, 0 if otherwise), Z_4= Secondary occupation of the respondent (non-agricultural=1, 0 if otherwise),Z_5= Farm size (ha), Z_6= Membership of society (members=1,0 if otherwise), Z_7= Gender of household head (male = 1, 0 if otherwise), Z_8= Marital status (married = 1, 0 if otherwise), Z_9= Years of education, $Z_{10=}$ Income from primary occupation (₦), $Z_{11=}$ Income from secondary occupation (₦), $\varepsilon_{ji=}$ Error term.

The coefficients may be positively or negatively significant or insignificant. A positive significant variable means that a percentage change in the independent variable will increase the probability of being poor by value of the coefficient, and a negatively significant variable is interpreted that a percentage change in the variable will reduce the probability of being poor by the value of the coefficient. The *apriori* expectation indicates that age of the respondents, primary occupation, secondary occupation, farm size, membership of society and years of education could have inverse relationship with poverty; while household size, gender of household head, and marital status might be directly linked to poverty.

3. Results and Discussion

Table 1: Income generating activities among rural households

	Primary occupation		**Secondary occupation**	
Activities	**Frequency**	**Percentage**	**Frequency**	**Percentage**
Agricultural activities				
Crop farming	151	75.5	1	0.5
Livestock farming	13	6.5	0	0.0
Processing	7	3.5	0	0.0
Fishery	4	2.0	1	0.5
Hunting	0	0.0	2	1.0
Non-agricultural activities				
Private salaried job	0	0.0	8	4.0
Artisans	12	6.0	66	33.0
Trading	7	3.5	38	19.0
Civil service	3	1.5	5	2.5
Transporters	1	0.5	14	7.0
Self employed	1	0.5	4	2.0
Clergy	1	0.5	1	0.5
None	0	0.0	60	30.0
Total	200	100	200	100

Source: Field Survey, 2016

Income generating activities among rural households: The income generating activities among the rural households are presented in Table 1. The activities were grouped into agricultural and non-agricultural activities which are primary or secondary activities to the respondents. Results show that more than three quarter (75.5%) of the respondents were engaged in crop farming as their primary occupation. This is expected as most households in the rural areas depend mainly on agriculture as their main source of livelihood. The crop farmers planted vegetables, yam, cassava, plantain, maize, pepper, tomatoes, and so on. More than 30% of the respondents did not have secondary income generating activities while about (70%) of the respondents engaged in a combination of different livelihood activities. From those who had secondary income generating activity, majority of them (33%) were artisans. These artisans include; tailors, hairdressers, barbers, welders, basket weavers, vulcanizers, mechanics, shoe makers, carpenters and painters. This shows that majority of the respondents diversified from agricultural livelihood activities to non-agricultural activities. Respondents had various reasons for diversifying into other income generating activities. However, the most pertinent reason for diversification was limited income due to seasonal factor of agricultural produce, diseases, pests and large number of dependents.

Income diversification and inequality among the rural households: From Table 2, majority (55.6%) of the households were engaged in farming activities either as primary occupation, secondary occupation or both. Crop farming had the largest share of about 90% in total income. This corresponds with the findings of International Fund for Agricultural development (IFAD, 2009). The remaining (10%) of the total income was shared among other livelihood sources with processing ranking highest (3%). The results also show that majority of the respondents were engaged in farming activities, and they generated more income from it, hence the large dominance of income from farming activities in the total income. The herfindahl diversification index obtained was 0.82 which further ascertained that the income generated from farming activities strongly dominates other income sources. Hunting and clergy as a means of livelihood contributed the least to the total income. Meanwhile, 30% had diversity index of 1, implying that these households did not diversify their income sources. The mean income diversification index was 1.22, which implies that an average respondent in the study area was involved in different types of income–generating activities simultaneously. On the average, a respondent was involved in at least one farming activity and one non-farm activity.

Table 2: Livelihood sources and income of respondents

livelihood activities	frequency	percentage	Income of respondents per month	Si	Si^2
Agricultural activities					
Livestock farming	13	4.8	911666.67	0.00726	0.000053
Crop farming	152	55.6	113485000	0.90358	0.816445
Fishery	5	1.9	2633000	0.020964	0.000439
Processing	7	2.6	3772000	0.03003	0.000902
Hunting	2	0.7	30000	0.00024	0.0000006
Non-agricultural activities					
Trading	45	16.6	2311000	0.0184	0.0003386
Civil service	8	3.0	357000	0.00284	0.00000081
Private salaried jobs	8	3.0	89000	0.00071	0.00000050
Artisans	78	28.9	1500600	0.01195	0.000142
Self employed	5	1.9	62000	0.00049	0.00000024
Transporters	15	5.5	373000	0.00297	0.0000088
Clergy	2	0.7	70000	0.00056	0.0000003
Total	260	100	125594266.7	1	0.82

Source: Field Survey, 2016

* The total of 260 was due to the multiple jobs held by some of the respondents.

Income inequality: In estimating the income inequality of the households, Gini coefficient was computed for total income (which include agricultural income, non-agricultural income and remittance), income from agricultural source, and income from non-agricultural source. The results are presented in Table 3. The mean income of respondents was ₦77,613.20±83,575.01. Also, the Gini coefficient obtained for total income was 0.48 (significant at 1%) and it reflects the level of inequalities in income distribution. This is similar to the Gini coefficients of 0.449 and 0.488 for Southeast and Nigeria respectively as reported by National Bureau of Statistics (NBS, 2005) and Aigbokhan (2008). Invariably, the gap between the rich and the poor was not so high among the rural households. The gini coefficients for agricultural income and non-agricultural income were 0.39 and 0.46 (significant at 1%). This implies that inequality was higher among households that earned non-agricultural than agricultural income generating activities, while inequality was highest for total income (including remittance). This may be due to a wide disparity between remittances obtained by household or overall effect of all income sources.

Table 3: Income inequality among the rural household

Income/Gini coefficient	Estimates
Mean income per month	₦77,613.21
Gini Coefficient	
Total income	0.48
Agricultural income	0.39
Non-agricultural income	0.46

Source: Data Analysis, 2016

Poverty status of respondents: From the results in Table 4, the mean expenditure was ₦50,433.50. The poverty line was estimated to be ₦6,490.50 which was computed as the two-third of the mean per capita expenditure of ₦9,735.74. Any household with monthly expenditure below the poverty line is classified as poor while household with expenditure equal to or greater than the poverty line is classified as non-poor. The head count ratio shows that 53.5% of the households were poor while 46.5% were regarded as non-poor. This implies that more households fell below the poverty line in the study area. The poverty gap of 0.214 was obtained. This can be compared with the poverty gap index of 0.12 for south-east geographical zone in 2004 reported by Omonona (2010).It is a measure of poverty deficit of the entire population. Poverty severity index was 0.108, this takes into account not only the distance separating the poor from non-poor households but also the inequality among the poor. The result is similar with the findings of Asogwa et al. (2012) who reported a poverty gap of 0.27 and poverty severity of 0.15 among farming households in Nigeria.

Table 4: Expenditure and Poverty indices of respondents

Expenditure/Poverty variables	Estimates
Mean expenditure per month	₦50,433.50
Poverty line	₦6,490.50
Per capita expenditure	₦1,947,15
Mean per capita expenditure	₦9735.75
Head count index	0.535
Poverty gap	0.214
Poverty severity	0.108

Source: Data Analysis, 2016

Effect of income diversification on poverty status: The probit regression results on the effects of income diversification on poverty status are presented in Table 5. The overall model had a good fit and it was significant at 1%. Age had significant relationship with poverty status at 5% and decreases the probability of being poor by 0.0128, implying that age reduces the probability of being poor. Household size was significant at 1%. A unit increase in household size will increase the probability of being poor by 0.175. This indicates that the larger the household size, the higher the probability of being poor. This is imperative because larger household size, especially more dependents, would require higher expenditure, hence, increase the chances of being poor. Being involved in agricultural activity as primary occupation, especially crop farming, reduces the probability of being poor by 0.1. Also, diversification into non-agricultural livelihood activity as secondary occupation had a probability of reducing poverty by 0.162 at 10% level of significance. This implies that being involved in agricultural activities as primary occupation and non-agricultural activity as secondary occupation reduces poverty. Since both categories of occupation have the likelihood to reduce poverty level, this means that households who diversify their income would further move away from poverty.

Being a member of co-operative society had a probability of increasing poverty status by 0.21 at 5% level of significance. This is not expected because co-operative society is supposed to better the life of a member. This effect may be due to complaints of respondents about co-operative societies. These include unfairness, mismanagement of funds and lack of fulfillment of expected benefits. Sex had significant effect at 1% level and had a probability of increasing poverty status by 0.295. This may be due to the fact that an average male has more responsibilities than his female counterpart. Marital status increases the probability of being poor by 0.243 and it was significant at 5%. This means that being married would increase the chances of being poor. The married have more responsibilities. Also, primary and secondary income had negative significant relationship with poverty. Although primary income was significant at 5% while secondary income was significant at 10%. This indicates that earning income from multiple streams is poverty reducing.

Table 5: Probit regression result on effect of income diversification on poverty status

Variable	z-value	Coefficient	marginal probability
Age	0.014	-.0321396 **	-.012813
Household size	0.000	.4390539***	.1750357
Primary occupation	0.469	-.2545589	-.1004824
Secondary occupation	0.100	-.4118469*	-.1620918
Farm size	0.319	.0358102	.0358102
Membership to society	0.014	.5499677 **	.2192533
Sex	0.000	.5499677 ***	.2952942
Marital status	0.013	.6240949**	.2434362
Years of education	0.686	-.0112396	-.0044808
Primary income	0.019	-0.0000001**	-0.0000007
Secondary income	0.002	-0.000008***	-0.0000032
Log likelihood		-87.626478	
Pseudo R^2		0.3628	
Prob>χ^2		0.0000	
N		200	

Note: ***, **, * Coefficients are significant at the 1%, 5%, and 10% level, respectively.
Source: Data Analysis, 2016.

4. Conclusion

Rural households diversified from agricultural livelihood activities to non-agricultural activities. Income inequality was higher among households that earned non-agricultural income than households that earned agricultural income, implying that agricultural income is more inequality reducing. Agricultural activities were found to be the predominant livelihood activities among the rural people but it did not reduce poverty significantly, but diversifying into non-agricultural activity as secondary income sources reduced poverty significantly. Nonetheless, income from primary and secondary activities reduced poverty significantly. It is concluded that there was income inequality among the rural households, income diversification (generating income from primary and secondary sources) by households decreased rural households' poverty, implying that livelihood diversification offers an opportunity for alleviating poverty among the rural households through multiple streams of income. Government policy should encourage rural households to remain in the farming business but motivated to harness other potentials in agriculture since agricultural income was found to be income inequality reducing. The policy should also emphasize crop farming since it has the highest share from total income. Skill acquisition programs by government and non-governmental organizations (NGOs) to enhance multiple streams of income (income diversification) for the households will be poverty reducing.

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The Nature of Host Community Participation in Informative Consultation and Decision-Making Processes in Tourism Development: A Case Study of Umhlwazini, Bergville, KwaZulu-Natal

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Abstract: Tourism industry in the central Drakensberg region has enjoyed a noteworthy growth in visitor influx and earnings as well. Conversely, poverty and poor living conditions in and around villages positioned nearby to major tourist destinations in the country continues to degenerate, which ultimately raised the issue regarding the contribution of host communities in tourism decision making and informative consultation processes. Community consultation and participation in decision making processes constitute a crucial component that offers assurance to the host community that tourism benefits will be shared with the community and that their views will be considered when making tourism decisions. Thus, this paper aims at exploring the existing extent of community consultation and participation in tourism decisions making, using a case study of Umhlwazini, Bergville, KwaZulu-Natal. The study incorporates a qualitative research approach with the use of interviews, focus groups and observations. The research findings show that the informative consultation process of community in the study area has been centralised, controlled, and minimal to none regardless of the constant aspirations of the host community to participate in decision making processes. Agreements and decisions relating to tourism and the community resources are agreed upon by outsiders who have no interest of the community at heart. The study recommends a private-public partnership, financial support for small local business enterprises, policy development and amendment to promote active community participation in tourism consultation and decision-making processes. This study contributes to a broader context of community participation in decision making structures, and present scholarly significance to researchers, students and academicians, and theoretical value to government, policy makers, investors and tourism authorities.

Keywords: *Consultation, community participation, decision-making processes, host community, tourism, development*

1. Introduction

Tourism is progressively developing into a central economic zone within the Drakensberg region. The industry of tourism is said to represent one of the most valuable sectors in the self-sustainability of UKhahlamba region, particularly the central part of the mountain because of its distinctiveness appearance (UKhahlamba Local Municipality, 2016). Consequently, the industry signifies one of the prime sources of livelihood, employment opportunities and infrastructural development for many countries, communities and tourist destinations (Baral and Heinen, 2007).The participation of local communities, particularly in tourism consultation and decision making processes cannot under any circumstances be ignored as it constitutes a critical component of tourism development. Ngxongo (2016) in his study of community participation and tourism development in Bergville discovered that the level of participation in extremely poor hence this study is essential in bringing to light the existing community consultation practise in Umhlwazini area.

According to World Tourism Organisation (WTO) the central constituent players of the industry, which are the government (public), investors (private), and host communities; are ought to work together as a foundation for a successful development of the industry particularly in grassroots level. The inability to realise the need to integrate the interests of all role players generally lead to exclusion, marginalisation, power struggle and passive participation of locals in tourism activities. In essence, this suggests that there is a communication breakdown between tourism stakeholders which results in uncertainty and volatility. Historically the local community of Umhlwazini has always been on the receiving end as most tourism investors often eliminate and exclude the views and the interest of the host community. Accordingly, the effect of poor consultation and participation of host communities in tourism activities constitutes one of the major challenges facing the tourism industry globally. The notion of decision-making participation and informative consultation of the host community remains the most appropriate and effective methods of dynamic community participation(Cole, 2006; Tosun, 2006; Murphree,2009; and Ngxongo, 2016).Subsequently, this study focuses on investigating the present consultation processes of the host community in matters affecting tourism at Umhlwazini. The study further examines the impact of poor consultation of local communities in tourism activities.

Scheyvens (2002) defines community consultation in the context of tourism as a process through which the adjacent citizens from where the tourist destination in situated are given sufficient right to voice out their opinions about the progression of tourism, they are consulted when major decisions are taken, and they are constantly updated on issues relating to tourism. Tosun (2000) further suggests that the host community in tourism development can participate by means of various methods, and two different levels of influence, in identifying community needs, offering resolution, preparation of new programmes and circulation of benefits. Ineffective consultation of the community poses a number of negative impacts which are not favourable to the enhancement of both the industry and the host communities. Various research scholars (Ashley, 2000; Li, 2006 and Lepp, 2008, and Ngxongo, 2016) correspond that the participation of the host community in tourism activities is mostly reliant on how crucial information is filtered from the top management (authorities) to the bottom level (community), thus the indispensable function of consultation can never be disregarded. On the basis of the above stated phenomenon, the study of this nature is mainly significant in the local environment for the reason that it contributes to theories in relation to why specific groups of community members participate in tourism, and some don't and also the modern nature of community consultation as far as making tourism decisions is concerned. The study allows for a foundation for the development and implementation of innovative policies and guiding principle on the community consultation and decision-making processes in the UKhahlamba municipality and to the entire region of the Drakensberg. As such, anticipated policies are to be utilised in educating the host community of Umhlwazini about tourism, to encourage maximum participation of the community in the early stages of development, and to track the development of the programme.

The outcome from this research also extends the body of knowledge about the impediments and key success factors regarding community consultation and decision making processes in tourism development in KwaZulu-Natal. Wider and deeper understanding of barriers to community participation will assist tourism policy makers to initiate appropriate strategies to overcome those limitations. Ultimately, the study helps to establish a level of tourism understanding and awareness among tourism authorities in Umhlwazini and the local community in particular. Such understanding can lead to better community participation and tourism benefits. In the present day, governments, including tourism authorities and the private sector have accepted the theoretical necessity to afford some level of authority and control of natural resources to the host communities; but the practicality of this concept remains a daydream misinformation as the majority of local communities are by no means consulted during the planning and budgeting stages which forms a crucial component of decision-making processes. Participation in tourism requires partnership and the dedication so to guarantee sustainability of tourism development activities. The impacts of participation are generally an indication of a particular stage of role players' involvement in the decision-making processes which as a result allows community members to make knowledgeable promises to a particular initiative (Stronza and Gordillo, 2008). The latest uproar of radical economic transformation in South Africa, which recognises the need to give a portion of powers to local communities, presents a great prospect for the tourism industry to explore the present nature and the extent to which host communities participate in decision making processes regarding tourism activities.

2. Community Involvement Concept in Tourism Decision making Processes

A number of research scholars (Tosun, 2000: Chok and Macbeth, 2007; Zhao and Ritchie, 2007; and Ngxongo, 2016) have simultaneously concurred that "the notion of community participation in tourism can be evaluated through two methods; decision making process and sharing of benefits with the host community". The United Nations Economic and Social Council Resolution 1929 (LVIII) illustrate the idea of involvement in development in the framework of tourism as follows: the privileges to voice out opinions on the proposed development, evenly and fair dealing with sharing of the benefits of tourism, and allowing the host community to participate in decision making and the implementation of the development or program. The underlying concept of allowing the host community to partake on development issues relating to tourism is to grant them the opportunity to utter their concerns, suggestion and get the necessary answers in relation to the development (Tosun, 2000). Simultaneously the community forms part of the decision making structure which makes it simple to distribute benefits generated from tourism in the area for to all the interested and affected parties, including the community. Equally, Cole (2006) coincide with the aforesaid analysis that the host communities can contribute in tourism campaigns and programs during all important phases of development including groundwork, implementation and sharing of benefits. Community involvement is ought to start in the early phases of development in tourism so that are role players will understand the responsibilities and expectations. The host community participation in this critical stage of the development can be in a form of providing manpower, sharing their profound enriching knowledge with the investors, providing materials and protecting their interest through discussions and signing of agreements. Tourism benefits' sharing represents an inclusive partnership between role players as it suggests that the host communities are able to enjoy economic remuneration, infrastructural development from the development of the tourism industry (Manyara and Jones, 2007).

A clear and honest method is particularly necessary for an effective community participation and consultation in tourism. Community meetings, written consultations and awareness campaign can be particularly useful for investors to gain support from the wider spectrum of the community. This way, the host community will feel connected to the development, and they will appreciate that their views are taken seriously. It is only when the host community benefits financially and their opinions are respected that their contribution to tourism development will become noteworthy of them. Community involvement in tourism is a great weapon that investors can use to win the support of the locals while guaranteeing the safety of the clients. When the people see themselves as part of the bigger picture; they will make sure that they do not engage in any violent situation that can taint their involvement in tourism. This can include protecting tourists against local crime and treating them with respect and dignity (Okazaki, 2008). This idea is also entrenched in the World Tourism Organisation principles, which categorically state that the host communities should and must at all time be consulted and participate in decision-making as they represent a fundamental component of tourism development (Chok and Macbeth, 2007)

Community Involvement in Benefit-Sharing: The idea of distribution of tourism benefits evenly with local communities has always been seen as one of many methods of community participation in the industry of tourism (Tosun, 2000; Li, 2006). Successful tourism development needs enhanced collaboration among tourism role players, including the industry, government at all levels, local communities, and tourism authorities. Benefit sharing is an important controlling instrument to consider in encouraging participants in particular the community (Eagles, McCoo and Hynes, 2002). Community participation has long been accepted as an instrument for harmonising power in spreading the benefits of development projects. In a top down development situation, the sharing of benefits is a way to pave the way for community participation in decision-making. In the absence of an effective analysis of the local political and development environments, it is difficult to conclude whether or not community participation in decision making is likely to be effective at a destination. Several studies and numerous worldwide development agencies have recognized that tourism is an influential tool for community enhancement due to the fact that it is an important economic sector in most countries (Chok and Macbeth, 2007; Zhao and Ritchie, 2007). Though there is no standard technique for assessing the sufficiency of community participation levels (Li, 2006). Communities can be attracted to participate in tourism through sharing the benefits acquired from tourism with them, and one requirement for a successful community tourism program, according to Scheyvens (2011) is that balanced profits of tourism "must remain in the hands of the majority of community members in an uncluttered and straightforwardly understood manner". An example of community participation in the benefits of tourism can be seen at the Isimangaliso Wetland Park, especially through its community outreach program, Isimangaliso's Arts and Crafts. The park provides an ideal platform for the local women to sell their products to the visiting tourists. The total proceeds from the project directly go to the community members that are involved in the arts and craft project. This is one of the strategies that are adapted by the park as an effort to enhance the footprint of the host community in tourism activities through arts and crafts (Gumede, 2009).

Study Area Community Consultation Processes: The UKhahlamba local municipality concedes the actuality that almost every one of the major tourism destinations in the Drakensbergis situated within local communities and predominantly exist side-by-side with the host communities. Many of these destinations are the main source of survival while others have a profound spiritual history of the host community. Hence, the

IDP policies do not only reiterate the need to incorporate the host communities of Bergville when making decisions about tourism destinations, but also emphasises the importance of sharing the tourism benefits with the surrounding communities in which all form part of community consultation procedures (UKhahlamba Local Municipality IDP, 2016). Regrettably, the IDP policies do not specify the necessary steps that must be followed in the community to be role players in tourism and to what extent can they play a part in making decisions. Hence the tourism authorities together with the private sector are taking advantage of this unawareness as a result the host community continues to be spectators in their own area. According to Ngxongo (2016), in Umhlwazini community the practise of community participation in decision making of tourism activities is practically non-existent which has yielded negative effects in the past. Community consultation in Umhlwazini is merely limited to issues in relation to livestock grazing, but when it comes to tourism issues; community consultation remains a top-down approach where all decisions are agreed upon without the input of the host community.

Community awareness, meetings are globally recognised as some of the most successful methods of consulting communities on issues that directly affect them (Tosun, 2006). The absence of community meetings contributes largely to the exclusion of the host communities as the majority of decisions are deliberated on community gatherings. Community meetings in the context of tourism serve to enlighten the locals about the details of all tourism programs, how can they participate and how these programs will affect the area economically and environmentally. Host community members are to be expected to have a clearer viewpoint on real issues if they are honestly consulted. This is in contrast with the state of affairs at Umhlwazini as according to Ngxongo (2016) the tourism issues of the village are certainly not discussed in community meetings which suggest that the community is deliberately excluded from making comments. Moreover, the community members rely on hearing says and rumour mill for information as there is a noticeable gap between the management of the resort and the community.

The Impact of Ineffective Community Consultation in Tourism: The consultation of the host community is fundamental, and authentic community involvement in decision making processes can uplift community awareness (Tosun, 2000). If the host community is actively involved in the process of developing tourism; it is most likely to support local tourism initiatives, actively participate in tourism, protect and safeguard visitors against any form of criminal activities arising within the community. Unfortunately, poor consultation with the host communities in tourism remains one of the foremost challenges that continue to undermine the constitutional rights and the desires of the host communities to participate in tourism activities (Mitchell and Ashley, 2010). Poor consultation of the host communities prevents the locals from participating in decision making processes (Cole, 2006). Consequently, the negative impacts of ineffective consultation between the community and tourism authorities have yielded harmful outcome, i.e. apathy, hostility towards visitors and negative outlook towards tourism which ultimately emerges as counteract to tourism development and community fulfilment. Effective, genuine and constant community consultation is particularly paramount in an effort to sustain the host community interests, values and their will to participate in tourism activities & beyond. The tourism industry has to do the utmost to incorporate and look after the interest of the host communities in developing the global agenda of the World Tourism Organisation. The present conditions of corruption, monopolisation, and deliberate exclusion of communities in decision making structures should be erased and undermined. Instead, inclusive management of tourism destinations should be encouraged, sharing of benefits with the community should be promoted and development must take place with the host community approval at all times.

3. Methodology

Research Design: According to Burns and Grove (2003) research design is an in depth outline for conducting a research study with control over elements that may interfere with the legitimacy of the findings. The study is descriptive in nature; with the use of qualitative research design. The qualitative aspect of the study aspires to gather an in-depth understanding of community behavior towards tourism issues and the grounds that leads to such behavior. This particular study investigates the "why" and "how" of consultation and decision making processes. Mainly, qualitative research allows the principal researcher to interact openly with the participants, offering the opportunity for comprehensive assessment of the matters and the generation of thorough responses (Nykiel, 2007). This research approach is mainly suitable in a study of this nature since it offers a holistic outlook of the local community of Umhlwazini with regards to consultation processes and their participation in community project decision making bodies.

Sampling method: The purposive sampling is utilized as it is the most suitable for this study because of its cost effectiveness; the researcher can identify participants who are likely to provide data that are detailed and relevant to the research question. According to Bryman (2008) purposive sampling is a form of non-probability sampling in which decisions concerning the individuals to be included in the sample are taken by the researcher, based upon a variety of criteria which may include specialist knowledge of the research issue, or capacity and willingness to participate in the research.

Study Sample: A total number of 25 respondents make up the study sample; the selected respondents represent the host community, tourism authority (Didima Resort and Ezemvelo KwaZulu-Natal), community Leadership (traditional council). The research study was undertaken in a recognised area in KwaZulu-Natal Province. The researcher found the participants in these areas to be directly involved or who may have had experience with this issue.

Data collection: A singular form of data collection was used; the researcher opted to exploit an unstructured interview method with open-ended questions for data collection. The interviews were conducted in a form of one-on-one sitting with all the respondents; a voice recorder was used to record all the interviews. Each interview lasted approximately 40 minutes. The interviews were conducted in the isiZulu language so that the respondents could have a clear understanding of the questions. The interviews covered all the necessary community structures including, the leadership, community members, traditional leaders, resort management and local tourism authorities. A total of twenty-five (25) interviews with the respondents were conducted so as to solicit all the necessary information that was required to get the appropriate answers. Two (2) focus groups were also interviewed as they are useful to obtain detailed information about personal and group feelings, perceptions and opinions, they save time and money compared to individual interviews and they provide a broader range of information.

Data analysis: This study adopted a thematic data analysis method, the information collected through interviews using voice recorder was translated, edited and transferred into a hard-copy format, the information was then coded per objective and categorised accordingly. Welman, Kruger and Mitchell, (2006) state that field notes can be described as detailed notes made by hand, tape recordings and observations that are compiled during qualitative interviewing. The results were consequently interpreted in parallel with the literature review and discussed.

Study Area: The Umhlwazini Village is a well-known rural village positioned adjacent to Didima Resort, falling within the authority of the UKhahlamba local municipality and the larger UThukela District Municipality. The village is placed about 6.2 kilometres from the southern section of the Didima Resort, and suitably situated on the way to all attractions that are available in the area. According to UKhahlamba Integrated Development Plan (2011) tourism and livestock business are the two major financial sources of live hood for many community members.

Figure 1: Image of Umhlwazini Community

Source: Scott (2013)

The village is set on the banks of major tourism features of the Drakensberg including the famous Mikes Pass, cathedral peak, San paintings and the mountain peak of snow. Hence this village is a famous stop for many visitors who are flocking to the either the resort or cathedral park hotel. The town of Bergville is the main administrative centre of Umhlwazini village; the area is under the administration of Amangwane Traditional Council (ATC). The host community of the village is a component of the surroundings and tourism facilities in the area. Umhlwazini community is a village mainly occupied by rural commune directly linked with the citizens that were removed from where Didima Resort is located (UKhahlamba Integrated Development Plan, 2011).

4. Data Analysis and Presentation

This section presents the responses from the interviews conducted from the focus groups and unstructured interviews. The data are presented in numbers and percentages, the results discussed and the data presented in this section are explicitly from the respondents. The themes that are identified for the purposes of data analysis are; the scope and nature of informative consultation and decision making processes, community participation strategy, impediments to active participation in decision making, and community structures that are involved in decision making. This primary objective was to explore the existing extent of community consultation and participation in tourism decisions making, using a case study of Umhlwazini, Bergville, KwaZulu-Natal. The results indicate that 72% of respondents are male, while 28% are female. This uneven proportion in respondents' gender is possibly caused by the fact that Umhlwazini is a profound rural village, as such, the belief in most villages is that the men knows better and should at all time be in charge or be the leader rather than a women hence the majority of respondents were male. The entire respondents, 100% was directly and indirectly involved with tourism activities in the area. Correspondingly, all of the respondents were residing in Umhlwazini area which was an advantage for the study since all respondents were familiar with the study area circumstances. Of all the respondents, 52% represented the host community members while 32% of the respondents represented the Amangwane Traditional Council whereas 12% of the respondents represented Didima Resort, and 4% respondent represented Ezemvelo KwaZulu-Natal.

Level of Community Consultation and Decision-making Procedures: In an effort to gain further information on the level of community participation in tourism development in Umhlwazini community, the respondents were probed on their participation in tourism decision-making procedures. The majority of the respondents indicated that they had never been part of any decision making process neither they have been called to comment or make any form of suggestion. Of the 25 respondents that were selected for the study, a total of 28% of the participants indicated that they have previously been part of the decision making process about tourism, whereas the majority 72% of the respondents indicated that they have never participated in tourism decision-making processes. In addition, 84% of respondents indicated that tourism authorities in the area have done very little to engage the community in the decision making of tourism activities. In essence, this research discovered that the host community of Umhlwazini area is mostly left over-looked in decision making processes and the information about tourism issues is always vehemently filtered down to the people. The respondents were subsequently asked whether if they had ever been requested to comment, suggest or recommend something about tourism at Umhlwazini; the majority of the respondents, 76% of the respondents indicated that they have never been requested to comment or suggest anything about tourism at Umhlwazini or Didima Resort, whereas 24% of the respondents indicated that they have once or twice been requested to comment and pass remarks about tourism in the study area. The ordinary members of the community are generally excluded when decisions about tourism are taken, as the small portion of the respondents that have previously been asked to participate in decision-making were from Didima Resort, ATC and the community councillor and none of the community. The informative consultation of the host community members as far as tourism development is a concern in the area remains deprived, largely, due to the disregard of community participation by tourism authorities.

The respondents were also asked whether they would wish to participate or be consulted when tourism decisions are finalised. The outcome of the investigation indicates that all the respondents unanimously agreed that they would be satisfied if the community was involved and consulted when decisions are taken as they are also custodians of the area where tourism is happening. According to the community of Umhlwazini, participating in tourism decision making is very important for them as their hopes for a healthier tomorrow are largely dependent on tourism, hence they need to be more involved than ever before. Regarding the decision-making processes, when the respondents were asked about their level of participation in decision making, one interviewee expressed the following:
“The community has no voice in tourism matters, in some cases they do not even engage us in issues relating to community projects; they will just come with a full plan on how everything will be executed, how much will be spent and who will do what and when. We hardly express our opinions on tourism yet the land belongs to our forefathers”

Taking into account the study outcomes, the decision making procedures of Umhlwazini tourism development remain very much monopolised and exclusive, community participation levels remains rather minimal which, in turn, functions against the principle of inclusive development in tourism (Cole, 2006). The rationale for such a restricted decision making process is that tourism in the region remains the key source of economy, hence Ezemvelo KwaZulu-Natal Wildlife is not willing to bestow the powers to people that possibly can make a decision against the will of the organisation. The findings of this study in this regard are not parallel with the principles of the World Tourism Organisation (WTC); which declares that host communities in areas where tourism is taking place have to at all times be a component of every level of management. The World Tourism Organisation during (World Tourism Day (WTD), 2014) reiterated the role of tourism in promoting the spirit of active participation of local communities using community development programs. A special emphasis was dedicated to host communities with a focal **point on how the tourism industry can be exploited in advancing community participation interest in decision making processes, particularly from the community members on the ground.** The WTD recognises that host communities have the rights to actively participate efficiently in the day to day administration of tourism matters occurring in their area. Consequently, mutual agreements must be reached that recognises the notion that community based tourism activities are must at all times involve community members in decision making procedures as per the host community desires and priorities.

Tosun (2000) asserted that community participation in tourism can take place in two forms; through the decision-making process and through sharing of tourism benefits with the host community. However, the outcomes of this study suggest that none of the two methods suggested by Tosun (2000) is happening at Umhlwazini as the community vehemently denies any involvement in consultation and decision making processes in their area. The results above indicate that the community of Umhlwazini is again being excluded in one of the most effective and common techniques of encompassing the element of local community in tourism development. The overall level of community participation in decision making of tourism development at Umhlwazini is extremely low. The members of the community are not involved in any of the tourism project initial stages, the views and opinions of the community about any proposed projects are not taken into consideration. This all suggests that the level of community participation in tourism is very marginal and selective hence the level of participation is very low.

Community Participation Strategy: The participants were also asked about the existing strategy that is used to promote maximum participation of the host community in tourism. The official custodian of tourism industry in the region is Ezemvelo KwaZulu-Natal Wildlife (EKZNW) in corporation with UKhahlamba Local Municipality. The study discovered that the present strategy that is used in the area is a top-down participation approach where community members are informed about tourism development activities rather than being engaged. There were various flaws that were discovered during the interviews, including the fact that community leaders are not considered as the role players in the decision making structures of tourism in the area. At least 86% of the respondents indicated that the existing participation strategy is was not drafted for the best interest of the community as it gives no power to the people to make meaningful decisions about tourism, whereas the other 14% indicated that there is a serious need for amendment of the strategy so that it serve the community rather than government. In theory, the tourism authorities in the area do concede the requirement to engage community members in decision making processes, but in practical sense; it's not yet taking place. When respondents were asked about this issue, one interviewee expresses the following response;
"I think the biggest problem with these people (EKZNW) is that that is they do not respect the community, all our opinions are not important to them. The system that they are using on us is more like that of apartheid where you are always told what to do and how you must do it".

Conflict of priorities between the community and EKZNW was also discovered to be one of the main issues that deteriorate the effectiveness of the participation strategy. Tourism is not the priority of EKZNW at any level. According to the outcome; tourism authorities from EKZNW declared that the main priority of the organisation is "CONVERSATION", and not tourism. This however was against the priorities of the people as the host community recognises tourism as their main source of revenue. The focal point of the participation strategy is conversation, and that is attested by a number of conservation community programs that were introduced, including; fire fighting initiative, community livestock program and landscape protection programs. These programs and others of similar nature are said to be the key priorities of EKZNW. A total of 92% of the respondents indicated that it's rather difficult for the community members to participate in decision making processes as most of the proposes activities are conservation related rather than tourism, whereas the other 8% of the responded indicated that they do not understand the distinction between tourism and conversation. According to Cole (2006) community participation strategy in tourism is likely to be more efficient and helpful if the host community is involved in the onset phases of the policy development as they are the ones to be affected by the strategy, they are the ones to approve and accept the strategy, and that they are the ones to champion and implement the strategy.

The results also discovered that the local municipality has no clear strategy or a policy that makes it compulsory for EKZNW to integrate community members whenever tourism decisions are taken in the area. The strategy does make provisions for the participation of host community members in EKZNW programs, but it does not specify as to how much and to what extent is the community allowed to participate. The UKhahlamba Local municipality is merely involved in the tourism affairs in the area through financial support thus all decisions about tourism activities in the area are decided by EKZNW single-handedly. The overall outcome of the study as far as participation strategy indicates that the strategy is manipulative, it is designed in such a style that the community members of Umhlwazini are excluded from voicing out their opinions and that there are too many flaws within the strategy that makes it exceptionally trouble-free for organisation like EKZNW to take advantage of the community.

Community Representation in Decision Making Structures: Tourism decisions are generally taken from structures or a board that represent the interests and the beliefs of all role players. The main role players in tourism, particularly in rural tourism and Community Based Tourism (CBT) are the community, government and investors. This paper furthermore looks at the extent to which the host community represented in the structures that makes decisions about the direction of tourism at Umhlwazini. On the topic of community representation, the study discovered that in theory the community should be represented by two committees that were elected the people. The first committee was elected with the responsibility to oversee tourism issues in the area, whereas the other committee was elected with the responsibility to represent the traditional council. In practise though, these two committees are never invited in any of the meetings, and that is due to disregard of community capacity to make competent decisions by authorities. A memorandum of understanding was mutual adopted in 2013 between the community and EKZNW that declared that host community members are ought to be allowed to express their grievances and remarks on how their land must be used, but none of the agreements have come into full effect.

According to Phillips and Roberts (2013) community structures and leadership are contributing dynamic to the success of tourism programs, especially in rural communities where illiteracy levels are relatively high. This is achieved by allowing the democratically elected community structures to be part of the decision-making **processes** in tourism development activities. The findings of the study are in contrast to the above-mentioned analysis as 72% of the respondents indicated that as officially elected community members generally they are never invited to participate in any of the decision making meetings by the authorities, the other 28% remained neutral as they were not in any leadership position to comment. The outcome of the study also discovered that the community levy fund, which is meant to support the community remains undisclosed as even the leaders of the community are not fully clued up about how much precisely is the community expected to get and how does one qualify to get the funding. According to Tosun (2000) the notion of sharing the tourism benefits with the community begins with a decision on how much benefit is to be given to the local community and that decision must be taken by the tourism authorities jointly with community leaders and community representatives. The traditional king and the community councillor are the only two people from the community who are occasionally invited during meetings. Regrettably, they are made to adopt a guest role and not participate in discussions about issues that are affecting the tourism patterns of their community. The results suggest that the community members of Umhlwazini are either deliberately excluded or the apparent lack of interest from the community could be the underlying basis for their exclusion, either way this phenomena present a challenge that can generate further detrimental problems in the near future unless it is appropriately and efficiently addressed by the people who are endowed with power. According to the outcome of the interviews, it can be strongly concluded that the host community of Umhlwazini is not represented in any of the official structures that makes final decisions about tourism development.

Impediments to Active Involvement in Tourism Decision-Making Procedures: In many developing countries, the development of the tourism industry is generally funded and controlled by international organisations that usually have incredibly little value for the host community and economic conditions of the area (Timothy, Ioannidas, Apostolopoulos and Gayle, 2002). This is because of the fact that a lot of unique tourism destinations are situated in rural and remote regions where levels of education and financial independence are extremely poor. In fact, many decisions in relation to the local tourism issues are decided somewhere else by foreign investors who have absolutely no regards to the interests and the well being of host communities where tourism activities are occurring (Wilkinson (1987). As such, in circumstances where all the authority over the management and development of tourism destinations are bestowed to private companies' only, minimal participation of community members in decision making processes is ought to happen. These, however pose a range of challenges to community members who wish to partake on tourism issues. Tosun (2000) categorised these challenges into three segments; operational limitations, structural limitations and, cultural limitations. In the quest of determining the challenges that prevents the host community to participate in decision making processes, the study outcome indicated that the most prominent limitations are related to operational and structural issues. The results suggest that the existing participatory approach is excessively one-sided to even respond to community requirements as the tourism authorities of Umhlwazini seemingly are not willing to share authority with the host community members. Indeed, Tosun (2000) asserted that the reluctance of investors to share power with host community members is one of the prominent limitations under operational challenges. Aref and Redzuan (2008), in their study of barriers to community participation toward tourism development indicated that the lack of coordination between investors and the host community, and efficient management is the main limitation of community involvement in decision making processes in Iran.

The outcome of the interviews further indicated some restrictions, which relates to structural limitations. A total of 60% of the respondents indicated poor education levels in the region as another limitation that prevents the local people from participating in decision making, whereas 26% of the respondents pointed out that economic reliance and lack of financial resources is a prominent challenge to the community of Umhlwazini particularly for those that are interested in pursuing tourism businesses, and the other 24% of the respondents indicated a lack of skills and expertise as an additional limitation that prohibits the host community to actively participate in decision making. The lack of skills in the area is directly linked to the low levels of education as these two variables are interrelated. Dogra and Gupta (2012) conducted a study on the barriers to community participation in tourism development; the outcome of the study indicated that all three forms of limitations as declared by Tosun (2000) exists in the study area, however, structural barriers were found to be the most prominent limitations that prevented the community of Sudh Mahadev to participate in tourism development. The concluding outcome of the study in this regards indicate that the greater part of Umhlwazini community simultaneously shares similar views concerning the limitations that hamper their participation in decision making processes particularly those that are related to tourism development. The remedial actions to the aforementioned challenges can only be achieved only if the participating role players work collectively and the private sector begins to recognize and respect the need to integrate host community members in all decisions pertaining to tourism development. Nonetheless, several limitations of community participation in tourism decision making processes as stated by Tosun (2000) were proven in this study, which ultimately suggests that the existing nature of community participation in Umhlwazini community is exceptionally poor.

In comparison, of the study results with other outcomes from different studies of similar nature, the findings are approximately comparable to a larger extent. The study discovered that a very small portion of the community in Umhlwazini is in fact participating in tourism decision making processes, the study also discovered that the host community members are willing to participate in tourism activities including decision making, however, the community still remains isolated and marginalised. The study further discovered that the level of participation in consultation processes concerning tourism development at Umhlwazini remains exclusive and only for the elite. The obstructions that prevent community members from participation were found to be the poor levels of education, shortage of expertise and skills, and corruption by the officials. The outcome of the study nonetheless is not so much unforeseen as the findings are in parallel with earlier research studies that explored the topic of host community participation and decision making in the tourism industry.

Michael, Mgonja and Backman (2013) conducted a study on *desires of community participation in tourism development decision making process using a case study of Barabarani in Tanzania*; the study was conducted in a rural area in Tanzania where tourism is the main source of sustainability for the community of Mto WA Mbu. In their findings, the host community acknowledged the necessity to be consulted at all times when tourism issues are discussed. The findings further suggested that the majority of the community members wants tourism authorities, community elected leaders and government officials to mutually make tourism decisions in consultation with community members, and that such decision must incorporate the interests of the community at heart. The study further concluded on the challenges that limited host community members to partake on decision makings, such challenges included poor leadership, insufficient knowledge and education and the arrogance of tourism authorities in the area. These results of the study that was conducted by Michael, Mgonja and Backman (2013) are fairly consistent with this study that "host communities in many developing countries are still marginalised in participating in decision making processes in tourism, particularly in rural areas where the level of education is exceptionally low".

Marzuki (2008) conducted a study on *decision making and community participation using a case study of the tourism industry in Langkawi.* The study argued that the host community members in the area have been afforded enough opportunities to participate in tourism decision making processes. In contrast, the findings suggest that the community members of Langkawi remain isolated and very far from the decision making structures. The outcome also suggested that the exclusion of community members in decision making processes is due to the participation strategy that was adopted by the tourism authorities that "community members can only express their concerns about tourism activities if requested and necessary". This study further concluded that there were three main issues in the study area as far as decision making participation was concerned. The issues discovered was insufficient information regarding the participation procedures in the decision making, limitations on the participation policies, and the apathy amongst community members. The study concluded by recommending that an innovative framework must be introduced that will guarantee community members' utmost participation in decision making in the area.

Tosun (2000) conducted a study on *the limits to community participation in the tourism development process in developing countries*; the variability of the decision making process in tourism development was a major component of the study. According to the study, the genuine participation of the host community in tourism can be realised in two methods; involving the community in decision making and sharing out tourism benefits with the host community. The outcome of the study concluded that many communities, particularly in developing countries are still finding it difficult to integrate the component of the local community when decisions about the direction of tourism are taken. The findings of the study were consistent with that of the aforementioned outcome as it was indicated that major limitations to community participation, especially in decision making was lack of information and awareness, centralisation of powers by tourism authorities, lack of skills and expertise, and elite dominance of the industry by those with money. The study concluded by recommending that in the future, research should focus on decentralisation of powers with a special emphasis on allowing host communities to take charge of all tourism activities in their land of birth, and that government should invest resources in community-based tourism (CBT) seeing that this is a perfect opportunity for communities to exercise their utmost authority in tourism without the interference of the private sector.

5. Discussion and Conclusion

This paper looked at examining the nature of community consultation and decision making processes; using Umhlwazini community as a case study. The findings suggest that the level of participation of the Umhlwazini community in decision-making is nominal to none. Virtually all the respondents agreed that the community is not involved in decision-making concerning tourism in the area. Over the past few decades the phrase "community participation" has gained increasing usage in academic literature, policy making documents and international conference papers as a key element in attempts to attain sustainable development in African countries. The issue of community participation is now an established principle when one considers issues dealing with decision-making to achieve sustainable tourism development (Shackleton, Campbell, Wollenberg and Edmunds, 2002). While several community members claimed to be aware of tourism benefits in Umhlwazini, they were quick to indicate that the community does not participate in deciding tourism matters. The majority of the respondents stated that the community is not involved in nor does it participate in decision-making relating to tourism interrelated matters. According to respondents, lack of education, corruption, political influence and accountability are the most prominent obstacles preventing the public from participating in tourism decision making processes. The literature has revealed that community participation in tourism development, especially in decision making procedures has become a vital component in several community development projects. Moreover, it has been noted that tourism is a good-placed poverty alleviation instrument, particularly in developing countries. The more local members participate in deciding about the projects in their area the more they will feel important and part of the process. A number of inclusive community based tourismprojects must be introduces so to give consent to community members to voice out their grievances and opinions about the tourism activities in the area. Tourism development campaign have to full take account of community members in planning, deciding and executing tourism projects in order to bring about harmony, a sense of inclusion, and the spirit of contentment.

Recommendations: The study recommends a public, private and community partnership that will generate efficient community ventures endowed with necessary expertise and capacity to encourage more community members to pursue tourism businesses as a means for sustainability. Such partnerships will provide necessary guidance, training and support for locally-based tourism. Through joint venture of this type, community leadership in the form of traditional leaders and elected leaders can benefits enormously with capacity building programs, and leadership skills enhancement. The study furthermore proposes tourism planning policy that will seek to enforce the support of community member's participation in decision making processes should be implemented. As such, the policy will present an allowance to the host community members of Umhlwazini to be part of tourism planning, development and implementation processes. Also the policy will permit for a planning system that will approve new tourism ventures that will be uncomplicated to manage and use for the community of Umhlwazini. Environmental Impact Assessment (EIA) method should be exploited as it provides an allowance for the host community to be a component of the pre-planning phases up until the proposed tourism development come into reality. Thus, will afford the community of Umhlwazini with a genuine opportunity to express their opinions, but also to be aware of how the anticipated developments will impact their lives and most importantly to partake on all decision making processes that involves their area of habitation and resources.

A special provision for financial support including leniency in supply chain and procurement policies needs to be established for the local community members of Umhlwazini so that they are able to enhance the footprint in tourism activities that are occurring in their area. In turn, this will have positive ripple effects on the economic sustainability of the community through employment opportunities, more business engagement from community members, and the increase in community members that are involved in tourism development. In order to bring harmony on the concern of non-participation of Umhlwazini people, it is recommended that both EKZNW and the community maximise the participation of people in decision-making. This suggests that gatherings must be held more often together with community members. The citizens of Umhlwazini should feel that decisions that are taken about tourism contribute towards their betterment. The reality is that projects are more likely to succeed and economic development happen when decisions that are taken reflect the will of community members and not that that of tourism authorities only. As stated earlier, the community members of Umhlwazini possess very partial information regarding tourism and its benefits, so, obviously their contribution to decision-making can be expected to be minimal. The concluding outcome of the study to some extent has provided a fresh perspective on how the issue of decision making in tourism can be addressed. Thus contributing immensely to the general body of literature on the subject of tourism, community consultation and decision making procedures.

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South African Sucrose Quality in Sugar: Determinants and its Empirical Implications

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Abstract: The study investigates which factors determine sucrose quality in the South African sugar cane production process. Though South Africa is the 8th largest producer of sugar cane in the world and the highest in Africa, a decline has been observed in the production of high quality sugar in the country. The study adopts the Auto Regressive Distributive Lags (ARDL) technique to analyze sugar cane production time series data from 1980 to 2016 in South Africa. Ten variables were tested, including Average Temperature, Stalk growth, Evaporation, and Soil Water Content (100mm). Our findings revealed that on both the short and long run, some of the variables investigated have the tendency of increasing sucrose level in sugar cane while an increase in other variables would decrease sucrose level altogether. However, the impact of Soil Water Content (100mm) appears not to be statistically significant on sucrose production in our regression model in the short and long run. Of special interest are Stalk growth (Reference sugar cane) and average temperature, as their values are more significantly germane as regards the quantity of sucrose obtained during sugar cane processing in South Africa.

Keywords: *Sugar, Can Production, South Africa, Auto Regressive Distributive Lags*

1. Introduction

The South African sugarcane industry is a diverse one involving both the agricultural cultivation processes, as well as the industrial production of sugars, syrups, and a range of by-products. It is a significant part of the country's agricultural economy with an average sugar output of 2.2 million tons per season (second only to maize), and is mostly centred in KwaZulu-Natal. Southern African Customs Union (SACU) is a market to about 60% of this sugar produced in South Africa and in combination with the world export market, contributes around R8 billion per annum to the South African economy and about R2.5 billion per annum to export earnings for the country. The average value of sugar cane production is R5.1 billion per annum, which is 17.4% of the total gross value of annual field crop production in South Africa. The industry supports 79,000 direct job and another 270,000 indirect job opportunities. It is estimated to provide sustainable livelihoods to about 1 million people (Tongaat, 2012). A total land mass of 430 000 hectares is engaged for the cultivation of Sugar cane in South Africa, covering about fourteen major provinces bordered by the Northern Pongola in the North and the Mpumalanga Low veld in the South. Mostly, a major proportion of about68%of this land mass area is the approximate distance of 30km away from the coastal region, while about 17% known for its high rainfall is located within the province of KwaZulu-Natal. The largely irrigated Northern Pongola and Mpumalanga Low veld areas makes up the remaining part of the total land area utilised for the growing of sugar cane in South Africa (Anon, 2016).

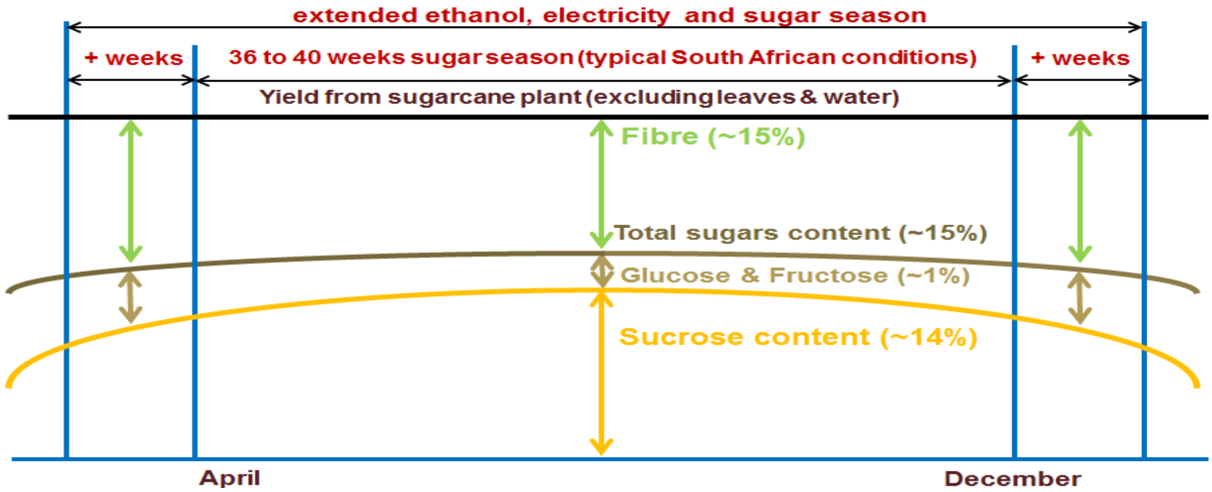
A highly complex system of molecular colloidal and suspended non-sugars and real sugars is the component extracted from the raw sugar cane juice, and the quality of extracted sugar largely depends on the percentage between the two categories of components. The quantity of sugar that could be extracted per ton of cane crushed is of great interest to a sugar cane miller in any given industry. All other things are a liability to the miller as this sucrose quality is the part which remains as an asset to him. Hence, the smaller the quantity amount of sugar cane per ton of sugar produced from the crushed cane, the lower the impurities level, the much easier it become for him to extract juice from the crystallize sugar. High level of sucrose and purity constitute the major factors that impact on a high rate of sugar recovery, level of non-sugars and low fibre. The nature and quantity of non-sugars found in the sugar cane is particularly important, as they have an impact on processing and refining costs. Sucrose content is therefore an all-important economic factor (Meyer and Wood, 2001). In fact, the days when sugar cane was paid for on a cane tonnage basis are long past. At present, one often hears that experimental results and even field yields should be given in tons sucrose per acre or tons sucrose per acre per unit time.

Sugar cane processing has made a wide range of contributions to the South African economy. Foremost, as has been earlier stated, is the high revenue the sugar cane industry generates. Secondly, approximately 77 000 jobs are provided to the South African populace through direct employment in the production and processing of sugar cane, and another 350 000 in other related support industries. Furthermore, South Africa has an approximate Figure of registered 35 300 cane growers. Relatively, an average of about one million individuals, this Figure is more than about 2% population of South Africans who solely rely on the cane sugar industry for their daily sustenance. In addition, the sugar industry has immensely offered support in education to the economy. The launched 1965 project of Sugar Industry Trust Fund for Education (SITFE) which began as an initiative from the private sector has been able to provide bursaries date to more than 10 000 higher education learners, through her supported school building projects and tertiary institutions worked towards the improvement of overall education standards in conjunction with community-based educational authorities.

Given the highlighted contributions of sugar cane to the South African economy, factors contributing to the quality of sugar cane content in the industry have a possible influence on its contribution to the total GDP of the agricultural sector, and hence, to the overall economy (Deressa, Hassan, & Poonyth, 2005). However, from a recent report on the South African sugar cane production industry which has been ranked fifteenth in the world with a production rate of 2.3 million tons per year of sugar, there has been a decline in both quality and quantity of the sugar produced (Anon, 2014).The rapid rate at which lifestyle diseases such as obesity, cardio-vascular disease and obesity are growing, especially among children, and the popular belief that fat and sugar consumption is responsible, has led the media and policy makers to have a negative attitude towards sugar production and consumption. However, such speculations are a result of unbalanced and scientifically flawed reporting about the role of sugar in the make-up of a balanced diet. Sugar is extracted from sugar cane, which is a natural plant. It is therefore completely natural, and a pure source of carbohydrate. Sugars contained in plants naturally occur in three forms – sucrose, glucose, and fructose. The sucrose obtained from sugar cane is no different from that obtained from other fruits and vegetables. In fact, all carbohydrate-rich foods, once digested, are converted into glucose, the body's primary source of energy. Prominent health bodies such as the World Health Organization and the Food and Agricultural Organization have confirmed that there is no clear-cut evidence of sugar being the direct cause of lifestyle diseases. Rather, they have shown that it is an indispensable part of any balanced diet.

South African sugar mills' main focus is to optimally extract sugar from sugar cane (Eggleston, 2010). The introduction of diffusion over the years as a preferred method of sugar cane extraction has to an extent improved the rate of sucrose extraction (Rein, 2007). The length of the South African milling session is usually 9 months, starting in April and ending in December (Moor and Wynne, 2001). Rein (2007) and Eggleston (2010) posited that about 98% of extractions from sucrose is obtained in South African sugar mills. However, Wynne and Groom (2003) objected, arguing that the 98% extraction rate cannot always the case. Rather, it is the length of the milling session in South Africa that determines sucrose content recorded for a particular season at a mill. Findings indicate that there is a bell-shaped path that appears typical in the South Africa season to sugar cane sucrose content curve, the month of July being the usual peak. Throughout the season, sugar cane quality differs influenced by factors such as the sugar cane cultivar grown, weather, pre- or post- harvest delay, and the age of the crop. At the starting and ending periods of the milling season, the recovery rate of sucrose is always lower, majorly as a result of cane quality fluctuations throughout the season and wet weather during harvesting (Kwenda, 2015). The duration of the season is determined by the amount of recoverable sucrose in the sugar cane plant. In the period from about the middle of March to the middle of December, the sucrose content is sufficient to allow for commercially viable extraction. Although the sucrose content tapers off at either end of the harvesting season, the total sugar content is still sufficient to allow for profitable bio ethanol production (Tongaat, 2012).

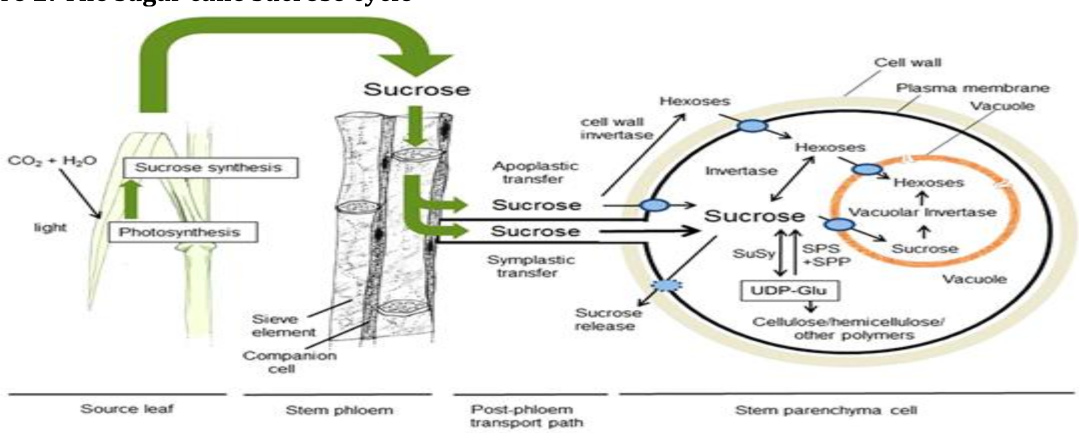
Figure 1: Extended sugar season



The extension of the sugar season is therefore also associated with additional sugar cane to be processed. This requires a further expansion of the area under sugar cane by about 12.5%. This expansion is only feasible in combination with bio ethanol production and access to bio ethanol markets.

The Sucrose Cycle in Sugar Cane: Sucrose is produced in sugar cane leaves (the "production site") through photosynthesis and transported to the stem (the "storage site") via the phloem. It is then either stored or converted to glucose and fructose which are used to provide the energy required for new growth. Although new growth reduces the sucrose content in the stem, it is most important, since it allows the plant ("factory") to increase both its sucrose production and storage sites (Whittaker and Botha, 1997). After the new growth phase, the cane undergoes the maturation stage where all fructose, glucose, and other soluble carbons are reconverted to sucrose for storage (Whittaker and Botha, 1997). It is worthy of note that even with optimal maturation conditions, a low yield cannot be overcome if the new growth stage was not efficient and led to poor (low yield) or excessive (low sucrose, but high fiber) cane growth. Scientists have made significant efforts to discover ways in which the growth process can be understood and manipulated to lead to high-sucrose cane yields, but with very little success. In addition, factors like climate and water availability which also affect the efficiency of this stage are out of the farmer's control. However, one thing that can be done to ensure high-sucrose produce is to ensure proper and adequate crop nutrition (Wang, Peng, Li, Bi, Legros, Lim, and Sokhansanj, 2013).

Figure 2: The sugar cane sucrose cycle



Source: Wang et al. (2013)

There are various factors that determine the quality of sucrose and other components in sugar cane, as can be seen from the literature. These identified factors include topping height, correct selection of varieties, harvest to crush delays harvesting practices, pest infestation, occurrences of diseases, fertiliser management practices, soil type and the use of chemical ripeners. Practices in fertilizer management have the tendencies of impacting directly on the quality of chemical in the sugar cane juice produced, for non-sucrose parameters as well as sucrose content, (such as starch, gums, ash and phenols) and this can to a great extent determine the quantity amount of recovered sugar in the streaming processes (Wood, 1982). The limited research available regarding sugar loss during the processing of sugar cane highlights these factors as responsible: method of storage and harvesting, cane variety, whether the cane is cut whole stock or billeted, and the level of cane contamination during cutting and storage. These attributes differ by country (Orgeron, 2012).

Table 1: South African Sugar Cane Varieties and their Characteristics

Variety	Parentage	Origin	Year of Release	Cane yield and RV (sucrose content)	Disease Susceptibility	Recommended Harvesting Practices	Recommended Planting Conditions	Ratooning, water stress recovery and response to ripeners	Other remarks
NCo376	Co421 x Co312	Coimbatore (India) & SASRI, South Africa	1955	Generally high yield and RV.	Susceptible to mosaic and smut.	Annual harvesting to be done at mid-late season.	Widely planted along the coast, not permitted in the Midlands or Northern Irrigated regions	Good ratooning ability, good water stress recovery and response to ripeners.	
CP66/1043	CP52/1 x CP57/614	Canal Point, Florida, USA	1987	High RV, low yield.	Resistant to mosaic and smut. Susceptible to eldana and yellow leaf syndrome. May lodge severely.	To be harvested in first few weeks of milling season.	Well-irrigated soils.	Generally poor ratooning ability and water stress recovery.	Requires excellent growing conditions. Profitable for farmers far away from the mill.
N12	NCo376 x Co331		1979	High RV.	Resistant to eldana and brown rust. Susceptible to mosaic.	Must be harvested older than 18 months	Variety of soils in rain-fed regions. Relatively poor performance on humid soils and on frost pockets.	Good ratooning ability	Hardy variety which performs well in a variety of conditions.
N14	N7 x MP	SASRI, South Africa	1980	Low RV, high yield.	Resistant to lodging. Susceptible to eldana, highly susceptible to RSD with high spread rate and losses	Annual harvesting at mid-late season. Do not harvest after mid-October. Poor cane yields after mid-August.	Not suitable for weak, shallow, or poorly-drained soils.	Poor water stress recovery, poor response to ripeners (Fusilade and Gallant), no response to Ethephon.	Requires high application of N and K fertilizers. Should not be planted too far away from the mill.
N16	NCo376 x Co331		1982	High RV, high yield.	Susceptible to eldana, smut, tawny, and brown rust.	Long cycle harvesting (more than 15 months old).	Humid soils in the Midlands and Hinterland. Usable in frost pockets. Performs poorly on shallow and sandy soils.	Poor water stress recovery.	Shows rapid stalk elongation and a high population of erect stalks, leading to generally good payloads.
N17	NCo376 x CB38/22	SASRI, South Africa	1984	Moderate-high RV, low-moderate yield		Annually along the coast. Must be harvested in summer (mid-late season).	Well-drained soils (sandy to sandy clay loams and heavy clay). Best results have been obtained on the North Coast and Zululand.	Poor ratooning ability in winter.	
N19	NCo376 x CB40/35	SASRI, South Africa.	1986 (North) / 1989 (South)	Very high RV, low	Susceptible to mosaic.	Annual harvesting.	Performs well on a range of soils (good alluvium, dolerite, Vryheid sediments) with proper irrigation.		Requires favorable rain-fed conditions to reach its potential of very high RV.
N21	CB38/22 x N52/214	SASRI, South Africa.	1989	Moderate RV, high yield	Resistant to eldana. Susceptible to lodging with late (16 – 20) month harvesting.	Harvest at 14 – 15 months if planted in Spring, and at 16 – 20 months if planted in Autumn.	Performs well on a range of soils (NGS Ordinary, Dwyka, tillite, granites), preferably on soils with above 12% clay content.	Good water stress resistance.	This variety actually performs better under stressed conditions and when eldana levels

								are high.
N22	70E0469 x N52/219	SASRI, South Africa.	1991	High RV, low-moderate cane yield.	Harvest early to mid-season. Poor results in the late season.	Only in high-potential soils with proper irrigation.	Poor water stress resistance.	Very suitable for mechanical harvesting due to its erect nature. RV content is highest early in the season.

Problem Statement: Customers' demand for high-quality sugar puts pressure on harvester operators and growers to focus on delivering sugar cane with high-quality content. However, this could be detrimental to the maintenance of sucrose quality, as it can lead to them pushing machine harvesters beyond their capacity, resulting in increased losses in sugar and sucrose. The imbalance between quality maintenance and the quest to meet customers' demand is a major challenge to cane growers in South Africa. Certain harvesting methods have been argued by policy makers that factors such as lower ground speed and lower pour rate could assist to reduce the loss in cane and damages of soil during the period of harvesting. It has however been noticed that such practices apparently increase harvesting cost significantly. A cane with high-quality sucrose would certainly possess a higher amount of Commercial Cane Sugar and hence improve profitability and growers returns; however, with the present harvesting prices, it is really difficult to produce an economically high-quality cane. The importance of understanding the factors that determine sucrose quality is shown by the priority of sucrose content among other components of sugar cane, as has been earlier discussed. The inability to effectively manage the economic pressure from various cane growing stages spanning plantation through harvesting results in short billets, high cleaning losses and excess stool damage. This in turn leads to a lower quality product being delivered. Addressing this major challenge is a major gap in the literature which this study is out to investigate.

Objectives of the study: The broad objective of this study is to determine the relationship between sucrose and the factors that determine its quality.
The specific objectives are to:

- To identify which factors determine sucrose quality in the South African sugar cane growing industry.
- To investigate to what extent these sucrose quality determinants impact on the profitability of sugar cane production in South Africa.

2. Theoretical Foundation and Empirical Analysis

The relevance of empirical analyses is hinged on the need to prove that the concepts in the study relate adequately with extant theories on sucrose formation. Not much work on theories that established the processes of sucrose formation in sugar cane can be found in literature. This could be as a result of individual interest in other fields of study at the expense of sugar production. However, some of the existing theories are reviewed herein. The theoretical background behind sucrose formation can be traced to Buchanan (1976), who found in his simple time regression analysis an inverse relationship between sucrose, harvestable components and water related contents. In addition, Rein (2007) and Meyer et al. (2013) posit that evaporation forms the heart of a sugar mill and is also the determining factor of the factory's steam economy. According to this argument, raw juice, which contains about 0.5% suspended solids, is heated up to near-boiling point and sent off to the evaporation system (Jorge et al., 2010). Evaporation involves the removal of water from sugar cane juice with the aim of attaining a solid concentration of about 60 - 65˚ Brix and an invert sugar composition of about 3.5 - 4.5%. Juice concentration then is reduced to a value just under the saturation point, after which crystallisation is initiated. This is done so as to get a cane juice concentrate with as little steam consumption, sucrose loss and colour formation as possible (Kwenda, 2015). Kwenda (2015) further postulates that a number of factors affect the efficiency of diffusers in the process of sucrose formation, such as cane preparation and residence time, imbibitions and percolation rates, the number of diffuser stages, flooding, and temperature. These factors should be taken into consideration and monitored if high sucrose extraction efficiency levels are to be maintained.

An impact factor which needs to be considered in the overall sugar production process is the environmental effects of sugar cane production processes. The choice of technologies applied in agronomic and agro-processing practices largely determine the environmental impact of the production process. The major environmental effects are air pollution from pre-harvest sugarcane burning (to facilitate cutting), water pollution, and soil erosion and compaction. Soil degradation through erosion and compaction happens as a result of intense mechanization (traffic of heavy machinery) and failure to implement best cultivation management practices, and has a negative impact on sugarcane yields (Martinelli and Filoso, 2008). Erosion problems become worse off by Compaction because it decreases water infiltration, reduce soil porosity, and ultimately increase runoff (Martinelli and Filoso 2008). The major source of soil degradation is during periods such as replanting of yields, land conversion, the time lag between next canopy closure and crop harvesting. During this time frame, the soil condition is left barren whereas this fallowing periods subject the soil to erosive forces of wind and rain. Even the wild vegetation, necessary conversion of natural and extensive pastoral conversion of land into cultivating fields of cane sugar exposes the soil to the risk of degradation. For instance, a research conducted in 2001at São Paulo, indicates a sharp increase in erosion rates to about 2 Mg/hayear to 30 Mg/hayear. This deterioration was observed take place among sugar cane fields, pastures and other natural vegetation. This high level of soil erosion allows deposition of sediment into reserved water, streams, wetlands, as well as rivers (Sparovek and Schnug, 2001).

According to Kwenda (2015), the sugar cane milling process is basically comprised of eight steps: cane preparation, sucrose extraction, raw juice clarification, filtration, evaporation, syrup clarification, crystallization, and centrifugal separation. Sucrose loss is experienced at each of these stages. It is therefore essential to review the major vulnerabilities of the product (sucrose) throughout the process, since the sugar cane industry is a complex system that requires efficient risk management capabilities. Watanabe et al. (2016) conducted a study which addressed some basic nutrients found in sugar cane juice and their main objective is to identifying the fundamental factors impacting on the quality of sugar cane. Sugar cane samples were collected between year 2013 and 2015 from all various milling stations where sugar cane is processed in Japan. This process helped to investigate the nexus between sucrose concentration and juice nutrients. Their findings based on the collected juice indicates that chloride (Cl^-) and potassium (K^+) are the major components present most in the juice of the cane sugar, and these two components correlate negatively with the concentration of sucrose in sugar cane. Furthermore, their result further established that the production area significantly contribute to the concentrations of chloride and potassium respectively, while those sugar cane with high content of Cl^- and K^+ concentrations reflects low concentration of sucrose.

Again, Buchanan (1976) focussed on the analysis of the statistical trends in sugar cane yields and quality and for a period of 25 seasons. It was indicated that although there were increasing rise in the production cost and a comparable decline in the quality cane sugar caused by an improved cane yields, the greater amount of sugar recovered (particularly when factory performance is not included) and its outcome returns increase more than was compensated for it. The study further indicates that there is evidence of possible gains that could be derived from economic advantage gotten in some certain situations from the processing of tops especially when leaves are not included). In other to further examine this, time series simple regression analysis was adopted, and the findings revealed from the statistical trends in cane yield and quality that there is economic support in the decline of the quality in cane provided there is a continued yield increase. Again, the study recommended that quality from cane sugar alone must not be the only priority at the expense of other factors. The significant impacts of temperature on the production of quality of sugarcane was the concern in Deressa, Hassan & Poonyth (2005) study. Having adopted a Ricardian model that integrated farmers' adaptation to investigate the effects of climate change on Sugarcane production in South African under dry-land and irrigation conditions. The research was built on a pooled data of 11 districts where time series data for a period 1977 to 1998 were adopted. The Result outcome indicates that changes in climate have nonlinear significant effects on South Africa net revenue per hectare of sugarcane. The result support possible future influence of increases in temperature than precipitation. Furthermore, the study also noted that irrigation cannot be taken as alternative effective strategy towards reducing the negative impacts of climate change on South Africa sugarcane production. Management regimes and technologies were suggested in the study as better alternative and it is a more efficient method towards adapting to climate change in sugar cane production.

3. Methodology

This paper is built on the theoretical foundation of the Cobb-Douglas production function as a means of establishing the factors that determine the quality of sucrose in the South African sugar cane milling industry. Bowle (1970) and Buchanan (1976) expanded the scope of the production function to incorporate linkages in the industry production possibilities of output and input, but with other possible factors are mainly controlled by technical relationships with the intention of gaining maximum profits. The Cobb-Douglas production function is built strongly on input and output relationship under which output in a given country i at period t takes the following form:

$$Y_t = AL_t^{\beta} K_t^{\alpha} \qquad (1)$$

Based on the given equation (1) above, Y_t = aggregate output in a period$t$, A is the total factor productivity, L_t is the labour input, K_t is capital input, where β *and* α are given as elasticity output of labour and capital, respectively. It is the level of technology that constantly influence these values.

In the where$\beta + \alpha = 1$, then the Cobb-Douglas model indicates constant returns to scale. It simply indicates that when we double the input of and labour $L_t$and capital $K_{t,}$ it lead to double output, Y_t. On the other hand, if $\beta + \alpha > 1$, it implies that increasing returns to scale set in and if$\beta + \alpha < 1$, it indicates diminishing returns to scale.

Linearizing equation (1) leads to new equation (2) as follows:

$$log(Y_t) = log(A) + \beta log(L_t) + \alpha log(K_t) \qquad (2)$$

A deviation takes place on Cob-Douglas production function as the study integrate agricultural product into production function as certain measures of output are determined by variables influencing them. The study attempts to adopt such variables used in literature, though not yet used in the South Africa, taking the forms in equations (1) and (2):

An equivalent of output Y_t is giving by Sucrose (*Sucr*$_t$*)* and K_t and L_t are to proxy all inputs in the production function. The functional relation is supported by Bowles (1970).

A Cobb-Douglas production function type is to be adopted, using the same variables such as: *Sucrose, Avtm, Drn60, Ecref, Fao, Grow, Harvest, Rain, Sr100, Swc100 and TT16*. This leads to the study's model specification.

Model Specification: Given that *Avtm*, *Drn60*, *Ecref*, *Fao*, *Grow*, *Harvest*, *Rain*, *Sr100*, *Swc100* and *TT16* would bear multiplicative relationship as inputs, we have:

$$Sucrose = f(Avtm, Drn60, Ecref, Fao, Grow, Harvest, Rain, Sr100, Swc100 \wedge TT16) \qquad (3)$$

At a time-series level, the linear relationship in the above equation yields:

$$\begin{aligned}\text{lnSucrose}_t = \text{ln}\alpha_1\text{Avtm}_t + \text{ln}\alpha_2\text{Drn60}_t + \text{ln}\alpha_3\text{Ecref}_t + \text{ln}\alpha_4\text{Fao}_t + \text{ln}\alpha_5\text{Grow}_t + \text{ln}\alpha_6\text{Harvest}_t + \\ \text{ln}\alpha_7\text{Rain}_t + \text{ln}\alpha_8\text{Sr100}_t + \text{ln}\alpha_9\text{Swc100}_t + \text{ln}\alpha_{10}\text{TT16}_t + \mu_t (4)\end{aligned}$$

Equation (4) leads to the ARDL model specification as follows:

The Model in ARDL format;

$$\begin{aligned}\varDelta\text{Sucrose}_t = c_0 + \sum_{j=1}^{n} \beta_{1j}\varDelta\text{RSucrose}_{t-j} + \sum_{j=1}^{n} \beta_{2j}\varDelta\text{Avtm}_{t-j} + \sum_{j=1}^{n} \beta_{3j}\varDelta\text{Drn60}_{t-j} + \sum_{j=1}^{n} \beta_{4j}\varDelta\text{Ecref}_{t-j} + \sum_{j=1}^{n} \beta_{5j}\varDelta\,\text{Fao}_{t-j} \\ + \sum_{j=1}^{n} \beta_{6j}\varDelta\text{Grow}_{t-j} + \sigma_1\text{Harvest}_{t-1} + \sigma\text{Rain}_{t-1} + \sigma_3\text{Sr100}_{t-1} + \sigma_4\text{Swc100}_{t-1} + \sigma_5\text{TT16}_{t-1} + U_t \ldots\ldots\end{aligned}$$

Where: ln *Sucrose* $_t$ is the dependent variable, and *Avtm, Drn60, Ecref, Fao, Grow, Harvest, Rain, Sr100, Swc100,* and *TT16* are the set of independent variables.

Ln A is the constant or intercept in the model, and μ_t is the part is not captured by the growth of the following explanatory variables: *Avtm, Drn60, Ecref, Fao, Grow, Harvest, Rain, Sr100, Swc100 and TT16.*

α_1-α_{10} are partial elasticity as given by each of the variables.

μ_t, α_{t1}, α_{t2}, α_{t3}, α_{t4}, ... α_{t10} are the measurable constants, and according to this model, they are positively related to sucrose, hence they are to be positively signed according to a priori expectations.

In line with equation (4) above, five steps are involved in carrying out a time series ARDL analysis: the ARDL time series unit root testing, the ARDL regression, ARDL Error Correction Model (ECM), diagnostic test, and analysis and interpretation of results.

Definition of variables: The variables used in the study are defined as follows:

- Average Temperature (AVTM): This is the sum of maximum temperature and minimum temperature divided by two to form the average temperature for the fourteen milling firms in South Africa.
- Deep Drainage at 60mm (Drn60): This is the average soil water that percolates beyond the root zone (deep percolation) for a soil with a total available moisture of 60 mm.
- Evaporation - reference sugar cane (Ecref): This averages the water loss through evaporation from the soil surface and transpiration from a fully canopied unstressed sugarcane crop.
- Evaporation - reference grass (Fao): This is a composition of all references on water loss through evaporation from the soil surface and transpiration from unstressed short green grass.
- Stalk growth - reference sugar cane (Grow): This is averages the total fresh cane growth of a full canopy unstressed sugarcane crop estimated as a function of incident solar radiation or crop water use, whichever is more limiting.
- Harvestable days – mechanically (Harvest): This is an average of mechanically harvestable days, determined from soil water content in the top 30 mm layer.
- (Rain): This is the average annual rainfall for all the mills within the cultivated period.
- Runoff – 100mm (Sr100): This accounts for the average surface runoff (water flow) as a result of the soil being saturated with water for a soil with a total available moisture of 100 mm.
- Soil Water Content - 100 mm (Swc100): This comprises of the averages of plant available soil water content calculated for rainfed conditions for a soil with a total available moisture (TAM) of 100 mm and with a full canopy cane crop growing on it.
- Thermal time 16°C (TT16): This is the average cumulative value of the mean daily temperature minus a threshold/base temperature of 16°C, below which the rate of sugarcane development or growth is taken as zero.

Justification for adopting appropriate Model: Study have shown that unit root is common problem that must be addressed while running a time series analysis. To therefore determine the most appropriate method of regression analysis suitable for this analysis, the study consider the need to test for the stationarity of the variables using three different alternative measures. To achieve this, Giles (2013) submit three situations that pose a problems to data and offer the best alternative methods:

- Given a condition where every variable in the model are integrated of order I (0), Ordinary Least Square (OLS) model would be needed as the best methodology since all variable are stationarity.
- There are conditions under which every variable is non-stationary at I(0), but when differenced could be become stationary at I(1), such situation requires the adoption of VECM as a preferred model (Johansen Cointegration Approach).
- Again, in situations where some variables have the mixture of both I(1) and I(0), Auto Regressive Distributive Lag (ARDL) is may be required (Chudik and Pesaran, 2013).

Data Sources: Data spanning the period between 1980 and 2016 on Average temperature (*Avtm),* Deep Drainage at 60mm (*Drn60),* Evaporation with to reference sugar cane (*Ecref),* Evaporation with reference to grass (*Fao),* Stalk growth with reference to sugar cane (*Grow),* Harvestable days – mechanically (*Harvest), Rain,* Runoff – 100mm (*Sr100),* Soil Water Content (*Swc100)*and Thermal time 16°C*(TT16)* are sourced from the South Africa Sugar Research institute (SASRI) website, while data on sucrose content in sugar was sourced from South Africa Sugar industry directorate 2016/2017 version.

4. Results and Discussion

Justification of Estimating Techniques: The estimating technique employed for this research work is the time series Autoregressive Distributed Lag (ARDL) approach of Chudik and Pesaran (2013), with the aim of testing for the existence of long and short run relationships between sucrose content in sugar cane and the variables that determine it. The study adopted ARDL methodology as the appropriate estimating technique due the following peculiar features with ARDL:

- When long run and short run dynamics are to be estimated, ARDL model offers the most recent valuable method (Giles, 2013).
- In conditions with a mixture of I(1) and I(0) data, ARDL model has been argued to be an appropriate techniques. Hence, it indicates that the method of estimation can be sequentially applied, most especially in cases of I(1), I(0), or mutually co-integrated and when their order of integration are mixed, however, ARDL cannot accommodate I(2) (Katircioglu, 2009).
- ARDL operates with automatic system selection of lags as they enter the model, and it can run appropriately with six variables (Giles, 2013).
- The long and short run regression of the model can be simultaneously estimated (Dritsakis, 2011).
- In the event of both small and large sample sizes, ARDL is mostly appropriate (Rafindadi and Yosuf, 2013).

In line with the above justification for our methodology, this study will employ the time series ARDL method according to Chudik and Pesaran (2013) to estimate the sucrose content in South African sugar cane. Faridi and Murtaza, (2014) among others have employed ARDL while using Cobb-Douglas production function.

Data Analysis and Interpretation: We report the results of the investigation carried out on the determinants of *Avtm, Drn60, Ecref, Fao, Grow, Harvest, Rain, Sr100, Swc100* and *TT16,* which are the independent variables.

Table 2: Results from Augmented Dickey Fuller

Augmented Dickey Fuller (Individual intercept)			
Variables	**t* Statistics**	**Order of Integration**	**P-Value**
AVTM	-4.817438	I(0)	0.0004***
DRN60	-4.867868	I(0)	0.0003***
ECREF	-5.010527	I(0)	0.0002***
FAO	-5.076252	I(0)	0.0002***
GROW	-2.752692	I(0)	0.0753*
HARVEST	-5.203241	I(0)	0.0001***
RAIN	-4.820605	I(0)	0.0004***
SRO100	-4.695419	I(0)	0.0006***
SUCROSE	-2.978819	I(0)	0.0465**
SWC100	-5.250974	I(0)	0.0001***
TT16	-3.683665	I(0)	0.0087***

"***", "**" and "*" represent statistical significance at 1%, 5%, and 10% respectively

Result for unit Root test in the model: To avoid spurious regression results in our study, this paper takes into account the need to test for unit root on the time series macro-variables in our model. Extant literature affirmed that most time-series macro-economic variables usually have stationarity problem and regressing non-stationary series could results in error that could threaten the validity/accuracy of our regression outcome. Hence, the study adopts a robust version of Augmented Dickey Fuller and Phillip-Perron and Dickey Fuller unit root test for this purpose. The study adopts the three methods to ascertain and validate the consistency of our results (Moon and Perron, 2004). The findings indicates that there is level stationarity for all the three methods, namely: Dickey Fuller, ADF-Fisher Chi Square, and Phillip Peron Unit root-test. The p-values were tested at 10%, 5%, and 1% respectively and as indicated in Tables 2, 3, and 4. We accept the unit root result since there is consistency and the estimating technique adopted can incorporate I(0) and I(1) in the analysed regression.

Table 3: Results from Dickey Fuller GLS

Dickey Fuller GLS (Individual intercept)			
Variables	**t* Statistics**	**Order of Integration**	**P-Value**
AVTM	-4.766138	I(0)	0.0000***
DRN60	-4.263975	I(0)	0.0001***
ECREF	-4.453989	I(0)	0.0001***
FAO	-4.409348	I(0)	0.0001***
GROW	-2.678070	I(0)	0.0112***
HARVEST	-4.019797	I(0)	0.0003***
RAIN	-4.488013	I(0)	0.0001***
SRO100	-4.279773	I(0)	0.0001***
SUCROSE	-2.624016	I(0)	0.0128**
SWC100	-4.006268	I(0)	0.0003***
TT16	-3.569667	I(0)	0.0011***

"***", "**" and "*" represent statistical significance at 1%, 5%, and 10% respectively

Table 4: Results from Phillip Peron

Phillip Peron (Individual intercept)			
Variables	**t* Statistics**	**Order of Integration**	**P-Value**
AVTM	-4.801834	I(0)	0.0004***
DRN60	-4.937494	I(0)	0.0003***
ECREF	-5.027942	I(0)	0.0002***
FAO	-5.048722	I(0)	0.0002***
GROW	- 2.621172	I(0)	0.0981
HARVEST	-5.187962	I(0)	0.0001***
RAIN	-4.832512	I(0)	0.0004***
SRO100	-4.678649	I(0)	0.0006***
SUCROSE	-2.866652	I(0)	0.0593*
SWC100	-5.245243	I(0)	0.0001***
TT16	-3.587831	I(0)	0.0110**

"***", "**" and "*" represent statistical significance at 1%, 5%, and 10% respectively

Result and Discussion on the Time Series ARDL Regression Model: This section reports results from the time series ARDL regression analysis done on the South African sugar cane milling industry. The popularised ARDL estimating technique as proposed by Pesaran & Pesaran (2010) was adopted with at least two lags. Table 5 presents the result of the time series ARDL estimated regression. According to the estimates from the time series regression, a high level of sucrose content is obtainable in both long and short runs, as most variables that determine sucrose content in sugar-cane are statistically significant at a 5% level of significance, except Soil Water Content - 100 mm (Swc100), which is not significant. It is evident that the variables under investigation tend to improve sucrose content in the South Africa Sugarcane industry if appropriate attention is given to their behaviour.

Table 5: Results from Time Series ARDL

Dependent Variable: SUCROSE
Method: Time Series ARDL
Sample: 1980-2016
Model selection method: Akaike info criterion (AIC)
Selected Model: ARDL(2, 2, 2, 2, 2, 2, 2, 1, 2, 2, 2)

Short-run Cointegrating Form

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(SUCROSE(-1))	0.415227	0.037154	11.175707	0.0015
D(SRO100)	-0.008469	0.000482	-17.568617	0.0004
D(SRO100(-1))	0.015909	0.000747	21.307105	0.0002
D(RAIN)	0.007401	0.000327	22.631870	0.0002
D(RAIN(-1))	-0.012874	0.000485	-26.565897	0.0001
D(HARVEST)	0.060107	0.002072	29.013529	0.0001
D(HARVEST(-1))	-0.093860	0.003658	-25.657408	0.0001
D(GROW)	38.239732	1.283654	29.789752	0.0001
D(GROW(-1))	24.367272	0.955758	25.495238	0.0001
D(FAO)	-31.06625	1.148737	-27.043840	0.0001
D(FAO(-1))	4.278805	0.508227	8.419079	0.0035
D(ECREF)	8.063441	0.383741	21.012710	0.0002
D(ECREF(-1))	-8.814526	0.334510	-26.350540	0.0001
D(DRN60)	0.001318	0.000368	3.578049	0.0373
D(AVTM)	-5.570829	0.207804	-26.808064	0.0001
D(AVTM(-1))	-1.577333	0.136116	-11.588165	0.0014
D(SWC100)	-0.002789	0.002855	-0.976830	0.4007
D(SWC100(-1))	-0.061940	0.003197	-19.374341	0.0003
D(TT16)	0.024974	0.000851	29.334098	0.0001
D(TT16(-1))	0.010655	0.000511	20.865465	0.0002

Long Run Coefficients

Variable	Coefficient	Std. Error	t-Statistic	Prob.
SRO100	-0.004502	0.001384	-3.253732	0.0474
RAIN	0.005088	0.000588	8.648131	0.0033
HARVEST	0.051463	0.005617	9.162409	0.0027
GROW	11.570062	1.308137	8.844686	0.0030
FAO	-17.54530	2.100031	-8.354785	0.0036
ECREF	6.843537	1.087776	6.291309	0.0081
DRN60	0.005439	0.001577	3.448763	0.0410
AVTM	-3.894437	0.348141	-11.186389	0.0015
SWC100	0.017636	0.010036	1.757219	0.1771
TT16	0.016084	0.001021	15.757655	0.0006
C	68.369306	6.301726	10.849299	0.0017

Data Analysis and Interpretation: A total of ten variables (among the variables that show a tendency to influence sucrose quality) entered the ARDL regression model, as indicated in the table 5. The results show that the variables have a high tendency to improve sucrose content in sugar cane both in the long and short run. This is because all variables exhibit significant relationships except Content of Soil Water (Swc100). The coefficient signs of these variables are important, as they give further details about the impact of these variables on the dependent variable. For instance, a 1% increase in the Runoff (Sr100) will cause sugar cane sucrose content to decrease by 0.8% in the short-run and by 0.5% in the long-run. However, the reverse is the case in the previous season, where a 1% increase in the Runoff – 100mm causes a 1.5% increase in sucrose content. Similarly, both short and long run, a 1% increase in rainfall will increase sucrose by 0.7% in the short run and 5.1% in the long-run. Similarly, mechanically harvestable day has the possibility of improving sucrose content. There could be 6.0% and 5.1% increments in sucrose content in the short and long runs respectively as result of a 1-day increase in the harvestable day. In summary, the study found consistency in the result obtained both in the short and long run. For instance, Growth of stock, Evaporation, Deep drainage and Thermal time at the temperature of 16^0cvalues would increase sucrose quality with a 1% increase in the variables' coefficients. This is also true in the long run. However, the study revealed a reverse relationship among evaporation with reference to grass, lag in evaporation, Average temperature, and its lag. An increase in these variables would decrease sucrose content in sugar cane by the coefficient value level.

Inferences, Comparison with Previous Empirical Studies and Discussion of Findings: The results indicate a negative relationship between sucrose content and Evaporation – Reference grass (Fao), Evaporation – Reference Sugar cane (Ecref) and the lag of Ecref, and Average Temperature (AVTM) and its lag, which is contrary to a priori expectation and existing theory. They support the findings of Buchanan (1976) who found in his simple time regression analysis an inverse relationship between sucrose, harvestable components and water related contents. Deressa, Hassan & Poonyth (2005) also noted that precipitation and temperature negatively and significantly affect sugarcane production in South Africa. The adoption of regression analysis to determine the impacts of these explanatory variables on sucrose has not been exploited much in literature. However, results have shown how sucrose could be increased in the production of sugar cane given the consideration of the available variables under investigation. The component proportions that will lead to increment have been identified. The study contributes to the body of knowledge in the following ways: (1) we employed a more sophisticated estimating technique in the determination of factors that could enhance sucrose increase in sugar cane which before now has not been used. (2) we provide evidence to support the increase of sucrose by moderating the increase of Growth of stock, Evaporation, Deep drainage, Thermal time and the temperature in the plantation periods and hence the increase in more sugar. The policy implication of our study to South Africa sugar industry is that more attention should be given to various planting season and possible weather variations as this variation could inhibit the quality of sugar cane product for the planting season and hence decrease expected revenue for both the farmer, the industry and South African government.

Table 6: Serial Correlation

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	1.243341	Prob. F(2,1)	0.5355
Obs*R-squared	24.96180	Prob. Chi-Square(2)	0.0000

Source: Authors' Computation

H_0:There is no serial correlation among the paired independent variables and the dependent variable.
H_1:There is serial correlation among the paired independent variables and the dependent variable.
Decision rule: Accept null hypothesis (H_0) when p-Value is greater than 5%.
Reject null hypothesis (H_0) when p-Value is less than 5%.
The results from serial correlation are shown in Table 6. The probability value in the table indicates that the F-statistics p-Value is greater than 5%. We therefore reject the null hypothesis and accept the alternative hypothesis, implying that there is no serial correlation in the model.

Time series-ARDL Regression Analysis Model and its strength Measurement: The study requires determination of the short and long run nexus as well as the strength of the Akaike Information Criterion (AIC) model selection summary on other models (the Hannan-Quinn criterion and Schwarz criterion) in the regression model. A Criteria graph has been employed to determine the top twenty (20) different series-ARDL models. The bench mark for the model analysed shows "that lower value of the AIC, behaves better in the model". From Figure 1, the first ARDL (2, 2, 2, 2, 2, 2, 2,1,2, 2, 2) model seems to be mostly preferred over others, since it provides the lowest possible value (-.2.8) in the Akaike Information Criterion. The ARDL (2, 2, 2, 2, 2, 2, 2,1,2, 2, 2) model appears to be the next with a -2.8 value as shown in the criteria graph.

Figure 1: Akaike Information Criterion (Top 20 models)

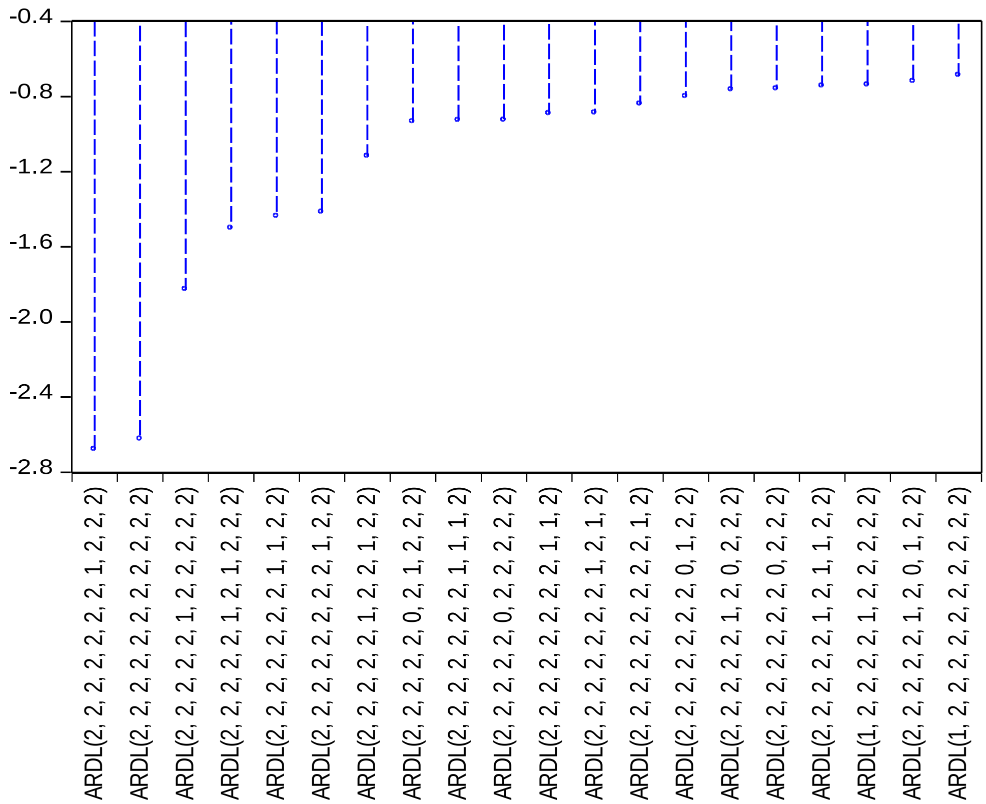


Table 8: ECM Analysis

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CointEq(-1)	-2.258148	0.074588	-30.274923	0.0001

Time Series-ARDL Error Correction *Model*: In Table 8, we use Error Correction Model (ECM) analysis to investigate the short run and long run dynamics of our model. The ECM coefficient reveals the speed of adjustment – how slowly or quickly the variables are expected to return to equilibrium. The negatively-signed coefficient of the ECM established an existing disequilibrium in the past, but the system is getting adjusted in the right direction. An ECM value of -2.258 suggests that there is a speed of adjustment from the short run deviation to the long run equilibrium of those factors that determine sucrose variables. Furthermore, we noted that long run equilibrium can be attained since the ECM is statistically significant at 5%. Our findings conform to the result of Banerjee, Dolado & Mestre (1998) and Rabbi (2011) who argued that a strong significant ECM value establishes proof of the existence of a stable long run association. Our findings further show that there will be convergence (steady-state) of the system and the attainment of high rate of sucrose in sugar is expected in the long run.

Table 9: Bound Testing

Null Hypothesis: No long-run Relationships exist

Test Statistic	Value	K
F- Statistic	16.36734	10
Critical Value Bounds		
Significance	I0 Bound	I1Bound
10%	1.76	2.77
5%	1.98	3.04
2.5%	2.18	3.28
1%	2.41	3.61

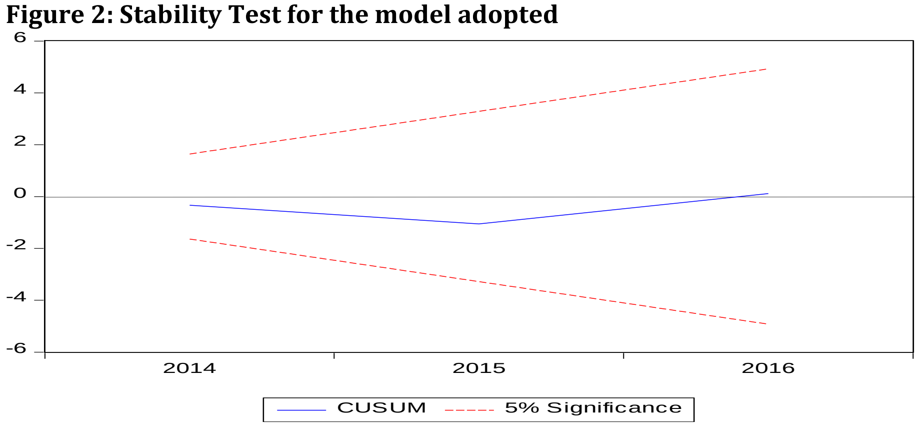
Test for Heteroskedasticity: We again ran the bound test to further establish the long run relationship among these variables. It is traditional that the value of *F*-statistics must be higher than both the lower and higher value of the upper bound. As indicated in the table, the value of 16.36734 is higher than 3.61 and 2.41. This further establishes the fact that there exists a long run relationship among the variables in question.

Table 10: Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	1.264954	Prob. F(31,3)	0.4916
Obs*R-squared	32.51265	Prob. Chi-Square(31)	0.3922
Scaled explained SS	0.447050	Prob. Chi-Square(31)	1.0000

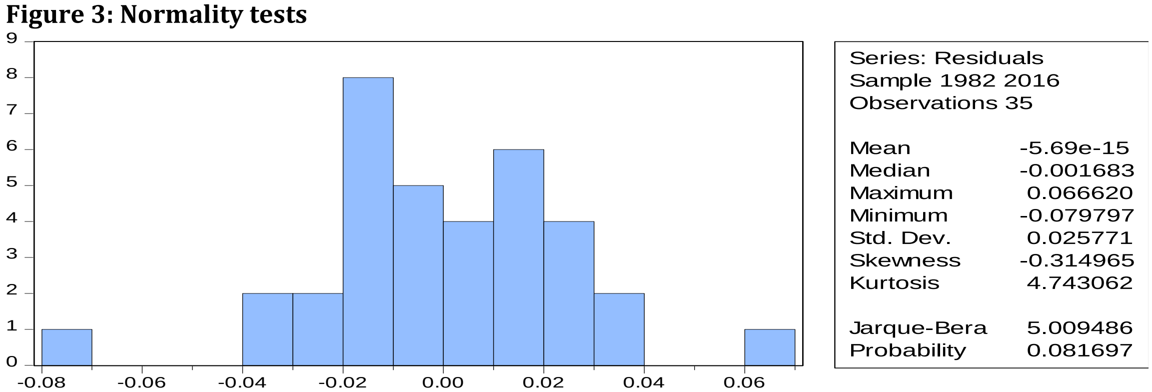
Test for heteroskedasticity was carried out on the regression analysis where it is expected that the variance of the error term be constant for all levels of observation. If this assumption is violated, then a heteroskedasticity problem sets in. We used the Breusch-Pagan-Godfrey test to confirm the existence of heteroskedasticity. The rule of thumb here is that three probability values must not be significant. As indicated in our table, this condition was met in our results, meaning that no heteroskedasticity exists in the model.

Figure 2: Stability Test for the model adopted



Furthermore, stability test has been carried out in this research work on recursive residual using Cusum procedure at 5% level of significance. It is evident that if the blue line falls within the two red lines, it shows that the regression is stable and it further confirms that there is long run relationship as shown in the figure above.

Figure 3: Normality tests



Again, Normality Test was carried out to ascertain if the data adopted is normally distributed on our regression analysis. From a priori expectation, except the Kurtosis to be skewnedaround **3.0**for a normal distribution, we. If ***K*> 3** → excess height, above average height. Our Kurtosis value of 4.7 fits in by approximation and revealed that our model is normally distributed. **Jarque-Bera:** J-Bera is a **perfect test** for normality. It is a combination of both Skewness and Kutosis. The normal standard or **Decision Rule**:If ***J-B* <**

5.99 → We do not reject the H_o (i.e. there is normality). If ***J-B > 5.99*** → We reject the H_o (i.e. there is no normality). Again, with Jarque Bera Value of 5.009 ,we do not reject $H_{o.,}$ meaning there is normality.

Table 11: Short-Run Causality Tests

	EQUATION: P-ARDL, H0=C(1)=C(2)=0		
Statistics	**VALUE**	**DF**	**PROBABILITY**
F –statistics	17.96141	(2, 3)	0.0214
	EQUATION: P-ARDL, H0=C(2)=C(3)=0		
Statistics	VALUE	DF	PROBABILITY
F –statistics	10.73110	(2, 3)	0.0429
	EQUATION: P-ARDL, H0= C(3)=C(4)=0		
Statistics	VALUE	DF	PROBABILITY
F –statistics	1.512483	(2, 3)	0.3514
	EQUATION: P-ARDL, H0=C(4)=C(5)=0		
Statistics	VALUE	DF	PROBABILITY
F –statistics	21.99715	(2, 3)	0.0161
	EQUATION: P-ARDL, H0= C(5)=C(6)=0		
Statistics	VALUE	DF	PROBABILITY
F –statistics	37.66610	(2, 3)	0.0075
	EQUATION: P-ARDL, H0= C(6)=C(7)=0		
Statistics	VALUE	DF	PROBABILITY
F –statistics	59.50756	(2, 3)	0.0039
	EQUATION: P-ARDL, H0= C(7)=C(8)=0		
Statistics	VALUE	DF	PROBABILITY
F –statistics	53.33957	(2, 3)	0.0045
	EQUATION: P-ARDL, H0= C(8)=C(9)=0		
Statistics	VALUE	DF	PROBABILITY
F –statistics	13.30528	(2, 3)	0.0322

Source: Author's calculation

Short-Run Causality Tests among the Determinants of Sucrose Quality: The study further considered the possibility of two variables jointly impacting on the short-run. Increase in sucrose quality. In the wald test model: C1= Avtm; C2=Drn60; C3=Ecref; C4= Fao;
C5=Grow; C6=Harvest; C7=Rain;C8=Sro100; C9=Tt16; C10=Swc100. The results indicate that all the pairs of variables could jointly impact on sucrose level in the short run, except for the pair of C(4) and C(5), namely Evaporation – Reference grass and Stalk growth – Reference sugar cane, whose p-Values are not significant. This implies that both variables cannot jointly cause sucrose to increase at the short-run.

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Food Inflation and Passenger Vehicle Purchases in South Africa: Cointegration, Short Run Dynamics and Causality

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Abstract: Food inflation in South Africa has been observed to be a major source of underlying inflationary pressures in the economy due to its persistence beyond that of other commodities. In this regard, this study investigated whether an increase in the prices of food products has a significant effect on passenger vehicle purchases in South Africa. The Phillip-Perron (PP) test, showed vehicle purchases to be stationary in level while food inflation was stationary in the first difference. Using secondary time series data, the Johansen cointegration test revealed that the variables in the vehicle purchase function were cointegrated in the long run. The vector error correction model showed a long-run relationship, albeit insignificant, between food inflation and vehicle purchases. There was no evidence of a short run relationship between the two variables. The Granger causality test revealed no causal effect between the variables, regardless of the direction of the test. The study concluded that an increase in the prices of food products will not play a considerable role in consumers' vehicle purchase decisions in South Africa. These results have policy implications for the motor and related industries.

Keywords: *Passenger vehicle purchases; Food inflation; Cointegration; Vector error correction model; Granger causality*

1. Introduction

Inflation is considered as posing serious economic challenges to businesses and consumers. This is mainly due to its adverse effect on the value of consumer buying power, social instability and reduction of confidence in the currency (Ashraf, Gershman & Howitt, 2013). It was observed that food prices in South Africa, have an indirect impact on inflation, through their effect on inflationary expectations, wages and the prices of other components in the consumer price index (CPI) (Rangasamy, 2010). The country is considered to have a larger weight for food items in its consumption basket; hence the increase of food prices has a large impact on inflation trends. Furthermore, food inflation in South Africa has been more persistent than the inflation of other commodities, thus considered as an important source of underlying inflationary pressures in the economy (Rangasamy, 2010). Considering that several studies have established a significant correlation between inflation and automobile sales (Apec, 2012; Chifurira, Mudhombo, Chikobvu, & Dubihlela, 2014; McGowan, 1984; Muhammad, Hussin, Razak, Rambeli & Tha, 2013; Muhammad, Hussin & Razak, 2012; Zide, 2012), it is therefore important to seek to establish the possible existing link between food inflation and vehicle purchases in South Africa. Although several other studies also identified food to be one of the factors that influence purchase decisions (Cheng, Sims & Teegen, 1997; Makatouni, 2002; Munchanda, Ansari & Gupta, 1999; Pieterse, 2009; Rimal, Moon & Balasubramanian, 2005), there appears to be an absence of research that directly links food inflation to passenger vehicle purchases.

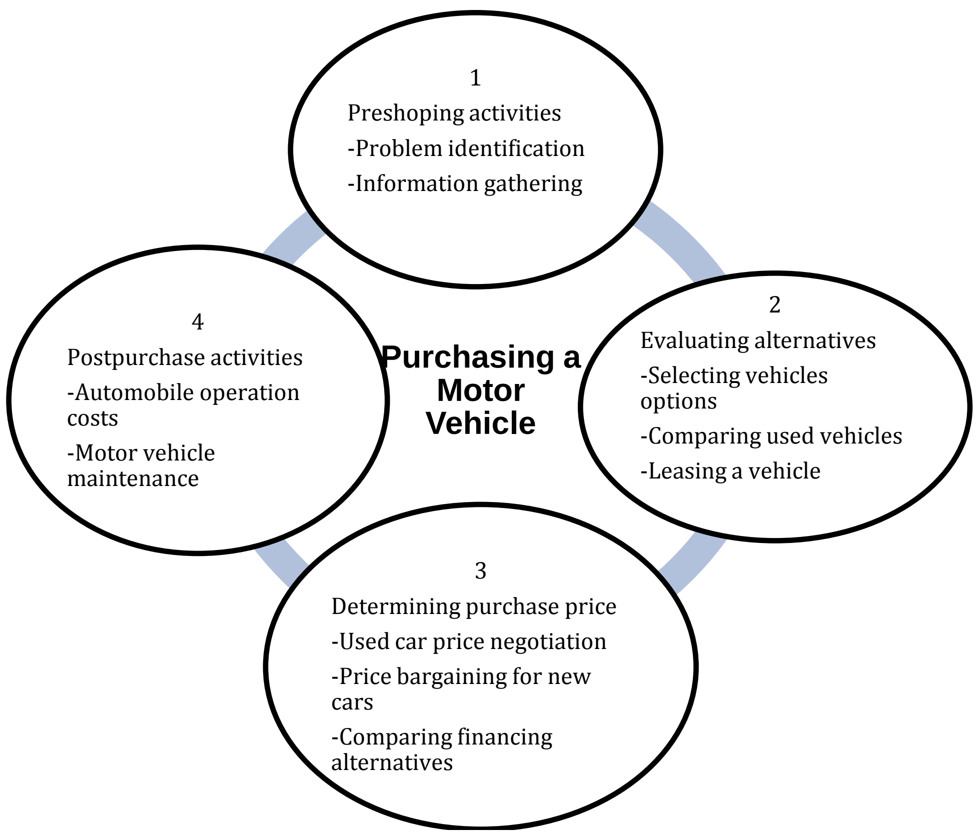
The present study will attempt to cover that gap and contribute to the literature by seeking to establish a causal relationship between vehicle purchases and food inflation. It will furthermore, seek to investigate whether the two variables are cointegrated in the long run and have a short run relationship. A recent study by Chifurira et al. (2014) examined the impact of inflation on automobile sales in South Africa. The author found that inflation and new vehicle sales in South Africa are cointegrated in the long run, thus supporting the existence of a long-run equilibrium relationship between the two. Additionally, a one-way causal effect (unidirectional causality) was found, running from inflation to new vehicles sales at a 5% level of significance. With the aim of providing an answer to the question of whether the increase in prices of food products has a significant effect on passenger vehicle purchase decision in South Africa, the rest of this paper will be structured as follows. Section 2 presents a literature review. Section 3 discusses the data and methodology. Section 4 presents the results, while Section 5 concludes.

2. Literature Review

Trends in passenger vehicle sales in South Africa: In South Africa, the 2008 global meltdown saw a decline in new passenger vehicle sales during 2009, with 258 129 units being sold in comparison with the average of 416 335 units sold per year over the four previous years (International Organisation of Motor Vehicle Manufacturers, 2014). However, new passenger vehicle sales recovered by 5.67% by December 2011 year-on-year, compared to the same period in the previous year, and reached 450 440 units sold in 2013 (International Organisation of Motor Vehicle Manufacturers, 2014). The trend for vehicles purchased reached its peak in the third quarter of 2014, with 40 265 units being purchased. A total of 31 473 passenger vehicles were sold in the second quarter of 2015. The trend in the passenger vehicle units purchased can be explained by a strong rand encouraging exportations and an increase in the disposable income of households. The drop in the number of passenger vehicle units purchased can be associated with the domestic political and economic turmoil leading to consumer reluctance to purchase durable goods such as passenger vehicles.

Understanding consumer buying behaviour: According to Ushadevi (2013) the theory of consumer buying behaviour broadly classifies these determinants into economic, sociological and behavioural factors. This study focuses on the economic factors. It is important to highlight the importance of the sociological and behavioural factors that influence consumer behaviour, including the following: family, reference group, opinion leaders, cultural factors, social class and caste, and individual determinants of consumer behaviour, such as age and lifecycles stage, occupation, economic situation, lifestyle, personality, education, belief, attitudes and motivation. For most people, purchasing a car is the second-most important and expensive decision after purchasing a house (Shende, 2014). Kapoor, Dlabay & Hughes (2010) suggest that this complex exercise consists of four phases: pre-shopping activities, evaluation of alternatives, determination of purchase price and post-purchase activities. Figure 1 below presents the phases of the consumer decision-making process for purchasing personal vehicles.

Figure 1: Phases of the consumer decision-making process for purchasing a personal vehicle



Source: rci.rutgers.edu/~boneill/presentations/FPF-Chapter-6.ppt

Factors influencing personal vehicle purchasing: Lane & Potter (2007:1050) suggest that numerous factors influence private car purchasing behaviour. These factors can be categorised as personal, economic and social, regulatory environments, vehicle performance and application. In addition to such objective factors are equally important subjective psychological factors, including attitudes, lifestyle, personality and self-image. This study focused on the economic factors that influence vehicle purchase decisions. In the following sections, interest rates, new vehicle prices, personal disposable income, fuel price and food inflation are discussed in detail.

Interest rate*:* Mehta (2015) posits that interest rates are one of the most influential factors in relation to consumer purchasing decision. This is mainly because financial contracts for consumer durables consist largely of multiple terms and conditions that include a price interest as well as payment period, which makes it unlikely that the financial costs of different contracts will be exactly the same. Pieterse (2009) indicates that there was a possible negative correlation between prime interest rate movements and new vehicle sales in South Africa. The author considered the steady increase in the prime rate for the period between 2001 and 2003, and again from 2005 to the end of 2008. The corresponding periods recorded a dramatic decline in year new sales growth. However, from 2002 to 2005, the prime rate took a downward turn. In contrast, the year-on-year new vehicle sales growth figures recorded for the related period showed positive growth. It was concluded that higher interest rates ultimately result in a lower demand for motor vehicles and, therefore, fewer applications for motor finance. In this same line, Cokayne (2007) reports that the six consecutive prime rate increases since 2005 had a dramatic negative impact on South African new vehicle sales. Examining the link between interest rate and borrowers' decisions to purchase a passenger vehicle in South Africa, Chisasa & Dlamini (2013) confirmed the existence of a negative but insignificant relationship between interest rates and passenger vehicle purchases in South Africa. The authors argue that interest rates have no role to play in the decision-making process involved in purchasing a passenger vehicle, implying therefore that by and large, regardless of whether interest rates are high or low, South African consumers will apply for credit to purchase a passenger vehicle.

New Vehicle prices: Investigating the impact of motor vehicle retail prices on consumers' decisions to purchase new motor vehicles in South Africa, Pieterse (2009) found that, out of 194 valid cases considered, approximately two thirds (62.4%) of the respondents (passenger vehicle consumers) shared the opinion that motor vehicle retail prices were the main impediment to the consumer's decision to apply or not to apply for motor finance. Similarly, Srivastava & Tiwari (2014) analysed consumer attitudes towards cars manufactured by European, American or Japanese manufacturers. They concluded that country-of-origin effect, brand name and distributor's reputation are significant predictors apart from the pricing of passenger cars. Alper & Mumcu (2007) investigated the demand for new automobiles in Turkey, using quarterly data on price, quantity, quality, country of origin and product characteristics of the new automobile sales market demand during the period 1996 to 1999. Contrary to Pieterse's (2009) and Srivastava & Tiwari (2014) assertions that passenger vehicle consumers are price sensitive, the authors observed that in the short run the demand for new automobiles is price-inelastic.

Personal disposable income: According to Mehta (2015), one essential economic factor influencing consumer buying behaviour is income. The author opines that this is mainly because the amount of goods bought by the consumer, as well as the type, differs depending on the wage a consumer earns. He noted that there was a very good chance of a consumer purchasing more luxury goods, such as high-end cars, when he or she has a higher income. Furthermore, the author suggests that there is a positive relationship between income growth and the quality of a car. To explain this further, the author underlines the fact that some studies have demonstrated that income level plays a role in predicting consumers' awareness regarding their attitudes. He also emphasises that in some empirical studies conducted in low income per capita jurisdictions, consumers did not show any improvement in their willingness to spend more on vehicles. Investigating car acquisition and ownership trends in motor vehicle-owning households in Surat, India; Barnerjee, Walker, Deakin & Kanafani (2010) found household income as the main determinant of the number and size of cars bought by households. Prieto & Caemmerer (2013) explored factors that influenced car purchasing decisions in major car markets in France. A representative sample of 1967 French households, who bought a new or used car within a year of their study, was considered. The research was based on random utility theory and applied multinomial logit modelling. The findings revealed that income has a positive impact on the decision to buy a new car from higher segments and a negative impact on the decision to buy a used car from lower segments.

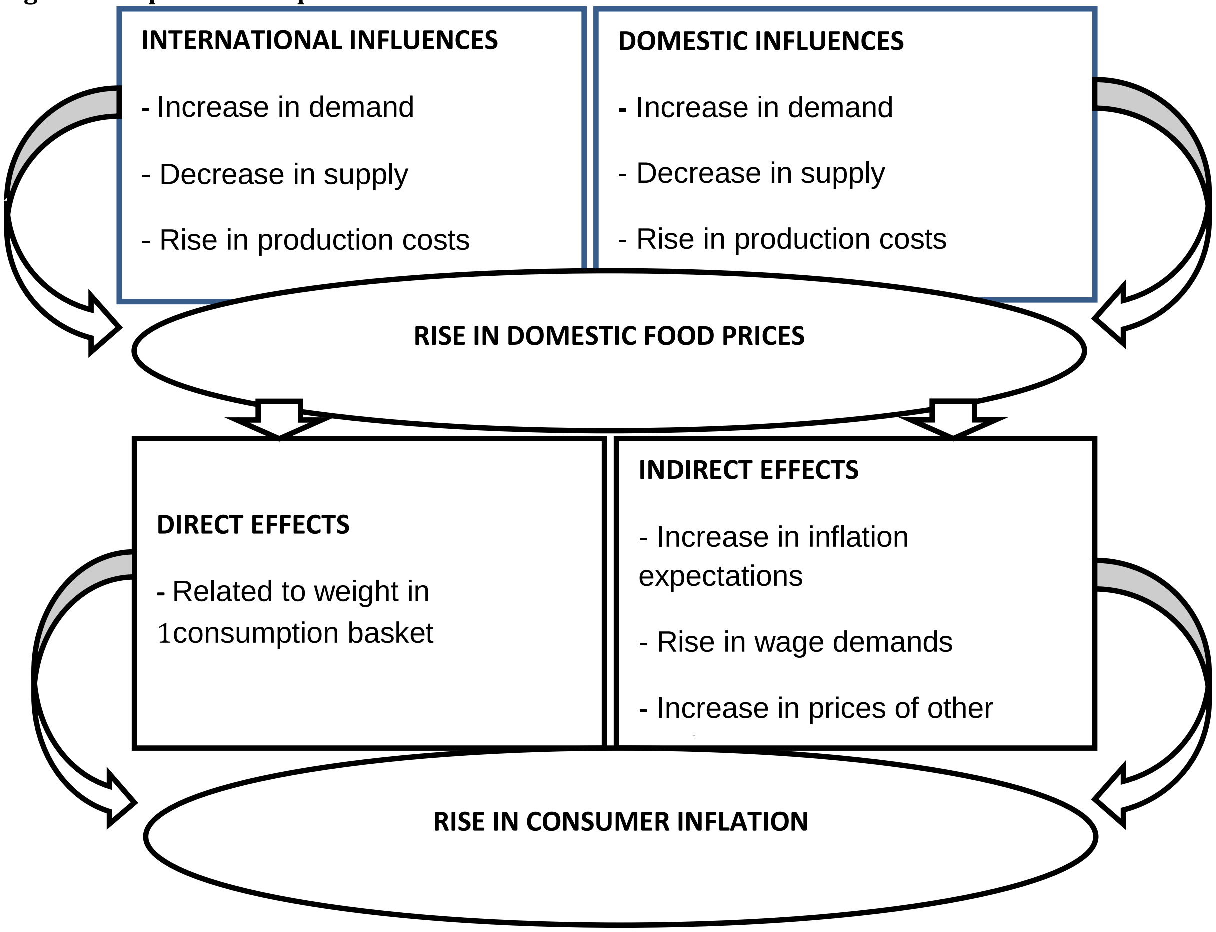
Fuel price: Barnerjee et al. (2010) examined new vehicle choice in India, principally household choice among motorised vehicle segments. Among the findings, the authors observed that consumers are sensitive to fuel cost and that new vehicles are preferred over used vehicles. In this same line, Biswas et al. (2014) state that Indian consumers are very sensitive to operating costs, as the price of gasoline in India is a large fraction of per capita income. This view supports an earlier study by Menon & Raj (2012) who found that approximately one-third of car owners in India had diesel vehicles, due to the price difference between gasoline and diesel. McManus (2007) explored the link between fuel prices and sales of motor vehicles and trucks in United States of America. He claims that a significant portion of changes in vehicle prices could be attributed to changes in fuel prices. The author concludes that rising fuel prices lower the prices of automobiles. He argues that the negative impact of rising fuel prices on vehicle prices is greater for less fuel-efficient vehicles than for more fuel-efficient vehicles.

Food inflation: Rangasamy (2010) suggests that food inflation in South Africa has been more persistent than that of other commodities, and could therefore be an important source of underlying inflationary pressures in the economy. Accordingly, an understanding of the interaction of food inflation and passenger vehicle purchase decisions by consumers is important. In this regard, Pieterse (2009) examined the impact of living cost on the decision of consumers whether or not to apply for motor finance. Of the 194 valid cases considered in the study, it was found that 83.5% of the respondents shared the view that living costs were the main impediment to their decision to apply or not to apply for motor finance in South Africa. It was concluded that the increase in the cost of basic food products had a significant influence on consumers' decision regarding whether or not to finance a motor vehicle in South Africa. Consistent with Pieterse (2009), Bloomberg News (2010) reported that inflation led to slower automotive sales in China. It was argued that car dealers made use of sales discounts of up to 14% and other incentives to stimulate car sales in the central Chinese city of Zheng Zhou. This was a response to rising prices which reduced buyers' purchasing power. Car dealers feared that a steady increase in the prices of daily necessities would undermine people's expectations of their future financial security, thereby reducing their desire to buy a car.

The place of food inflation in headline inflation: The weight of food products in the consumption basket may not be proportional to the overall impact of food price increases on consumer inflation, considering the fact that products exert both direct and indirect price impacts on overall (headline) inflation (Rangasamy, 2010). The direct impact of an increase in food prices on headline inflation occurs through changes in the prices of food components in the consumption basket, while the indirect impact of food prices occurs through their effect on inflationary expectations, wages and the prices of other components in the CPI. The direct price effects are related to the weight of food in the CPI. Considering the fact that most developing countries have a larger weight for food items in their consumption baskets, the increase of food prices will have a large impact on inflation trends in these countries, in comparison to developed countries. However, it is important to note that within a country, the impact on different segments of the population may differ (Rangasamy, 2010). High food prices are viewed as an incentive for net food producers to produce more food. It was found that whenever food prices are on an upwards trend relative to input prices, farm income will grow, thereby encouraging agricultural investment. On the other hand, rising food prices can present tremendous challenges for poor people, who spend much of their income on food (Johnson, 2008; Von Braun & Tadesse, 2012). In Afghanistan, for instance, it was found that a 1% increase in the price of domestic wheat flour is associated with a 0.20% decline in real monthly per capita food consumption (D'souza & Jolliffe, 2010).

Durevall, Loening & Birru (2013) suggest that during the global food crisis, Ethiopia, among other African countries, experienced an unprecedented increase in inflation, which was among the highest in Africa. Monthly data over the past decade were used, and models of inflation were estimated to identify the importance of the factors contributing to CPI inflation and three of its major components: cereal prices, food prices and non-food prices. The results showed that inflation in Ethiopia is strongly associated with the dominant role of agriculture and food in the economy. In fact, Ethiopia's inflation was practically synonymous with food price inflation during the study period. It was found that in the long run, food prices seem to be determined in the external sector, in other words, the exchange rate and international food prices explain the evolution of Ethiopia's food prices. In the short run, domestic agricultural supply shocks, as well as inter-seasonal fluctuations, which are probably induced by expectations regarding future harvests, cause large deviations from the long-run relationship between domestic and foreign food prices. Figure 2 below illustrates the impact of food price increases on consumer inflation

Figure 2: Impact of food price increases on consumer inflation



Source: Rangasamy (2010)

The trend in the contribution of food inflation to headline inflation in South Africa suggests that during the 1980s, the contribution of food inflation to headline inflation was proportional to its weight in the CPI basket. This weight represents the consumer household expenditure during a specific period (National Agricultural Marketing Council, 2012). Over the last two decades, this contribution has shown a considerable increase (Rangasamy, 2010). Although it has been noted that the increasing inflation rate in South Africa is mostly the result of an increase in food price inflation, this was not always the case. There is evidence that between 1998 and 1999, when CPI food was growing at a relatively constant rate, the overall inflation rate was declining. Nevertheless, between the end of 1999 and the middle of 2000, and again from the middle of July 2001, there was a clear indication that the increase in CPI for food had preceded an increase in the overall rate of inflation (National Agricultural Marketing Council, 2004).

Between 2002 and 2008, the contribution of food products to headline inflation increased its weight in the consumption basket by approximately 1.4% (Rangasamy, 2010). In 2012, the weight of the food category in the CPI was 14.27, while the weight of food and non-alcoholic beverages was 15.68. The average food and non-alcoholic beverages CPI for 2012 kept on increasing in comparison to previous years. It was recorded at an average of 127.4 index points, seven points higher than the 118.93 index points for 2011. The CPI rate for food and non-alcoholic beverages averaged 7.2% for 2012, showing that consumers paid 7.2% more for food and non-alcoholic beverages in 2012 than they paid in 2011 (National Agricultural Marketing Council, 2012). Comparing the food and non-alcoholic CPI to the headline CPI provides an indication of the impact of the food and non-alcoholic CPI on the headline CPI. During 2012, the CPI for food and non-alcoholic beverages was higher than the headline CPI rate. This was similar to 2011, when the CPI rate for food and non-alcoholic beverages exceeded the headline CPI rate. South Africa's official food price inflation rate (year on year) in December 2013 was 3.5%, whereas the headline inflation rate (CPI) was 5.4%. Table 1 below presents the annual average rate of headline and food inflation in South Africa from 2008 to 2013.

Table 1: The annual average rate of headline and food inflation in South Africa

	2008	**2009**	**2010**	**2011**	**2012**	**2013**
Headline Inflation	10.04	7.1	4.3	5.0	5.6	5.8
Food inflation	13.85	9.4	0.8	7.3	7.4	5.9

Source: Stats SA (2014)

The Impact of the increase in food prices on consumer purchase decisions: It has been demonstrated that consumers react to pressures, including high prices at the petrol pump, economic uncertainty and escalating food costs (McCarty, 2011). Increasing prices affect household consumption patterns in two ways: first, through the percentage of the household's expenditure dedicated to consumption, and second, through the consumer basket mix of goods that are regularly purchased. Indeed, households that allocate a higher percentage of their total income to food experience higher food inflation, as an increase in the price of a consumer basket will mean more money being spent on consumption, in comparison to those households whose percentage of money spent on food is small (Capehart & Richardson, 2008; McGranahan, 2008). In recent years, there has been a visible rise in prices globally, particularly for food, which makes up a large part of the budget of low-income households (Levell & Oldfield, 2011). These increasing prices lower the purchasing power of a given nominal income and further affect the expenditure decisions of households (United Nations, 2012).

Rising food prices lead to distress, food riots and declining purchasing power, as well as aggravating chronic poverty and enhancing inequality (Food and Agricultural Organisation, 2008; High Level Panel of Experts on Food Security and Nutrition, 2011). The higher the prices, the stronger the welfare consequences for consumers (High Level Panel of Experts on Food Security and Nutrition, 2011). The short-term responses may include a reduction in food consumption and an increase in labour supply through piece jobs and dissaving (World Bank, 2008). Furthermore, increasing prices have an uneven impact across population groups and prompt different responses (Wodon & Zaman, 2008). The poor respond by limiting food consumption and adopting less balanced diets, which have short- and long-term negative health consequences. The non-poor do not necessarily reduce food consumption, but will spend less on durables. The fact that the poor spend a greater part of their income on food makes them worse off than the non-poor when there are food price increases (Regmi, Deepak, Seale & Bernstein, 2001; United Nations, 2012). A survey conducted in the USA on the impact of rising food prices on consumers' spending found that in-home food products were not the only areas of spending that were affected. Some other areas where respondents would change their spending were also mentioned. These areas included dining out (64%), buying new clothes (55%), spending on snack food (45%), paying for recreation and entertainment (44%) and going on vacation (39%) (Nielsen, 2013).

The Bureau of Food and Agriculture Policy, which is a unit at the University of Pretoria, presented, in their 2009 annual baseline presentation, an analysis of the impact of food inflation during the 2007–2009 period on different consumer groups in South African society. In their findings, it was highlighted that the poorest consumers had to spend 12.8% more of their annual income in 2007/08 to buy the same food basket, while the wealthiest consumers had to pay an additional R1 840 per year for the same food basket. However, the latter was only 0.7% of their annual income, which therefore had a much smaller impact than in the case of poor consumer groups. In an empirical study on the NCA of South Africa and the motor finance sector, it was found that an increase in the price of basic food in South Africa was one of the factors that also influenced consumers' vehicle purchase decisions (Pieterse, 2009). In fact, based on the primary data collected via questionnaires from both consumers and credit providers in the country, it was found that the cost of basic foods had a significant influence on consumers' decisions to or not to apply for motor vehicle finance (Pieterse, 2009).

3. Methodology

Data: Secondary data of a time series nature spanning January 2008 to August 2015 were used for this study. The principal sources of secondary data were as follows: data for the passenger vehicle quarterly sales units (VP) were obtained from the National Association of Automobile Manufacturer of South Africa (NAAMSA). The food inflation (FI) figures proxied by the food and non-alcoholic beverages index were obtained from Statistics South Africa (Stats SA). Disposable household income data were obtained from the South African Reserve Bank (SARB). Passenger vehicle unit price (P) figures proxied by the producer price index for manufacturer were obtained from the SARB. Interest rate (IR) figures proxied by the prime overdraft rates were obtained from the SARB. Lastly, fuel price (FP) figures proxied by the price of petrol per cubic meter were acquired from the South African petroleum Association. All the sources of data stated herein are public data domains, duly audited thus the data used for this study is deemed valid and reliable.

Unit root test: The data were subjected to unit root tests using the augmented dickey-fuller (ADF) Schwarz info criterion and the Phillip-Perron (PP) test, in order to test stationarity.

Cointegration Technique: To test the presence of a long run relationship among the variables, the Johansen and Juselius (1990) cointegration method was used. The Johansen and Juselius test was performed on variables which were found to be integrated of order 1. The Johansen test has two types of test of cointegration. The first is the "trace" test, which has the null hypothesis that the number of cointegrating vectors are not of full rank and thus: $r^* = r < k$ with an alternative of $r = k$. This differs from the Max Eigen value approach which tests where the alternative is specified as $r = r^* + 1$

Vector error correction model: The effect of food inflation on consumer purchase behaviour can be perceived over the short- and long-term. Considering the important place of food in headline inflation in South Africa, the vector error correction model (VECM), was applied in order to account for the dynamics of the short- and long-run relationship between food inflation and vehicle purchases. The VECM model can be specified as:

$$\Delta X_t = \mu + \Phi D_t + \Pi X_{t-p} + \Gamma_{p-1} \Delta X_{t-p+1} + \cdots + \Gamma_1 \Delta X_{t-1} + \varepsilon_t, \quad t = 1, \ldots, T$$

where

$$\Gamma_i = \Pi_1 + \cdots + \Pi_i - I, \quad i = 1, \ldots, p-1$$

dictates the long- and short-run dynamics. Therefore, $\Pi = \alpha\beta'$, where Π dictates the number of cointegrating relationships, α is the speed of adjustment parameters and β is the cointegrating vectors.
In this study, the dynamic relationship between food inflation and vehicle purchases was the main focus. This relationship can therefore be seen as (excluding the external regressors):

$$\begin{bmatrix} \Delta x_t \\ \Delta y_t \end{bmatrix} = \begin{bmatrix} \alpha_1 \\ \alpha_2 \end{bmatrix} [1 - \beta] . \begin{bmatrix} x_{t-1} \\ y_{t-1} \end{bmatrix} + \begin{bmatrix} \varepsilon_{1,t} \\ \varepsilon_{2,t} \end{bmatrix}$$

Granger causality estimation model: A pairwise Granger causality test was conducted to examine the transmission mechanism between food inflation and vehicle purchases and other predictor variables of vehicle purchases. Therefore, in order to determine the nexus between food inflation and vehicle purchases, the Engle and Granger (1987) two-step procedure was applied, as specified in equations 2 and 3 below:

$$VP_t = a + \sum_{j=1}^{N} n_j FI_{t-j} + \sum_{j=1}^{N} y_j VP_{t-j} + \mu_t \quad \ldots\ldots[2]$$

$$FI_t = c + \sum_{j=1}^{N} \alpha_j VP_{t-j} + \sum_{j=1}^{N} \beta_j FI_{t-j} + \mu_t \quad \ldots\ldots[3]$$

Where: VP = Vehicle purchases

FI = Food inflation
t = time period (01/2008 – 08/2015).
The error terms μ are assumed to be uncorrelated.
The null hypotheses to be tested were:
$H_1 : n_j = 0$, j = 1, 2, 3..........N meaning that food inflation does not Granger-cause vehicle purchases (VP).
$H_2 : \alpha_j = 0$, j = 1, 2, 3........N meaning that VP does not Granger-cause food inflation.

If the first hypothesis is rejected, it means that food inflation Granger-causes vehicle purchases. Rejection of the second hypothesis would show that the causality runs from vehicle purchases to food inflation. If none of the hypothesis is rejected, it would mean that food inflation does not Granger-cause vehicle purchases and vehicle purchases do not Granger-cause food inflation, indicating that the two variables are independent of each other. If both hypotheses are rejected, it means there is bi-directional causality between food inflation and vehicle purchases. Pairwise Granger causality tests among factors influencing vehicle purchases were also performed.

4. Results and Discussion

Unit Root results: Table 2 below, reports conflicting unit root test results for stationarity. Since the PP test is non-parametric in nature, it will be the preferred method for the unit root test. Household disposable income and new vehicle prices are the only variables that the test confirms to be stationary. For the rest of the variables, the p-values at a 10% significance value suggest that the null of a unit root cannot be rejected. These results paved way for an examination of the presence of a long-run relationship between food inflation and vehicle purchases using cointegration tests.

Table 2: Unit root test results

Variable	Augmented Dickey–Fuller				Phillips–Perron			
	Level with intercept (p-value)	Order of integration	1st difference with intercept	Order of integration	Level with intercept	Order of integration	1st difference with intercept	Order of integration
VP	-0.4042	I(1)	-3.2380**	I(0)	-3.4873*	I(0)	-	I(0)
FI	-4.1272**	I(0)	-	I(0)	-1.7599	I(1)	-4.6474***	I(0)
FP	-0.7692	I(1)	-4.1203**	I(0)	-2.1128	I(1)	-14.9974***	I(0)
I	-2.1593	I(1)	-5.0084***	I(0)	-9.1401***	I(0)	-	I(0)
IR	-1.5560	I(1)	-5.0084***	I(0)	-1.0389	I(1)	-3.6638***	I(0)
P	-2.2120	I(1)	-	-	-2.3049	I(1)	-	-

Note: ***, ** and * denote significance at 1, 5 and 10% levels, respectively (Source: R Statistics)

Cointegration Results: The Johansen trace cointegration test illustrates the existence of four integrating equations at the 95% (p-value=0.05) confidence level suggesting therefore that vehicle purchases, food inflation, fuel price, interest rate, household disposable income and new vehicle price are cointegrated in the long run. Both the Trace Statistic (Table 3) and the Max-Eigen Statistic (Table 4) are higher than the Eigenvalue. This result confirms that the variables under review are cointegrated in the long run, hence a long-run equilibrium exists between them.

Table 3: Trace Statistics

Unrestricted Cointegration Rank Test Trace Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	Critical Value (0.05)	Prob.**
None *	0.989798	293.092	95.75366	0
At most 1 *	0.950881	169.2914	69.81889	0
At most 2 *	0.872924	87.92645	47.85613	0
At most 3 *	0.565989	32.22625	29.79707	0.0258
At most 4	0.293434	9.68977	15.49471	0.3054
At most 5	0.011475	0.311608	3.841466	0.5767
Trace test indicates 4 cointegrating equations at the 0.05 level				

Table 4: Max-Eigen Statistics

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	Critical Value (0.05)	Prob.**
None *	0.989798	123.8006	40.07757	0
At most 1 *	0.950881	81.36494	33.87687	0
At most 2 *	0.872924	55.7002	27.58434	0
At most 3 *	0.565989	22.53648	21.13162	0.0315
At most 4	0.293434	9.378162	14.2646	0.256
At most 5	0.011475	0.311608	3.841466	0.5767
Max-Eigen statistic test indicates 4 cointegrating equations at the 0.05 level				

VECM long-run relationship: Results of the VECM presented in Table 5 below show that there is a negative and insignificant long-run relationship between food inflation and vehicle purchases. Similarly, Chifurira et al. (2014) found that there is a long-run relationship between new vehicle sales and inflation in South Africa. This confirms the view that passenger vehicles are purchased by high living standards measures (LSM) groups within a socio-economic group. Food inflation will have less to no impact on vehicle purchases by this category of consumers, considering the fact that food expenditure occupies a relatively small proportion of their disposable income. Furthermore, the test showed that the long-run relationship is dominated by the effect of vehicle purchase in the previous period. Given that the long-run relationship seems to be solely dependent on past values of the dependent series, a closer study into the short-run dynamics is required. The α parameter in the VECM formulation is representative of the short-run deviations of the long run.

Table 5: Estimated long run relationship

Cointegration Eq:	ColntEq1	
VP(-1)	1	
	-278.679	
	[0.70727]	
C	-30449.05	
Error Correction	D(VP)	D(FI)
CointEq1	0.885801	6.30E-05
	-0.21425	-0.00016
	[-4.13441]	[0.39778]
D(VP(-1))	0.287738	-0.000123
	-0.25698	-0.00019
	[1.11967]	[-0.64468]
D(VP(-2))	1.004455	-0.000149
	-0.28757	-0.00021
	[3.49292]	[-0.70237]
D(FI(-1))	295.7536	0.038323
	-302.798	-0.22395
	[0.97674]	[0.17113]
D(FI(-2))	140.7593	-0.188402
	-268.638	-0.19868
	[0.52397]	[-0.94826]
C	-41018.14	8.738258
	-15159.4	-11.2117
	[-2.70579	[0.77939]
FP	26.01532	-0.003187
	-7.24858	-0.00536
	[3.58902]	[-0.59452]
I	0.034039	-5.30E-06
	-0.0169	-1.20E-05
	[2.01409]	[-0.42418]

IR	1219.319	-0.806898
	-670.806	-0.49612
	[1.81769]	[-1.62641]
P	-330.0596	0.514142
	-228.753	-0.16918
	[-1.44286]	[3.03896]
R-squared	0.773917	0.59703
Adj. R-squared	0.654226	0.383692
F-statistic	2198.06	1.625659
F-statistic	6.465952	2.798524
Log likelihood	-239.8398	-45.18558
S.D. dependent	3738.033	2.070764

Source: R-Statistics

The VECM results showed that there is no relationship between vehicle purchases and food inflation in the short run. This means that an increase or decrease of food inflation in the short run will have no effect over consumers' decision to purchase passenger vehicles. This is similar to the view by Chisasa & Dlamini (2013), which suggests that economic factors do not play a significant role in the passenger vehicle purchase decision. The authors submitted that the cost of credit and, hence the total cost of acquiring the vehicle, are not a significant factor in the decision-making process, advocating for psycho-social factors to be more determinant regarding vehicle purchase decisions in South Africa. Furthermore, the results of the VECM showed the existence of a positive and significant short run relationship between vehicle purchases and fuel price at 1 % level of significance, vehicle purchases and interest rate at 10 % level of significance.

Table 6: VECM short run results

D(VP)				
	Coefficient	**Std. Error**	**t-Statistic**	**Prob.**
CointEq1	-0.885801	0.214251	-4.134414	0.0002***
D(VP(-1))	0.287738	0.256984	1.119673	0.2707
D(VP(-2))	1.004455	0.287569	3.492922	0.0013***
D(FI(-1))	295.7536	302.7977	0.976737	0.3356
D(FI(-2))	140.7593	268.6383	.523974	0.6037
C	-41018.14	15159.39	-2.705791	0.0106***
FP	26.01532	7.248582	3.589022	0.001***
I	0.034039	0.0169	2.014086	0.052**
IR	1219.319	670.8063	1.817692	0.0779*
P	-330.0596	228.7534	-1.442862	0.1582

Source: R-Statistics

Granger causality test results: The results of the Granger causality test as per Table 7 below show that there is no causal effect running from food inflation to vehicle purchases or a causal effect running from vehicle purchases to food inflation. The two variables were found to be independent from each other. This is in contrast with the study by Chifurira et al. (2014), which found in South Africa, the existence of a one-way causal effect (unidirectional causality) running from new vehicle sales at 5% level of significance. Considering the fact that food inflation in South Africa was found to affect mostly the poor range of the population and having a smaller to negligible impact on the wealthiest consumers' annual income, this corroborates more the view that an increase in the price of food products will not cause any impact on the purchase of passenger vehicles in South Africa.

Table 7: VEC Granger causality/Block Exogeneity

Null Hypothesis:	**Obs**	**Lags**	**Chisq.**	**Prob.**	**Result**
D(FI) does not cause D(VP)	28	2	1.448641	0.4847	H_0 is not rejected
D(VP) does not cause D(FI)	28	2	1.107052	0.5749	H_0 is not rejected

5. Conclusion

Inflation poses serious economic challenges to businesses and consumers. This is mainly due to its adverse effect on the value of consumer buying power, social instability and reduction of confidence in the currency (Ashraf, Gershman & Howitt, 2013). Considering the fact that food inflation in South Africa is viewed as an important source of underlying inflationary pressures in the economy due to its persistence beyond that of other commodities (Rangasamy, 2010), the present study is of considerable value by explaining the relationship between food inflation and consumer purchases of passenger vehicles. The results of the present study suggest that food inflation and vehicle purchases are cointegrated in the long run, hence a long-run equilibrium exist between the variables but have no relationship with each other in the short run. Similarly, Chifurira et al. (2014) suggest the existence of a cointegration in the long-run between car sales and inflation in South Africa. However, in contrast to the present study, the authors only considered inflation as a predictor of car sales, while this study considered five economic predictors of vehicle purchases, including food inflation. In Addition, the present study finds a positive and significant short run relationship between vehicle purchases and fuel price in South Africa. Similarly, Menon & Raj (2012) argues that approximately one-third of car owners in India had diesel vehicles, due to the price difference between gasoline and diesel, thereby presenting the significant impact of fuel price on car purchases in India. Furthermore, the results of the present study reveal no causal effect running from food inflation to vehicle purchases or a causal effect running from vehicle purchases to food inflation. The two variables are independent from each other. In conclusion, South African will purchase their new passenger vehicles despite hikes in food price products. This is due to the fact that passenger vehicle purchases are the privileges of individuals pertaining in a higher socio-economic level where food expenditure occupies a small proportion of their disposable income. Hence, food inflation will have no impact on vehicle purchases in South Africa.

Recommendations: In light of the long-run relationship between food inflation and vehicle purchases that this study has demonstrated, stakeholders in the motor industry should be mindful of possible changes in consumer spending patterns as inflation continues to spiral. Such consumer responses to inflation variability should be incorporated when formulating policy directed at marketing, production, sales and firm profitability. Furthermore, Given that the long-run relationship revealed in this study seems to be highly dependent on past values of vehicle purchases, a closer study into the link between psycho-social factors and the passenger vehicle purchase decision in South Africa is recommended. This is similar to the suggestion by (Chisasa & Dlamini, 2013).

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Market Orientation and Performance of Small Businesses in South Africa

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Abstract: The study focused on identifying the relationship between market orientation and performance of small businesses in Vryburg region of South Africa. It aimed to achieve the following objectives, (1) To determine the level of market orientation among small businesses in Vryburg region of South Africa, (2) To establish if there is any relationship between market orientation and performance of small businesses in Vryburg region of South Africa. The study was exploratory in nature and utilised the quantitative research method with a descriptive research design. 268 questionnaires were distributed to small businesses owners/managers in the Vryburg region of South Africa. 207 questionnaires were returned, 9 questionnaires out of the 207 returned were incorrectly filled. Simple random sampling, a probability sampling technique was used in the study. Data analysis included descriptive statistics, correlation and regression analysis. The Cronbach's Alpha co-efficient was used to measure reliability. The findings revealed that the majority of small businesses in Vryburg region of South Africa are market oriented. The findings further show that there is a positive relationship between market orientation and the performance of small business in the Vrburg region of South Africa. The study proposed the formalisation of small businesses, the development of strategic cultures as well as entrepreneurship and business management training for small business owners and managers.

Keywords: *Market orientation, Small business, SMMEs, Business Performance, South Africa*

1. Introduction

In South Africa, small businesses are firms with a maximum of 200 employees (National Small Business Act (NSBA), Act 102 of 1996, as amended in 2003 and 2004). In the United States of America (USA), small businesses are entities with less than 500 employees (USA Small Business Administration [SBA], 2013), while in the European Union (EU), a business with maximum employees of 200 is classified as small business (European Commission) (EC) (2009). There are other criteria used in small business classifications in different parts of the world in addition to the head count approach referred to above. Terminologies applied to small businesses also differ. In South Africa as in the EU, small businesses are referred to as small, micro and medium enterprises (SMMEs) (NSBA, 1996, 2004; EC, 2009). For the purpose of this paper, the South African definition of small business which generally implies businesses with no more than 200 employees is applied because the study is focussed on South Africa. In addition, the term small businesses and SMMEs are used interchangeably to mean the same business category. The importance of small businesses to national economies has been sufficiently demonstrated. For example, small businesses constitute 95% - 97% of all South Africa's enterprises (Damane, 2008; Abor & Quartey, 2010; Nieman & Nieuwenhuizen, 2010; Venter, Urban & Rwigema, 2011). The relative importance of the small business sector in other economies has also been reported. The sector accounts for 99.7% of employment in the USA (Small Business Agency of the USA (SBA) (2006). In the Organisation for Economic Co-operation and Development (OECD) member countries, small businesses represent more than 95% of all enterprises and employ more than half of the workforce in the private sector (Savlovschi & Robu, 2011). Savlovschi and Robu (2011) claim that the small business sector accounts for two-thirds of all new jobs. The foregoing illustrates the global economic importance of small businesses.

Notwithstanding their generalised economic relevance, the relative contributions of small businesses to various national economies show significant differences. In South Africa for example, the contribution of the small business sector estimated between 30%-40% of GDP (South Africa Year Book, 2005/06; Damane, 2008; Abor & Quartey, 2010; Nieman & Nieuwenhuizen, 2010; Venter et al., 2011) creates a somewhat dubious impression of the small business sector as an engine for the growth and development. Though small businesses in Brazil have been reported to be doing well in recent times, their contribution to the national

GDP stands at only about 20% (Timm, 2011). This suggests that in spite of their improved performance the contribution of small businesses to Brazil's national output remains low. This again undermines the generalized notion of the economic significance of small businesses. In contrast, the European Commission (2013) asserts that there are more than 20 million small businesses representing 99% of EU businesses which constitute the key drivers for economic growth, innovation, employment and social integration. Similarly, the SBA (2013) estimates small business contribution to the US gross domestic product at 46%-48% from 2002 to 2008. This means that the relative contribution of the small business sector to the developed economies is far more significant than in the developing countries. This could also mean that small business contribution to the local economy of the Vryburg region in South Africa would be similarly relatively insignificant.

The authors argue that the contribution of small businesses to the national output especially in the developing economies including South Africa would be more meaningful if only they can become more productive. The researchers believe that the source of this improvement could come from improving the internal resources and capabilities of the small businesses. It is the realisation of the importance of the small business sector as well as the difficulties encountered by small businesses that has influenced the South African government to enact the National Small Business Act of 1996 (Act 102 as amended in 2003, 2004). The Act aims at creating an enabling environment to facilitate improved performance of small businesses. Besides Act 102, central government of South Africa has also created small business supporting agencies such as Small Enterprise Development Agency (SEDA), Small Enterprise Finance Agency (SEFA), the Industrial Development Corporation (IDC) and the Centre for Small Business Promotion among other organs to support SMME development. Provincial governments as well as local and provincial SMME desks also exist all directed at supporting small business activities. In spite of these elaborate government interventionist efforts, small businesses continue to perform dismally and have not made substantial impact on addressing South Africa's critical problems of unemployment, job creation, poverty alleviation and equitable distribution of income. Contrary to expectation, Statistics South Africa (Stats SA) (2017) reported an increase in the unemployment rate in South Africa from 26.5% in the last quarter of 2016 to 27.7% in the first quarter of 2017 reflecting the worsening unemployment crisis confronting South Africa.

Prior studies have shown that market orientation (MO) have respectively demonstrated positive influence on firm performance (Eris & Ozmen, 2012; Heiens & Pleshko, 2011; Morgan, Vorhies & Mason, 2009). Businesses that provide goods or services to customers based on information gathered directly or indirectly from customers are said to be market oriented. In addition, market oriented businesses also tend to collect information about their competitors which influences their strategic decisions. Information generated about customers and competitors is shared within the business in order to produce goods or services to satisfy customer expectations and at the same time enable the business to out-compete rivals. Notwithstanding, literature is not conclusive on the relationship between market orientation and performance of small business in South Africa. Brockman, Jones and Becherer (2012) argued that market orientation does not support firm performance when risk taking, innovativeness and opportunity focus are decreased.The inconclusiveness of extant literature on the relationship between market orientation and performance of small business in South Africa necessitate this study. Empirically, the findings of this study will contribute to the body of knowledge on market orientation in South Africa and provide strategic information to small businesses owners/managers about gaining customer and competitive advantage.

Objectives: The objectives of the study are: (1) to determine the level of market orientation (MO) among small businesses and (2) to establish if there are any relationships between MO and performance of small business.

Hypotheses

H_o1: Small businesses are not market oriented.
H_a1: Small businesses are market oriented.
H_o2: There is no relationship between MO and business performance.
H_a2: There is a relationship between MO and business performance.

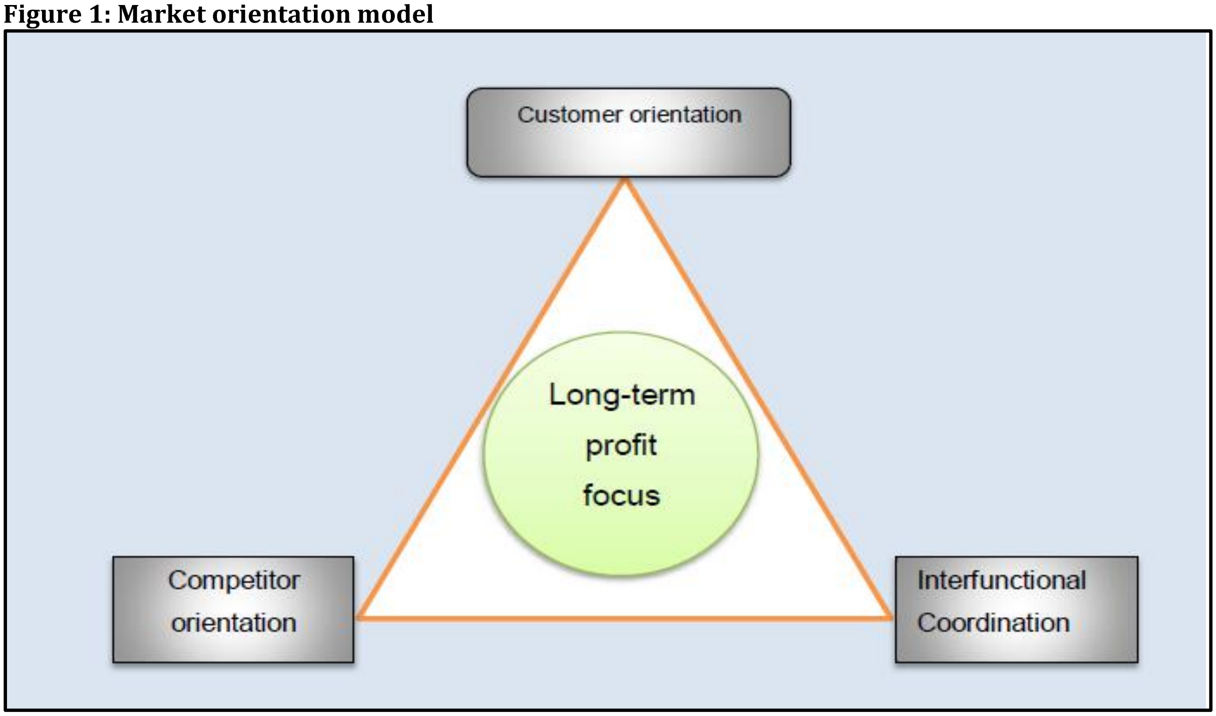
2. Literature Review

This study is grounded on the market orientation model.

Market orientation model: MO has generated substantial research interest in recent years and has been explained in a number of ways. Two early and almost simultaneous systematic studies on the MO construct which have been points of reference for researchers are the works of Narver and Slater (1990) and Kohli and Jaworski (1990). Kohli and Jarworski (1990) explain MO from a behavioural stand point. They argue that MO is an organisation-wide generation of market information, dissemination of the information across business departments and responding to the changes taking place in the environment. Narver and Slater (1990) similarly explain MO from a cultural perspective. Narver and Slater (1990) maintain that MO reflects an organisation's cultural behaviour which focuses on information generation about customer needs, competitor actions and intentions.

Narver and Slater (1990) further explain that MO consists of three behavioural components namely customer orientation, competitor orientation, and interfunctional coordination. According to them, customer orientation refers to "the sufficient understanding of one's target buyers to be able to create superior value for them continuously". They then defined competitor orientation as, "a seller's understanding of the short term strengths and weaknesses and the long-term capabilities and strategies of both the key current and potential competitors". Narver and Slater (1990) defined interfunctional coordination as "the coordinated utilization of a business's resources in creating superior value for target customers" maintaining that a firm has to foster business-wide interdepartmental synergy by effectively integrating its entire human and other capital resources in its continuous effort to create superior value for buyers. Narver and Slater (1990) explain market orientation primarily must have long-term focus both in relation to profits and in implementing each of the three behavioural components. Narver and Slater's conceptual framework is presented in Figure 1.

Figure 1: Market orientation model



Source: Narver and Slater (1990)

Kohli and Jaworski (1990) identified three dimensions in explicating the market orientation construct which they named intelligence generation, intelligence dissemination and responsiveness. For Kohli and Jaworski (1990), firstly, firms need to generate market intelligence (information) about customers' needs and preferences, competitors' strategies, government regulations, technology and other environmental factors.

Secondly, the information generated should be shared across the firm's departments or functional areas. Thirdly, firms need to plan a coordinated response to the information collected. Responsiveness includes provision of customers' needs and preferences, countering competitors' actions and intentions, addressing technological and other environmental issues and government regulations. Kohli and Jaworski (1990) further explain that responsiveness comprises of two sets of activities namely (i) response design using market intelligence; and (ii) response implementation- executing such plans. They then concluded that responsiveness takes the form of selecting target markets, designing and offering products/services that cater to their current and anticipated needs, producing, distributing, and promoting the products in a way that elicits favourable end-customer response.

The two approaches agree that MO enables businesses to collect market information through marketing research and marketing information systems and sharing the information among various departments within the businesses. The shared information among the organisation's members forms the basis of responses to customer needs as well as rivals' actions and intentions (Kohli & Jarworski, 1990; Narver & Slater, 1990; Wei, 2006). The key elements of MO identified by the above authors could be surmised as *customer orientation*, *competitor orientation* and *interfunctional coordination*. MO activities of businesses are therefore directed towards satisfying customers optimally while outpacing their rivals.

Hinson and Mahmoud (2011) contends that the MO construct had mainly been tested in large businesses and therefore required adaptation for applicability in small businesses which are confronted with unique problems such as resource and technological limitations. On a similar note, the researchers opine that small businesses do not have elaborate organisational structures with business units or functional areas or the requisite resources to engage in elaborate marketing research or employ market information systems. The MO concept was therefore adapted to fit the practices of small businesses. This requires innovative information generation dissemination and response by small businesses. For instance, small businesses could gather customer information directly from their clients or through interviewing potential customers in shopping malls, taxi ranks or public places of large human convergence. They could also observe their competitors' actions and intentions directly or indirectly by interviewing their rivals' customers. Visits to government agencies such as SEDA or SARS or small business units of the commercial banks such as ABSA, FNB or Standard Bank would be useful resources of government policies, regulations, and financial information. The information generated could then be discussed among the firms' employees collectively since there are hardly distinct functional units. Response strategies would be informed by the shared information. MO and firm performance is discussed in the next section.

Market Orientation and firm performance: Literature tends to attribute superior firm performance (growth and profitability) to market orientation. Heiens and Pleshko (2011) research into market orientation and business performance concluded that there is a positive relationship between market orientation and firm performance conditioned by what they termed a "turbulent and intense competition". Heiens and Pleshko (2011) add that MO might be more successful if environmental factors among others are integrated into the MO construct. This means that market orientation and business performance is mediated by environmental factors such as the ever changing business environment driven by intense competition among rival firms, technological change, and economic trends among others. Similarly, other research findings support the positive relationship between MO and business performance (Nayebzadeh, 2013; Chao & Spillan, 2010; Hanzaee, Nayabzadeh, & Jalaly, 2012; Morgan et al., 2009; Cillo, Luca & Troilo, 2010). Contrary to the above, Brockman et al. (2012) argued that market orientation does not support firm performance. Notwithstanding, the foregoing discussion suggests that businesses that collect and share information about their customers' needs and meet them and at the same time make strategic decisions taking into account competitive actions of their rivals in addition to other environmental factors such as government regulations and policies, tend to outperform those firms that are not oriented towards the market. Against this background, the level of MO and the consequent influence on the performance of the small businesses in the Vryburg region of South Africa was investigated. In order to determine the influence MO exacts on business performance, measurement instruments have been developed and applied by researchers. The measurement instrument applied for this study is discussed in the next section. This paper argues that there is a positive relationship between MO and firm performance.

3. Methodology

This paper utilised quantitative research methodology. Choy (2014) pointed out that quantitative methodology is reliable, saves time with the use of survey and facilitates numerical data. This study adopted the simple random sampling approach to give each small business a chance to be selected. The study area was Vryburg region in the North West Province of South Africa. A sample size of 268 was derived using the online sample size calculator from a population frame of 885 with a confidence level set at 95%. Structured questionnaire was administered to the small business owners/managers with the help of the research assistants. The questionnaire for the study was divided into three sections namely demographic information, market orientation and firm performance. A modified MO measurement scale was incorporated into the measurement instrument for the study since the conceptual model for the study has received extensive research attention resulting in the development of various measurement instruments. The MARKOR scale has been applied extensively in measuring the MO construct (Narver & Slater, 1990; Kohli et al., 1990; Matsuno et al., 2002; Kara et al., 2005). The dimensions of the instrument were subjected to Cronbach's alpha coefficient test to determine the internal consistency and reliability. The result showed all MO items showed values above 0.80 which imply excellent internal consistency and reliability. In this study, the four point likert scale was applied because the researchers felt the middle of the road response ("don't know" or "neutral") creates room for respondents' casual completion of the questionnaire without a careful thought out answer. IBM Statistical Package for Social Sciences (SPSS) software version 24 was used for the statistical analysis. Statistical procedures including descriptive statistics, correlation and regression analysis were applied in the analysis of the results.

4. Results and Discussion

Table 1: The response rate

Respondents	No. of questionnaires sent	No. returned	Response rate
SMEs owners/managers	268	207	77%

Table 1 depicts that the survey questionnaire was administered to a sample of 268 small businesses out of which a total of 207 completed were returned. This represents a response rate of 77% (77.23% to be precise). There were nine (9) incorrectly filled questionnaires among the 207 that were returned and these were excluded from the analysis meaning 198 completed questionnaires were analysed.

Table 2: The Descriptive statistics of Market Orientation variables

MO Variables	Mean	Standard deviation
Intelligence generation	3.55	1.02
Intelligence dissemination	3.35	1.14
Responsiveness	3.55	1.03
Scale Mean	3.48	
Standard deviation	1.06	
Cronbach alpha	0.86	

Table 2 shows the descriptive statistics of market orientation. The two elements with the highest mean are intelligence generation (mean 3.55) and responsiveness (mean 3.55) these are equally important. The next important MO dimension is intelligence dissemination that recorded the lowest mean of 3.35. The scale mean in Table 2 is 3.48 and this is above 3.00, this shows a high level of market orientation of small business. This is consistent with Martin et al. (2009) that found small manufacturing firms to be market oriented.

Table 3: Descriptive statistics of business performance variables

Business performance Variables	Mean	Standard deviation
Sales growth	3.86	0.96
Gross profit growth	3.84	0.98
Return on investment growth	3.70	0.99

Employment growth	2.47	1.00
Scale Mean	3.47	
Standard deviation	0.98	
Cronbach alpha	0.94	

Table 3 shows the descriptive statistics of business performance. The most important performance variable is the sales growth with a mean of 3.86. Gross profit growth and return on investment growth are also important performance variables with mean of 3.84 and 3.70 respectively. The performance variable with the lowest mean is employment growth with a mean of 2.47. The low mean of 2.47 of employment growth can be attributed to the small size of employees in small business; small businesses might be reluctant to employ many workers. In fact, they might perceive growth in numbers (employees) as increased cost to business (Bloise, 2002). This finding is also consistent with Hurst (2011) who found that most small businesses do not aim at growing big or undertake breakthrough innovations.

Table 4: Correlation analysis between MO dimensions and business performance

Model	Market Orientation	Business performance
Pearson correlation	1	.525
Sig (tailed)		.000
N	198	198

Table 4 illustrates the correlation analysis between market orientation and business performance. The Pearson correlation recorded a strong positive correlation of 0.525 with a significant value of 0.000 which is less than 5%. This is a strong positive association between market orientation and business performance. This means that if market orientation value increases business performance value will also increase and vice versa. This result is consistent with Heiens and Pleshko (2011) that found a positive association between market orientation and business performance.

Table 5: Regression analysis between MO dimensions and business performance

Model	Unstandardised coefficients		Standardised coefficients	t	p value	Model statistics
	B	Std. error	Beta			
1(Constant)	.946	.350	--	2.702	.008	R = 0.635 AdjustedR^2= 0.397
MO	.097	.013	.525	7.634	.000	F = 65.891 $p<0.05$

Dependent variable: Business performance

Table 5 illustrates the regression analysis between market orientation and business performance. The P value is 0.000 this is less than 5%, this shows that there is a significant positive relationship between market orientation and business performance. This result is consistent with (Morgan et al., 2009; Cillo et al., 2010 Chao & Spillan, 2010; Hanzaee, Nayabzadeh, & Jalaly, 2012; Nayebzadeh, 2013) that found a positive relationship between MO and business performance.

5. Conclusion and Recommendations

The findings of extant studies were inconclusive on the level of market orientation among small businesses and on the relationship between market orientation and small business performance. This paper has a number of theoretical and practical implications for researchers and practitioners. First, this study investigated the level of market orientation among small businesses. It was demonstrated in the literature review that market oriented small firms tend to be more successful than firms that were less focussed on the market. In order to be successful, small businesses need to identify present and future needs of customers while being cognisant of current and potential actions and intentions of their competitors as well as environmental requirements and market trends. Information generated about customers, competitors and the environment should form the basis of small business decisions and market response. Second, this study examined the relationship between market orientation and performance of small business. Authors also seem to agree that there is a positive relationship between MO and business performance (Heiens & Pleshko, 2011; Nayebzadeh, 2013; Chao & Spillan, 2010; Hanzaee, Nayabzadeh & Jalaly, 2012; Morgan et al., 2009; Cillo et al., 2010). Researchers who hold this view explain that businesses attain superior performance if they collect, share and act on information gathered about their customers, competitors and the general environment, such as economic, cultural, political etcetera. (Verhees & Meulenberg, 2004; Roskos, 2004; Cillo et al., 2010). Authors agree that increased profitability and growth are positively correlated with MO. The findings of this study concluded that small businesses are market oriented and that there is a positive relationship between MO and business performance. Recommendations to policy makers and SME owners/managers to improve MO are suggested below.

Recommendations: The study has revealed a number of critical issues pertaining to the state of the social and economic conditions in South Africa, and by extension in other African and developing countries. It was reported that the South African economy manifests a high level of unemployment (especially among the youth), high levels of poverty and inequitable distribution of income. The economy is also characterised by a very large informal small business sector whose contribution to the economy is unclear. The small business sector, reputed for employment of up to about 80% of South Africa's workforce, remains largely unproductive. In fact, employment in the small business sector is described in certain circles as "disguised unemployment". The contribution of the sector to the national economy remains paltry, in the region of 30%-40%, given the size of the human capital it engages. In addition, the often hyped perennial problems of lack of skills in marketing, entrepreneurship, general business management and financial management continue to daunt the sector. The foregoing creates challenges for policy makers. The problem is that the small business sector which is supposed to lead the war against unemployment, poverty and inequity remains largely informal and ineffective. So long as the small business sector remains largely informal, its capacity and ability to address the problems highlighted above remain elusive. In order to overcome the precarious situation outlined above, the following recommendations are made based on the findings of the study.

Formalisation of small businesses: The prevalence of high level of informal small businesses in South Africa revealed in the study requires a radical approach. The sector requires a huge effort in turning the mostly informal and necessity-driven small business entities into economically viable and sustainable enterprises. A step in the right direction would be to formalise the small business sector similar to what obtains in Brazil. SEDA definitely has lessons to learn from its Brazilian equivalence-SEBRAE which has been phenomenally successful in facilitating formalising small businesses and turning them into economically viable and vibrant commercial entities in Brazil. It is therefore strongly recommended that the South African government, in partnership with small-business oriented NGOs relentlessly pursue formalisation strategy in order to take the bulk of the small businesses to the commercial domain. Entering the commercial sector will ameliorate other SMME problems such as lack of access to credit finance from the banking sector. The registered small businesses could also receive state guarantees for credit facilities and access formalised training in various business-related fields. Indeed, the benefits emanating from formalisation are enormous. It is a sure route to improving the effectiveness of the small business sector culminating in addressing the chronic unemployment, poverty and inequity hurdles.

The Brazilian experience: It was reported in the literature review that South Africa is confronted with a plethora of socio-economic problems. Unemployment is high and increasing. The gap between the rich minority and the poor masses is on the increase, meaning inequity is worsening. Majority of South Africans still wallow in poverty. The government is expected to take the lead in addressing the 'hydra-headed' problems engulfing the country. These structural problems have confronted Brazil. However, the literature reports that Brazil has reduced levels of poverty, unemployment and equity through an effective small business policy. A significant proportion of the unemployed in Brazil have found their way into small business operation. The rate of unemployment was drastically reduced in the last decade. The income gap between the rich and the poor has been significantly slashed. The Brazilian route to addressing the socio-economic problems is recommended to the South African government and NGOs for adoption in relation to unemployment, poverty and inequity problems. Accordingly, it is recommended that small business owners/managers be encouraged to integratively cultivate these strategic cultures within their businesses. This encouragement could come in various forms such formal training sessions, mentorship, apprenticeship and learnership. The ultimate goal of such programmes would be to inculcate in the small business owner/managers the *entrepreneurial/marketing/innovative* spirit so that they could innovatively lead the entrepreneurial revolutions in their respective communities. Such small business based (entrepreneurial) revolutions have catapulted present day economic giants such as the US, China, Japan, Germany and India to global prominence. An effective and efficient small business sector therefore is *sine qua non* for socio-economic development especially in developing countries including South Africa.

Business management skills development: The study also revealed a high percentage of respondents (44%) had no business and (35%) had no entrepreneurship training. This must also be a cause for serious concern for policy makers. Basic training in business management and entrepreneurship would assist small businesses overcome skills shortage in areas such as finance, marketing and information management thereby promoting effective and efficient business management and operations. It is also anticipated that, intensive and regular training in entrepreneurship and business management would expose small business owners/managers to benefits of strategic management

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The Endogeneity Effects of Conservation Agriculture Adoption on Smallholder Farmers' Food Security Status in Osun State, Nigeria

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Abstract: Goal two of the Sustainable Development Goals stipulates that, individuals at all strata are food secure. This is a major social problem with far reaching economic and development consequences. Growing population has exacerbated the pressure on land base agriculture to supply energy requirements, and traditional agricultural practices have complicated the topical issue. Thus, efforts to simultaneously improve agricultural productivity and keep the system sustainable calls for appropriate sustainable agricultural practice such as conservation agriculture. This study investigates the links between CA adoption and household food security in Nigeria. Two hundred and twenty-one respondents in the study area were sampled. Multisampling technique was used to select the required sample and a questionnaire was administered. Descriptive statistics result revealed farmers' and farm-based characteristics while food security index divulged the food security status of the respondents. The Double hurdle model was employed to investigate factors driving the adoption of CA and extent of adoption while two-stage least square (2SLS) estimated bi-causal links between CA adoption and food security status. The age of respondents, gender, education, access to credit, farm size cultivated and access to extension services contributed significantly to the adoption of CA and so to the extent of adoption. The two-stage least square confirms the exogeneity of CA adoption with food security status. By implication, the adoption of CA practices in Nigeria is a viable option to increase food production and by extension to attain sustainable food security status.

Keywords: *Endogeneity, conservation agriculture, food security, double hurdle model, 2-SLS*

1. Introduction

There are more noticeable consequences of farming systems today relative to the previous experience because of the growing call for agricultural practices that are sustainable and preserve the environment (Shrestha & Clements, 2003). To supply the needs of today without compromising the potentials of tomorrow, agricultural practices that aim to increase per capita productivity trend needs to be done sustainably. Sustainable agricultural practices have assumed a challenging dimension owing to hike in food prices and energy, changing climate, water shortage, degraded biodiversity including budgetary exigency (Kassam, Friedrich, Shaxson & Pretty, 2009). Moreover, population growth has risen with the demand for nutritious diet, water and other agricultural harvests thereby mounting more pressure on agricultural resources. Government and other proponents of development in advanced economies have advocated for food security by using practices that are sustainable (Kassam et al., 2009). Attaining food security in Nigeria is crucial, but has encountered economic and developmental challenges like deteriorating eating pattern, distress sales of assets to provide daily nutrition among the average families (Ajani, Adebukola & Oyindamola, 2006). Moreover, one of the Sustainable Development Goals (SDG) demands that no individual should go hungry regardless of their status. Programmes such as Special Program for Food Security (SPFS), Root and Tuber Expansion program, Fadama development projects, community oriented agriculture and rural development projects and providing infrastructures have been established to ensure that Nigerians are food secure (Ojo & Adebayo, 2012). In spite of government's efforts to attain food security, the impact remains largely unfelt especially among the rural population who are primary producers. Then, efforts to simultaneously improve agricultural productivity and keep the system sustainable demands appropriate methods of land stewardship such as agricultural conservation.

Conservation agriculture (CA) supports the resourceful utilization of available natural resources through a unified soil, water and biological resources management, effectively combined with other inputs (FAO, 2008). CA helps to maintain a safe environment and promotes sustainable agricultural production. It gives the opportunity to harvest higher crop yields at minimum production costs without degrading soil fertility and water (FAO, 2008). CA also adopts pragmatic approaches to minimise soil erosion, reconstitute the organic matter, maintain soil moistness and fertility (African Conservation Tillage (ACT), 2005). Mazvimavi, Ndlovu, Nyathi & Minde (2010) opined that keeping soil unexposed is among the primary principle of CA. As such, cover crops aid CA system, not only to better soil characteristics but also to enhance the capacity for a prolific biodiversity. With this, farmers are more well-informed about mulching, though argument persist that mulching is only achieved using crop residues. Nonetheless, small farms produce small biomass which hinders them from the 30 percent recommended mulch cover to practice CA, other reports have suggested leaf litters and grasses as equally good materials (Giller, Witter, Corbeels & Tittonell, 2009). Global assessments of agricultural land show some 106 million hectares under CA cultivation or in part no-till systems (Derpsch & Friedrich, 2009; FAO, 2008). The potential and the actual level of CA adoption by smallholder farmers has also been questioned (Bolliger et al., 2006; Erenstein, 2003; Affholder et al., 2009; Giller et al., 2009). Limited access to land, informal land tenure systems , insufficient technical know-how , irregular extension services, difficult access to agricultural inputs and markets, and smallholders' impatient desire to quickly reap returns on the resources invested, are factors that deter the adoption of CA. Giller et al. (2009), argued that CA maybe profitable to farmers cultivating medium to large-scale automated farms, it is simply not cost effective for resource-poor farmers and their farming systems.

Empirical studies establishing the nexus between CA adoption and household food security in Nigeria are scanty with the notable exception of Babatunde & Setiloane (2006); Omotesho & Muhammad-Lawal (2010); Kuku & Liverpool (2010); Ojo & Adebayo (2012). Moreover, there is dearth of study on this topical issue particularly in Nigeria. Aina (2011) averred that the Nigeria agricultural system is characterized by peasant production system and by extension low productivity as a result of poor response to agricultural technology adoption. This is further buttressed by Kassam, Friedrich, Derpsch & Kienzle (2015) who reported that there is no substantial evidence to show for the investment allocated to agricultural research in Africa because the adoption of this technology by farmers in many parts of Africa is (0.8%), with no record or documentation for Nigeria. To justify the investment made in Nigerian Agricultural research, there is need to investigate farmers' adoption (consciously or unconsciously) of CA practices in Nigeria; this will assist to formulate relevant policy to enhance food productivity and subsequently reduce the persistent food insecurity menace through proper awareness about the need to consolidate on the current trend and success of CA adoption in other sub-Saharan Africa countries as well as the developed world.

In fact, not having sufficient information about the adoption of conservation practices and food security and how they relate theoretically has led to the low level of enlightenment and empowerment of farmers with the requisite skills in Nigeria. The policy directions are mainly influenced by what is known. More viable policies directions would have been adopted if more is known, hence, the need for the study. Basically, this study identified the CA technologies commonly practiced by smallholder farmers in Osun state, Nigeria; established the Food security status (FSS) of respondents, investigated factors driving use of CA technologies and the extent of CA technologies adoption; and examined the existence of bi-causal relationship between CA adoption and FSS.

2. Literature Review

Conservation tillage is viewed as a combination practice that covers soil surface with crop residues for the purpose of facilitating the infiltration rate of water, reduces erosion and at the same time enhances soil quality for better productivity. According to African Conservation Tillage (2005), conservation tillage is a conventional agriculture practice which reduces soil erosion and runoff. Furthermore, zero tillage is regarded as an integral part in achieving conservative agricultural practice. In the same vein, report from FAO in 2011 stated that when tillage is adopted in the process of land preparation there is a reduction in soil erosion and the rate at which land and water is being polluted. Also, there is a noticeable decline in the heavy reliance on external input to better the quality and efficient use of water and reduction in green-house gases emission by cutting down on fossil fuel utilization (FAO 2011; Also, Mazvimavi et al. (2010) and Shetto & Owenya (2007) in their separate reports revealed that tillage saves resources that farmers would have hitherto committed to agricultural production. Furthermore, the foregoing authors opined that when crops are rotated and intercropped with nitrogen fixating crops (legumes), top-dressing fertilizer that restores soil fertility is added and at the same time aids effective utilization of soil nutrient and weed control. Doing this can end the life cycle of a particular disease or pest capable of causing total economic loss (African Conservation Tillage (ACT) 2008).

In addition, Langyintuo (2005) observed that scientists who come up with innovative technologies such as CA to boost food production are often challenged with the accurate identification of factors that limit their adoption rate among farmers especially the smallholders. According to FAO (2008), smallholder farmers only cultivate area of land varying between less than a hectare to ten hectares of land with the primary aim of sustaining the family using family labour. With about 500 million smallholder farms distributed across the world, FAO (2008) reiterated their importance in securing food for over 2 billion people mainly in Asia and Sub-Saharan Africa. In the past decade, the number of reported cases of malnutrition have risen, majority of these cases have been traced to reduced purchasing power and soaring rate of unemployment (Low External Input and Sustainable Agriculture (LEISA), 2009). Strategies to improve households' well-being according to Roslan, Nor-Azam & Russayani (2010) are fundamentally macro policies such as food security. Moreover, the rationale behind most of the support systems that aim to better the lot of the poor people is that, physical and human capital development makes farmers reorganize themselves to invoke positive changes in their various economic activities. Today, food insecurity is considered a global menace, so complex that people who are directly confronted with the situation have to device a means to be food secure while paying attention to their economic and social limits (Farooq and Azam, 2002).

According to Olagunju, Oke, Babatunde & Ajiboye (2012), household food insecurity mainly stems from lack of wealth (asset and income). In the authors' explanation, wealthier households are less vulnerable to food shortages compared with low-income household with meagre resources, and, the impact of food price inflation is relatively severe on poor household as food accounts for a large part of their spending. As reported, the link between the food security status and the purchasing power of a household is dynamic and it changes in time (Romer-Lovendal and Knowles, 2006; Aliber, 2009). However, with other factors such as prices of other products, availability of close substitutes, taste left unchanged, the quantity and quality of items consumed is likely to change when there is variation in income. Equally, changes in the price of consumable and non-consumable items also dictate individuals' purchasing power (Olagunju et al., 2012).

3. Methodology

The Study Area: The study area is Osun State, Nigeria. Osun state is located in the South West of Nigeria, with the Capital city being Osogbo. The state shares boundary with Kwara State in the north, Ekiti State and Ondo State in the east, in the south by Ogun State and Oyo State in the west. The area is homogeneous and agrarian in nature which supports the cultivation of food and tree crops; food processing, marketing and trading are other livelihood activities in the area. Social interaction among the inhabitants of the state is moderate alongside other minority ethnic groups.

Sampling Procedure and Sample Size: Osun state was stratified into 3 Agricultural Development Programme (ADPs) Zones namely Osogbo, Iwo and Ife-Ijesha. A Multistage sampling method was adopted to select the sample for the study. The first stage begun with the purposive selection of Iwo and Ife-Ijesha ADP Zones owing to its rurality and prevalent agricultural activities. The second stage involved random sampling of 2 Local Government Areas (LGAs) from each of these zones (that is, Olaoluwa and Ejigbo LGAs as well as Ede North, and Ife East LGAs from Iwo ADP zone and Ife-Ijesha ADP zone respectively). In the third stage, 3 villages were randomly chosen from the villages identified across 4 LGAs selected in the second stage. Thus, a total of 12 villages were selected. Considering the population variation of the selected villages across the chosen L.G.As, proportionality factor and random sampling techniques were used to select 230 respondents at the fourth stage. The figure was arrived at using the formula stated as follow:

$$S = \frac{n}{N} \times 230 \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$ where:

S = sampled respondents from the selected villages, in each of the L.G.As
n = population of registered farming households in each of the villages.
N = total population of registered farming households in the 12 villages across the 4 L.G.As chosen.
230 = number of respondents sampled.

Only 221 copies of the questionnaire were used in the final analyses. Others were either not returned or contained inadequate information. This indicates that a response rate of 96.08 percent was coded and used for the final analyses. It is important to stress that only 230 samples were selected across the enumerated LGAs because of fund and time. Based on the information collected from the 2 ADP zonal offices in question, this sample size also represents about 22% of the total population across the 12 villages used in this study.

Data Collection: The data was sourced primarily by administering questionnaire to respondents (household heads) in a scheduled interview process due to perceived low literacy level of the respondents. The information collected includes: age, gender, household size, years spent in school, primary and secondary occupation, marital status, size of the farmland, access to extension agent and frequency of extension agent visit etc. Furthermore, information was gathered on the awareness of CA practices, CA techniques commonly practiced and methods of operations, challenges involved, land availability and use, labour use and institutional factor among others. Information on respondents' household monthly expenditure on food and non-food items was also collected.

Data Analytical Techniques*:* Frequency counts, percentages, mean values and standard deviation are descriptive statistics that describe farmers and farm-based characteristics. Food security index was used to establish the FSS of the respondents. The double hurdle model was also used to investigate factors driving adoption of CA and so the extent (rate) of CA adoption while two-stage least square (2SLS) technique was used to examine the endogeneity effect of CA adoption on FSS (that is, to establish the existence of bi-causal relationship between CA adoption and FSS). The choice of 2SLS technique with the use of instrumental variables (IV) is found appropriate for this study because it estimates causal interactions and at the same time permits the estimation of consistency where independent variable correlates with the error terms (to guard against the existence of endogeneity issue) (Stock, Wright and Yogo, 2002). Such correlation is usually observed where there is reverse causation between dependent variable and at least one of the covariates, and when there are relevant explanatory variables which are omitted from the model, or when the covariates are subject to measurement error. To use the ordinary linear regression at this point will only yield result that is inconsistent, biased and spurious (Stock et al. 2002). Only a good instrument will yield an estimate that is consistent. And, to obtain good instrument(s), test of endogeneity (using ivendog command in STATA) was carried out after the estimation of 2SLS model which produced the Wu-Hausman F test and Durbin-Wu-Hausman chi-square test. In the same vein, Humphreys (2013) stressed that Wu-Hausman test is appropriate to ascertain the reliability, appropriateness and to control for self-selection bias especially when it has to do with the choice of instruments in 2SLS and IV estimation. Adepoju (2013) also confirmed that IV estimation can be used to handle endogeneity in models with linear parameters.

Model Specification*:* This study benefited from the analytical framework stated by Omonona & Agoi (2007); Adepoju & Salman (2011); Cragg (1971) and He, Fletcher, Chinnan & Shi (2009).

Approach to Measurement of Food Security-Households' Food Expenditure Approach (HFE) (Omonona & Agoi 2007; Arene & Anyaeji 2010): This involves getting per capita food expenditure of i^{th} household divided by 2/3 mean per capita food expenditure of all households. This was used to construct food security index and subsequently, FSS of the smallholder farmer households. The HFE approach was found appropriate therefore, used to measure food security for this study after a literature review of different approaches. It solves the problem of getting the actual total income of farming households which respondents find difficult to divulge and also solves the difficulties in getting daily calories intake especially, in Nigeria. Hence, following Omonona & Agoi (2007), a distinction was made on household food security status by separating them into those that are food secured and those that are not food secured by means of food expenditure approach to construct food security index. Arene & Anyaeji (2010) also adopted this approach to establish the FSS of various smallholder farmers.

This is given by:

$$F_i = \frac{Per\ capita\ \ food\ \exp\ enditure\ \ for\ the\ ith\ household}{2/3\,mean\ per\ capita\ \ food\ \exp\ enditure\ of\ \ all\ household} \ldots\ldots\ldots\ldots\ldots\ldots\ldots(2)$$

Where:

Fi = food security index

When:

$Fi \geq 1$ = food secure i^{th} household and

$Fi < 1$ = food insecure i^{th} household.

Therefore, any household with a per capita monthly food expenditure exceeding or equal to two-third of the mean per capita food expenditure is considered to be food secure. Otherwise is considered to be food insecure.

Double-Hurdle Model (D-H Model): The D-H model introduced in 1971 by Cragg is more popular in estimating two-stage decision processes. The merit of D-H model relative to the Tobit model lies in its framework that can be conditioned to estimate observed consumer's behavior as a joint choice of two decisions as an alternative to a single decision. For this study, the D-H econometric model methodology is considered appropriate because it estimates a probit model in the first stage in order to determine the factors affecting the smallholders' decision to adopt CA practices while the second hurdle confirms the actual or observed level (extent) of CA adoption. This makes it possible to separate the initial decision to adopt ($y > 0$ vs $y = 0$) from the decision of how much to adopt (extent); y given $y > 0$ (Olwande & Mathenge, 2012). The D-H model analyses the determinants of incidences (awareness) and intensity (extent) of adoption of CA practices; that is, drivers of CA practices adoption. The choice of this model stems from the assumption that households make two sequential decisions concerning the adoption of innovative technology. Each hurdle is conditioned by the farmer's socio-economic attributes along with the adopted CA practices. To estimate the D-H model, a Probit regression model (fitting all the observations) is stated after a truncated regression of non-zero observations (Cragg, 1971). The D-H model is designed to analyse the probability of an event occurring or otherwise. So that if it occurs, assumes a continuous value. . In relation to this study, the decision to adopt each practice comes first, followed by the extent of use (i.e. the level of adoption).

Thus, the first hurdle is stated as;

$d_i^* = Z_i'\alpha + u_i$ (decision to adopt a CA practice) ……………………….(3)

$y^* = X_i'\beta + v$(intensity/extent of use) …………………………………..(4)

$di = 1$ if $d^*>0$ ……………………………………………….(5)

$di = 0$ if $d^*\leq 0$

Then, the second hurdle which has the semblance of a Tobit model, is stated as:

$y^* = \max(y_i^{**}, 0)$ ……………………………………………………………….(6)

Finally, the observed variable, y_i, is determined by the interaction of both hurdles as follows:

$y = d_i y_i^*$ ……………………………………………………………………………(7)

$u_i \sim N(0, 1)$ $v_i \sim N(0, \sigma^2)$

If both decisions are made jointly (the Dependent Double Hurdle), under a condition where the error term is assumed to have a bi-variate normal distribution, it follows that the two decisions have been made together. Then, it is stated as:

$(ui, vi) \sim BVN(0, \psi)$

The composition of the two-stage decision suggests that participation and use be estimated together in order to yield efficient estimate (He *et al.,* 2009)

Economic and Behavioral relation of FSS and CA: In order to relate conservation agriculture (CA) to FSS of farming household, the farming household economic behaviour under constraint utility maximization gives a useful theoretical underpinning. The model establishes a direct link between the asset endowments of farming households, variables explaining the economic and social conditions under which household make decisions on farming household FSS. Thus, the independent variables fitted in the model below is hypothesized to affect the farming household FSS.

$$Y_i = \alpha + \beta CA_i + \lambda SC_i + \gamma HC_i + \in X_i + \mu_i \text{……………………………………………}(8)$$

Y_i = FSS of i^{th} households (proxied by food security index).

α = Intercept,

CA_i = Farmers endowment of CA technologies adoption (index)

SC_i = Farmers endowment of social capital/other institutional factors

HC_i = Farmers endowment of human capital (proxied by years of formal education)
X_i = Vector of farmer's characteristics, and
μ_i = error term (unobserved disturbances and potential measurement errors).
Explicitly,

Farming household Characteristics:
H_1 = Age of farming respondent (years)
H_2 = Age squared captures life cycle of respondent (years)
H_3 = Gender of respondent (dummy: 1 for male, 0 if otherwise)
H_4 = Household size (actual number of people in the household)
H_5 = Primary occupation (dummy: 1 if farming, 0 if otherwise).
H_6 = Years spent in school (years).

Farm-based Characteristics:
F_1 = Farm size under cultivation (ha)

Social capital/Institutional factors:
I_1 = Membership of social group (dummy: 1 for member, 0 if otherwise)
I_2 = Frequency of extension visit (actual: continuous)
β, λ, γ and $\in$ are parameters to be estimated.

4. Results and Discussion

This section presents the summarized statistics of the respondents' socio-economic characteristics. The conservation practices adopted by the respondents were examined, coupled with the distribution of households by their FSS, factors driving adoption and extent of CA technologies adoption. The endogeneity effect of CA adoption on households' FSS was investigated and reliability of the instruments used was also tested.

Socio-economic characteristics of the sampled respondents*:* The summarized statistics of some socio-economic attributes of the household heads are reported in Table 1.

Table 1: Summary Statistics of selected Respondents' socio-economic variables

Socio-economic variables	Mean	Standard Dev.	Min	Max
Age (years)	53.96	12.31	24	76
Years spent in School (actual)	6.85	4.07	0	18
Household size (actual)	6.80	2.71	1	15
Farm size under cultivation	1.90	1.07	1	6
Food expenditure (₦)	18235.43	7371.58	4700	49000
Per capita food expenditure (₦)	3257.56	2379.24	662.5	18300
Number of CA technology adopted	1.48	1.39	0	4

Source: Data Analysis, 2016

The mean age of respondents in the study area is 53.96 years. The minimum and maximum ages of the enumerated respondents are 24 and 76 years, respectively. The maximum years spent in school was 18 years. Also, the maximum household size is 15 persons with an estimated mean of 70 individuals in every 10 homes. Besides, the estimated monthly mean food expenditure and per capita mean food expenditure were ₦18,235.43K and ₦3,257.56K, respectively. This suggests that the monthly food expenditure is relatively high in the study area despite being a rural setting. Furthermore, this outcome suggests that food production in the area is at subsistence level. Equally, an average household in the study area adopted at least one CA practice/technology.

Distribution of Households by FSS: Available information (FAO, WFP, IFAD, 2012; Cook & Frank, 2008) agrees that human and economic development have a close and important link with food security. Food security is among the Sustainable Development Goals (SDGs) that attracts global attention (United Nations

Department of Economic and Social Affairs (UNDESA), 2015). Given the importance of food security, household's FSS of respondents in the study area is presented in Table 2.

Table 2: FSS Distribution of Households

FSS	Frequency	Percentage
Food Insecure	74	33.48
Food Secure	147	66.52
Total	**221**	**100.0**

Source: Data Analysis, 2016

The distribution revealed that 66.52% of the sampled households are food secured while 33.48% are food insecure; this suggests that more than half of the respondents are food secured. This result indicated that more households in the study area are food secured.

Factors Driving Adoption and Extent of CA Technologies Adoption: The processes through which farmers develop attitude, make decisions and use or not use innovative technology (Talukder, 2012) are sequential, and they determine the rate and extent of adoption. The D-H model was estimated to understand the position of respondents concerning adoption of conservative agriculture. The independent D-H model assumes a normal distribution and uncorrelated error terms from the first and second hurdles. . This implies that respondents make the two-stage decision to adoption CA and extent of CA adoption independently. Testing the independence of the two decisions, the relationship between the error term in the first hurdle (Tier1) and second hurdle (Tier2) in the models was investigated. The result revealed uncorrelated error terms. This suggests that factors influencing smallholder farmer's decision to adopt CA in the first hurdle (selection equation) were unassociated with the decision variables in the second hurdle (outcome equation) involving extent of CA adoption. This affirms the relevance of estimating D-H model relative to Probit and/or Tobit models. Table 3 presents the maximum likelihood estimates (MLE) of the independent D-H model.

Table 3: Maximum Likelihood Estimates (MLE) of the Independent Double-Hurdle Model.

	Coefficient	Std. error	Z	p>/z/
Tier1 (CA Adoption Decision)				
Constant	15.228	228.7654	0.07	0.947
Age	-0.2464	0.1008	-2.44**	0.015
Age-squared	0.0018	0.0009	2.03**	0.042
Gender	-1.8175	0.3956	-4.59***	0.000
Marital status	0.8691	0.7717	1.13	0.260
Years spent in school	-0.0580	0.0256	-2.26**	0.024
Household size	0.0575	0.0434	1.32	0.185
Access to credit	0.4484	0.2425	1.85*	0.064
Primary occupation	-6.5685	228.7475	-0.03	0.977
Mode of land acquisition	-0.2784	0.2609	-1.07	0.286
Farm size under cultivation	0.1746	0.1008	1.73*	0.083
Social organization membership	-0.1378	0.3079	-0.45	0.654
Access to extension services	-0.4965	0.2967	-1.67*	0.094
Tier2 (Extent of CA Adoption)				
Constant	1.2693	0.2411	5.26	0.000
Age	-0.0231	0.0095	-2.42**	0.015
Age-squared	0.0001977	0.0000968	2.04**	0.041
Marital status	-0.0861	0.0536	-1.60	0.108
Years spent in school	0.0150	0.0060	2.46**	0.014
Household size	-0.0017	0.0062	-0.28	0.782
Access to credit	-0.0736	0.0321	-2.29**	0.022
Primary occupation	0.0395	0.0391	1.01	0.312
Mode of land acquisition	-0.0302	0.0360	-0.84	0.401
Access to extension services	0.0188	0.0202	0.93	0.352

Sigma Constant	0.1748609	0.0110305	15.85	0.000

Wald chi2 (12) = 43.43, Log likelihood = -41.750046, Prob> chi^2 = 0.0000
***, **and * - significance level at 1%, 5% and 10% probability respectively.
Source: Data Analysis, 2016

The log-likelihood ratio (LR) and Pr > chi^2 corroborate the reliability of the model. This means that factors influencing the two-stage decision relating to adoption and extent of adoption of CA practices could be expressed in the independent D-H model. Coefficients in the first hurdle indicate how a given decision variable affects the likelihood to adopt CA practices while those in the second hurdle indicate how decision variables influence the extent of CA adoption. The result of the first hurdle (Probit model) indicates that age (P<0.05), quadratic age (P<0.05), gender (P<0.01), years spent in school (P<0.05), access to credit (P<0.1), farm size under cultivation (P<0.1) and access to extension services (P<0.1) are statistically significant decision variables that influenced the likelihood of CA adoption among the respondents. In line with this, the likelihood of CA adoption decreases by 24.64% for every increase in age; the result is in line with *a-priori* expectations, because increase in age is expected to discourage adoption of CA in the sense that older farmers tend to be rigid in adopting new practices; hence, prefer their traditional farming practices. Also, the likelihood of CA adoption decreases by 181.75% for being a female gender because female headed households tend to focus on children and household chores. And, as expected, increase in years spent in school decreases the likelihood of CA adoption by 5.8% because educated individuals prefer white collar jobs in cities relative to farming, let alone adopting innovative technology. In the same vein, more access to extension services decreases the likelihood of CA adoption by 49.65%. This result negates *a-priori* expectations and the reason could be linked to inadequate extension services in the study area. *Ceteris paribus*, extension services are expected to teach modern farming techniques to smallholder farmers to improve their crop productivity and FSS.

On the other hand, an increase in quadratic age, access to credit and farm size under cultivation increase the likelihood of CA adoption by 0.18%, 44.84% and 17.46%, respectively. This means that, increase in quadratic age increases CA adoption; this contravenes the earlier findings. Quadratic age, being a measure of life cycle hypothesis, stipulates a declined productivity, since ageing affects capability to work on the farm. Similarly, access to credit facilities and farm size under cultivation, potentially boost adoption of CA practices. Access to more credit facilities can translate to adoption of innovative practices and improved farming operations on larger land; hence, result to increased productivity and improved FSS. This finding refutes *a-priori* expectations. In the same vein, the truncated model in the second hurdle revealed that age (P<0.05), quadratic age (P<0.05), years spent in school (P<0.05), and access to credit (P<0.05) are statistically significant decision variables that influence respondent's extent of CA adoption. The result of the second hurdle revealed that: age and years spent in school are positive determinants of extent of CA adoption (that is, intensity of CA technologies adoption) in the study area. This finding suggests that an increase in quadratic age increases the chances of adopting CA by 0.01%; this contradicts *a-priori* expectations. Quadratic age, being a measure of life cycle hypothesis affects farm proficiency; thus, ageing ordinarily reduces farm productivity and adoption of new technologies. Also, as expected, additional years spent in school increases the probability of CA adoption by 1.5%; this negates *a-priori* expectations. Educated individuals search for white collar jobs in the cities, therefore, unwilling to take farming as a profession. Similarly, the coefficients of age and access to credit have negative relationship with the extent of CA adoption. This suggests an inverse relationship with extent of CA adoption. It implies that, a unit increase in age reduces extent of CA adoption by 2.31%; this is expected because ageing affects the farmer's capability to work; hence, discouraging adoption of CA. Equally, access to credit reduced the probability of extent of CA adoption by 7.36%. This negates *a-priori* expectation, and could be traced to non-utilization of credit facilities for which it was allocated. Summarily, the truncated model (Tier2) revealed that specific socio-economic variables are important and significant factors driving the adoption of CA and the extent of CA adoption among respondents.

Endogeneity Effect of CA Adoption on Households' Food Security Status (2-SLS Estimation): According to Ashley & Parmeter (2015), an estimated model will be spurious if the dependent variable correlates with the error term (ε). Therefore, eliminating endogeneity in models estimating food security will help formulated development policy that tackles food security issues head-on. The endogeneity estimation as shown in Tables

10a and 10b reveals factors influencing CA adoption decision in the first-stage regressions and Instrumental variables (2SLS) regression estimates in the second-stage respectively.

Table 4a: Factors Influencing CA Adoption Decision

CA adoption decision	Coefficient	Std. error	t	P>|t|
First-stage regressions				
Constant	2.017695	0.1862875	10.83	0.000
Age	-0.0113341	0.0022864	-4.96***	0.000
Gender	-0.3387644	0.0706346	-4.80***	0.000
Years spent in school	-0.0141459	0.0067107	-2.11**	0.036
Household size	0.0170044	0.0100218	1.70*	0.091
Primary occupation	-0.4797596	0.0697852	-6.87***	0.000
Farm size under cultivation	0.0340149	0.0249853	1.36	0.175
Social organization membership	-0.1222154	0.075947	-1.61	0.109
Frequency of extension visit	-0.0557906	0.0310822	-1.79*	0.074
Mode of land acquisition	-0.0801178	0.0628212	-1.28	0.204

F-statistics = 15.71, Prob> F= 0.0000, R-squared = 0.4013
***, **and * - significance level at P<0.01, P<0.05 and P<0.1 probability level respectively.
Source: Data Analysis, 2016

The first-stage regression estimation in Table 4a showed that age (P<0.01), gender (P<0.01), years spent in school (P<0.05), primary occupation (P<0.01) and frequency of extension visit (P<0.1) are statistically significant decision variables which influence and have an inverse relationship with the adoption of CA technologies among smallholder farmers in the study area. Conversely, as expected, household size (P<0.1) is statistically significant and has a positive influence on the adoption of CA technologies as household members are expected to provide family labor needed on the farm. This has influence on CA adoption and potentially cut down the overall running expenses. In the same vein, the instrumental variables (2SLS) regression estimates are shown in Table 4b.

Table 4b: Factors Driving FSS

FSS	Coefficient	Std. error	t	P>|t|
Instrumental variables (2SLS) regression				
Constant	6.4843	1.8520	3.50	0.001
CA adoption decision	-1.7073	0.9757	-1.75*	0.082
Age	-0.0207	0.0138	-1.50	0.135
Gender	-0.6992	0.3903	-1.79*	0.075
Years spent in school	-0.0096	0.0251	-0.38	0.702
Household size	-0.2157	0.0322	-6.69***	0.000
Primary occupation	-0.9841	0.4630	-2.13**	0.035
Farm size under cultivation	0.0190	0.0789	0.24	0.809

Instrumented: CA adoption decision
Instruments: age, gender, years spent in school, household size, primary occupation, farm size under cultivation, social organization membership, frequency of extension visit, mode of land acquisition
F-statistics = 12.61, Prob> F= 0.0000, R-squared = 0.0277
***, **and * - significance level at P<0.01, P<0.05 and P<0.1 probability respectively.
Source: Data Analysis, 2016

It is evident from Table 4b that CA adoption decision (P<0.1), gender (P<0.1), household size (P<0.01) and primary occupation (P<0.05) are statistically significant decision variables which drive FSS. These variables have inverse relationship with FSS among the respondents. The implication of this result is that, increase in adoption of CA technologies potentially reduces FSS. This result negates *a-priori* expectation, but, the reason for this is attributable to the earlier finding which shows low level of CA adoption (see Table 1) where the average number of CA technologies adopted was 1.48; this obviously will affect the productivity and FSS; and by extension, total income and household welfare. Also, as expected, effect of female headed households on

FSS is hypothesized to be negative because, female headed households focus more on the children and other household chores and may not be fully involved in farming activities let alone, adopting new technologies to boost food security. Then, increase in household size was found to reduce FSS; there is a mixed feeling on those findings as it partially agrees and at the same time negates *a-priori* expectations. In the first instance, youth have no interest in farming; rather, they prefer to take up salaried jobs in major cities. This affects the productivity and by extension FSS. Secondly, an increase in household size is anticipated to boost productivity and FSS as family members are expected to provide the farm labor required. In this case, it is not so and the reason for this illuminates the reason earlier stated. In the same vein, an increase in primary occupation (farming, in this case) reduces FSS. This is against the *a-priori* expectations and this might be linked to households' low level of CA adoption. Furthermore, this may be the reason for cultivating small inherited farmland (being the prevalent mode of land acquisition) where production is low in accordance with farm size and by extension discourages achieving better FSS.

Since CA adoption decision is statistically significant and inversely related with FSS as shown in Table 4b, there is exogeneity of CA adoption decision with FSS. It means that the assumed instrumental variables-frequency of extension visit and social organization membership are not endogenous to the dependent variable (FSS). Put differently, the frequency of extension visit and social organization membership do not determine FSS and vice versa. The Wu-Hausman F test and Durbin-Wu-Hausman chi-square test estimated to affirm endogeneity effect (reverse causality) of CA adoption on smallholders' FSS revealed a significant effect with P-values of 0.02559 and 0.02329, respectively. This is an indication no reverse causality which suggests exogeneity of CA adoption with smallholders' FSS. Similarly, following endogeneity test, each instruments used against the instrumented in the instrumental variable estimation (IV estimation) was tested for their reliability.

<u>Test of Endogeneity of: CA-adoption</u>

Ho: Regressor is exogenous
Wu-Hausman F test: 5.05456 F (1,212) P-value = 0.02559
Durbin-Wu-Hausman chi-sq test: 5.14644 Chi-sq (1) P-value = 0.02329

<u>Testing the Reliability of the Instruments used in 2SLS</u>

```
. test (landacq=0) (freqextvst=0)
( 1)  landacq = 0
( 2)  freqextvst = 0
F(  2,   211) =    2.63
Prob> F =    0.0742

. test ( freqextvst=0) ( socorgmem= 0)
( 1)  freqextvst = 0
( 2)  socorgmem = 0
F(  2,   211) =    3.07
Prob> F =    0.0483

. test ( pryocc=0) ( frmszculv= 0)
( 1)  pryocc = 0
( 2)  frmszculv = 0
F(  2,   211) =   25.58
Prob> F =    0.0000

. test ( hhldsz = 0) ( yrssptschl = 0)
( 1)  hhldsz = 0
( 2)  yrssptschl = 0
F(  2,   211) =    3.90
Prob> F =    0.0217

. test ( age = 0) ( gender = 0)
```

(1) age = 0
(2) gender = 0
F(2, 211) = 24.63
Prob> F = 0.0000

The reliability test results show that the instruments specified in the model are good; hence, the estimation eliminated possible bias.

5. Summary, Conclusion and Recommendations

The test of reverse causality between CA adoption decision and households' FSS using instrumental variable estimation technique indicated that the direct effect of CA adoption decision on households' FSS outweighs the reverse effect in the explanation of the correlation between the two variables. This is evident by examining the significance level of the instrumented-CA adoption decision. Notwithstanding, this analysis sets a decisive context for the path of causality between CA adoption decision and FSS as stated in Table 4b. The low R-squared in the estimated OLS and 2SLS models is attributable to the nature (binary) of the regress and in the analysis. More so, the reverse causality (endogeneity) could have been accepted if the instrumented variable (CA adoption decision) is not statistically significant. Since the IV-variable is significant, by implication, the study concludes that, there is absence of reverse causality (bi-causal relationship) which further confirms the exogeneity of CA adoption with smallholders' FSS. Hence, the crux of the findings in this study is the need to adopt CA practices in Nigeria as a viable option to increase food production and achieve sustainable food security status which is in line with the sustainable development goals.

Consequent on the findings of this study, the following are recommended:

- There is need for Youths reorientation/encouragement to take up farming as an income generating activity regardless of their educational achievement. Though, education significantly affected the use of CA, it had a negative influence on the adoption rate of CA. It is essential to promote human capital development in the study area by increasing funding to schools to lessen the financial burden on parents in educating posterity. This calls for evolution of adult education policy complimented with Universal Basic Education to ensure qualitative education that can effect positive changes among respondents. By so doing, farmers will appreciate the value of education which invariably helps them to internalize and adopt new agricultural technologies such as CA.
- Invention should not be gender biased so that females can take active role in farming and adopt CA technologies to achieve better FSS. Their roles should not be limited to household chores alone.
- Access to credit had a positive and significant association with CA technology adoption. Thus, credit facilities should be made available to active/registered farmers to expand their scale of operations and adopt CA technologies.
- Extension services are vital to transferring agricultural innovations to farmers. Efforts concerning visits by extension agents should be doubled in the study area to enlighten smallholder farmers on the need to adopt CA practices coupled with adequate trainings on the technical know-how.
- High dependency ratio in terms of large household size has significantly shown over time to negatively affect FSS than those with fewer members, especially in the rural settings where meagre income is prevalent. As the outcome of the study confirms that majority of the respondents perceive large family size as a way to access family labour, labor-saving devices should be promoted along with birth control strategies.
- Farming on a medium/large scale as a means of livelihood should be promoted because primary occupation was significant but affected FSS negatively. This is traceable to the subsistence scale of production resulting from the small land holding farmers cultivate.
- There is need to substantiate investment in Nigeria Agricultural sector. As a short-term intervention plan to facilitate CA adoption, provision of incentives that will motivate households to engage in farming is required. This could be achieved through effective and sincere institutional framework devoid of political interference.

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South Africa's Military and Peacekeeping Efforts: A new paradigm shift in its foreign policy since 1994

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Abstract: One of the South Africa's great soft power attributes has been the attraction and power of its transition to inclusive democratic governance after a long period of apartheid rule. This gave South Africa a certain moral authority and prestige to play very significant roles in conflict resolution and mediation through peacekeeping operations. Every government in an ever-changing and dynamic geopolitical environment ensure that its defence force cum foreign policy conform to the international environment while aiming at the defence and protection of its national interests. Using interpretive approach; this work argues that; fundamentally, there are three basic factors that reinforce South Africa's participation in peacekeeping which are politics, economy and security. By extension these three elements is considered a transformational agent of South Africa's economy. SANDF is, therefore, considered a dynamic and exceptional foreign policy tool that complements and at same time enhances South Africa's diplomatic manoeuvrings and influence within the wider international developments. It is concluded that South Africa's multilateral and foreign policy agendas have been driven by the pursuit of its national interest while trying to ensure peace in other African states.

Keywords: *Peacekeeping, foreign policy, apartheid, development, diplomacy*

1. Introduction

Since its first inclusive; democratically, elected government in 1994, South Africa has shown preference for a normative drive in its foreign policy. In an ever-changing dynamic international environment, it is imperative for every government to make certain that its defence forces cum foreign policy is not only for the domestic environment but also work with the international community while aiming at the defence and protection of the domestic (socio-political and economic) environments. Debatably and since 1994, South Africa's foreign policy has been one of the most prosperous and inspiring areas of post-apartheid South Africa international affairs though built on the ironic legacy of the racialized apartheid state and the ideologies of the A N C (Le Pere & Garth, 2014). As understood by Alden & Le Pere (2009), South Africa's foreign policy agenda following the demise of apartheid in1994 has been premised on the belief that the well-matched of human strategic review for Southern Africa, rights, democracy and solidarity politics is a means to its own developmental needs. This agenda is reinforced by its policy of multilateralism and observance of international law and signatory to several international conventions is seen as strategic to its foreign policy objectives and tacitly, maintaining the idea that South Africa is presumably one of the *de- facto* leaders in Africa. Coming out of its morally objectionable socio-political and economic ideology, a post-apartheid South Africa would likely be in a very good position to challenge the rest of Africa in political, economic and military terms. South Africa, while trying to shape its approach towards international relations, has been engaged in debate on a number of foreign policy issues, ranging from human rights to economic diplomacy, conflict resolution and peacekeeping. Hence a proud tradition of robust foreign policy; thus compelling us to reflect on post-apartheid South Africa's foreign policy with reference to the role of its military in peacekeeping across Africa.

The South African National Defence Force (SANDF) of recent has been a significant role player and debatably, central feature of the former apartheid enclave foreign policy. This perhaps, can be attributed to an aggregate of its political needs to deal with the frequent occurrence of objectionable levels of conflict and instability at regional level, precisely from an international and regional peacekeeping perception. This, no doubt, has opened up new prospects for South Africa ever since making regional peace and security one of the bases for its foreign policy. SANDF is therefore considered a dynamic and exceptional contribution that complements South Africa's diplomatic efforts and enhances South Africa's impact within the broader international developments (Defence Review Committee, 2014). In contrast to the position of South Africa before 1994, where regional seclusion, unilateralism, militarization and the dominance of the military instrument, was the order of the day, the post-1994 South Africa has however, route itself for a position of international relevance where participation in regional co-operation, multilateralism, diplomatic dialogue, and peacekeeping has been accentuated in its foreign policy. This informed South Africa's foreign policy commitment to development, integration, promotion of peace and security in Africa, heightening by South-South and North-South cooperation; while promoting its national interests by participating in various global institutions of governance. Following the end of the cold war in 1990s, Africa, argued Egwu, (2007), coincidentally, has witnessed an increase in the frequency of internal conflicts. This occurs between different socio-ethnic and cultural groups within a national territory, and between groups who feel politically and economically excluded and marginalized from existing power structures on one hand, and on the other hand from central authority.

Across the borders of the continent are numerous and unhealthy security challenges spawned within individual societies. At the moment, security threats comprise challenges to human security and a whole range of socio-economic and environmental degradation along with traditional military security challenges (Dokubo & Joseph, 2011). Within the government in South Africa and towards the end of 1990s, there has been increasing appreciation of the fact that South Africa's socio-political and economic stability would be closely linked to the economic and political development of the Africa as a whole, a realization that reflected the close connection between regional stability and its national interest (Nibishaka, 2011). It is against this background that the work examines South Africa's military and its peacekeeping efforts in Africa; as a new paradigm shift in South Africa's foreign policy. Basically, the contention is that contrary to initial use of the South Africa military as an instrument of suppression within and outside South Africa, in more idealistic terms the South Africa military has gradually re-emerged to become a more prominent feature of South African foreign policy.

2. Methodology

Usually, there are some underlying theoretical and rational assumptions that establish useable research and which of the methods is appropriate for productive knowledge development in a particular study. This study, however, relied on interpretive approach in order to establish some assumptions, apart from given the work greater scope to discourse questions around the trajectories of South Africa's peacekeeping efforts in Africa. This method adopts the position that our knowledge of reality in peacekeeping efforts at international level is considered a new paradigm shift in South Africa's foreign policy since its transition from apartheid to democratic governance in 1994. Basically, the assumption is that states interact with the wider world through different diplomatic means with the goal to possibly protect and project its national interest in the totality of the targeted social, political and economic goals. Therefore, the reason for which this study has adopted interpretative method is to enable an in-depth study and understanding of the South Africa's peacekeeping efforts and its foreign policy objectives.

3. Theoretical expectation

Researchers in International Relations (IR) have identified a variety of actors that somewhat determines the direction of state's foreign policy; this include political experts, the epistemic communities (Jacobs & Page, n. d), the military who sometimes determines the international behaviour of states. Thus assuming that state's national interests vis-à-vis its behaviour at international level while using its military are clear and the means by which these interests are pursued are correspondingly clear. What this translates to mean is that the military (SANDF) is an additional stratum of actors who indirectly plays an important role in executing the foreign policy of a state, though not as key players in the policy-making process (Flynn, 2014). In IR, much academic work has been committed to other various forms of the uses of the armed forces but not much has been committed to the tangible activities of military contingents raised for peacekeeping purposes. This might be because peacekeeping, according to Bidwell (1978) is surreptitiously designed to be part of a face-saving tactic intended to provide a cover up for an unending war by proxy to prevent conflict that may jeopardize the national interest of the state providing the peacekeepers.

Theoretically, the topic peacekeeping to some extent is not a highly hypothesized subject. Most writings on the subject according to Fetherston (2000) have been done by diplomats and those in the military with experience in the field of peacekeeping; consequently, limiting the accumulation of knowledge on peacekeeping to a cautious list of do's and don'ts. Theorizing peacekeeping is therefore, an emerging field of international relations. There has been a proliferation of terms such as first generation peacekeeping, peace-making or multidimensional peacekeeping in the past decades where the degrees of intervention and mandates of peace operations is variously described argued Fetherston (2000). The UN Charter; chapter 6, article 3 (1) made provision for the pacific settlement of disputes, through negotiation, mediation, arbitration, and/or judicial decision, resort to regional agencies or arrangements, or other peaceful means of their own choice. However when pacific settlement fails, the goal of collective security (where the security of each member is assumed by all) motivates the provisions in Chapter 7 for coercive measures, including economic and military sanctions, against an aggressor (http://www.refworld.org/pdfid/3ae6b3930.pdf). In practice, however, peacekeeping and preventive diplomacy has replaced collective security.

Earlier studies on peacekeeping mechanisms according to Pugh (2004:42) shows that peacekeeping developed in the 19th century Europe in the inter-war period as a means of dealing with emerging conflicts from struggles for self-determination against European imperial rule. The event that mark the beginning of the institutionalization of peacekeeping as an extension of UN diplomacy came into existence when the UN Emergency Force (UNEF) was set up in 1956 to oversee the extraction of British, French and Israeli troops who had invaded Egypt (a former British colony), after nationalization of the Suez Canal. Peacekeeping one would therefore say is a strategic intervention for managing and resolving conflicts in the global community. There has been a plethora of definitions of peacekeeping by scholars. To Johnstone & Nkiwane (1993) peacekeeping is conceived as the deployment of the men of the armed forces (the military) and occasionally civilians under the control and command of the international body, generally after cease-fire has been accomplished, this however must be with the consent of the warring parties. Pugh (2004:47) in agreement describes peacekeeping as a multinational force, sometimes with a civilian component, whose mandate is to administer, monitor or patrol areas of conflict in a neutral and impartial way subject to the approval of the parties involved in the dispute. Using Burton's human needs approach and Fisher & Keashly's ideas of contingency and complementarily, Fetherston (2000) corroborates that peacekeeping activity is based on consent and a type of conflict resolution capable of productive positive results.

Expounding on these definitions, Liebenberg, Malan, Cilliers, Sass & Heinecken (1997), states that the idea of peacekeeping has since been stretched and transformed to encompass a host of third-party interventions/strategy and actions; ranging from precautionary diplomacy to humanitarian support and the military execution of specific mandates or agreements brokered by the countries involved in peacekeeping to facilitate the development of positive peace where its success and effectiveness have positive meaning. Hence, Green, Kahl & Diehl (1998) perception has it that peacekeeping operations may possibly, be deployed at various stages of conflict; this may be before the occurrence of any violence or during a full-scale war. Set within this framework as an intervention/preventive deployment. The reason why NATO describes peacekeeping as a peace support operation resulting from an agreement or cessation of hostilities that has recognised an accommodating and peaceful environment where the level of consent and compliance is high and the risk of disruption is low(Ministry of Defence, 2011). The responsibilities of peacekeeping forces therefore, may be divided into two major areas, to act as a means of separation, a breathing space where both sides can step back from hostility to create conditions for peace by negotiations, and crucially, functions as peace building or supervise the implementation of an interim or final settlement negotiated by the peacemakers. Importantly, the peacekeepers are neutral and impartial towards the disputants; thus enhancing improved communication, social, political and economic regeneration. To accomplish this, two categories of forces are deployed to conflict areas; the observer missions predominantly of lightly armed officers and peace forces, made up of light infantry with the basic logistical supports (Neethling, 2000; Fetherston, 2000; Allan, 1991).

Nonetheless, peacekeeping as couched by Bidwell (1978:635), is an ambitious description in that the presence of peacekeepers has never kept the peace, owing to the fact that they have neither the authority nor the military capability to do it rather they function as a restorative agent whose mandate is to ensure positive peace. Positive peace has been described as a process or sets of structures which facilitate constructive resolution of conflict and positive human development (Neack, 1997). Peacekeepers therefore, serves as pacific, disinterested, and impartial agents which, at the moment when the belligerents feel so disposed, can separate the two sides, delineate truce lines, arrange the exchange of prisoners of war and report infractions of the truce agreement. By interpretation, the peacekeeping forces can only put forth a palliative influence, appealing to the psychological moment when both sides are psychologically and physically worn out and with no choice of ignoring a call to cessation of hostility. This only mark the beginning of a long peace agreement that seldom guarantee a cessation to all violence, but only marks a point in time where some or all of the warring parties make a commitment to pursue a peaceful course to resolve conflict (Ministry of Defence, 2011:3). This, however, has not taking away the fact that peacekeeping is a prominent military intervention strategy for controlling, managing and resolving conflicts while providing humanitarian, economic and political support (restoring legitimate government), promotion of good communication, negotiation, mediation otherwise known as consent-promoting techniques which constitute the soft skills and processes of peacekeeping as opposed to the hard, or technical and military skills designed to win hearts and minds (Woodhouse, 2015:28).

Conflicts in Africa; a leeway to South Africa's peacekeeping efforts: In the last two decades, prolonged internecine wars particularly, in Africa, have been a common occurrence. Fundamental to South Africa's foreign policy objective since the collapse of apartheid is the promotion of peace in the continent. Although South Africa's successful transition to inclusive governance in 1994 was laden with joy for the continent. However, this joy has been marred by disastrous internal conflicts in other part of the continent. Internal conflicts in Africa are manifested in violent armed insurgence between governments and opposition or militia groups (ACCORD, 2007). It is within this context that South Africa's peacekeeping role in Africa emerged. At independence most countries in Africa inherited lopsided geographical areas where ethnic groups who were meant to be together found themselves in an unconducive geopolitical environment, with different socio-cultural background and language. By implication the foundation for political conflict in Africa was laid during the colonial era. Prior to independence, one factor that has bedevilled peace in Africa was the accentuation of differences between identity groups by the colonial government (Nibishaka, 2011), where some groups were recognized as being superior to others, hence, the categorization of people as inferior and superior. For example, in the case of Burundi, the minorities were considered as superior and therefore used by the colonial masters as instrument of suppression to control and overpower the majority.

This categorization has since been entrenched in the social formations of many African states thus leading to the recalibration of new form of identity accounting for the lingering nature of conflicts in Africa today. The politicisation of the Northern Cote d'Ivoire identity in the late 1990s, for example, apart from economic problem and the subsequent creation of the notion of "Ivoirité", that eventually led to the political crisis in the French speaking country is a reconceptualization of Ivoirian nationality by politicians struggling for political power (Nibishaka, 2011). Also factored into political instability in Africa is the challenge of inequality among groups and in all probability the prime cause of conflict in Africa. In essence, inequality between groups escalates the possibility of conflict. Correspondingly, socio-political and economic inequalities underpin the existentiality of conflicts in Africa. Sierra Leone, Rwanda, Nigeria, and Liberia are examples of states where the monopoly of political power and its attendant benefits by one group had led to conflicts. What this means is that inequality breads conflict where there is division of society into two pre-dominant groups. Other factors include collapse of state institutions characterised by prolong destructive and greedy government operating through coercion, corruption and political personalism to secure political power and control of resources, the result of which is economic decline which plays a major role in state collapse and conflict, of which many occurs where political problems are traditionally resolved by means of violence. History have it that such countries like Democratic Republic of Congo (DRC), Rwanda and Burundi created a state model based on the artificial construction and manipulation of ethnicity to maintain political power Department for International Development (2001).

In addition, there is conflict over control of resources. In Africa, for example, conflicts often occur where groups compete for access or control of resources. As understood by Le Billon (2000), there are two types of resource based conflict; wars of resource scarcity and wars of abundance; common among them is conflicts of insufficiency relating to the control of natural resources. Conflicts of abundance are very high where the state depends on natural resources such as oil; here the wealth of the country becomes the prize for controlling the state. Evidenced are the DRC, Nigeria, and Sierra Leone, where the control of oil and diamond are seen as an instrument of control, therefore making the situation difficult to conciliation. It is no longer gainsaying that South Africa is an ambitions state and always willing to play a leading role in Africa. This ambitious position is reinforced by its economic power recognized internationally within and outside the continent. To a large extent, this has contributed to an unprecedented restructuring of the regional economic and political architecture. Engaging techniques such as institutional building and moral suasion, according to Alden & Le Pere (2009), South Africa has promoted new regional structures and processes and, simultaneously, a revivalist form of the pan-Africanist ideology. It is this frame of pan-Africanist that characterised South Africa's entry into peacekeeping in Africa.

4. South Africa's military and peace keeping efforts

Ever since the admission of South Africa back into the Community of Democratic States following the demise of apartheid system and the espousal of inclusive governance, expectations in Africa have grown steadily vis-à-vis South Africa's prospective role as a peacekeeper in African conflicts. Observably, South Africa by all standards and going by its position in Southern African Development Community (SADC) and by extension global level, the former apartheid enclave should be able to ensure effective peacekeeping in Africa. The reason for this perhaps is as a result of the role (political-military) the South Africa National Defence Force (SANDF) had played so far in the security requirements of Southern Africa. According to Neethling (2000) from an international perspective, there is a clear signal being sent to African countries that South Africa may likely be the country to shoulder the growing responsibility of conducting peace missions in Africa. This was demonstrated in May 2017 when President Jacob Zuma announced that South Africa's peacekeeping force in the DRC has been extended for a year Eye Witness News (May 5, 2017). Neethling (2000) contends that conventionally, the methods of contributing troops by states have not receive support from other countries on the continent as a result of the attendant financial and military responsibilities associated with peace missions in Africa. As a result of this, there is high expectation that South Africa will play a significant role in African peacekeeping requirements; influenced by efforts at international level to build home-grown peacekeeping capabilities in Africa. Relatively, South Africa falls within the paw view of few countries that has the economic clout to flex its muscle whenever there is unhealthy political and economic infringement into her sphere of influence; hence, its ability to commit human and material resources to peacekeeping in Africa.

Comparatively, South Africa is no longer new in international peacekeeping efforts; the first of which was in 1998 when Pretoria deployed a set of personnel (SANDF) to Lesotho, though it was claimed to be a SADC intervention in the land lock country. South Africa under the UN had her first deployment to DRC in 1999, followed by its contribution in 2004 when South African troops formed the basis of the UN Operation in Burundi (ONUB). Basically, South Africa's peacekeeping role has been impactful for sub-Saharan Africa; owing to the fact that South Africa in relativity is a military heavyweight with the capability of providing distant peacekeeping efforts, thus conceiving that SANDF is a force for stability in Africa. The emergence of South Africa as a major contributor to peacekeeping operations in Africa was informed by three major socio-political and economic developments. South Africa's political engagement on the continent (Africa) has been factored into its peacekeeping efforts; evidence is its efforts at conflict prevention and management by promoting dialogue and mediation. For example, the presence of SANDF in Burundi and the DRC were informed by South Africa's leading role as the architect of peace processes in the two countries. South Africa's presence in Darfur also serves as a pedestal to playing a leading role in the resolution of conflicts in the war torn country. The second development was the deployment of South African National Defence Force (SANDF) in UN-led operations, at regional level (Burundi, 2003) and sub-regional organizations (Lesotho, 1998), as well as bilateral arrangements. For example, South Africa has at times deployed its personnel through bilateral agreements as in the DRC (2000) and Central African Republic (2003). In 2004, the former apartheid enclave and the DRC entered into a bilateral treaty on defence cooperation; this however, paved the way for the two countries to further sign bilateral agreement on military assistance to the Democratic Republic of Congo (Nibishaka, 2011).

Historically, South Africa has aligned its peacekeeping deployments with political and diplomatic mediation efforts in support of its growing image and role as a "middle power" in the international sphere (Lotze, de Coning & Neethling, 2015; Rettig, 2016). In 2000, during the DRC peacekeeping mission, the SANDF spearheaded efforts at stabilising the country's internal politics, reconstruction and development of infrastructure and also offered to train DRC's military personnel. South Africa therefore, sees peacekeeping operations as a sustainable foreign policy tool to back up its ambition of playing a leading role in multilateral forums apart from other benefits. Within the South Africa's government circle in the late 1990s, there was a growing recognition of the fact that South Africa's socio-political and economic stability would be closely linked to the socio-economic and political prosperity of the continent (Africa) as a whole. Hence the close interconnection between continent's stability and South Africa's national interest. As an emerging continental power, South Africa for more than a decade has been a major contributor to international peacekeeping and has troops and military observers deployed in several African countries, these countries include the DRC, Burundi, and Darfur in Sudan. From the Defence Review of 2015 (Department of Defence, 2015) this is concomitant to South Africa's strategic stance and its inescapable continental leadership role; thus, enhances its influence within wider international developments, while promoting regional security, precisely through the application of its military capabilities to pressing African security issues. In its quest to maintain its ambitious continental power cum national interest, South Africa has participated in the following peacekeeping operations.

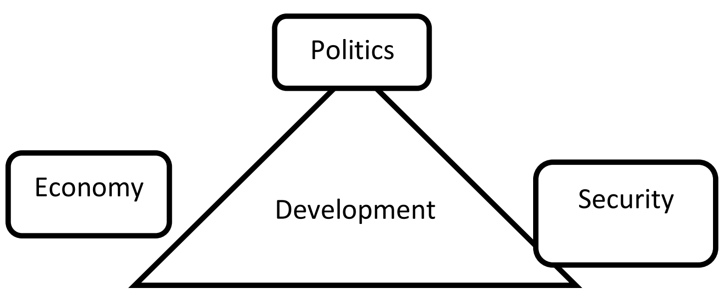
That South Africa has located its interests in Africa was demonstrated at the height of the devastated political crisis in the DRC; South Africa was the first African country to deploy in the war torn country in 1999; with additional deployment of troops under the United Nations Organisation Mission in the DRC (MONUC) in 2001. Involved in this operation were the SANDF's Medical team, military police, the Engineering Corps, a Well Drill and ferry units then known as Operation Mistral, in 2006, later transformed to include; the Aviation Unit of the SANDF while the Well Drill and Ferry units were withdrawn. This phase of Operation Mistral contributed to taking the DRC to its first democratic elections in 2006, run mainly by MONUC (Department of Defence, Online). At the request of the UN Department of Peacekeeping Operations, South Africa in 2000 deployed officers in support of the United Nations Mission in Eritrea and Ethiopia (UNMEE). In 1999, the OAU now African Union (AU) had brokered a peace deal that eventually ended an armed conflict between the two countries. In what was tagged as Operation Expresso Ethiopia and Eritrea, SANDF took over the operational control of all military persons deployed under OLMEE (Organisation of African Unity Liaison Mission in Eritrea and Ethiopia); SANDF was kept on ground for UNMEE and OLMEE missions until 2008 owing to several extension requests. South Africa however pulled out of the mission for the reason that there were continued disputes over the border between Eritrea and Ethiopia in addition to a number of constraints from the Eritrean government, the result of which was the inability of UNMEE to accomplish its mandate (Department of Defence, Online).

From the Department of Defence (Online),the SANDF under the codenamed "Operation Cordite in Sudan" began in 2004 (July) in support of the African Union Mission in Sudan (AMIS) operating largely in the country's western region of Darfur. AMIS was later transformed into UN African Mission in Darfur (UNAMID), a hybrid African Union/United Nations mission in 2008. It is on record that South Africa was aboard and responded to a request to increase its commitment to a standard UN infantry battalion when AMIS was terminated. This was in form of various full-time force and Reserve Force units and regiments. In 2010 Operation Cordite committed more military personnel to expedite confidence building in the Sudanese military. Operation Cordite also contributed to the success of the referendum on Sudan's future, the result of which was the peaceful splitting up of the country into Sudan & South Sudan in 2011. Though, the SANDF commitment to peacekeeping in Sudan is officially over with gradual withdrawal of its 8 Infantry Battalion in the country in April 2016, after making its marks in ensuring peace in the country; and while South African soldiers will no longer be part of the hybrid AU/UN mission in Sudan, there will still be South African representation in the country. The need to re-establish peace where opposition leaders are allowed to participate in a transitional government stimulated South Africa to embark on an ambitious and dangerous peacekeeping mission in Burundi. An operation that was coded "Operation Curriculum" (Department of Defence, Online). To give it international recognition and legitimacy the operation was sanctioned by the United Nations (UN) Security Council. Initially, it was an AU mission but metamorphosed into a UN mission in 2004 with focus on peacekeeping, while the protection unit was excluded; a responsibility that was taken over by SANDF. In addition, to the SANDF mandates, the government (an interim government) of Burundi requested that the SANDF train the members of the Burundi Defence Force (BDF)in order to prepare them for the task of overseeing the protection unit upon the expiration of SANDF mandate.

After Burundi's successful and internationally recognised election, the operation came to an end after a successful withdrawal of the last SANDF troops in 2009 leaving Burundi peaceful and politically on its feet after ending the 15 years of civil war in the East African country. South Africa's role in sending peacekeepers to Burundi was complemented by diplomatic efforts to shepherd the country toward peace. Burundi, however, slipped back into crisis in 2015; ironically, South Africa has at no point attempted any military reengagement in the country. Debatably, South Africa seems to have discounted the prospects of influencing its characteristic role as a hegemon in sub-Saharan Africa as well as a decisive leader and norm-builder in continental security (Rettig, 2016). One factor perhaps that has contributed to this might be as a result of domestic challenges, such as unemployment and changes in the GDP. The need to strengthen and harmonise regional and by extension international and national security informed South Africa's launch of "Operation Copper'' (Maritime security on the Mozambican channel) in January 2011. The need for effective maritime security in Southern Africa's as well as the increase spate of the activities of piracy in Somalia, the Seychelles and Kenya and its gradual movement towards Southern Africa serves as a pedestal to SANDF deploying several naval and air assets to Mozambican waters; with logistic support from the Mozambican Navy. The South Africa's frigates have since maintained a permanent presence in the northern Mozambique Channel most importantly to protect (South Africa's) merchant-marine ships (Defence Web, 2017). One of the features of South Africa intervention in Africa's political crises is helping to strengthen the recipient's military, on this notes the navies from neighbouring countries, such as the Mozambican Navy, receives training from the South Africa's Navy. This is in accordance with the maritime strategy for securing waters, drafted by South Africa, which has been adopted by SADC. Though very costly and expensive, the presence of SANDF (Operation Copper) is still very much felt in the Mozambican waters and as far as Tanzania coasts. At this point it is pertinent to ask the question; what motivate South Africa to engage in so much peacekeeping?

Underlying forces driving South Africa's contributions to peacekeeping: Typical of foreign policy is the relations of states which include navigating a complex array of diplomatic issues and actors and the elements that constitutes the basis for assessing the successes and challenges of states foreign policy. Though, South Africa is disposed to negotiation while settling disputes through dialogue and mediation with conflicting parties; nonetheless the SANDF has featured prominently as a diplomatic tool of South Africa's foreign policy particularly towards Africa which is why one might be tempted to dig into the underlying principle behind South Africa (SANDF) participation in peacekeeping operations across Africa.

The successful transition to democratic governance of South Africa no doubt had raised hopes for better and quality peacekeeping in Africa. South Africa's regional hegemony was no longer reserved for Cold War strategy and preserving Apartheid therefore, could in theory be applied to more affordable approaches to peacekeeping in Africa (Ditsong, 2013). South Africa's transition to democratic governance and accompanying commendation from the international community rejuvenated the hope for a future where Africa would have its own effective peacekeeping force. Debatably, South Africa seizes the opportunity to actualise its foreign policy objectives while trying to ensure peace on the continent. Fundamentally, there are three basic factors that reinforce South Africa's participation in peacekeeping; which are politics, economy and security, by extension these three elements translate to development.



At the time when the UN was struggling to achieve its goals in Africa, and attempts to forge cooperation between African states in continental peacekeeping were advancing slowly, South Africa was able to overcome its own immediate challenges through a successful transition to democratic governance. Elsewhere in Africa the end of the Cold War introduced the more classical paradigm of a massive shift in power. Military conflicts began to overwhelm the UN peacekeeping forces; and the OAU was in no position to take over the challenge. Between 1990 and 1994, the cost of UN peacekeeping missions in Africa increased six-fold (Neethling, 2008). South Africa's transition and accompanying international acclaim however revived the hope for a future where Africa would have its own effective peacekeeping force. There have been divergent of opinions and contributions by scholars on whether South Africa employs peacekeeping to its socio-economic benefit. Suffice to say that on one hand one might argue that such does not exist. On the other hand one might conclude that South Africa has the covert intention of SANDF in peacekeeping to serving its economic interests in states wherein it stands the opportunity to contribute peacekeepers.

Political: Fundamentally, states made and affect its foreign policy within the international and domestic political context, which by interpretation means that a state may have multiple foreign policy goals – social, political, economy, military. Once formulated, it can be executed by various means with the aim of achieving targeted goals. It is within this context that the SANDF debatably accepts its position within the ambits of South African foreign policy; thus justifying its goal of promoting peace and stability on the continent as a key component of its foreign policy. In foreign policy, there is some purposeful behaviour exhibited when the state actors respond to the International environment and uses the best information available to maximize the goals of such state with the assumption that the state is a rational actor with established socio-political and economic goals. Debatably, one of the main motivations driving South African peacekeeping operation is political. To Lotze et al (2015), there are two political factors that underpin South Africa's drive for international, peacekeeping. On the basis that South Africa understands that its development (socio-political and economic prosperity) hinges on the progress and peace on the continent. South Africa has therefore, designed a foreign policy that promotes economic and social development in Africa, thus requiring the strengthening of peace and security within the continent. It is on this note that South Africa sees its contributions to regional, sub-regional, and by extension to UN peacekeeping missions as fundamental to its foreign policy objectives.

On the second note, South Africa in support of its growing image and role as a middle power internationally, has progressively come to use its "starring" role in Africa as a facilitator in peace processes. This role is strengthened through the deployment of SANDF in peacekeeping missions. This by extension has helped to influence South Africa's position in the committee of nations, most importantly the United Nations. This diplomatic action has paved the way for South Africa to punch above its weight (Lotze et al, 2015) and has therefore helped South Africa to further push for a permanent seat on a restructured UN Security Council. The fifth pillar of South Africa's national interests according to Nkoana-Mashabane (South African Minister of International Relations and Cooperation), is based on the fact that South Africa is committed to working for a stable African continent where peace and development is engendered (Zondi et al, 2014). It is on this note that the above submission helps to unpack the rationale behind the concentration of South African peacekeeping operations on Africa, and perhaps the reason South Africa may not likely be committed to peacekeeping outside Africa. Hence the extension of deployment of the members the SANDF in the Democratic Republic of Congo by another year while fulfilling the international obligations of South Africa towards the UN (Eye Witness, 2017). The SANDF as reported by Eye Witness (2017)has over 1,371 members with the United Nations Organisation Stabilisation Mission (MONUSCO) in the Democratic Republic of the Congo. Justifying the political role of South African National Defence Force, Heywood(1997)contends that militaries are political institutions of a very particular kind that can play different roles in the political life of a state; the most important of which is as an instrument of war. Foreign policy, once formulated, can be implemented by a number of means. Debatably, militaries are part of the inner caucus in a political system owing to the fact that they are represented in key policy-making bodies thus making them part of the institutional power base. It therefore means that militaries may well function as instruments of foreign policy (Du Plessis, 2003; Heywood, 1997). As an integral part of foreign policy implementation, the pacific use of the military in peacekeeping operations in this context refers to a diversity of ways in which military power can be applied.

Economy: In the words of South Africa's defence minister, NosiviweMapisa-Nqakula, while justifying the commitment of South Africa to maintaining peace in Africa; she said South Africa is committed to the renewal of the African continent and to the promotion of peace and stability which will lead to the sustainability of African development based on the understanding that South Africa's national interest is inextricably linked to what happens in Southern African sub-region, (SADC), and the continent of Africa in general (Allison, 2014). Landsberg (nd: 2) in his work titled "South Africa's African Agenda: Challenges of Policy and Implementation" states that one of the South Africa's foreign policy agenda for the African continent which is based on the understanding that Africa's socio-economic development cannot take place without political peace and stability, is to contribute to Post-Conflict Reconstruction and Development (PCRD) in Africa, particularly in the Democratic Republic of Congo (DRC) and Sudan. Although the main rationale that reinforces South Africa's engagement in peacekeeping is political, South Africa's deployments arguably serve to support its national economic interests. South Africa, according to Lotze et al. (2015) has deployed peacekeepers in countries where it holds commercial interests, such as the DRC and Sudan. Evidently, South African mobile telecommunications giants, Vodacom and MTN, mining companies, Standard Bank and state-owned electricity provider Eskom have invested heavily in the DRC apart from some South African farmers that are also growing crops in the country.

South Africa for example has developed a special relationship with Sudan, especially after the signing of the Comprehensive Peace Agreement (CPA) in January 2005. The two countries collaborate in various economic and commercial fields. It is on record that South Africa and Sudan have sixteen bilateral agreements that cut across a number of fields. They have growing cooperation in the energy sector, trade, agriculture, arts and culture, social development, scientific cooperation, as well as in security and military fields. South Africa established a diplomatic mission in Sudan immediately, following the signing of the CPA (SAnews, 2015). In other cases, bilateral deployments have been conducted where potential to extend South Africa's commercial interests exist, such as in the Central Africa Republic (CAR). In essence, the deployment of peacekeeping personnel cannot only be viewed as entirely distinct from South Africa's use of economic diplomacy as its influence spreads in Africa. Debatably, it should be viewed as grappling with balancing its national security interests and international investment competitiveness that comes from developed countries like China, USA, and Japan etc. It therefore means that South Africa's economic interest and importance are the driving forces behind its political stands on some of the crucial security and economic situations facing Africa today.

Security: South Africa dated from the period of apartheid has had a long history of (internal socio-economic and political)conflict and concerns over security, as well as long history of approaches to the management of security issues in this context (Cawthra, 2013). Traditionally, security is considered as the fundamental value and definitive goal of state behaviour (Evans & Newnham, 1996). Therefore, national security to every government is its most important responsibility; as it involves the protection and safety of the country and its citizens; against both internal and external threats that have the capability of challenging the security of the state, as well as the society, hence the involvement of South Africa in peacekeeping particularly in Africa. Built on the Draft Defence Review of 2014it is highlighted that, although South Africa is not well thought-out a global military force, it does have a significant military role to play in the Southern African region, commitments to international peace, in terms of peacekeeping and support operations in Africa. One can argue that South Africa's national security strategy, defence and foreign policy are viewed as intertwined. South Africa's domestic security is therefore viewed as intricately linked to that of regional security, and vice versa. The provision of security no doubt is the essence of every sovereign state. The history of government in human society is considered as the history of the steady expansion of the role of the state. This is (security) drove by and conceivably, driving changes to the notions of security for which the state is responsible. Therefore, the security of state is subject to the guarantees of security in all its dimensions. By interpretation, South Africa's security comprises economic policy driven by national interest with various international agreements.

Occasioned by its history, geography and economic prospects, South Africa arguably, is tactfully, pursuing a somewhat hegemonic regional policy, trying to use its relatively sophisticated military/economy as a tool which remains a basic reference in its regional diplomatic actions. In support of its growing image as a middle power; internationally, South Africa has progressively facilitates peace processes while protecting its national interest. This is reinforced through the deployment of SANDF in peacekeeping missions across Africa and SADC in particular. The Mozambique Channel is considered a vital maritime corridor for South Africa's economy, thus justifying the need for effective maritime security in Southern Africa's waters. While defending and protecting its national interest cum security, the SAND has deployed several naval and air assets to Mozambican waters. South Africa's frigates till date maintain a permanent presence in the northern Mozambique Channel, overtly because 80% of Southern Africa's imports and exports are transported by means of the sea.

5. Conclusion

From the foregoing discussion, it is reasonable to conclude that the evolution of peacekeeping operation and its merger with foreign policy has reflected and reinforced the structure of the world system. Peacekeeping, debatably is covertly designed to be part of a face-saving diplomatic tactic aimed at providing a cover up for an unending war by proxy to prevent conflict that may lead to deprivation of socio-political development and sometimes the political interest of the state providing the peacekeepers. South Africa's foreign policy goals since the adoption of inclusive democratic governance in 1994 has always been about contributing to a stronger African Union (AU), supporting efforts to build a more stable and peaceful continent. South Africa, till date, is one of the largest contributors in terms of finance to the AU's budget, the foundation of South Africa's foreign policy is therefore fundamentally held together by its moral capital, normative agency, and political importance. One of the South Africa's great soft power attributes has been the attraction and power of its transition to inclusive democratic governance after a long period of apartheid rule. This gave South Africa a certain moral authority and prestige to play very significant roles in conflict resolution and mediation through its peacekeeping operations across the continent (Africa). South Africa's quest for peace, which is mostly embedded in the African environment and its state system, has triggered the debate whether the disposition of South Africa's foreign policy is pivotal to promoting cooperation in Africa or diplomatically garnishing its ambitions of becoming hegemonic while aggressively pursuing its own political, security, economic and trade interests which by extension leads to inclusive development. This paper has therefore argued that though SANDF of recent has been a significant role player and a central feature of the former apartheid enclave foreign policy. However, it has open up new prospects for South Africa to develop its economy, its multilateral and foreign policy agendas which have very much been driven by the pursuit of its national interest while trying to ensure peace in other African states. Given the destructive and ruffian-like role South Africa played within SADC during the apartheid years, its post-1994 foreign policy has become sensitive to regional needs, and has since pursued an enviable foreign policy objectives based on the principles of equity and mutual benefit. South Africa's development diplomacy through peacekeeping underpin by the effective use of SANDF places emphasis on capacity building to deliver on human security needs in an efficient, democratic and sustainable manner.

South Africa has therefore focused its foreign policy responsiveness on providing institutional and capacity building support to some African countries emerging from violent conflict. These include Burundi, Sudan, the DRC where there have been heavy investment from South Africa's conglomerates as well as South African government own companies. Helping DRC to ensure peace and economic prosperity through investment from both individuals and government is a welcome development. This was the view of Mr Jean Madungu, a resident in Empangeni South Africa while commenting on the South African investment in the DRC. There are divergent opinions by scholars on whether South Africa employs peacekeeping to its benefit. Although some have held to the opinion that such does not exist, while others maintain that South Africa has the covert intention of SANDF in peacekeeping to serving its economic interests in states wherein it stands the opportunity to contribute peacekeepers. The post-apartheid South Africa since 1994, drawing on its experience of emerging from a seemingly intractable apartheid conflict situation has sought to position itself as a strong supporter of multilateralism, democracy and human rights within the committee of nations. Though South Africa's foreign policy in this regard seems to be inconsistent, and has often been criticized for these inconsistencies in its foreign policy approach. However, the belief within foreign policy circles is that the deployment of the members of SANDF in peace operations is fundamental to the country's inclusive foreign policy ambitions, a fit that has strengthened South Africa's international image as "African peacemaker".

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Monetary Policy Transmission Mechanism in Namibia: A Bayesian VAR Approach

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Abstract: This study analyzed the interest rate channel, credit channel, exchange rate channel and asset price channel for monetary policy transmission mechanism in Namibia. The idea behind this study is to have a comprehensive study that covers a variety of channels for monetary policy transmission mechanism. The study utilized a Bayesian vector autoregression (BVAR) technique on quarterly time-series data covering the period 2000:Q1 to 2016:Q4. In particular, the validity of the data used is checked and verified by using two sets of prior distributions suggested by Sims and Zha as well as prior distribution of Koop and Korobilis. The variables used in this study are real output (Y_t), real effective exchange rate (E_t), inflation rate (P_t), repo rate (R_t), housing price index (H_t) and credit extended to private sector (L_t). The findings revealed that interest rate and credit channels remain important in the transmission mechanism to this day. Notably the exchange rate and asset price channels are also slowly gaining prominence in monetary policy transmission mechanism. Therefore, the study provides useful information to the monetary authorities regarding the process of transmission mechanisms. This is quite important especially that the Central Bank (Bank of Namibia) is very serious about financial stability within the financial system, given the fragility of the financial systems in the world due to financial crisis.

Keywords: *central bank, monetary policy, Bayesian VAR, Namibia*

1. Introduction

Namibia's monetary policy arrangement dates back at time of independence in 1990. In particular, Namibia's monetary policy conduct in Namibia involves a fixed exchange rate regime as an agent used to control inflation in order to maintain financial stability (Sheefeni, 2013). The option of fixed exchange rate regime is in-line with Namibia's decision to remain within the Common Monetary Area (CMA). This arrangement is formerly known as Rand Monetary Area, which consisted of Botswana, Lesotho, Swaziland and South Africa. Botswana moved out in 1976 and Namibia joined in 1990 after attaining her independence. The Common Monetary Area is now comprised of the following members Lesotho, Swaziland, Namibia and South Africa. It follows that the decision to remain in the CMA suggests abandonment of discretionary monetary policy, while giving more priority to maintaining a fixed peg against the rand (BoN, 2000). In 1993, Namibia introduced its own currency the Namibia dollar which was effectively pegged to the South African rand on par. However, in 1992, there was already a separate bilateral agreement between the two countries regarding the features of the peg arrangement (Kalenga, 2001). The bilateral agreement provides that "either contracting party has the right to issue its own national currency" (BoN, 2000). Specifically, Article 4, Section 1 of the Bilateral monetary agreement, states that, *"Against the aggregate amount of Namibian dollar currency issued by the Bank of Namibia, the Bank of Namibia shall maintain a reserve equivalent thereto in the form of Rand assets and freely usable foreign currencies in such proportion as the Bank of Namibia considers appropriate..."* (BoN, 2000). The section emphasis the need to fulfill the backing rules, which is why the 1993 peg was on par though the rand remained legal tender in Namibia (Kalenga, 2001).

The two dominant features of the bilateral agreement are: (1) a commitment to convert the Namibia dollar to South African rand at a fixed exchange rate, and (2) an explicit requirement that the BoN monetary liabilities be backed by the South African rand or other foreign assets (Kalenga, 2001). It should be noted that although there is a fixed parity between the two currencies, it is not irrevocable (Tjirongo, 1995). The pegging the exchange rate arrangement serves as a nominal anchor that can help in controlling domestic inflation (Mishkin, 1998). In the case of Namibia, the decision was influenced by the shared historical trade relations and close ties between the two countries. Thus, it was seen deemed fit that the SA rand provides a stable anchor for low inflation in Namibia (Kalenga, 2001). However, the implication of this setting is that Namibia's monetary policy is by default determined by South Africa taking away the discretionary of independent monetary policy conduct, making it difficult to assess monetary policy transmission mechanisms in Namibia. Interestingly, there are instances where the BON has sometimes opted for tight monetary policy for the sake of defending the exchange rate in the absence of inflationary pressures or in the absence of serious heated economic activities. Therefore, it is against this background that the paper sought to evaluate the channels for monetary policy transmission mechanisms in Namibia. The paper is organized as follows: the next section presents a literature review. Section 3 discusses the methodology. The empirical analysis and results are presented in section 4. Section 5 concludes the study.

2. Literature Review

The theoretical literature discusses a number of channels of monetary policy transmission. However, they are broadly categorised into four main ones namely, interest rate, credit, exchange rate and asset price channels. The interest rate channel is founded on the macroeconomic models of investment developed in the mid-20th century. In particular it is based on the neoclassical models of investment developed by Jorgenson (1963) and Tobin (1969). According to Boivin, Kiley and Mishkin (2010), for investment, the key channel for monetary policy transmission is the direct interest rate operating via the user of capital. In this regard, there are factors that determine effects of monetary policy operating through these direct user cost channels. For example, the horizon over which interest rates influences spending. This is so because capital assets have a long life span and any adjustments of these stocks involve costs, which are considered when incorporating changes in interest rates into investment decisions. It is from this viewpoint that it has been argued that it is the real interest rate (which is the cost of capital) and the expected real appreciation of the capital asset that influence spending related to the expected life of the asset (Boivin et al., 2010).

The preceding relationship has been formalised by traditional econometric models by including the long-term interest rate in the user cost formula. This is because the monetary transmission mechanism involves the link between short- and long term-interest rates through expectation hypothesis of the term structure of interest rate. Therefore, the key channel through which monetary policy actions are transmitted to the economy and their effects on market interest rates is better known as the interest rate channel of the monetary policy transmission (MPT). However, Roley and Sellon (1995) argued that the connection between monetary policy actions and long-term rates is not a clear-cut to be particular it is weaker and less reliable. Other authors, such as Taylor (1995), have also highlighted the conflict on the magnitude of the impact of short-term and long-term rates on economic activity. Intuitively, for long-term decisions such as investing in plants and equipment, the long-term interest rate matters most. In line with the previous argument, the expectations hypothesis of the term structure postulates that, a policy change in the short-term interest rate is then transmitted to medium- and long-term interest rates through the balancing mechanism of supply and demand in the financial markets (Goeltom, 2008; Boivin et al., 2010). It is in this view that monetary policy affects long-term interest rates by manipulating short-term interest rates. This in turn results in changing market expectations of future short-term rates (Walsh, 2003). However, the market segmentation theory of the term structure of interest rates infers that the relationship between interest rates of different maturities is unnecessary, because investors and borrowers have strong maturity preferences that they intend to achieve when they invest. Therefore the major factors that determine the interest rate for a maturity segment are supply and demand conditions unique to the maturity segment.

The second channel of monetary policy transmission is the credit channel. In discontentment with how the effects of the interest rate explain the impact of monetary policy on expenditure on long-standing assets, resulted in a view of the monetary transmission mechanism that emphasises asymmetric information in financial markets. Mishkin (1996) indicates that information problems also refer to matters pertaining to costly verification and enforcement of financial contracts. In this regard, the most talked about channel that are resultant of information problems in credit markets are the bank lending and the balance-sheet channel. The bank lending channel is founded on the basis that banks play a special role in the financial system because they are suitable to deal with asymmetric information problems in credit markets. Gertler and Gilchrist (1993) indicate that the bank lending channel is based upon two critical assumptions. Firstly, bank loans and other non-bank assets such as commercial paper are imperfect substitutes, because of imperfect information in credit markets. Small firms are largely dependent on bank loans because of difficulties to obtain funds through other means, such as issuing securities or bonds, owing to high screening and monitoring costs (Markidou & Tapia, 2003). Therefore, the unwillingness by the bank to offer credit will have repercussions in terms of spending by the dependent customers. This in turn translates into lower aggregate demand. Secondly, through change in monetary policy, the central bank has the ability to constrain the supply of bank loans through change in monetary policy. For instance, a monetary policy contraction leads to a reduction in bank reserve money and the number of loans, hence bringing about a fall in spending by bank-dependent customers. It is in view of this that monetary policy contraction leads to a reduction in the supply of bank loans and in turn affects real economic activity.

The balance sheet channel is a resultant of a decline in the importance of the bank lending channel (Mishkin, 1996). Introduced by Bernanke and Gertler (1989), the balance sheet channel is normally coupled with the outcome of a policy-induced change in interest rates on the cash flows and hence the balance positions of non-financial firms that are heavily dependent on bank loans (Afandi, 2005). For example, a contraction in monetary policy in the form of a rise in interest rates is a cost because it brings about an increase in interest expenses for the firm. This leads to a reduction in its cash flows, hence weakening its balance sheet position. On the contrary, an expansionary monetary policy yields opposite results. However, if interest rates increase further, it leads to a reduction in asset prices, which in turn lowers the value of collateral. The implication here is that lower collateral is a risk to the lender which also suggests that losses from adverse selection are higher, so as moral hazard. That is to engage risky investment projects by owners with lower equity stake in a firm. Lower collateral are usually associated with lower net worth which by implication also leads to a decrease in lending to finance investment spending (Mishkin, 1996).

From the households perspective, declines in bank lending cause a decline in durable and housing purchases by consumers, who are limited when it comes to access to alternative sources of credit. Similarly, an increase in interest rates causes deterioration in household balance-sheets because consumers' cash flow is adversely affected (Mishkin, 1996). Furthermore, the effects of the balance-sheet channels can also be explained via liquidity effects on consumer durable and housing expenditure. The importance of balance-sheet effects is their impact on consumers' desire to spend as opposed to lenders' desire to lend. The argument is that because of asymmetric information about their quality, consumer durables and housing are very illiquid assets (Mishkin, 1978). Therefore, the illiquidity of consumer durable and housing assets is another reason why a monetary contraction, which raises interest rates and thereby reduces cash flow to consumers, leads to a decline in spending on consumer durables and housing. It can be concluded that a decline in consumer cash flow increases the likelihood of financial distress, which in turn reduces the desire of consumers to hold durable goods or housing, thus reducing spending on these items, and consequently aggregate output.

The third channel of transmission mechanism is that of the exchange rate. This mechanism works directly via its effect on import prices to aggregate demand via net exports (Ramos-Francia and Sidaoui, 2008). The analysis of this channel of transmission can be categorised into two parts: (i) the pass-through from the monetary policy rate to the exchange rate and (ii) the pass-through from the exchange rate to the real economy. A policy rate change by the central bank also induces a change on return on local/domestic investments relative to foreign investments. The interest rate differential leads to capital outflows and affects the relative exchange rate. Therefore, central banks make serious attempts to maintain stable interest rate differential in order to facilitate capital account stability and to abate volatility of the bilateral exchange rate. With regards to pass-through from the exchange rate to inflation and the real economy, changes in the exchange rate are directly transmitted to the consumer price through the cost of imported inputs and finished goods. However, the magnitude and speed of the pass-through depend on prevailing demand conditions, price adjustment costs and the perceived persistence of the depreciation/appreciation. The indirect transmission has lag effects through changes in the levels of demand (between domestic goods and import substitutes). This comes as a result of shifts in the country's external competitiveness or inflation expectations (Ramos-Francia and Sidaoui, 2008).

In general, the exchange rate channel examines the relationship between net private capital inflows and monetary policy under the two extreme categories, namely the fixed and flexible exchange rate regimes. Karamanou, Mahadeva, Robinson and Syrichas (2017) discussed the two alternatives. Under a flexible exchange rate regime monetary tightening in the form of interest rate hike, makes local currency deposits more enticing, resulting in appreciation of a currency. The consequence of high valued currency is that it makes local goods more expensive than foreign goods which result in a drop in net exports and consequently aggregate output. However, under the fixed exchange rate with no capital controls, monetary tightening will cause capital inflows. This is so because of the attractiveness of a higher domestic interest rate to international investors. Thus the central bank responds by growing its foreign exchange reserves in hope to forcefully reduce the interest rate down to its original level. Thus, in the presence of fixed exchange rate or heavily managed, the effectiveness of monetary policy action is reduced but not necessarily entirely eliminated.

The authorities still have some room for manoeuvring. In particular, there are two ways in which monetary policy can maintain some degree of independence in the case of a fixed exchange rate regime. First, under the incomplete fixed exchange rate regime with some capital controls, where there is no substitutability of domestic and foreign assets, may enable the central bank interest rates to diverge from the levels of the interest rate parities. This is true for as long as the exchange rate does not reach the zone's boundaries. Secondly, monetary policy can affect the real exchange rate via the price level, provided there is no perfect substitutability between domestic and foreign assets, allowing domestic interest rates to deviate from international levels. In this way, monetary policy can affect the real exchange rate through prices while holding the nominal exchange rate fixed. Furthermore, via this channel the monetary authorities can affect net exports at a limited degree but with much longer lags. Therefore, capital controls and imperfect substitutability of domestic and foreign assets, along with a target zone regime, create a channel for monetary policy to affect output and prices despite a fixed exchange rate system (Bitans, Stikuts and Tillers, 2003).

The fourth channel focuses on the simulating effect of higher asset prices (such as equities and housing) on household consumption and aggregate demand (Mishkin, 2004; Pedram, Shirinbakhsh and Afshar, 2011; Huang, 2012). This concurs with the monetarist view that the concentration should focus on all relative asset prices and real wealth. The effect of asset prices extends beyond those operating through interest rates, exchange rates and equity prices (Metzler, 1995). The effect of monetary policy shocks on market interest rates affects both the short-term and long-term interest rates. This is because economic agents expect delay in reversed monetary policy actions. Accordingly, changes in long-term interest rates could have an impact on asset prices to an extent that depends on the expectations of other variables affecting those prices and on expected future policy actions (MPC, 2003). For example, a decline in monetary policy can lead to a decline in land and property values, which in turn leads to a decline in household wealth and thus a decline in consumption and aggregate output. In fact, Taylor (1995) argued that changes in long-term interest rates influences the price of financial assets and the price of physical assets such as durable consumption goods, real estate and business equipment. Thus, changes in the prices of these assets will alter individuals' spending and savings decisions and consequently, affect real income and the inflation rate (Pedram et al., 2011).

Various studies have empirically looked at monetary policy transmission mechanisms to determine whether there is conformity and compatibility between the theoretical propositions with the empirical outcomes and if not, what the possible reasons could be. Uanguta and Ikhide (2002) examined monetary policy transmission mechanisms in Namibia using monthly data for the period 1990 to 1999. Two channels (interest rate and credit channels) were investigated by employing two methods were applied to obtain the results, namely the cumulative forecast error variance and a general (unrestricted) vector autoregression model. The findings are that monetary policy tightening causes lending rates to increase in the domestic economy. This in turn leads to a decline in private investment, resulting in negative impacts on output and employment in the short run. These results showed that both channels were effective in the case of Namibia. A study by Bitans, Stikuts and Tillers (2003) examined the transmission of monetary shocks in Latvia. It dealt in particular with short-term reactions of the economy to various monetary shocks. The importance of various channels of monetary transmission was tested empirically by using the structural vector autoregression (SVAR) model and small structural macroeconomic model using monthly data for the period January 1995 to March 2002. The analysis provided evidence that monetary shocks were transmitted to the economy mainly through the exchange rate channel. The analysis of the financial system of Latvia supported the view that the wealth channel was very weak or even non-existent at the time because of a relatively underdeveloped capital market.

A study by Muco, Sanfey and Taci (2003) examined the conduct of monetary policy in Albania during the transition period. By employing the VAR model, the study identified various channels through which monetary policy could affect prices and output and established their relative importance. This study used monthly data for the period January 1994 to May 2003. Estimates from a VAR model of key macroeconomic variables demonstrated the weak link between money supply and inflation up to mid-2000. However, the move during 2000 from direct to indirect instruments of monetary control helped to strengthen the predictability of the transmission link from money supply to inflation. Hence the conclusion that external influence, by contributing to exchange rate stability, had played an important part in keeping inflation low for most of the transition period. Moreover, the introduction of indirect instruments of monetary policy appeared to have contributed to the effectiveness of the exchange rate transmission mechanism of monetary policy into the real economy. The preceding results concur with that of Chow (2004) for Singapore where the VAR model was estimated using monthly data for the period January 1989:1 to October 2003. The study used the real effective exchange rate as a measure for monetary policy and finds that output reacts immediately and significantly to a contractionary monetary policy shock. Therefore, the study finds that the exchange rate channel was more effective in transmitting monetary policy to the economy than the interest rate channel. Ngalawa (2009) investigated how monetary policy action affects consumer prices and output in Malawi by employing a technique of innovation accounting in an SVAR model. The study used monthly time series data for the period January 1988 to December 2005. Effectively, the country employed hybrid operating procedures where the officials were targeting reserve money and short-term interest rates. However, the findings revealed that the bank rate proved to be more effective then reserve money as a monetary policy instrument affecting both price stability and high growth and employment objectives.

Spulbar, Nitoi and Stanciu (2012) investigated the transmission mechanism of the monetary policy in Romania. The study employed the Bayesian vector autoregression (BVAR) on monthly data for the period 2001 to 2010. The results revealed that the exchange rate is effective in affecting the real economy. However, the interest rate channel of is being more and more consistent in the last years. Similarly, Atabaev and Ganiyev (2013) also analyzed the effects of monetary transmission on real output and price level in Kyrgyzstan. In particular, the study used monthly data for the period 2003 to 2011 to analyze the relationships between the money supply, real output, price level, interest rate, credit and real exchange rate using VAR. The findings showed that the interest rate channel remains weak, the credit channel has some affects to real output while the exchange rate channel affects the prices. Exchange rate channel remains still the most effective channel. In South Africa, Gumata, Kabundi and Ndou (2013) investigated the different channels of transmission of monetary policy shock in a data-rich environment. The study utilized a Large Bayesian Vector Autoregression model with 165quarterly variables observed from 1990Q1 to 2012Q2. The model included five channels of transmission: credit, interest rate, asset prices, exchange rate, and expectations. The results revealed that all channels seem effective though their magnitudes and importance differ. Furthermore, the results reveal that the interest rate channel is the most important transmitter of the shock, followed by the exchange rate, expectation, and credit channels. The asset price channel is somewhat weak.

Rosoiu and Rosoiu (2013) analyzed the importance of the interest rate and exchange rate channels for the emerging countries Romania, Poland, Czech Republic and Hungary. The study employed BVAR approach with Diffuse priors on quarterly data over the period 1998:Q1 to 2012:Q3. The results revealed that both channels are effective for the monetary policy transmission mechanism in Hungary and Czech Republic. In Romania and Poland they do not exhibit puzzles, but the impact of the macroeconomic variables is not very significant and shows very high volatility. In the context of monetary integration, exchange rate channel will become irrelevant when these countries adopt Euro currency. This change will lead instead to a powerful interest rate channel. Sheefeni (2013) investigated the role of monetary policy in Namibia for the period 1993 to 2011. The study specifically analyzed the relative importance of the different channels of monetary policy transmission using a SVAR and SVECM on quarterly data. Furthermore, the study also examined the exchange rate pass-through from exchange rate to domestic prices using both SVAR/SVECM and the single equation error correction model (ECM). Estimation results on the different channels of monetary policy transmission mechanism showed that the interest rate channel and the credit channel are effective in transmitting monetary policy actions. The exchange rate channel is also operative but not effective. The money effect model confirms that inflation in Namibia is not a monetary phenomenon. The results of the pass-through relationship showed that there is an incomplete but high exchange rate pass-through from exchange rate to domestic prices. Hai and Trang (2015) analyzed monetary transmission mechanism in Vietnam by using a VAR, focusing especially on how the economy dynamically responds money demand, interest rate, exchange rate, and asset price shocks. The study used quarterly data for the period 1995-2010 to examine the different channels of monetary policy mechanism in Vietnam. The empirical results show money demand and interest rates account for a major part of variations in output. And output is affected by monetary tightening in some lags, bottoming out after 5-6 quarters.

Mwabutwa, Viegi and Bittencourt (2016) analyzed the evolution of monetary transmission mechanism in Malawi for the period 1981 and 2010 using a Bayesian Time Varying Parameter Vector Autoregressive (TVP-VAR) model with stochastic volatility. In specific terms, the study evaluated the responses of real output and general price level to bank rate, exchange rate and credit shocks have changed over time since Malawi adopted financial reforms in 1980s. The results showed that inflation and real output responses to monetary policy shocks changed over the period under the review. Importantly, beginning mid-2000s, the monetary transmission performed consistently with predictions of economic theory partly due to stable macroeconomic conditions and positive structural changes in the economy. However, the statistical significance of the private credit supply remains weak and this calls for more financial reforms targeting the credit market which can contribute to monetary transmission and promote further economic growth in Malawi. Similarly, Mabulango and Boboy (2016) also examined the monetary policy transmission mechanism in the Democratic Republic of Congo using monthly data for the period January 2003 to December 2015. A restricted Bayesian VAR framework was used following Sims and Zhao (1998); Brandt and Freedman (2006) and Koop and Korobilis (2010) restrictions. This was done with the aim of investigating the short-run dynamic responses of output and inflation to interest and exchange rate innovations. The results reveal that the interest rate channel remains weak. Moreover, the transmission mechanism through the exchange rate channel has been found more pronounced during the recent period of macroeconomic performance.

There are lessons to be learnt from these studies. Firstly, there are similarities in the sense that some studies find the interest rate, credit, exchange rate and asset price channels to be effective. Other studies find the opposite. However, there are variations in the significance of the impact. Secondly, there are also variations in econometric techniques employed in analyzing the interrelation among all channels of the transmission mechanism. This is common across developed countries, emerging markets and quasi-emerging markets. In the case of Namibia, the only study that comes close to the issue of monetary policy transmission is that of Uanguta and Ikhide (2002). However, this study only looked at interest rate and the credit channel, leaving a gap by not examining the exchange rate and asset price channels. Furthermore, Sheefeni (2013) comprehensive model of analysing the interest rate, credit and exchange rate channels, leaving out the asset price channel creates a gap in the literature. The two studies provide useful insights on the three channels of monetary policy transmission in Namibia. The question still remains about monetary policy transmission mechanism of a comprehensive model that includes the asset price channel. Therefore, this calls for a study that is inclusive of interest rate, credit, exchange rate and assets price channels. Thus, this study intends to fill this gap.

3. Methodology

Empirical Framework: This study estimates a Bayesian vector autoregression model to analyse monetary policy transmission mechanism in Namibia as it was used by Spulbar, Nitoi and Stanciu (2012). This approach is appropriate for small open economies where monetary policy has been criticized because of abnormalities such as liquidity as well as price or exchange rate puzzles (Rosoiu and Rosoiu, 2013). The second problem is that of over-parameterization, particularly, in the presence of a large number of parameters to be estimated while faced with too few observations. This problem can be addressed by using Bayesian methods were developed (Rosoiu and Rosoiu, 2013; Mabulango and Boboy, 2016).In light of the above, this justifies the use of this methodology as opposed to the standard vector autoregression used in most empirical studies. Firstly, the validity of the data used is checked and verified by using two sets of prior distributions suggested by Sims and Zha (1998) as well as prior distribution of Koop and Korobilis (2010). This can be explained in the following manner. Consider the following VAR (p) model:

$$y_t = a_0 + \sum_{i=1}^{p} A_l y_{t-1} + \varepsilon_t \qquad \varepsilon_t \sim N(0, \Sigma) \qquad (1)$$

Where $y_t$is an $m \times 1$vector of $t = 1, \dots \dots \dots, T$ observations on $m$time-series variables, $a_0$is a $m \times 1$vector of intercepts and $A_l$is a $m \times m$matrix of regression coefficients for the l_{th} lag with the $p$maximum numbers of lags. Furthermore, Ycan be defined to be a $T \times 1$matrix which stacks the T observations on each dependent variable in columns next to one another. Specifically by denoting:

$$x_t = [1\ y_{t-1} \dots y_{t-p}],\ X = \begin{bmatrix} x_1 \\ \vdots \\ x_T \end{bmatrix},\ B = \begin{bmatrix} a_0 \\ A_1 \\ \vdots \\ A_p \end{bmatrix}, \qquad (2)$$

and $\beta = vec(B)$, the VAR model can be rewritten:

$$y_{mT\times 1} = X_{T\times(mp+1)} B_{(mp+1)\times m} + E_{T\times m} \qquad E \sim N(0,\Sigma) (3)$$

The debate surrounding the choice of prior distribution still remains a bone of contention, particularly in Bayesian analysis. When one chooses the Sims-Zha prior, equation (1) can be rewritten as:

$$y_t = c + \sum_{i=1}^{p} y_{t-1} B_1 + u_t \qquad u_t \sim N(0, I_M) \qquad (4)$$

where$\Sigma = A_0^{-1} A_0^{-1}$and $A_0$is non-singular. By denoting:

$$B = \begin{bmatrix} B_1 \\ \vdots \\ B_p \\ c \end{bmatrix},\ c = a_0 A_0^{-1}, B_1 = A_+ A_0^{-1}, u_t = \varepsilon_t A_0^{-1}, \qquad (5)$$

This model can be related to the reduced form of equation (2). It follows that, using Sims-Zha notations, the model can be written compactly as follow:

$$YA_0 - XA_+ = U \qquad (6)$$

$$ZA - U \qquad (7)$$

where$Z = [Y - X]$ and $A = \begin{bmatrix} A_0 \\ A_+ \end{bmatrix}$ (8)

Unlike the independent hyper prior specification (that is, $\pi(A_0)\pi(A_j)$), Sims and Zha suggest the conditional prior (Sims-Zha prior):

$$\pi(A) = \pi(A_0)\pi(A_+|A_0) = \pi(A_0)\phi(B_0, \Psi_0) \qquad (9)$$

where$\pi(.)$ is a marginal distribution of A_0, while $\phi(.)$ is the standard normal density with meanB_0 and covariance Ψ_0.Each element of Ψ_0 is written as:

$$\Psi_{0l,ij} = \left(\frac{\lambda_0 \lambda_1}{\sigma_j l^{\lambda 3}}\right)^2 \qquad i, j = 1, \dots, m \qquad (10)$$

whereσ_j^2 is the jth element of Σ for the lth lag of variable i in equation j. Moreover, the hyperparameters such as $\lambda_0, \lambda_1 and\ \lambda_3$ represent the general accepted beliefs about the series being modelled. In principle, the idea is to shrink all equations around a random walk with a drift for variables that show persistence and around white noise for variables that are mean-reverting. This takes care of the problem of over fitting the data. It is very simple and attractive (Gumata, Kabundi and Ndou, 2013). For a detailed description and discussion of the hyper parameters of Sims and Zha prior see Brandt and Freedman (2006). In estimating the model using Sims and Zha prior, the study will use a Normal-Wishart prior distribution.

As indicated earlier, the study will also estimate the model employing the Ko-Ko Minnesota/Litterman prior (2010). This approach assumes that Σ is known. The prior for β is given by:

$$\beta \sim N(\beta_0, \underline{V}) \qquad (11)$$

With mean $\beta_0 = 0$ and covariance$\underline{V} \neq 0$.Koop and Korobolis specified the prior covariance matrix $\underline{V}$as a diagonal matrix with its elements$V_{ij,l} (i = 1, \dots, p)$.

$$V_{ij,l} = \begin{cases} a_1/p^2 \ \ for\ coefficients\ on\ own\ lags \\ (a_2\sigma_i)/(p^2\sigma_j)\ for\ coefficients\ on\ lags\ of\ variable\ i \neq j \\ a_3\sigma_i\ for\ coefficients\ on\ exogenous\ variables \end{cases} \qquad (12)$$

Whereσ_i^2 is the ith diagonal element of Σ.

The two models are estimated using Bayesian techniques.

Data and Data Source: This paper used quarterly data covering the period 2000:Q1 to 2016:Q4. The nature of the work requires secondary data which were sourced from Bank, Bank of Namibia (BoN) statistical bulletins (various issues), First National Bank Namibia and Namibia Statistics Agency (NSA). The data for the following variables were collected, real gross domestic product (Y), the real effective exchange rate (expressed as an index, this index growth indicating Namibia's real appreciation against the currencies of the trading partners) (E), the inflation rate (P), the total credit extended to the private sector (L), the interest (repo rate) (R) and the real house prices index (H). All the data are expressed in natural logarithm. The period chosen is based on the fact that data of the real house index only started to be collected then and no data collected prior to the said period.

4. Findings and Analysis

Unit root: In testing for stationarity the Kwiatkowski-Phillips-Schmidt-Shin (KPSS) test was used. The series were found to be stationary in level form with the exception of real output and credit to the private sector; hence the null hypothesis of stationarity could not be rejected for the rest of the variables.

Table 1: Unit root tests: KPSS in levels and first difference

Variable	Model Specification	KPSS Levels	First Difference	Order of Integration
LNY_t	Intercept	1.043	0.102**	1
	Intercept and Trend	0.107*	0.102**	0
LNE_t	Intercept	0.201**	0.066**	0
	Intercept and Trend	0.107**	0.051**	0
LNP_t	Intercept	0.194**	0.080**	0
	Intercept and Trend	0.073**	0.050**	0
LNR_t	Intercept	0.718***	0.095**	0
	Intercept and Trend	0.067**	0.064**	0
LNH_t	Intercept	0.388**	0.344**	0
	Intercept and Trend	0.149**	0.134**	0
LNL_t	Intercept	1.073	0.276**	1
	Intercept and Trend	0.190***	0.095**	0

Source: author's compilation and values obtained from Eviews
*Notes: (a) ***, ** and * means the variable is stationary at 1%, 5% and 10% respectively.*

The next step is then to difference once, the variables which were non-stationary in level form as shown in table 1. After differentiating the variables once, all the test statistics showed that the series are now stationary. Therefore, it can be concluded that the some variables are stationary at levels and others in first difference, implying that there is a mixture variables integrated of order zero I(0) and one I(1).

Table 2: Optimal Lag Order Selection Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	294.341	NA	3.681	-9.301	-9.095	-9.221
1	721.165	757.268	1.242	-21.909	-20.468	-21.343
2	805.861	133.874	2.662	-23.479	**-20.803***	-22.429
3	863.027	79.2946	1.462	-24.162	-20.251	**-22.627***
4	899.024	42.964	1.732	-24.162	-19.016	-22.141
5	951.742	**52.718***	**1.362***	**-24.701***	-18.320	-22.196

* indicates lag order selected by the criterion

VAR Lag Order Selection Criteria: The information criteria for the lag order selection for the VAR system is presented in Table 2. These tests show the convergence on the lag length and that is the essence of the lag structure test. At the chosen lag length, all the inverse roots of the characteristic AR polynomial have a modulus of less than one and lie inside the unit circle, indicating that the estimated VAR is stable or satisfies the stability condition. First it is necessary to determine the number of lags, since this has a big effect in the analysis. There are five criteria: the sequential likelihood ratio (LR), Akaike information criterion (AIC), Schwarz information criterion (SC), final prediction error (FPE) and Hannan Quinn information criterion (HQ).

Impulse Response Functions: As stated earlier the impulse response functions where derived from the Bayesian VAR estimates based on the prior of Sims and Zha (1998) and that of KoKo Minnesota/Litterman (2010) prior. The channels estimated are the interest rate, exchange rate, credit and asset price channel of monetary policy transmission mechanism in Namibia. The BVAR models were introduced as alternatives as an alternative to the VAR technique (Spulbar et al, 2012).

Figure 1: Interest Rate Channel - Minnesota

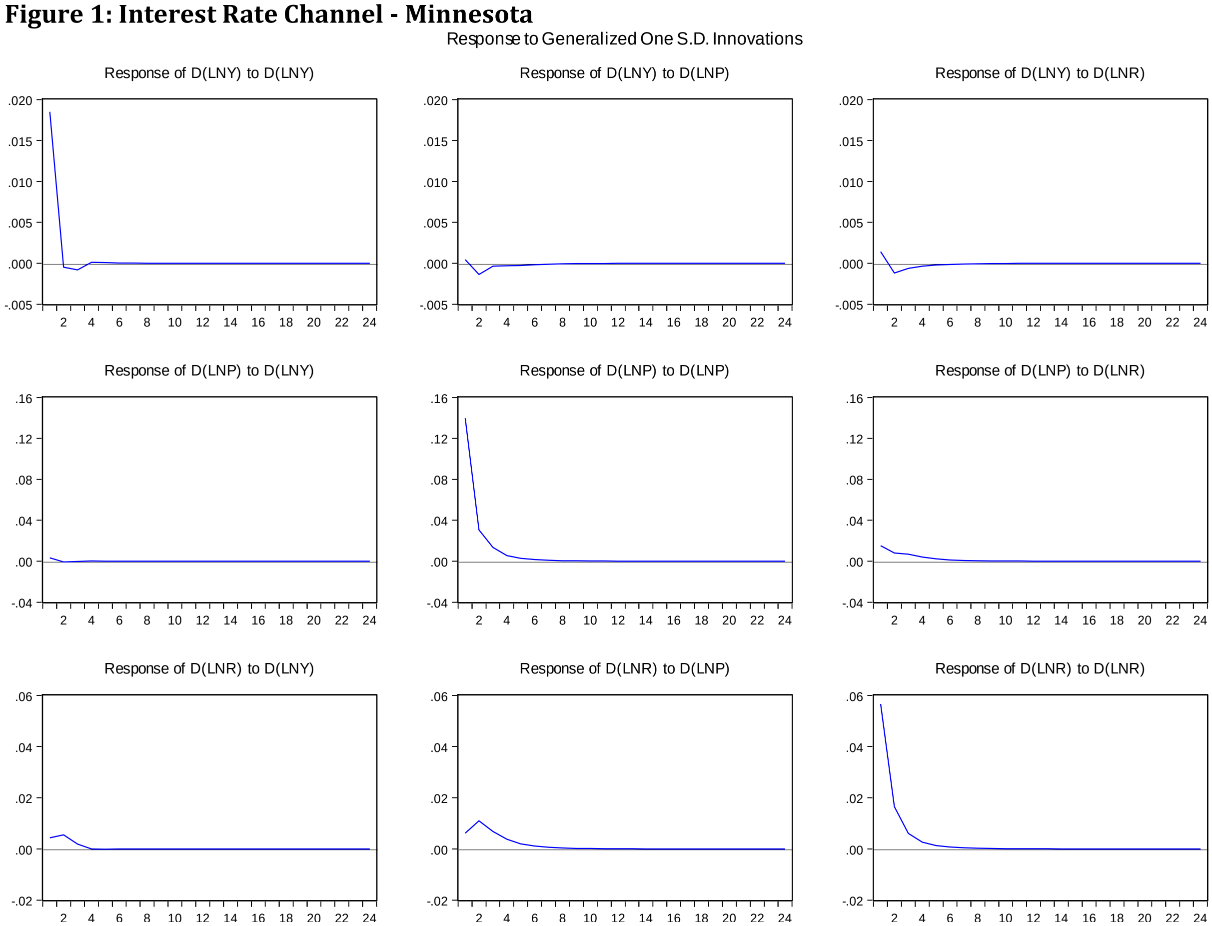
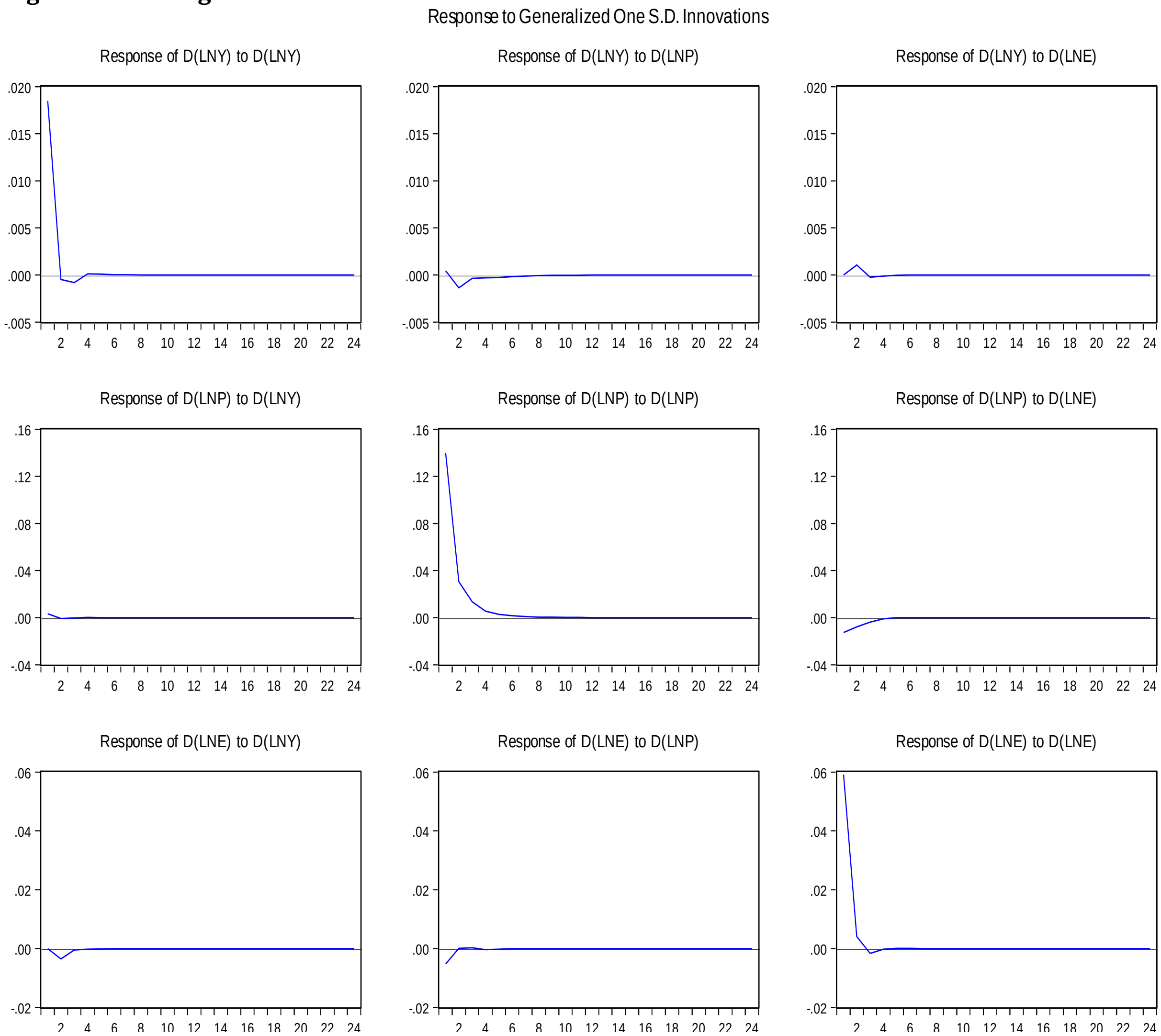


Figure 1 shows the results of the of impulse responses of output growth and inflation rate to interest rate innovation. In this regard, a positive shock in a form of a rise in the interest rate results in output growth declining up to 8 quarters. The effect is not persistent, thus it wears out after 8 quarters. This indicates that the monetary policy does have effect on output in the medium-term and not necessarily in the long-term. Similarly, inflation rate also responds negatively to shocks in interest rate, though not persistent. In particular, the effect also wears out after 8 quarters. These results are in agreement with those of Mabulango and Boboy (2016) who showed similar results for Democratic Republic of Congo.

Figure 2: Exchange Rate Channel – Minnesota



The results in figure 2 show that the effects of positive exchange rate shock on output and inflation. In this instance, a positive shock to exchange rate (an appreciation of exchange rate in Namibia), results in an increase in output initially increases which followed by a non-persistent decline in output after 3 quarters and the effects wears out after 6 quarters. In addition, an appreciation of exchange rate resulted in an increase in the inflation rate but on the negative grid, but the effects wore out 5 quarters. These results are similar to those of Mabulango and Boboy (2016) though the time horizons differ in the sense that they used monthly frequency. This is possible for Namibia due to the fact that Namibia is dependents on imports goods for its local production. Particularly, the shocks on exchange rate will immediately feed into prices of goods and services charged by producers who use imported inputs and consumers who purchase imported goods and services. The results for the credit channel reveals that a positive shock to credit results in a decline in both output and inflation rate as shown in figure 3. Interestingly, the effects wear out after 4 quarters in both cases. Again this illustrates the medium-term of monetary policy transmission mechanism as it is commonly recorded in literature for developing countries.

Figure 3: Credit Channel - Minnesota

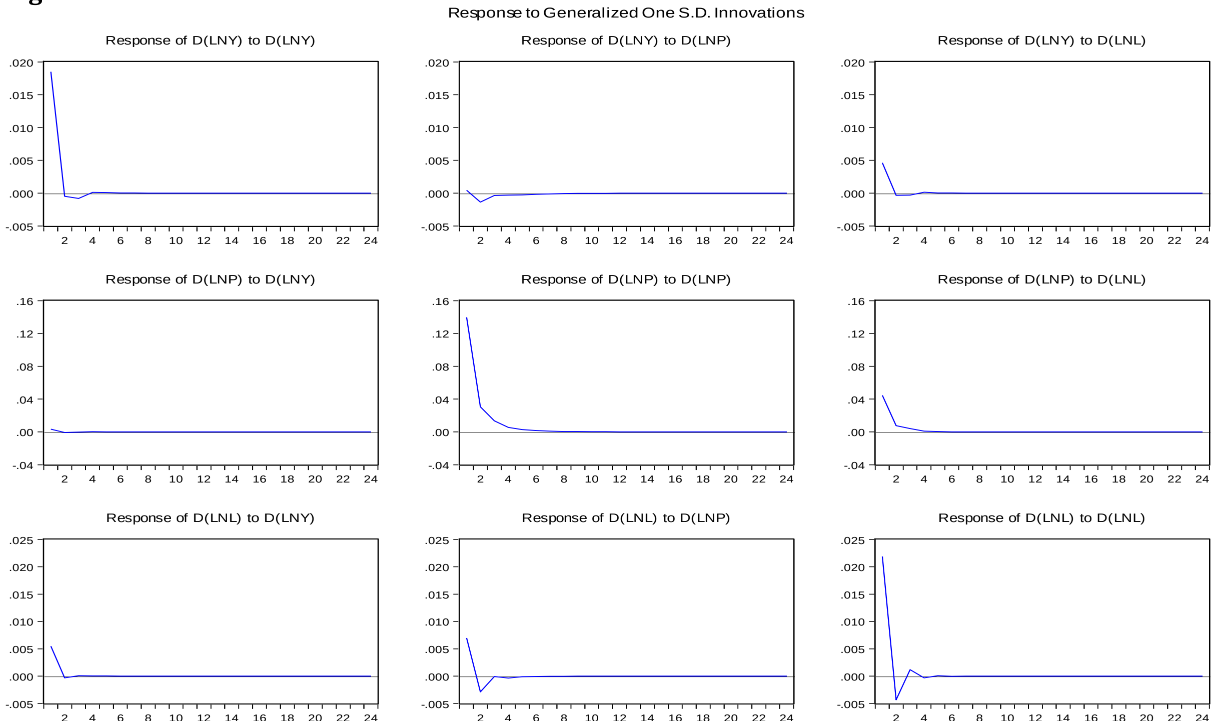
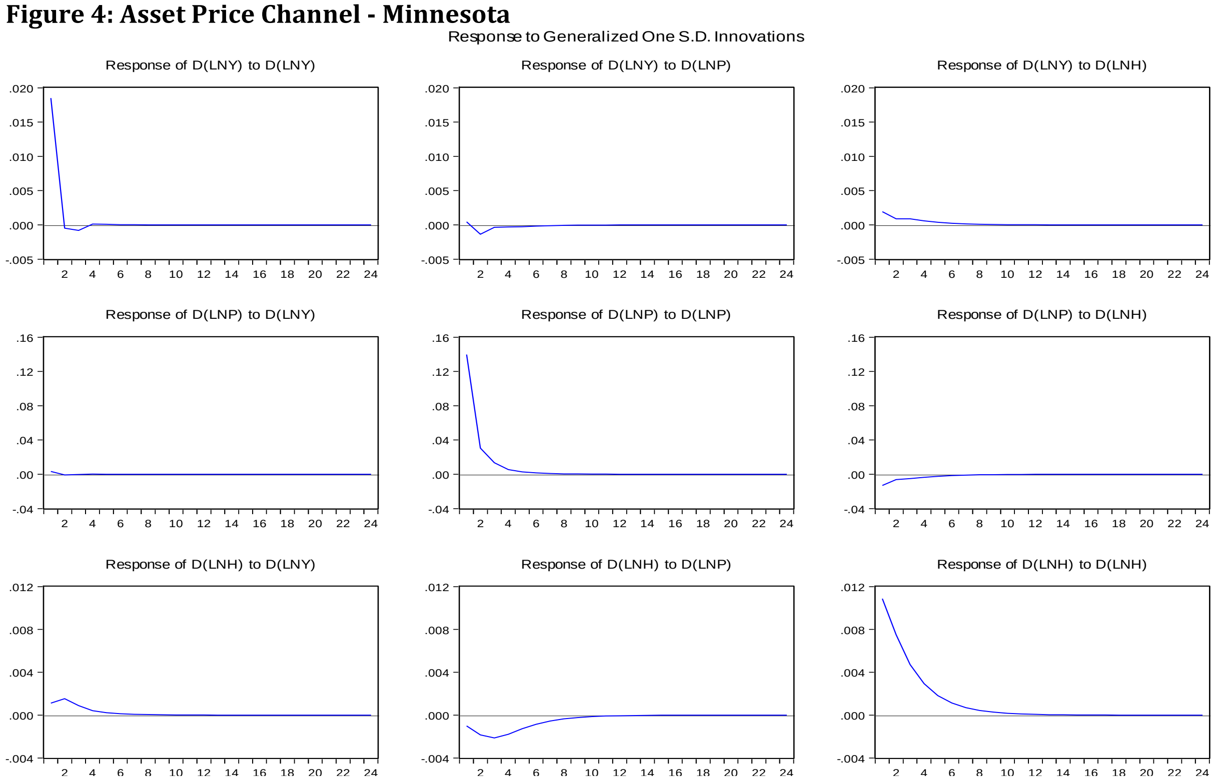


Figure 4: Asset Price Channel - Minnesota



Notably, output responded negatively to the shocks to housing prices and the effects wear out after 7 quarters. On the contrary, inflation rate responded positively though the persistence dies out after 5 quarters as reported in figure 4. The responses do not appear to be of great magnitude as it is with most empirical studies in developing countries. The exercise was repeated with additional prior of Sim's-Zha to compare whether or not the results differ. All four channels were again assessed and the findings are discussed below.

Figure 5: Interest Rate Channel - Sim's-Zha (WishartNormal)

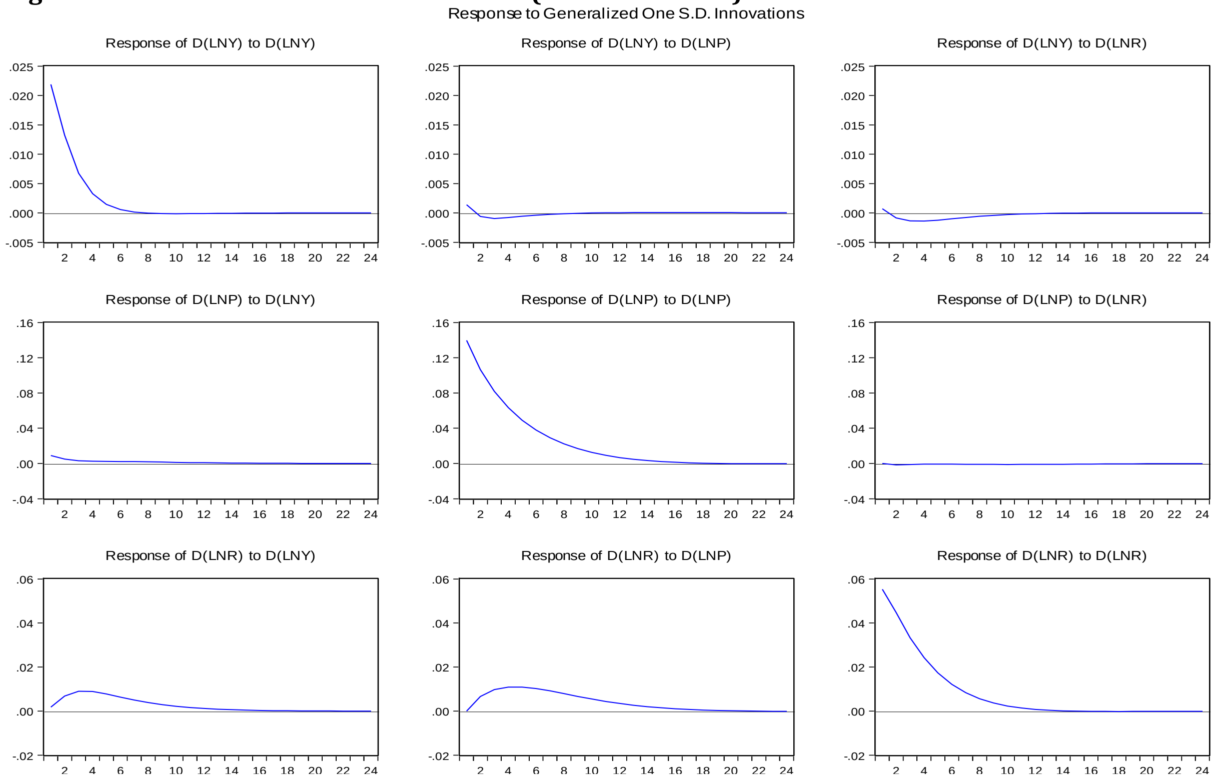


Figure 6: Exchange Rate Channel - Sim's-Zha (Wishart Normal)

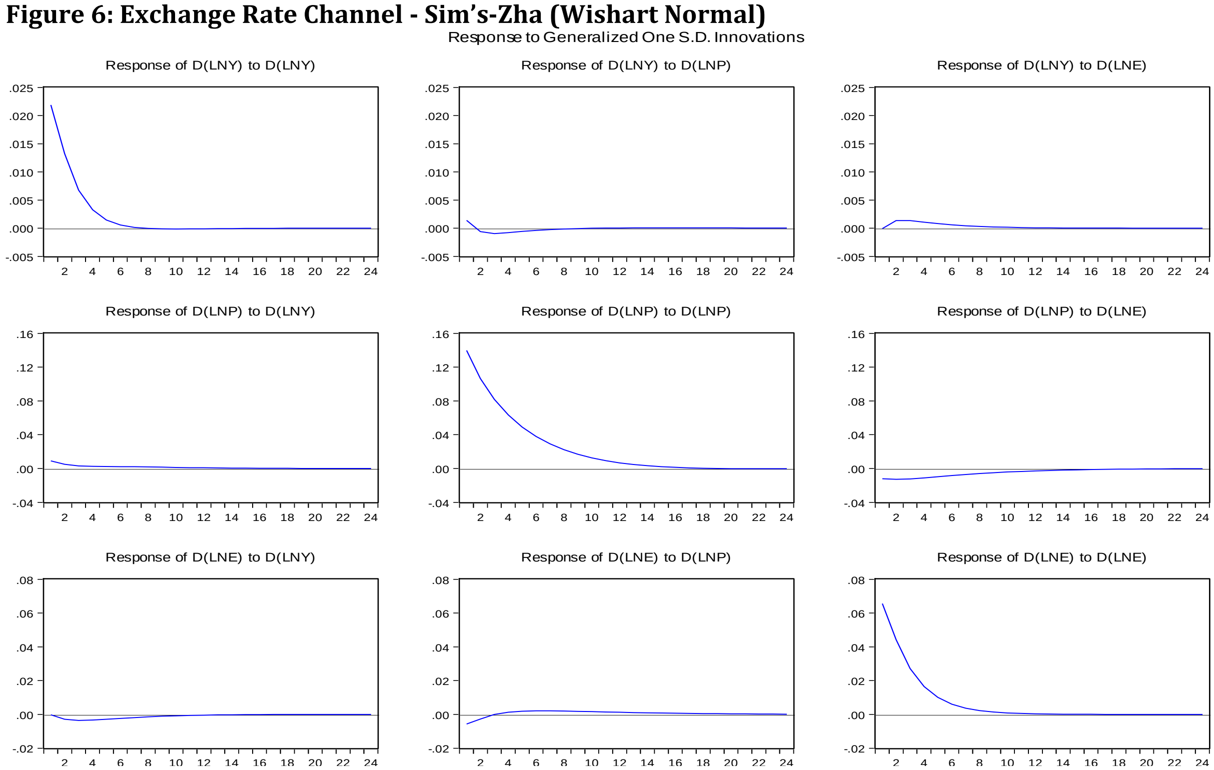
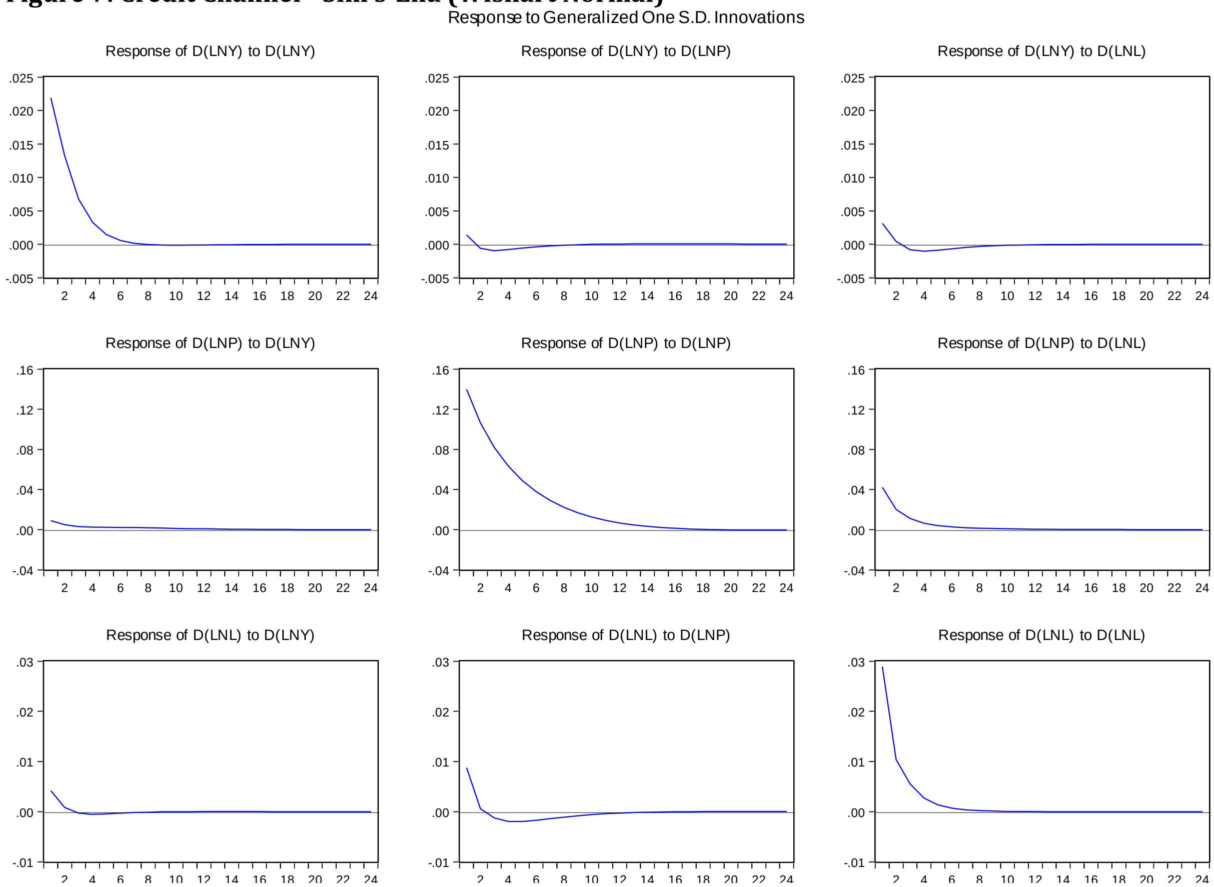


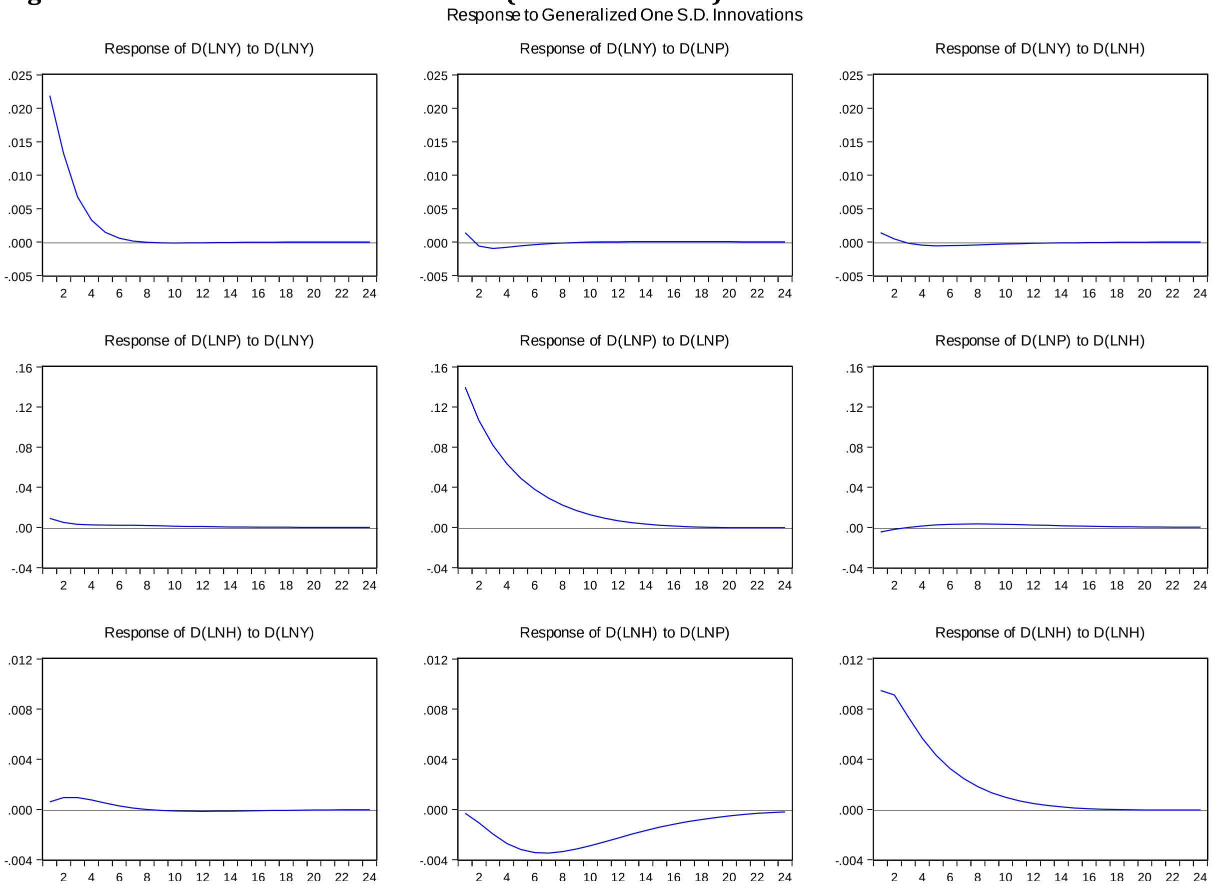
Figure 5 shows the results of the of impulse responses of output growth and inflation rate to interest rate innovation. In this regard, a positive shock in a form of a rise in the interest rate results in output growth decline up to 4 quarters. Thereafter, output increases to the baseline and the effects dies out after 15 quarters. Surprisingly, the shocks to interest rate did not affect the inflation rate under Sim's- Zha prior. This indicates that the monetary policy does have effect on inflation rate. The results in figure 6 show that the effects of positive exchange rate shock on output and inflation. In this instance, a positive shock to exchange rate (an appreciation of exchange rate in Namibia), results in an increase in output initially increases which followed by a non-persistent decline in output after 8 quarters. Similarly, an appreciation of exchange rate resulted in an increase in the inflation rate but on the negative grid, but the effects wore out 15 quarters under the Sim's-Zha prior.

Figure 7: Credit Channel - Sim's-Zha (Wishart Normal)



The results for the credit channel reveals that a positive shock to credit results in a decline in both output and inflation rate as shown in figure 7. Notably, the effects wear out after 8 and 7 for output and inflation respectively. Therefore, this illustrates the medium-term of monetary policy transmission mechanism as it is commonly recorded in literature for developing countries. Figure 8 reports that output responded immediately responded negatively to the shocks to housing prices but with a smaller magnitude. Moreover, inflation rate responded positively after 8 quarters, though the persistence dies out after 12 quarters though with relatively a smaller magnitude as it appear common in empirical studies in developing countries.

Figure 8: Asset Price Channel - Sim's-Zha (Wishart Normal)



5. Conclusion

The study analyzed the various channels for monetary policy transmission mechanism in Namibia. The study utilized the Bayesian vector autoregression modeling approach where the impulse response functions and forecast error variance decomposition where derived. This approach was specifically chosen because of its appropriateness for small open economies where monetary policy has been criticized because of abnormalities such as liquidity as well as price or exchange rate puzzles. Firstly, the validity of the data used is checked and verified by using two sets of prior distributions suggested by Sims and Zha (1998) as well as prior distribution of Koop and Korobilis (2010). In this regard, quarterly data covering the period 2000:Q1 to 2016:Q4 was used in estimation of the models. The variables included are real gross domestic product (Y), the real effective exchange rate (expressed as an index, this index growth indicating Namibia's real appreciation against the currencies of the trading partners) (E), the inflation rate (P), the total credit extended to the private sector (L), the interest (repo rate) (R) and the real house prices index (H). The results of the unit root test showed that some variables are stationary at levels and others in first difference, implying that there is a mixture variables integrated of order zero I(0) and one I(1). The results of the impulse response functions showed that under the KoKo Minnesota/Litterman (2010) prior, the interest rate channel remains an important transmission mechanism of monetary policy shocks. However, the effect of monetary policy via the credit, exchange rate and asset price channels are short-lived. On the other hand, under the Sim's-Zha (Wishart-Normal) prior, the effect of the shocks to monetary policy remained persistent for about 12 quarters if not more. Therefore, the study recommends that all channels are to be considered in the conduct of monetary policy and not to primarily focus on the two channels namely, the interest rate and the credit channels. The asset price channel is very important for the stability of the financial market and consequently financial stability.

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Human Capital Reputation as an Antecedent of Foreign Direct Investment Market Entry in Zimbabwe

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Abstract: This paper examines the influence that the reputation of Zimbabwe's human capital has as an antecedent of FDI market entry opportunities in the country. By synthesizing nation branding, behavioural finance and foreign direct investment theory, this paper contributes to the growing body of knowledge in human capital as a determinant influencing foreign investor behaviour within an African economic context. Empirical data was generated from a self-administered online survey of a purposively sampled population of 305 foreign investors within the Zimbabwean context. Exploratory factor analysis extracted the items that constituted the Zimbabwean human capital construct, with Cronbach's alpha coefficients being utilized to measure the reliability of the measuring instrument. Descriptive statistics, Pearson product-moment coefficients and multiple regression analysis were employed to further analyze the data. The results revealed that foreign investors considered the availability of a sustainable, highly productive, skilled, retainable and inexpensive workforce, as the influential human capital attributes they considered for FDI to Zimbabwe. The empirical evidence further affirmed that the reputation of Zimbabwe's human capital is an antecedent for resource- and efficiency-seeking FDI typologies to Zimbabwe. As a result, practical guidelines are provided for the Government of Zimbabwe and the Zimbabwe Investment Authority on the potential development and promotion of Zimbabwe's human capital for the purpose of positively influencing investor behaviour, thereby attracting FDI to the country.

Keywords: *Human capital, nation branding, behavioural finance, foreign direct investment, Zimbabwe*

1. Introduction

In 2015, foreign direct investment (FDI) contributed an estimated US$66.9 billion to the African economy, representing 4.2% of the continent's total gross domestic product (United Nations Economic Commission for Africa, 2015). Over the same period Ernst and Young (2016), estimated that FDI had contributed up to 149 000 new jobs to the African continent. As a result of this significant contribution to African economies, an enhanced understanding of the determinants of FDI and their impact on the attractiveness of Africa as an investment destination have received significant academic attention (Atlaw, Teklemariam & Dong-Geun, 2014; Gui-Diby, 2014; Luiz & Charalambous, 2009; Moreira, 2009; Rjoub, Aga, Alrub & Bein, 2017). However, little is known about the determinants of FDI to Zimbabwe since the 1998-2008 crises, and even less about the potential influence of Zimbabwe's human capital on the inflow of FDI to the country. While there is a plethora of empirical evidence (Anyanwu & Yameogo, 2015; Kariuki, 2015; Kinda, 2010; Zekiwos, 2012), relating to the economic determinants that attract FDI to the African continent, there is a discernible gap in empirical studies exploring the subjective (non-financial) factors influencing FDI to African countries in particular. This dearth in studies on the subjective determinants of FDI extends to the case of Zimbabwe. From a behavioural finance perspective, it can be argued that the perceived image of a country as an investment location subjectively influences the decision-making process of foreign investors (Bakar & Yi, 2016; Dottorato, 2012; Papadopoulos, Hamzaoui-Essoussi & Banna, 2016). This paper argues that, in the case of Zimbabwe, one such nation image heuristic in the FDI decision-making process is the perception held (reputation) of the human capital. Human capital is proxied as *People* within the nation branding context.

The agglomeration of economies of scale in resources (Angola, South Africa, Botswana & Zimbabwe) is considered to be one of the most significant determinants of FDI in the African context (Sichei & Kinyondo, 2012). One such agglomeration is that of human capital. Conventional notions (Rehman, Balooh & Mustafa, 2015; Samouri & Kiazarmani, 2016; Teixeira & Queiros, 2016) suggest that the human capital endowment of a nation is a critical catalyst for economic development and competitiveness within the contemporary globalised economy. To this end, some studies (Abdelbaji, Azali, Azam & Norashidah, 2016; Kottaridi & Stengos, 2010; Salike, 2016) have observed some human capital attributes as being statistically significant determinants of FDI inflows to countries which include China and regions such as Sub Saharan Africa. Thus, foreign investors have a vested interest in a potential investment location's labour force, as labour affects productivity, product quality and resource utilisation, all of which impact the perceived efficiency, effectiveness and viability of engaging in international business (Asiedu, 2006; Sichei & Kinyondo, 2012). This paper seeks to establish whether foreign investors have a vested interest in Zimbabwe's human capital.

The knowledge, skills and abilities of a country's human capital may be harnessed to attract FDI, to the extent that the underdevelopment of a location's human capital is considered to be detrimental to the attraction of FDI to countries such as was in the case of China, Bangladesh, India and Vietnam (Rehman et al., 2015; Yussof & Ismail, 2002). This paper seeks to contribute to the body of knowledge relating to the influence of the reputation of Zimbabwe's human capital on FDI by examining seven distinct items as explanatory variables of Zimbabwe's human capital. While the value of human capital to investors is embodied within theoretical literature (Cleeve, Debrah & Yiheyis, 2015; Noorbakhsh & Paloni, 2001), this paper is novel in that it examines the influence of Zimbabwe's human capital in particular as an antecedent of FDI market entry across four FDI opportunities (market-, resource-, efficiency-, and strategic asset-seeking). This paper represents the first empirical attempt at examining human capital as a factor of Zimbabwe's nation brand image in relation to the nature of FDI market entry opportunities in the country.

Problem definition and objectives: Zimbabwe's human capital is considered to be one of the country's key resources. The human capital that Zimbabwe possesses is highly competent, educated and skilled, and is considered to be the most literate on the African continent (Monyau & Bandara, 2015). However, Zimbabwe experienced monumental levels of brain drain during and after the 1998-2008 Zimbabwe socio-economic crisis, resulting in the near collapse of some the country's key sectors (United Nations Educational Scientific and Cultural Organisation, 2013; World Bank, 2012; Zimbabwe Agenda for Sustainable Socio-Economic Transformation, 2013). During the 1998-2008 crises, Zimbabwe experienced a mass exodus of both skilled and semi-skilled professionals, with an estimated net migration rate of 21.78 migrants per 1000 population (Index Mundi, 2014). As a result, Zimbabwe currently has a discernibly large diaspora population, meaning the country has also been largely unable to retain its talented and skilled citizens (Index Mundi, 2014; United Nations Educational Scientific and Cultural Organisation, 2013).

Despite improvements in Zimbabwe's economic growth since 2009, it generally has been "jobless" growth, with a significant proportion of Zimbabwe's productive population being currently unemployed (Bertelsmann Stiftung's Transformation Index, 2014; Ndiweni, Mashonganyika, Ncube & Dube, 2014). The ability of Zimbabwe to retain its talented/skilled citizens and the cheap cost of its labour suggests that, although there may be a large, skilled, but unemployed workforce in Zimbabwe – the unemployment rate is as high as up to 96% due to Zimbabwe's current (2015) economic situation (Danha, Takaindisa, Mlotshwa & Simlet, 2015). This raises the question of whether the reputation of Zimbabwe's human capital may play a role and be influential to foreign investors considering FDI opportunities in Zimbabwe. With this in mind, the following objectives were framed:

- To establish the essential qualities that constitutes the human capital reputation of Zimbabwe within the foreign direct investment context.
- To determine if the perceived reputation of Zimbabwe's human capital influences foreign direct investors considering market-seeking opportunities in Zimbabwe.
- To determine if the perceived reputation of Zimbabwe's human capital influences foreign direct investors considering resource-seeking opportunities in Zimbabwe.
- To determine if the perceived reputation of Zimbabwe's human capital influences foreign direct investors considering efficiency-seeking opportunities in Zimbabwe.
- To determine if the perceived reputation of Zimbabwe's human capital influences foreign direct investors considering strategic asset-seeking opportunities in Zimbabwe.

2. Literature Review

Within the context of this paper, the influence of human capital on investor behaviour will be examined from the perspective of nation branding, behavioural finance and FDI theory.

Overview on human capital in the FDI context: According to Dunning's (1977, 1979, 1988) Ownership-Location-Internalisation (OLI) framework, investors select particular countries as locations for FDI based on the locational advantages that it offers to the foreign investor in that country (Dunning, 2000; Nayak & Choudhury, 2014). One such locational advantage is access to human capital. To this end, some empirical studies (Brooks, Roland-Holst & Zhai, 2008; Thangavelu & Narjoko, 2014), have attributed the attractiveness of South-East Asian Nations as FDI locations, to the region's robust human capital. This phenomenon finds credence in the field of behavioural finance.

Within the contemporary business context, how the people (human capital) of a country are perceived based on their reputation for competence, openness, friendliness, and other qualities such as tolerance, is a critical consideration in the formation of positive subjective references for that country (Belloso, 2010b; Schlicher, 2012). To this end, human capital may be considered as a subjective factor contributing to the image held and reputation of the country (Belloso, 2010a; Dinnie, 2008; Knott, Fyall & Jones 2016). Lopes (2011) posits that the image of a nation may be considered as a behavioural construct that influences the 'actions' of the consumer. Within the FDI context, the behavioural finance theory supports the influence of subjective factors on investment decisions (Aspara, 2013). The behavioural finance theory assumes that subjective intrinsic human behavioural factors influence investment decision making (Kishore, 2006; Palmgren & Ylander, 2015; Phan & Zhou, 2014). This implies that a subjective factor such as the perceptions held of the human capital of a country may influence FDI decision-making. Dottorato (2012) notes dichotomies between two heuristic bias archetypes in the behavioural finance theory, as being either emotionally or cognitively driven. Table 1 synopsises these within the scope of this paper as it occurs prior to and during the decision-making process of investors.

Table 1: Related heuristics/biases cited in behavioural finance theory

Specific bias	Description
Loss aversion	Overly conservative investment behaviour to mitigate risk of loss
Regret	Rationalising investment decisions to avoid negative feelings
Endowment	Significantly higher value is placed on owned resources rather than un-owned resources
Representativeness	Pre-existing ideas influence how new information is processed and framed
Recency	Overemphasis is placed on the most recent events
Illusion of control bias	Investor misguidedly believes they have control or can influence the outcome of investment

Source: Adapted from Dottorato (2012)

Based on Table 1, it can be implied that existing perceptions (*recency*) of the availability of a skilled and sustainable-productive workforce in a particular country informs the consideration (*illusion of control bias*) of the country's human capital (*representativeness*). This mitigates loss aversion and rationalises feelings of potential regret associated with investing in the country based on the perceived endowment of the potential investment location. Therefore, from this perspective, human capital may be presumed to inform the heuristics of foreign investors and influences their biases towards a particular country as a potential investment destination. The present paper hypothesises that, akin to brand theory, how foreign investors perceive the human capital available in a particular location based on business-oriented characteristics influences their subjective preference (image) for the location as an investment destination. The stereotypes of the skills level, qualifications and, labour profile (gender, age and productivity) of the human capital of a potential investment location may be considered as qualitative, evaluative factors of the enduring investor perception of the citizens and the demographic profile of a particular FDI location (Kalamova & Konrad, 2009).

Observed variables for human capital within the FDI context: A significant proportion of previous studies have examined the influence of human capital on FDI using single proxies (Salike, 2016). However, within the context of this paper, seven human capital variables are examined.

Population size: The population size of a country is a significant indicator of human capital. Within the FDI context, FDI inflows have been observed to have a direct correlation with the size of human capital available within a particular country (Rehman et al., 2015). Tembe and Xu (2012) observe that African countries with relatively smaller populations seem to attract less FDI due to their perceived market size. This implies that a larger population indicates a potentially larger market to foreign investors (Kavita & Sudhakara, 2011). Studies have posited that larger populations, as is the case in selected African and Asian countries, often translate into the presence of a larger and growing market, as well as a larger, often cheaper pool of skilled labour for FDI (Aziz & Makkawi, 2012; Kariuki, 2015). For instance, increased FDI inflows to China have been attributed to the country's vast domestic market potential due to its population size (Yussof & Ismail, 2002).

Availability of a sustainable workforce: The availability of a sustainable workforce is a subjective consideration for foreign investors. To this end, Mottaleb and Kalirajan (2010) conclude that there is a positive and statistically significant correlation between the total productive labour force (based on gender and age) of developing countries and FDI inflows. Gebrewold (2012) observes that in the African context, labour force growth rates have an influence on FDI inflow - assumingly the availability of a larger and more cost-effective labour force in an FDI location encourages labour intensive FDI. Empirically, Salike (2016) found that human capital endowment had a significantly positive relationship with FDI inflows to China.

Cheap cost of labour: The cheap cost of labour is also a subjective consideration for foreign investors. In the case of China, Salike (2016) observes that the perceived cost of labour in China has contributed to the divestment and the increased un-competitiveness of China as an FDI destination for labour intensive FDI activity. Donaubauer and Dreger (2016) found empirical, robust evidence of the detrimental effect of higher perceived and actual labour cost on the competitiveness of China and other East Asian countries as FDI locations. The cost of labour often informs the perceptions of investors in relation to the quality of the labour available to investors and is a source of comparative advantage for ASEAN countries in particular (Yussof & Ismail, 2002).

Literacy rate: The literacy rate of the human capital available in a country also informs the perceptions of foreign investors with regards to the quality of the human capital. Lee and Lee (2016) argue that an uneducated workforce does not contribute to a country's stock of human capital and that human capital stock increases proportionally to education levels. Thus, a larger population with higher public education, would positively influence and increase FDI as it improves the perceptions of the competence and skills of its citizens (Aziz & Makkawi, 2012; Kalamova & Konrad, 2009; Gharaibeh, 2015). Rjoub et al. (2017) consider an educated workforce to be crucial for the attraction of FDI to Africa in particular. For instance, Vinesh, Boopendra & Hemraze (2014) attribute the attractiveness of the Southern Africa Development Community (SADC) region for FDI to the high literacy and secondary school education enrollment rates. Gharaibeh (2015) concludes that, in the Bahraini context, the population and public education secondary school enrolment had a significant and positive relationship with FDI. Relatedly, Rehman et al. (2015) observe a direct link between technical education skill levels and FDI inflows. This suggests that the more educated the labour force is, the higher its capacity for technology uptake and the possibility of yielding high productivity levels (Alsan, Bloom & Canning, 2006; Teixeira & Queiros, 2016).

Availability of a skilled workforce: The availability of a skilled workforce is an important determinant of FDI (Luiz & Charalambous, 2009; Moreira, 2009). Vinesh et al. (2014) attribute the long-term increase in FDI inflows to the SADC countries to the availability of a skilled labour force in the region. Rjoub et al. (2017) ascertain that the availability of a skilled workforce instils investor confidence and therefore encourages FDI inflows. Multinational Enterprises (MNEs) with high technical requirements predicate their FDI decisions on the availability of a skilled workforce within a potential FDI location (Petrakou, 2013). Thus, skilled human capital may be considered as a catalyst for high productivity (Vinesh et al., 2014). Erdogen and Unver (2015) determine that a competent labour force catalyses more profitable economic activity within an economy.

Productivity of the workforce: The productivity of the workforce in terms of industrial output is positively associated with FDI inflows (Salike, 2016). Rehman et al. (2015) suggest that there is a direct link between the number of skilled citizens in a country and FDI inflows. The attraction of a mobile, international skilled workforce, therefore, plays a significant role in obtaining a competitive advantage for MNEs and national governments alike, since human capital is detrimental to the growth and competitiveness of both investors and host economies (Samouri & Kiazarmani, 2016). Some studies (Akpan, Isihak & Asongu, 2014; Gui-Diby, 2014), have concluded that the maximisation of FDI and its economic benefits are predicated on the value of its human capital in terms of its productive output.

Ability to retain talented/skilled citizens: Xu and Sylwester (2016) hypothesise that increased FDI to a particular country increases the demand for human capital and therefore, reverses 'brain drain' and retains skilled human capital within an economy. This suggests that skilled human capital migrates to FDI receiving economies, suggesting that less developed economies may not be able to retain their talented or skilled citizens (Hoxhaj, Marchal & Seric, 2016). Consequently, the ability to retain talented or skilled citizens is a critical factor for host countries and becomes a critical element in the considerations of foreign investors. The observed variables examined in the present paper to measure the human capital construct are, therefore: population size, availability of a sustainable workforce, cheap cost of labour, literacy rate, availability of skilled workforce, and the productivity of the workforce, ability to retain talented or skilled citizens.

Overview of FDI market entry motive typologies: FDI market entry occurs in four distinct forms: seeking market, resource, efficiency and strategic asset opportunities (Cui, Meyer & Hu, 2014; Lintunen, 2011).

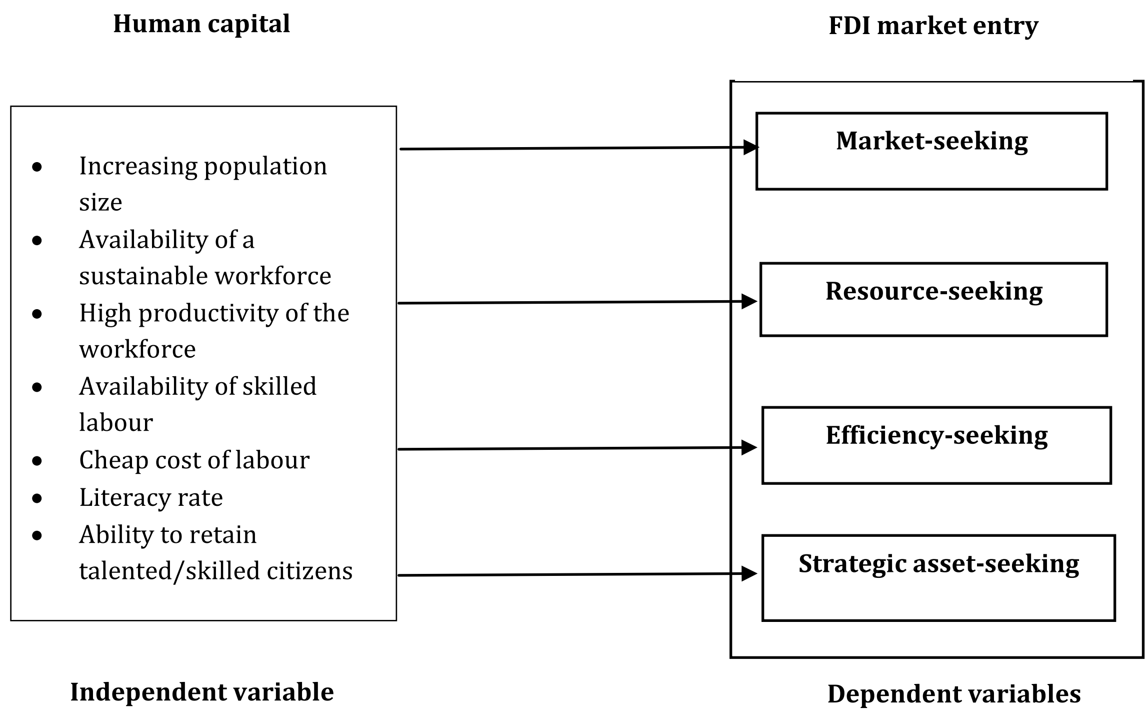
The market-seeking investment motive: Market-seeking foreign investors are motived to engage in FDI activity in order to exploit, sustain or protect new and existing markets respectively, by circumventing trade barriers (Cui et al., 2014). By locating within certain foreign markets, market seeking investors may be motivated to accrue certain advantages which include exploitation of host country incentives and avoiding barriers to market entry such as tolls and import quotas (Lintunen, 2011). Other strategic motives include more effective positioning in the foreign market; substantial labour and input cost-saving potential, as well as the effectiveness of promotion activities by government and quasi-government development agencies (Sikharulidze & Kikutadze, 2013; Wilson, Baack & Baack, 2014).

The resource-seeking investment motive: Resource-seeking foreign investors are motivated to engage in FDI activity in order to secure a stable, low cost and high-quality natural resource supply (Cui et al., 2014). By locating in certain markets where the resources are, resource seeking foreign investors pursue secure stable supplies of factors of production at a lower acquisition cost, and may benefit from government FDI incentives such as export processing zone status and tax, repatriation and capital gains tax concessions (Lintunen, 2011; Wilson et al., 2014). Additionally, Sikharulidze and Kikutadze (2013) also put forward access to joint venture projects and developed infrastructure as potential motives for resource-seeking investors.

The efficiency-seeking investment motive: Efficiency-seeking foreign investors engage in FDI in order to diversify risks and achieve economy of scale and scope (Cui et al., 2014). By locating in a certain foreign country, a foreign efficiency seeking investor may take advantage of governments' local production incentives such as tax rebates and duty-free importation of capital equipment, easing of market entry barriers, and the existence of vertical or horizontal linkages (Lintunen, 2011:26; Wilson et al. 2014:110). Other advantages include exploiting an existing favourable business environment in the host country; achieving economies of product or process specialisation or concentration in the production and distribution of products and services to the host market and other markets, as well as benefitting from potentially cheaper and/or skilled labour (Lintunen, 2011:26; Sikharulidze & Kikutadze, 2013:102).

The strategic asset-seeking investment motive: Strategic asset-seeking investors engage in FDI in order to pursue long-term strategic objectives such as sustaining or advancing global competitiveness. The location advantages accruing to strategic asset seeking direct investors may be any of the previously discussed locational advantages, as long as they offer the required technology transfer and/or organisational assets that will benefit the direct investor - particularly, access to unique, intangible and organisationally embedded assets such as corporate governance and brand equity (Lintunen, 2011:26). Specific locational factors for strategic asset seeing investors are identified by Wilson et al. (2014:110) to also include cost-effective access to synergetic, knowledge-based assets, access to markets and institutions. Each investor motive, therefore, represents a unique investment market opportunity and more importantly, clear target market segments for investment promotion practitioners, where the nation, based on its current FDI needs, may target a specific investor segment whose motive is compatible with the country's FDI advantages and more importantly, investment requirements. This, in turn, improves the quality of FDI attracted to the host economy. With this in mind, the following sub-section explores the motives of nations for engaging foreign investors in FDI activities and actively promoting FDI to their respective economies. Based on the objectives of the paper and the literature discussed, the hypothesised model in Figure 1 was tested.

Figure 1: Hypothesised model of human capital as a non-financial determinant of FDI market entry opportunities in Zimbabwe



As is illustrated in Figure 1, the paper aimed to establish the relationship between *Human capital* and the four FDI typologies, market-, resource-, efficiency- and strategic asset-seeking FDI inflow opportunities in Zimbabwe. To this end, the following hypotheses were tested:

H_1: The perception of foreign direct investors regarding the reputation of Zimbabwe's human capital influences whether they seek market FDI opportunities in Zimbabwe.
H_2: The perception of foreign direct investors regarding the reputation of Zimbabwe's human capital influences whether they seek resource FDI opportunities in Zimbabwe.
H_3: The perception of foreign direct investors regarding the reputation of Zimbabwe's human capital influences whether they seek efficiency FDI opportunities in Zimbabwe.
H_4: The perception of foreign direct investors regarding the reputation of Zimbabwe's human capital influences whether they seek strategic asset FDI opportunities in Zimbabwe.

3. Methodology

The data to test the aforementioned hypotheses was generated as part of a broader study on the non-financial nation brand image dimensions influencing FDI inflows to Zimbabwe. A quantitative cross-sectional deductive study was conducted (Welman, Kruger & Mitchell, 2005). The quantitative research paradigm allowed for the quantification and rigorous testing of the perceptions of foreign investors based on operationalised variables which were measured and utilised to test the hypotheses formulated. For the purposes of the broader study, the total population of all foreign investors with a past, current, or potential interest in investing in Zimbabwe (post-2008 crisis) from between January 2009 and April 2015 were eligible to participate in the study. From this population, a purposive, total population sample was drawn (Mathers, Fox & Hunn, 2007) of 751 respondents with e-mail contact details from a database of foreign investors obtained from the Zimbabwe Investment Authority (ZIA). An effective population of 640 foreign investors with valid e-mail addresses were invited via e-mail to participate in the online survey. Primary data was collected by an online survey administered on the Google Forms platform (Boland, 2013). An online survey was suitable as it facilitated access to all possible survey participants regardless of their location at the time of the study. The survey solicited information from the specific population (foreign investors) of interest (Hox & Boeije, 2005). Responses were recorded on a 5-point Likert psychometric response scale (Warmbrod, 2014), which solicited responses on the level of influence each observed variable exerted on their decision-making process when considering investing in Zimbabwe. The interval scale (Joshi, Kale, Chandel & Pal, 2015), ranged from(1) not at all influential, (2) slightly influential, (3) undecided, (4) quite influential to,(5) extremely influential.

Exploratory factor analysis (EFA) was employed utilising STATISTICA version 12 software. EFA extracts items that correlate and group together to constitute a distinct construct and reduces the observed variables into smaller discernible factors (Field, 2009; Larsen & Warne, 2010). EFA was employed to extract the items within factors *Human capital* and the four market entry opportunities at a factor loading cut off point of 0.50. Principal Component Analysis (PCA) with varimax rotation was employed to establish a factor matrix based on the factor loadings (Hair, Black, Babin & Anderson, 2010). The PCA generated the Eigenvalues of the constructs which represented the variance of the underlying factor. Only factors with Eigenvalues above one were considered as acceptable for further analysis. Cronbach's alpha coefficients were employed to test the reliability of the measuring instrument by calculating inter-item consistency at a cut-off point of 0.70 (George & Mallery, 2003). Pearson product-moment correlation coefficients were utilised to establish the linear associations between the five continuous variables - the *Human capital* and the four market opportunities (Cohen, 1988).

A Multicollinearity diagnostics test was conducted to establish the viability of a regression analysis, with a tolerance of more than 0.1 and a VIF of less than 10 indicating the absence of collinearity (Nimon, Henson & Gates, 2010). Multiple Regression Analysis was conducted to test the hypotheses (H_1-H_4) for statistically significant relationships. Multiple regression analysis for this study was conducted considering the assumptions outlined by Hair et al. (2010). These assumptions are that: linearity was established, consistency of variance was determined, independence in error term was confirmed, and normality of the distribution existed. Hypotheses were accepted where t-values exceeded the critical values of 3.09 at $p<0.001$ and between 1.96 and 3.09 at $p<0.05$ significance levels.

4. Empirical Results

The results of the study are presented in the subsequent sections.

Validity and reliability of the measuring instrument: Table 2 summarises the results of the retained EFA items for the *Human capital* construct, the items that loaded, the Eigenvalue of the construct, as well as the Cronbach's alpha (α) for the construct.

Table 2: Validity and reliability of the Human capital construct

Eigenvalue: 2.67% of variance = 3.29		**Cronbach's alpha =0.861**	
Items	**Factor loading**	**Item correlation**	**Cronbach's alpha after deletion**
Availability of a sustainable workforce	0.777	0.759	0.812
High productivity levels of the workforce	0.835	0.848	0.790
Availability of a skilled workforce	0.828	0.840	0.793
Cheap cost of labour	0.706	0.463	0.887
Ability to retain talented/skilled citizens	0.548	0.544	0.868

Two items (increasing population size and high literacy level of the citizens) loaded below the threshold of 0.5 for valid factor loadings with -0.033 and 0.494 respectively. As is evident in Table 2, five of the initial seven (availability of a sustainable workforce, high productivity levels of the workforce, availability of a skilled workforce, cheap cost of labour, ability to retain talented/skilled citizens) items loaded, being above the minimum factor loading coefficient of 0.50 (Varimax rotation). Factor loadings ranged between 0.548 and 0.835. The *Human capital* construct had an Eigenvalue of more than 1 (2.67) and explained 3.29% of the variance in the data. *Human capital* returned a Cronbach's alpha coefficient of 0.861 and therefore the items to measure this measure can be deemed highly reliable. As a result of the EFA and the Cronbach's alpha coefficient data analyses, the *Human capital* construct in the Zimbabwean context is characterised by *the availability of a low-cost, sustainable, highly productive, skilled workforce, which Zimbabwe has been able to retain*.

Descriptive statistics: Table 3 presents the descriptive statistics for the *Human capital* construct.

Table 3: Descriptive statistics of the human capital construct items

Variables	Mean	Standard Deviation
Availability of a sustainable workforce	3.78	1.29
High productivity levels of the workforce	3.80	1.25
Availability of a skilled workforce	3.86	1.22
Cheap cost of labour	3.77	1.35
Ability to retain talented/skilled citizens	3.30	1.39
Average	3.70	1.30

As is evident in Table 3, foreign investors seemed undecided (tend towards rating 3 on the Likert scale) whether their investment decisions are based on Zimbabwe's ability to retain talented/skilled citizens in their investment decision-making process. However, respondents seemed to consider: the availability of a sustainable workforce; the high productivity levels of the workforce; availability of a skilled workforce and the cheap cost of labour, as quite influential reputational factors of Zimbabwe's *Human capital* (tend towards rating 4 on the Likert scale). However, when considering the standard deviations there was much variation (exceeding one) in responses, with the most variation for the ability to retain talented/skilled citizens (1.39) and the least for the availability of a skilled workforce (1.22). Overall the *Human capital* construct reported a mean of 3.70 and a standard deviation of 1.30. Foreign investors seem to consider *Human capital* as quite influential (tend towards rating 4 on the Likert scale) when considering FDI in Zimbabwe.

Table 4: Descriptive statistics of the dependant variables

FDI inflow opportunities	No. Items Retained	Min. Factor Loading	Max. Factor Loading	Mean	Standard Deviation
Market-seeking	7	0.554	0.804	3.50	1.07
Resource-seeking	11	0.561	0.726	3.43	0.97
Efficiency-seeking	6	0.520	0.715	3.70	0.91
Strategic asset-seeking	6	0.524	0.830	3.24	1.06

Table 4 shows that thirty items loaded across the four dependent variables and were retained for further analysis. The lowest minimum factor loading was 0.520 for Efficiency-seeking FDI inflow opportunities, while the highest maximum factor loading was 0.830 for Strategic asset-seeking FDI inflow opportunities. Foreign investors seemed undecided (tend towards rating 3 on the Likert scale) regarding considering Resource- and Strategic asset-seeking FDI inflow opportunities in Zimbabwe. On the other hand, foreign investors seemed to consider Market- and Efficiency-seeking FDI inflow opportunities to be quite influential (tend towards rating 4 on the Likert scale) when considering investment in Zimbabwe. Overall, there was some variation in responses (exceeding one) indicating different response opinions, with the most variation in responses for

Market-seeking FDI inflow opportunities (1.07) and the least for Efficiency-seeking FDI inflow opportunities (0.91).

Results of the correlation analyses: Table 5 presents the correlation matrix of *Human capital* and the FDI inflow opportunities based on Pearson product-moment correlations (*r*). According to Cohen (1988) a correlation coefficient (*r*) falls within three categories of weak (0.10-0.29), moderate (0.30-0.49) or strong (≥ 0.50).

Table 5: Correlation matrix of the non-financial nation brand image determinants and FDI inflow opportunities in Zimbabwe

Variables	HNC	MKT	RES	EF	SA
Human capital (HNC)	**1.000**				
Market-seeking FDI inflow opportunities (MKT)	0.321	**1.000**			
Resource-seeking FDI inflow opportunities (RES)	0.537	0.570	**1.000**		
Efficiency-seeking FDI inflow opportunities (EF)	0.410	0.564	0.752	**1.000**	
Strategic asset-seeking FDI inflow opportunities (SA)	0.347	0.464	0.650	0.491	**1.000**

($p<0.05$)

As can be seen from Table 5, *Human capital* reported a moderate ($p<0.05$) correlations with *Market-seeking FDI inflow opportunities* (r = 0.321), *Efficiency-seeking FDI inflow opportunities* (r = 0.410), and *Strategic asset-seeking FDI inflow opportunities* (r = 0.347). *Human capital* also reported a strong ($p<0.05$) correlation with *Resource-seeking FDI inflow opportunities* (r = 0.537). This notion draws a particularly discernible correlation between Zimbabwe's *Human capital* and resource-seeking FDI market entry opportunities in Zimbabwe*.* This is supported by Bhatt (2013:162), who identifies the exploitation of cheap labour (as a proxy for *Human capital*) as a motive for resource-seeking investors to invest in a particular host country. Table 6 summarises the results of the Multicollinearity diagnostics testing of the dependent variables.

Table 6: Results of the Multicollinearity diagnostics testing for the dependant variables

Variables	Multi-collinearity statistics	
	Tolerance value	**VIF**
Market-seeking FDI inflow opportunities	0.638	1.567
Resource-seeking FDI inflow opportunities	0.668	1.497
Efficiency-seeking FDI inflow opportunities	0.605	1.653
Strategic asset-seeking FDI inflow opportunities	0.602	1.661

Multicollinearity diagnostics testing was conducted to determine if there are high correlations between the dependant variables. To conduct a multiple regression analysis requires that the variables are not highly correlated with each other. Market-, resource-, efficiency-, and strategic asset-seeking FDI inflow opportunities reported tolerance values of more than 0.1, ranging between 0.602 and 0.668, and VIFs of less than 10, ranging between 1.567 and 1.661. This suggests that the dependant variables are free from collinearity, confirming that a multiple regression analysis could be conducted.

Results of the multiple regression analysis: Table 7 presents the results of the multiple regression analysis.

Table 7: Multiple regression results of the determinant Human capital influencing FDI market entry opportunities in Zimbabwe

Independent Variable: Human capital						
Dependent variable	**Adjusted R^2**	**β**	**T-value**	**Sig. (p)**	**Hypothesis Number**	**Hypotheses**
Market-seeking FDI market entry opportunities	0.469	-0.027	-0.519	0.605	H_1	Rejected
Resource-seeking FDI market entry opportunities	0.581	0.173	4.990	0.000*	H_2	Accepted
Efficiency-seeking FDI market entry opportunities	0.369	0.130	2.756	0.006**	H_3	Accepted
Strategic asset-seeking FDI market entry opportunities	0.581	-0.014	-0.301	0.764	H_4	Rejected

* $p<0.001$ **$p<0.05$

Table 7 presents evidence of a significant ($p<0.001$) statistical relationship between *Human capital* and *Resource-seeking FDI inflow opportunities* ($p=0.000$). The t-value of *Human capital* exceeded the critical value of 3.09 at $p<0.001$ significance level, and thus hypothesis H_2 was accepted. This implied that foreign investors perceived *Human capital* as influential for considering resource-seeking FDI inflow opportunities in Zimbabwe. The magnitude of the path coefficient (β) for *Human capital* and resource-seeking (0.173) FDI inflow opportunities was weak positive. Gebrewold (2012) confirms that in the African context, labour force growth rates and the availability of larger labour-force influences FDI inflows and encourages labour intensive FDI. The empirical evidence also affirms that *Human capital* is an influential antecedent to efficiency-seeking FDI inflow opportunities in Zimbabwe. Bhatt (2013) reiterates that the exploitation of cheap labour opportunities is a motive for resource-seeking investors to invest in a particular host country. Gebrewold (2012) also observes that the availability of a cost-effective labour-force has an influence on FDI inflow, encouraging labour intensive FDI in the African context. Similarly, Wadhwa and Sudhakara (2011) advance the notion that the availability of skilled labour within a country may be a distinct motive for resource-seeking investors engaging in FDI within a host country.

There was also evidence from Table 7 of a statistically significant ($p<0.05$) relationship between *Human capital* and *Efficiency-seeking FDI inflow opportunities* ($p=0.006$). The t-value of *Human capital* exceeded the critical value of between 1.96 and 3.09 at $p<0.05$ significance level, and thus hypothesis H_3 was accepted. This implied that foreign investors perceived *Human capital* as influential for considering efficiency-seeking FDI inflow opportunities in Zimbabwe. The magnitude of the path coefficient (β) for *Human capital* and efficiency-seeking (0.130) FDI inflow opportunities was also weak positive. The empirical evidence affirms that *Human capital* is an influential antecedent to efficiency-seeking FDI inflow opportunities in Zimbabwe. Cleeve et al. (2015) verify that human capital in the African context is particularly relevant to efficiency-seeking FDI. From the Ukrainian experience, Kudina (1999) found that efficiency-seeking foreign investors were particularly influenced to invest in the country by considering the high productivity of the labour of the country. Jain, Kundu and Newburry (2015) observe that in the Indian context, software companies engage in efficiency-seeking FDI to mitigate their skills gaps. Sarma (2005) finds that increasingly, efficiency-seeking FDI in the East Asian region is buoyed by the agglomeration of a skilled and specialised labour force in the region.

Human capital also reported p-values exceeding 0.05 with *Market-* and *Strategic asset-seeking FDI inflow opportunities*, reporting p-values of ($p= 0.605$) and ($p=0.764$) respectively. Thus, hypotheses H_1 and H_4 were rejected, implying that foreign investors did not perceive *Human capital* as influential for considering market- and strategic asset-seeking FDI inflow opportunities in Zimbabwe.

5. Conclusion and Recommendations

The empirical evidence suggests that: the availability of a sustainable workforce; high productivity levels of the workforce; viability of a skilled workforce; the cheap cost of labour and; ability to retain talented/skilled citizens are the attributes of Zimbabwe's human capital reputation. Therefore, it appears as though foreign investors consider the reputation of Zimbabwe's human capital to be based on the availability of a sustainable, highly productive and skilled workforce, which is cost-effective and retainable within the country.

Human capital presented a weak statistically significant relationship with efficiency-seeking FDI inflow opportunities in Zimbabwe. It is therefore recommended that:

- The Government of Zimbabwe should strive to maintain its focus on the high standard and access to education for its citizens to maintain its skilled and sustainable workforce, as it will attract investors in need of skilled and productive labour in their enterprises. This inflow of efficiency-oriented FDI in turn will further up skill Zimbabweans because of both technology transfer and on-the-job experience, thereby improving the productivity of the country's human capital. The increased productivity of the workforce would encourage more MNEs to locate their business processes in Zimbabwe.
- The Zimbabwe Investment Authority (ZIA) should engage in specialised sector-specific advertising to market the specific skills of Zimbabwe's people, and the country as a productive labour-rich hub in Southern Africa. By doing so, labour intensive industries such as manufacturing and mining would be able to consider Zimbabwe's workforce positively and potentially locate their operations in Zimbabwe to exploit its human resources, which in turn would aid the Zimbabwean government in retaining its skilled citizens by increasing job opportunities in Zimbabwe and reduce the high unemployment rate in the country,
- The ZIA consistently advocates for the review of existing intellectual property rights laws, and the adoption of more transparent, global-standard policies relating to technology transfer. More progressive laws and policies would encourage FDI-led technology and skills transfer to local Zimbabwean firms and the local workforce respectively, thereby improving the ability of Zimbabwean-based firms to retain skilled and productive labour in the country.

Human capital also presented a weak statistically significant relationship with resource-seeking FDI inflow opportunities in Zimbabwe.It is therefore recommended that:

- The ZIA engage in sector-specific promotion to position Zimbabwe as a regional skills hub in Southern Africa. This may be achieved by promoting Zimbabwe's workforce – its skills in the manufacturing, agricultural, mining and tourism sectors and competencies – based on Zimbabwe's integration in the global value chain of products and resources which include steel, textile and leather products, as well as the growing, processing and production of cotton, tobacco and sugar. Promotion platforms can include specialised trade journals and magazines, advertising in sector-specific media such as manufacturing and technology programming on television or by advertising at trade (mining, ICT, construction) and industry (manufacturing, tourism, agriculture) events. This may position Zimbabwe as an efficiency hub for MNEs.
- The ZIA engage in investor targeting, particularly in the attraction of investment in its tertiary education sector buoyed by Zimbabwe's high basic literacy rates. High literacy rates can translate to process, delivery and cost-saving efficiencies for tertiary, as well as research and development institutions interested in investing in Zimbabwe's human resources. Foreign investors may be targeted with skills development-linked tax rebates for FDI entities that provide experiential learning for university and vocational college students, and recent graduates.
- Public-Private-Partnerships are initiated by the government of Zimbabwe to establish high performance skills centers with FDI entities requiring specialized skills as part of their investment in Zimbabwe. Such centers would equip Zimbabwe's workforce with the required skills to participate more productively within the Zimbabwean resource-oriented job-market. Such initiatives would also increase the expertise within the Zimbabwean economy, and even more-so the skills required for the beneficiation of natural resources such as Zimbabwe's diamonds.

Overall, the findings of this study make a novel contribution to the FDI discourse, particularly in the context of post-crisis Zimbabwe and have significant implications for the Government of Zimbabwe and ZIA. Generally, the findings imply that it is imperative for the Government of Zimbabwe to be cognisant of the particular attractiveness of its human capital and should, therefore, enact policies and legislation that promotes the effective and sustainable utilisation of the country's human capital. This would be aided by the ZIA, which should adopt an evaluation role in assessing investor labour market needs and linking these needs with the prerogatives of Zimbabwe's economic opportunities. ZIA may then more effectively undertake a policy advisory role in guiding the Government of Zimbabwe in aspects such as the review of its labour laws in line with global best practices; particularly the augmentation of Zimbabwe's labour arbitration framework which is widely considered to be ineffective, expensive and procedurally complicated. Such initiatives will potentially reduce the challenges that may be associated with recruiting Zimbabwean labour - thereby improving the attractiveness of Zimbabwe's human capital to investors.

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The Influence of Packaging Elements on Buying Behaviour for Convenience Goods amongst Customers

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Abstract: The role of packaging has changed with the move to self-service retail formats. Marketers have transformed packaging to become one of the major promoting tools to products. There was a necessity to explore packaging and its elements in order to understand which of these elements influence international university students purchase decisions. Thus, this paper seeks to determine the relationship between international university students' buying behaviour and package elements through linear regression analysis. A quantitative, non-probability research approach was employed. A convenience sample was used to select study 400international students from two South African universities. Research findings reveal that international students' perception of packaging elements influence their buying behaviour. The results also show that there is a significant relationship between consumer perception and students buying behaviour. Findings also reveal that there is a significant relationship between consumer buying behaviour and seven predictor variables; colour, graphics, packaging technology, label information, brand name, time pressure and level of involvement. It is thus imperative for the marketers to understand that packaging elements have various influences on the consumer depending on context and on product. If the package elements are properly combined, the package will be more attractive and attention grabbing.

Keywords: *Buying behaviour, convenience goods, packaging elements, international university students*

1. Introduction

Packaging has various functions which include the capacity of positioning brands on distinctive and attractive positions that arouse consumer buying decision; it communicates persuasive and descriptive information about brands (Mutsikiwa, Marumbwa & Mudondo, 2013). Wells, Farley and Armstrong (2007) state that besides using package to protect products during storage and selling against damage and smudge, in addition, it is being used as a marketing means in building and reinforcement of brand equity. However, Kotler and Keller (2012) point out that package offers customers a logo that is visible allowing them to tell the product in the package quickly. Packaging is a dependable basis of brand information. It carries information on quality, quantity, pricing, information about direction of use and ingredients. Inappropriate packaging designs could also emanate from the fact that packaging differs around the world. Kotler and Keller (2012) are of the view that understanding how the consumer makes decisions amongst different products can give producers an upper hand over rivals. Organisations can utilise this information deliberately with a specific end goal to sell the right products at the correct time to the right people at the right place. The value of packaging tool to communicate with consumers is increasing. To understand how to communicate with consumers, it is vital that producers get adequate information on the psychology of consumers. This is important to comprehend the reaction of consumers to packaging of fundamental products (Jafari, Nia, Salehi & Zahmatkesh, 2013). The overall purchase decision is affected by the nature of relationship between the packaging elements and consumer behaviour. Hence, while marketers and businesses should understand the process a consumer goes through to make a decision, they should equally explore and understand the influence of packaging on the ultimate purchase decision. However, literature in this regard is scanty and hence, the study focuses on how packaging elements influence consumer buying behaviour from an international university students' perspective to enable evaluation of local packaging to best international standards. Packaging must be sufficiently orchestrated for its marketing function to assist in selling the product by triggering interest and presenting the product positively to the intended consumers (Lee, 2010). As stores are drawing closer to a self-administration design and diverse products are found on store shelves, sellers assume a less imperative part in communicating to consumers by leaving the product information to be communicated to consumers by the package. Thus, the significance of packaging rises daily (Muruganantham & Bhakat, 2013). There was a necessity to explore packaging and its elements in order to understand which of these elements influence international university students purchase decisions in South Africa.

2. Literature Review

Understanding consumer behaviour: Consumer behaviour involves physical, mental and emotional activities in which individuals select, buy and utilise goods to fulfil their needs (Gilaninia, Ganjinia & Moradi, 2013; Schiffman & Kanuk, 2007). On a similar note, Esitiri, Hasangholipour, Yazdani, Nejad and Rayej (2010) state that consumer purchasing behaviour is a mental introduction describing a consumers' way to deal with settling on a decision. However, the final decision that a consumer makes is affected by various factors and contexts, hence, consumers behave differently in any given scenario. It is essential for organizations that intend to survive and be successful to see how individuals carry on in a purchasing process. Retaining customers, customer relationship marketing, customer value and lifetime value of customers are urgent angles that organizations have to take into consideration through marketing (Du Plessis, Rousseau, Boshoff, Ethlers, Englebrecht, Joubert & Sanders, 2011). Marketers are constantly interested in understanding consumer behaviour as this knowledge provides the marketer with information on how consumers behave. This includes how they think, feel and choose from many like products, brands and so on as well as how consumer behaviour is influenced by their surroundings, reference groups, family, and salespersons (Brosekhan & Velayutham, 2014). The buying behaviour exhibited by a consumer is as a result of cultural, social, personal and psychological factors. It is important for marketers to try to comprehend this behaviour even though it is complex and most of the factors that influence it are uncontrollable and beyond the hands of marketers (Rizvi & Elahi, 2013). Principal reasons which impact buying on impulse are mental stimuli, advertising, and package is identified as one of the inducements. It is therefore important to understand consumer behaviour over time given the radical changes taking place in the field of marketing.

Consumers examine their desires in light of the messages obtained by means of the package and in the event that package misrepresents the benefits of the product, this is when the consumers experience unfulfilled desires that result in disappointment and dissatisfaction. The package shape is another critical paradigm for assessment in this stage. Different shapes of packaging, considering the demands and shapes of the product, can assume an essential part in this stage. The results by Warlop, Ratneshwar, Osselaer and Stijn, (2005) demonstrate that diverse packaging components, through helping the remembrance of perceived quality of products, play an essential part in the review and repurchase of products. Lake (2009) affirms that when buying high involvement goods, each stage in the decision-making process is useful and only the last two stages are important in products with low involvement products. The process of decision making in consumer purchasing behaviour demonstrates that packaging ought not just to increase consumers' consideration or convince consumers to purchase products; it rather ought to develop positive assessments after purchase and make sure that consumers make repeated purchases. Metcalf, Hess, Danes and Singh (2012) are of the opinion that packaging ought to be intended for consumer ease-of-use, convenience and simplicity of carrying the product.

Packaging elements: Wells, Farley and Armstrong (2007) report that the majority (73%) of participants confirm that they depend on packaging when making purchase decisions. On a similar note, Jafari et al. (2013)state that the International Institute for Point of Purchase Advertising (IIPPA) report states that approximately 72% of buying decisions are done right at the purchase point. Philips and Bradshaw (2011 cited in Jafari et al., 2013) state that impulsive purchase that take place in supermarkets amount to 51% of all purchases. In America, buyers spend approximately 35 minutes in a store; where they encounter about 6300 products and have to make a choice on average of only 14 of them (Salahshour & Feyz, 2010). Kotler and Keller (2012) agree to this finding as they point out that consumers encounter over 20,000 products within a 30-minute shopping period. Since a consumer has to pass through many products in a short space of time it therefore means that marketers must design an attractive package which will draw consumer's attention. This is supported in a study by Zeyghami, Rezaei, Asadi and Davoodabadi (2011) whose findings affirm that 60 percent of purchase made in a day are not planned and above 20% of these decisions are triggered by the way products are packaged. This suggests that the role that packaging has on buying behaviour cannot be underestimated. It is in the interest of the businesses and marketers to give packaging the attention it deserves given its potential to invoke and influence buying decisions.

Kuvykaite, Dovaliene and Navickiene (2009) state that memory of a package is improved for non-verbal stimuli if the picture is placed to the left and is improved for verbal stimuli if the information is scribed to the right side of the packaging. A qualitative study done by Otterbing, Shams, Wastlund and Gustafsson (2013) on textual and pictorial elements of packaging, indicates that pictorial elements like photography of product ought to be put on the left side of the packaging so as to maximize customer memory. This certainly demonstrates that engaging quality of graphics, as well as the best possible arrangement of pictorial and literary component of packaging is fundamental to be recognized by customers. Alervall and Saied (2013) report that seventy-five percent (majority) of the consumers who were interviewed said that the main visual element that influenced their emotions was colour. The respondents said colour has a substantial influence on human instincts and human psychology. This is also supported by Wu, Bao, Song and Hu (2009) who contend that colours bring strong symbolic significance and it impact consumers' psychological and visual feelings. Ahmadi, Bahrami and Ahani (2013) suggest that the customer's eagerness to purchase a product rises if the product is exhibited in smaller packages. In another study the outcomes were those packaging impact consumers' choices while size and shape usually influence respondents buying behaviour (Kariuki & Karugu 2014). Ares, Besio, Gimenez and Deliza (2010) state that the shape of a package, be it square or round does not influence buying decisions for the respondents. Sioutis (2011) asserts that technology in packaging which represents convenience is the most significant element in influencing buying decisions. Wills, Schmidt, Pillo-Blocka and Cairns (2009) on the buyer state of mind towards food information found that additional information given on the packaging ought to be proper as it influences consumer nutritional decisions.

Hollywood, Wells, Armstrong and Farley (2013) affirm that consumers usually read information on packaging when they need to purchase a substitute product, when the product they normally purchase is not available. Furthermore, Adam and Ali (2014) carried out a study and found that country of origin is positively correlated with consumer purchasing behaviour. As identified by the study, consumers regularly check country of origin before purchasing. In a study on university students by Mutsikiwa et al. (2013) the results reveal that brand name has a significant relationship with purchase decisions of university students. Silayoi and Speece (2007) suggest that time pressure is a major factor in influencing the consumers' buying behaviour. Results show that consumers who are under time pressure use visual elements when selecting products. On the other hand, verbal elements are found to have strong influence when consumers are not under time pressure. Venter, Merwe, Beer, Bosman and Kempen (2011) investigated an example of perception of South African consumers of food packaging. Results found that respondents generally perceive packaging basing on its physical and functional attributes through spontaneous awareness. This indicates that verbal attributes were essential, as respondents considered some information as critical either for their healthiness or for determining whether to buy the product.

3. Methodology

The data for the study were collected from international students in two universities in South Africa using a quantitative research approach through a structured questionnaire.

Sample: The sample comprised full-time international students from University of Fort Hare (UFH) and Durban University of Technology (DUT). A non-probability convenient sampling technique using a cross-sectional survey was used to select respondents based on their availability. DUT was intentionally selected since the researcher is based at DUT. Furthermore, both DUT and UFH enrol a higher number of international students, especially, from Zimbabwe and Nigeria because of the scholarships they are awarded from their home country.

Measuring instrument: A Likert-scale structured questionnaire was used to measure latent constructs, in this case, consumer behaviour. The questionnaire was designed in a manner that addressed the study, hence the measuring instrument managed to measure what had to be measured. These ordinal scales measure levels of agreement/disagreement on a continuum from strongly disagree to strongly agree, thus making assumptions that behaviour can be measured. This is necessary to uncover degrees of opinion of the respondents. A pre-test was done on a small group of university students to eliminate discrepancy and lack of clarity in some questions that affect efficiency and effectiveness.

Data collection and procedure: A self-reported questionnaire was distributed to a convenient sample. An enclosed letter, clearly indicating the purpose of the study, was attached to the questionnaire. Of the 400 questionnaires that were distributed, 397 were returned, which were used for the data analysis. Various ethical considerations were adhered to in administering the questionnaire. The students' rights to anonymity, confidentiality and privacy were respected. Statistical Package for Social Scientists (SPSS) was used for data analyses. Regression analysis was used to estimate relationship between consumer buying behaviour and the packaging elements.

Reliability and validity: The two most important aspects of precision are reliability and validity. The reliability of the questionnaire is computed by taking several measurements on the same subjects by computing the Cronbach alpha coefficient. Reliability value of 0.70 is an acceptable coefficient though lower thresholds are often reported in the literature, depending upon the nature and context of the study (Tavakol & Dennick, 2011). Generally, higher reliability coefficients are indicative of satisfactory reliability of a research instrument. The results show that reliability scores for all sections (approximate or) exceed the recommended Cronbach's alpha value. This therefore indicates a degree of acceptable, consistent scoring for these sections of the research.

Factor analysis is used to find latent variables or factors among observed variables (Tustin, Lingthelm, Martins& van Wyk, 2005). In marketing research, there may be a large number of variables, most of which are correlated (Maholtra, 2006). In this case, factor analysis could be used to reduce the number of variables to a manageable level for the purpose of composite analysis and interpretation. However, for factor analysis to be appropriate, the variables must be correlated. Hence, this study employed factor analysis. The value of the KMO statistic was above 0.5 for the packaging elements considered in the study, hence, it was considered appropriate for factor analysis. The Bartlett's Test of Sphericity is considered to be significant therefore, allows for the factor analysis procedure. Both KMO and Bartlett's test are presented in Table 1.

Table 1: The Kaiser-Meyer-Olkin (KMO) and Bartlett's test of sampling adequacy

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy.		0.846
Bartlett's Test of Sphericity	Approx. Chi-Square	1160.759
	Df	28
	Sig.	0.000

4. Results and Discussion

There were 397 responses from the targeted university students, representing a 99.3% response rate. The analysis of respondent characteristics is reflected in Table 2.

Table 2: Characteristics of respondent

Variable	Category	Frequency	Frequency (%)	Cumulative (%)
Age of respondent	20-24	217	54.7	54.7
	25-29	151	38.0	92.7
	≥30	29	7.3	100
Gender of respondent	Male	164	41.3	41.3
	Female	233	58.7	100
Education level	Diploma	196	49.3	49.3
	Honours/ BTech	129	32.5	81.8
	Masters	45	11.4	93.2
	Doctorate	27	6.8	100

Characteristics of respondents: The results show that most of the respondents (54.7%) were in the 20 – 24 years' category, while 38.0% and 7.3% were in the 25 – 29 years and above 30 years respectively. Men and women have different shopping strategies, suggesting that the way they perceive packaging elements when they make purchasing decisions varies. Kuvykaite et al. (2009) found that the visual elements were most important for women, whilst, men prefer verbal elements. Thus, it was therefore important to consider gender in this study, which could substantiate trends in the analyses that follow below. Majority of the respondents (58.7%) were females while 41.3% were males. Following Kuvykaite et al. (2009) argument above, results could be skewed towards visual elements as more women participated in this study. The section that follows explains the regression analysis results.

Regression analysis: The aim of the regression analysis in the study was to investigate relationship existing between the dependent variable (consumer buying behaviour) and the predictor variables such as packaging elements, time pressure and level of involvement. The specified regression model equation takes the following form:

$CBB = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \beta_{10} X_{10} + \beta_{11} X_{11} + \mu$…………………………………………………………………… *equation 1*

Where: CBB: Consumer buying behaviour
β_0: Constant
$\beta_1 - \beta_{11}$: Slope parameters of the model
X_1: Colour of packaging (CL)
X_2: Size and shape (SS)
X_3: Graphics (GP)
X_4: Packaging material (PM)
X_5: Packaging technology (PT)
X_6: Nutritional information (NI)
X_7: Label information (LI)
X_8: Country of origin (CO)
X_9: Brand name (BN)
X_{10}: Level of involvement (LI)
X_{11}: Time pressure (TP)
μ: Error term

For this paper linear regression analysis was used to estimate relationship between consumer buying behaviour and the packaging elements. The predictor variables (packaging elements) and the specified regression model equation took the following form:

$CBB = \beta_0 + \beta_1(CL) + \beta_2(SS) + \beta_3(GP) + \beta_4(PM) + \beta_5(PT) + \beta_6(NI) + \beta_7(LI) + \beta_8(CO) + \beta_9(BN) + \beta_{10}(IL) + \beta_{11}(TP)$…………………………………………………………………………*equation 2*

Table 3: Model summary

Model	R	R^2	Adjusted R Square	Std. Error of estimate
1	.912[a]	.832	.818	.380

a. Dependent variable: Consumer buying behaviour

As reflected in Table 3, the R is multiple correlation coefficient and its value is 0.912, while adjusted R^2 shows the ratio of interdependence. The value of adjusted R^2 is 0.818 implying that 81.8% of the variance in the dependent variable can be predicted from independent variable.

Table 4: Coefficients

Model	Unstandardized coefficients		Standardized coefficients	t	Sig
	B	Std. Error	Beta		
(Constant)	-1.216	.276		-4.221	.000
Colour of packaging (CL)	.169	.056	.137	3.042	.003
Size and shape (SS)	.108	.083	.172	3.241	.514
Graphics (GP)	.212	.074	.224	4.373	.000
Packaging material (PM)	.281	.975	.291	2.154	.745
Packaging technology(PT)	.119	.075	.159	3.385	.001
Nutritional information (NI)	.174	.917	.174	2.517	.981

Label information (LI)	.159	.095	.159	3.381	.001
Country of origin (CO)	.214	.043	.205	3.414	.061
Brand name (BN)	.251	.062	.261	3.576	.001
Consumer perceptions	.182	.041	.152	2.418	.451
Level of involvement (IL)	.156	.085	.114	2.678	.005
Time pressure (TP)	.186	.047	.232	4.275	.000
Individual characteristics	.241	.082	.185	3.524	.642

Therefore, given the results in Table 4 above, the equation is presented as follows:
Consumer Buying Behaviour = -1.216 + 0.169(CL) + 0.212(GP) + 0.119(PT) + 0.159(LI) + 0.251(BN) + .0156(IL) + 0.186(TP)………………………………………………… equation 3

The results show that only 7 predictor variables are significant to influence consumer buying behaviour in this study at less than 5% significance level. These are colour, graphics, packaging technology, label information, brand name, time pressure and level of involvement. The discussion of these explanatory variables and how they influence on consumer buying for convenience goods follows below.

- **Colour of packaging:** Colours bring strong symbolic significance and impacts consumers' psychological and visual feelings (Wu, Bao, Song & Hu,2009). Moreover, consumer moods can be changed by colour (Kauppinen-Raisanen & Luomala, 2010). In this study, colour of packaging (CL) positively and significantly influence consumer buying behaviour, with a coefficient value of 0.169 and significance level of 0.003. The results concur to findings by Alervall and Saied (2013) which reveal that colour was the main visual element significantly influencing consumer emotions.
- **Graphics:** Graphics create an image on the packaging (Lee, 2010). Moreover, putting an image of the product on convenience goods creates a positive attitude towards the package and brand beliefs. In this study, consumer buying behaviour is positively influenced by graphics as revealed by a coefficient value of 0.212 and a significance level of 0.000. The importance of graphics has been acknowledged by Mizutani et al. (2010) that customers will positively remark a product if the image is congruent and pleasant. Similarly, Mizutaniet al.(2010) reiterate that graphics significantly influence flavour evaluation and ultimately, consumer buying behaviour.
- **Packaging technology:** An innovatively designed wrapper or container can have a large impact on whether or not a product is noticed on store shelves (Agyeman, 2014), implying that technology can be a major factor that influences consumer buying behaviour. In this study, packaging technology (PT) positively and significantly influence consumer buying behaviour, with a coefficient value of 0.119 and significance level of 0.001. A study by Sioutis (2011) also reveal that technology in packaging which represents convenience is the most significant element in influencing buying decisions.
- **Label information:** Most consumers feel that it is essential to read label information on the package so that they can see instructions, expiry dates, storage etcetera (Adam & Ali 2014). In this study, consumer buying behaviour is positively influenced by label information (LI) as revealed by a coefficient value of 0.159 and a significance level of 0.01. Mutsikiwa et al. (2013)and Butkeviciene, Stravinskiene and Rutelione(2008) also argue that label information is the most significant verbal element when evaluating products before. Moreover, research by Karimi, Mahdieh and Rahmani (2013) also show that there is a significant relationship between consumer purchase decision and the label information on packaging. Thus, these findings reiterate the importance of label information on packaging on influencing consumer buying behaviour.
- **Brand name:** Brand name is very essential in consumers' decision making process. Nowadays, brands represent the company and also have a strong association with perceived quality, taste, social class and consumers' life style (Kariuki & Karugu, 2014). The importance of brand name (BN) has been revealed in this study as it was found to positively and significantly influence consumer buying behaviour, with a coefficient value of 0.251 and significance level of 0.001. Previous study by Shehzad, Ahmad, Iqbal, Nawaz and Usman (2014) reveal that brand name has a significant positive relationship with consumer buying behaviour. The authors further argue that consumers are brand conscious and prefer branded products.

- **Level of involvement:** According to Maiksteniene and Auruskeviciene (2008) convenience goods are generally regarded as low involvement but consumers' involvement varies with every consumer. This gives some direction to how level of involvement can influence consumer buying behaviour. In this study, consumer buying behaviour is positively influenced by level of involvement (IL) as revealed by a coefficient value of 0.156 and a significance level of 0.005. This is supported by Chavis (2010) who states that the degree of involvement has a very significant effect on consumer behaviour.
- **Time pressure:** Kuvykaite et al. (2009) describe time pressure as having too little time to do purchasing. This therefore suggests that, overall, it influences consumer buying decisions. The results of this study revealed that time pressure (TP) significantly influences the purchasing decision of convenience goods as reflected by a coefficient of 0.186 and a significance level of 0.00. A study by Silayoi and Speece (2007) concluded that time pressure is a significant factor in influencing consumer buying behaviour. The explanation for this finding could be based from the fact that the study mainly focused on students who are already time-constrained, thus make their buying decision based on the time available to them.

5. Conclusion and Recommendations

The findings of the regression analysis revealed a significant relationship between consumer buying behaviour and seven predictor variables; colour, graphics, packaging technology, label information, brand name, time pressure and level of involvement. The results, thus, present an insight to marketers that they should understand their consumer base and packaging factors that influence their buying behaviour and the different contexts those consumers are in. This will help marketers to focus their resources on key drivers of package, so that resources can be effectively utilised. Marketers must design colourful package because customers are drawn to a product by its colour. Marketers must design packages that do not cause any harm to the environment. It is also the responsibility of marketers to create consumers' awareness towards the environment and build consumers' responsibility toward it. Manufacturers must include information which is readable and easy to understand on package because some customers want to read the label information; use instructions, ingredients, weight and expiry date before they purchase the product. Manufacturers must avoid using dense font which is unreadable. It can be concluded that packaging elements influence consumer buying behaviour differently depending on context and on product. Some packaging elements influence buying decisions while others did not but it does not mean that they are not necessary. If all packaging elements are properly combined the package will grab customers' attention. In summary, package must be viewed as the most valued tool in today's marketing.

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The Impact of Ethical Practices on the Performance of Small and Medium Enterprises in South Africa

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Abstract: SMEs have become beacons of hope towards improving economic growth and development of many countries globally. However, the literature documents a high discontinuance rate among small businesses. The purpose of this study is to investigate the impact of ethical practices on the performance of SMEs in South Africa. The study was based on a quantitative research design. The survey method was used as a data collection method. Using this method, self-administered questionnaires were used as the primary data collection tool. These questionnaires were hand delivered to the participants by the researcher. The random sampling method was used to obtain the participants. The population consisted of SME owner/managers in Polokwane municipality. 74 SME owner/managers participated in the survey. Data analysis included descriptive statistics, factor analysis, T tests and regression analysis. The Cronbach's alpha was used as a measure of reliability. The findings showed that SMEs display unethical behavior and a weak performance. It was discovered that SMEs does not have policies in place to guide their ethical behavior. The T test results showed significant differences between gender and education levels with ethical practices of SMEs. The regression results showed that there is a positive relationship between ethical practices and performance of SMEs. Recommendations were made for SMEs to treat ethical issues seriously lest they risk incurring costs associated with lawsuits and negative brand reputation.

Keywords: *Behaviour, ethics, performance, SMEs, South Africa*

1. Introduction

Small businesses are increasingly becoming important key players towards economic prosperity of nations across the globe (Peprah, Mensah & Akosah, 2016). There is a growing trend worldwide towards considering SMEs as economic drivers and engines for economic growth and development (D'Imperio, 2012). However, it is difficult to understand the contribution of SMEs without understanding their definition. The African Development Bank (2007) points out that defining the term SME is the first step in conducting a policy-relevant analysis to solve problems related to the sector. According to Dada (2014), there is no universally acceptable definition of SMEs. However, in South Africa, the National Small Business Act of South Africa 1996 as amended in 2003 defines a small business as "*a separate and distinct entity, including cooperative enterprises and non-governmental organizations managed by one owner or more, including its branches or subsidiaries if any is predominantly carried out in any sector or sub-sector of the economy mentioned in the schedule of size standards, and can be classified as an SME by satisfying the criteria mentioned in the schedule of size standards*" (Government Gazette of the Republic of South Africa, 2003). This definition tallies with international standards as it employs both the qualitative and quantitative definitions. Ilegbinosa and Jumbo (2015) point out that globally, SMEs contribute immensely towards the gross domestic product (GDP). Firoozmand, Haxel, Jung and Suominen (2015) highlight that SMEs are the economic backbone in the U.S. SMEs play an important role in most developing countries by creating jobs for both the urban and the rural populace (Kongolo, 2010).

Ramukumba (2014) notes that SMEs in developing countries greatly assists in evenly distributing opportunities and wealth which result in poverty reduction. According to International Finance Corporation Report (2013), the largest share of employment in developing countries belongs to small and medium enterprises (SMEs). Regardless of the positive contributions made by SMEs to the economy of South Africa, the SMEs' business discontinuance rate is notoriously high in South Africa. This is attributed mainly to factors such as lack of finance, crime, lack of management experience, lack of functional skills, poor attitudes towards customers, ineffective leadership styles and conduct of unethical behavior among others. This study is driven by the desire to elaborate on the impact of ethics on the performance of SMEs. The study is of significance in the sense that it intends to generate empirical findings on the relationship between ethical practices and performance among SMEs from a South African perspective. Furthermore, the findings of the study will help improve the theoretical framework for business ethics. In light of the contribution of the SME sector in South Africa, it is of significance to investigate factors that can improve their performance. Hence, the findings of the study will be useful to SME owners and organizations that assist SMEs to better understand factors that can help to improve the performance of SMEs in South Africa.

The objectives of the study: The objectives of the study are:

- To explore the ethical practices of SMEs
- To examine the relationship between gender and ethical practices of SMEs
- To assess the effect of age on the ethical practices of SMEs
- To determine the relationship between ethical practice and performance of SMEs

Hypotheses

H_0: There is no relationship between gender and ethical practices of SMEs
H_1: There is a significant relationship between gender and ethical practices of SMEs
H_0: There is no relationship between education and the ethical practices of SMEs
H_2: There is a significant relationship between education and the ethical practices of SMEs
H_0: There is no relationship between ethical practices and performance of SMEs
H_3: There is a significant relationship between ethical practices and performance of SMEs

2. Literature Review

Smit, Cronje, Brevis and Vrba (2007) and Hellriegel, Jackson, Slocum, Staude, Amos, Klopper, Louw and Oosthuizen (2008) describe ethics as a set of values or guiding principles which aim to separate right and wrong behaviors. As such, an individual or an organization is obliged to act or behave in a manner deemed acceptable and rightful. This study is grounded on the stakeholder theory. The theoretical background of ethical practices and performance of SMEs augurs well with the stakeholder theory. The stakeholder theory by Freeman (1984) is a theory rooted in the organizational management philosophy on how different organizations should deal with ethical issues in a business context. Stakeholder theory begins with the assumption that values are necessarily and explicitly a part of doing business. The theory emphasizes that managers should be guided by a set of values, which in turn assist them in managing relationships with their different stakeholders. Stakeholders include shareholders, employees, suppliers (goods and funds) customers, and the communities in which the firm operates. The stakeholder theory clearly underlines the importance of running a business ethically (Freeman, Wicks & Parmar, 2004). However, a few studies schemes, Key (1999) challenge the validity of the stakeholder theory arguing that it lacks a solid theoretical validation. Nevertheless, this theory forms an important aspect of this study as it provides a framework to formulate ethical principles for small businesses. In addition, Key, Bewley and Vault (2004) argue that the stakeholder theory still stands as an important theory to explain CSR in organizations.

Lather (2009) argues that businesses should aim at improving ethical practices related to customers and suppliers as they determine the sustainability of the business. On that note, it is crucial for SMEs to address issues relating to; corporate social responsibility, employees, customers and how they relate with their suppliers. However, Vivier (2013) report that most SMEs are solely run, which result in one managing the business without any formal written ethical policies. Consequently, SMEs lack formal structures and policies to deal with shareholders, suppliers, employees, the community and the ones relating to how they respond to customer complaints as compared to large businesses (Arruda, 2010; Spence & Perrini, 2010). Arruda (2010) notes that SMEs compromise ethical principles whenever they perceive an economic gain. A study conducted by Vivier (2013) showed that a number of SME owners agreed that they act unethical to be profitable. In some cases, SMEs often tries to avoid involving themselves in corporate social responsibility activities, citing that it's only applicable to profitable large businesses (Spence & Painter-Morland, 2010; Schlierer et al., 2012). Ethical challenges faced by new SMEs include not meeting commitment to suppliers, perception of dishonesty and lack of business experience, skills and competencies. A study by Viviers and Venter (2008) report that SMEs are involved in fraudulent activities. The authors of this study believe that unethical conduct exhibited by SMEs is among the top reasons why their loan applications are turned down by banks. Fatoki (2012) concurs and asserts that SMEs in South Africa exhibit high levels of unethical behavior which seriously compromise their sustainability.

Gender and ethical practices of SMEs: Gender is a crucial element to consider in the bid to resolve unethical behaviour displayed by some small businesses. On that note, it is important to investigate if there are gender differences in the ethical stance or behaviour exhibited by SME owners. Dawson (2013) argues that gender difference in ethical behavior is a reality than a myth. On that account Dawson (2013) notes that gender differences in ethical behavior exhibited by men and women are attributed to gender socialization. This explains why women tend to be more ethical than men as indicated by Hazlina and Seet (2010). Similarly, Castejón and López (2016) note that women are philanthropic which makes them ethical as compared to men who are driven by the desire to surely make economic gains. This makes men to embark on unethical practices more than women. Chinchilla and Jiménez (2013) remark that women tend to consider the long-term consequences that may arise due to unethical decisions more than their male counterparts. The literature about the relationship between gender and ethical practices of SMEs is inconclusive. Dutta and Banerjee (2011) found out that the women displayed unethical behavior compared to men in their study. However, the authors of this study believe that by nature women are risk averse hence, they are less likely to be involved in fraudulent activities and corruption as compared to men. Therefore, it can be hypothesized that there are gender differences on the ethical practices of SMEs.

Level of education and ethical practices of SMEs: It is important to critically investigate the determinants of ethical behavior among SMEs. This is crucial as it informs policy making. As such, the authors of this study believe that education is a good predictor of ethical behavior among SMEs. A study by Herrera et al. (2014) indicates that people with university qualifications tend to take ethical issues more seriously than their counterparts with non-university qualifications. Similarly, Dutta and Banerjee (2011) found out that people who have acquired tertiary qualifications are sensitive to ethical issues than their uncertificated counterparts. They further reasoned that educated owners understand the long-term consequences of unethical behavior hence, their desire to act within expected codes of conduct. University education is instrumental in shaping ethical behavior among individuals since ethics and corporate social responsibility are engraved in the modules taught in institutions of higher learning (Pérez, 2010; Larrán Jorge, AndradesPe˜na, & Muriel de Los Reyes, 2014). It can be hypothesized that, there is a significant difference on the ethical practices of SMEs based on the level of education.

Ethical practices and performance of SMEs: According to Manaf and Latif (2014), performance is the ability of an organization to fulfil the demands of the investors by assessing the company's achievements. In this study performance is measured in terms of market share growth, sales, profitability, return on assets, employment growth, customer satisfaction and employee satisfaction. Donker, Poff and Zahir (2008) found that ethics positively influence workers to take responsibility of their work which results in improved firm performance. Hilman and Gorondutse (2013) found perceived ethics to be positively associated with SMEs' performances. According to Ahmad et al. (2012), it is also important to take into consideration the issue of corporate social responsibility (CSR) when discussing about ethics among small businesses. This is because CSR is often neglected by SMEs regardless of the positive benefits it can bring to their organizations. Kamyabi, Barzegar & Kohestani (2013) and Brammer (2007) found a positive relationship between CSR and financial performance. Dutta and Banerjee (2011) find that adhering to ethical standards can improve the performance of small businesses beyond national borders. Therefore, it can be hypothesized that there is a significant relationship between ethical practices and performance of SMEs.

3. Methodology

The study focused on a population of 250 SMEs in Polokwane municipality. Polokwane was chosen because it is an area with a high concentration of SMEs in Limpopo province. This creates a high probability to get accurate representation and a true reflection of SMEs in South Africa. The quantitative research method was adopted for this study and 156 SMEs were surveyed. The sample size was deemed adequate enough for the study after following recommendations by Sekaran and Bougie (2010) that a sample should be sufficient enough in order to draw accurate generalizations. The sample size was determined by Raosoft sample size calculator which takes into consideration: the margin of error, confidence level and population size. The random sampling technique was used in the study. Data was collected through the use of self-administered questionnaires in a survey. The questionnaire for the study consisted of three sections; (1) biographical questions (2) ethical practice questions and (3) questions related to SMEs performance. The questions in the questionnaire were all closed ended questions. The research also made use of the 5 point Likert scale questions for both ethical practice and performance. The Lickert scale questions ranged from strongly disagree to strongly agree for ethical practice questions and for performance it ranged from excellent to no idea. Data was analyzed using descriptive statistics, factor analysis, T test and regression analysis. Descriptive statistics were run to summarize data on the ethical practices and performance of SMEs. Factor analysis was run to check if the variables of the different ethical practices confirm the underlying constructs as indicated in the existing literature while the T tests were used to compare mean differences between gender and education with the ethical practices of SMEs. According to Kim (2015), "t- tests are usually used in cases where the experimental subjects are divided into two independent groups, with one group treated with A and the other group treated with B." Regression analysis was conducted to test the hypothesized relationships between ethical practices and performance of SMEs. In this study, ethical practices were the independent variable while performance was the dependent variable of the study. The Cronbach's alpha was used to measure reliability.

4. Results and Discussion

Response rate: One hundred and fifty-six questionnaires were hand delivered to SME owners in Polokwane Municipality. Seventy-four questionnaires were returned and filled properly, making a response rate of 47 percent.

Biographical information: To understand business ethics and dynamics fully among SMEs, it was important to also capture the SME owners' and firm characteristics. The results indicated that a significant number of the participants were males (65%) compared to only (35%) females. The dominant age of the respondents was 31-40 years. The findings are in agreement with similar studies (Tsele, 2015). Considering the level of education, the findings indicate that a significant number of the respondents (61%) have matric and below qualifications. Studies such as Agbenyegah (2013) share similar findings. It was further discovered that most small businesses in the study area (35%) are solely run and operated, dominating in the retail sector. Considering employment creation, most respondents indicated that they employ under 5 employees, including the owner and most of these SMEs (40%) have been in business for a period of 1-5 years.

Table 1: Descriptive statistics for ethical practices of SMEs

Item	Mean	Standard deviation
The owners of this firm abide by the law.	2.33	1.21
We meet our tax obligations every financial year end	1.87	0.66
The contractual obligations in my organisation are always honoured.	2.56	0.77
We have clearly written policies to deal with our stakeholders.	1.44	0.76
Our business pays its suppliers on-time	2.35	0.81
All our employees are obligated to give customers accurate information.	3.11	0.82
We have clear policies to deal with customer complaints and suggestions	2.86	0.85
Our policies protect employees from any form of discrimination.	3.33	0.71
Our employee evaluation process is pivoted on fairness.	2.87	0.76
We sometimes manipulate performance indicators	4.21	0.77
We create jobs for the local communities	3.12	0.67
Our business provides staff with training	2.22	0.88
There is friendship and interpersonal trust among employees.	3.10	1.23
Our stuff feels that they are fully supported by management in any charitable work endeavours.	2.66	0.87
Our business treats its employees with dignity and respect.	3.25	0.96
Cronbach's alpha	0.80	

Descriptive statistics for ethical practices of SMEs: Table 1 shows descriptive statistics for ethical practices of SMEs. As indicated, the mean scores on the question items are low. This shows that SMEs engage in unethical practices. In addition, the results indicate that SMEs have no formal policies in place to shape their ethical behaviour. The findings are consistent with similar studies (Arruda, 2010; Spence & Perrini, 2010). It is further reported that SMEs cut a lot of corners to just make profits or close a deal that in most cases ethics are foregone (Arruda, 2010; Vivier, 2013). Unethical behaviors among SMEs include fraudulent activities, bribes, window-dressing financial statements, failing to meet commitments with suppliers and tax evasion among others. According to Harron, Ismail and Oda (2015), SMEs should embrace ethical values such as fairness, honesty, openness and integrity.

Table 2: Factor analysis for ethical practices of SMEs

Item	Factor 1	Factor 2	Factor 3	Factor 4
Our policies protect employees from any form of discrimination.	0.81			
Our employee evaluation process is pivoted on fairness.	0.77			
Our business provides staff with training	0.74			
Our stuff feels that they are fully supported by management in any charitable work endeavours.	0. 67			
Our business treats its employees with dignity and respect.				
Our business pays its suppliers on-time		0.79		
We sometimes manipulate performance indicators		0.76		
The owners of this firm abide by the law.			0.77	
We meet our tax obligations every financial year end			0.68	
The contractual obligations in my organisation are always honoured.			0.62	
We have clearly written policies to deal with our stakeholders.			0.60	
All our employees are obligated to give customers accurate information.				0.75
We have clear policies to deal with customer complaints and suggestions				0.69
Eigen value	3.41	2.34	2. 11	1. 77
Percentage of variance explained (75.46%).	25.01	21.21	18.11	11. 13
Cronbach's alpha	0. 81	0.79	0.80	0.83

Source: Principal components factor analysis with varimax rotation. Kaiser-Meyer-Olkin (KMO) test of sampling adequacy =0.74; Barlett Test of Sphericity (BTS) = 443.566, p=0.000

Factor analysis for ethical practices of SMEs: Table 2 shows factor analysis results. As shown above, four factors with Eigen values greater than one were identified. These are factor 1 which comprises of ethical practices related to employees, factor 2 consisted of ethical practices related to suppliers, factor 3 consisted of ethical practices related to legal requirements and factor 4 comprises of ethical practices related to customers. Factors related to shareholders and the community were dropped due to low factor loadings.

Table 3: Descriptive statistics for SMEs performance

Item	Mean	Stand deviation
Sales growth	4.23	1.33
Market share growth	3.12	0.79
Profitability	3.45	1.03
Return on assets	4.15	0.81
Employment growth	2.26	0.71
Customer satisfaction	2.10	1.22
Customer satisfaction relative to competitors	1.11	0.69
Employee satisfaction	1.44	0.91
Overall performance	3.39	0.82
Cronbach's alpha	0.79	

Descriptive statistics for SMEs performance: In this study performance was measured in terms of market share growth, sales, profitability, return on assets, employment growth, customer satisfaction and employee satisfaction. A 5 point Likert scale ranging from excellent (1), good (2), not bad (3), not good (4) and no idea (5) was used. Table 3 shows descriptive statistics for SMEs performance. The findings show that SMEs display a weak performance. The findings indicate that SMEs are doing well in terms of customer satisfaction and employee satisfaction compared to other measures of performance. However, for the past 3 years the respondents reported that their overall performance was not good. The findings are consistent with similar studies (Atkinson, 2013; FinMark Trust, 2015; SME Growth Index, 2015) which stress that SMEs in South Africa are not performing optimally.

Test for difference in ethical practices: The second objective of the study was to examine the effect of owners' demographic characteristics such as gender and level of education on the ethical practices of SMEs. Four Factors were identified from factor analysis. These include factors related to: employees, suppliers, legal requirements and customers. Items relating to shareholders and the community were dropped due to low factor loadings.

Table 4: Gender differences on ethical practices

Factor	Female	Male	t- statistic	Sig level
Ethical practices relating to employees	2.84	2.71	1.66	0.02
Ethical practices relating to suppliers	3,28	3, 23	1.43	0.01
Ethical practices relating to legal requirements	2.77	2.73	1.69	0.03
Ethical practices relating to customers	2.98	2.29	1.51	0.00

Sig 0.05

T test for gender differences on ethical practices: It is important to interrogate gender differences on how males and females treat ethical issues in their businesses. Table 3 presents findings on gender differences on ethical practices of SMEs. Importantly, the results indicate that there are gender differences on the ethical practices of SMEs. As indicated by the T test results, females tend to be more ethically sensitive than their male counterparts. Similarly, studies such as Hazlina and Seet (2010) as well as Castejón and López (2016) agree with the above findings. The findings lead to the decision to reject (**H_0)** and accept (**H_1)** which states that there is a significant relationship between gender and ethical practices of SMEs. It can be deduced that gender is an important determinant of ethical behaviour among SMEs.

Table 5: Level of education difference on ethical practices

Factor	Matric & below	Tertiary	t- statistic	Sig level
Ethical practices relating to employees	2.73	2.76	1.67	0.00
Ethical practices relating to suppliers	2,76	3, 21	1.36	0.02
Ethical practices relating to legal requirements	2.70	2.75	1.55	0.01
Ethical practices relating to customers	2.96	2.33	1.58	0.43

Sig 0.05

T test for level of education difference: Table 4 presents the results about the level of education difference on ethical practices of SMEs. It can be deduced that there are education differences on the ethical practices of SMEs. Respondents with tertiary qualifications tend to be ethical than those with matric and below qualifications. The results are in agreement with similar studies (Herrera et al., 2014; Dutta & Banerjee, 2011) which report that people with tertiary qualifications tend to take ethical issues more serious than their counterparts with matric and below. Logically one could conclude that attaining a certain tertiary level qualification enables one to understand legal regulations and policies well than those without since some of the material and content is included in the tertiary curriculum. The findings lead to the decision to reject (**H_0)** and accept (**H_2**) which states that there is a significant relationship between education and the ethical practices of SMEs. It therefore means that education predicts ethical behaviour.

Table 6: Regression analysis results

Independent variables	Beta	T	Sig
Ethical practices	0.187	50.721	.000

Source: Data Analysis. Dependent variable: performance. Sig.>0.05

Relationship between ethical practices and performance: Table 5 display regression analysis results. The regression analysis results between ethical practices and performance are (B= 0.187, sig= 0.000). The results support the alternative hypothesis ($\mathbf{H_3}$) that there is a significant relationship between ethical practices and performance of SMEs. Based on the confidence interval of 95% and Sig.>0.05 this led to the decision to reject the null hypothesis ($\mathbf{H_0}$) and accept the alternative hypothesis ($\mathbf{H_3}$). The results are in agreement with similar studies (Hilman & Gorondutse, 2013). This suggests that ethical behaviour has a bearing on the performance of SMEs.

5. Conclusion

SMEs have become beacons of hope towards improving economic growth and development of many countries globally. SMEs have played a key role in regions like the European Union, Asia and the United States with booming economies. It is without doubt that SMEs act as agents of change and engines for economic growth and development. However, it was discovered that a significant number of SMEs continue to suffer premature death. It has been noted that SMEs are involved in unethical behaviours such as tax aversion, failing to meet quality standards, lack of policies to protect employees and customers, fraudulent activities and selling of illegal substances among others. The authors of this study believe that unethical behaviour poses a threat to the sustainability of SMEs. Ethical conduct has become an important issue that SMEs should take serious lest they suffer negative consequences such as negative brand image, lawsuits, and lack of trust among different stakeholders in their networks. The T test results showed gender and education differences on the ethical practices of SMEs. This shows that both gender and education are crucial determinants of ethical behaviour among SMEs. The regression results confirmed that there is a significant relationship between ethical practices and performance of SMEs. Based on the confidence interval of 95% and Sig.>0.05 this led to the decision to reject the null hypothesis ($\mathbf{H_0}$) and accept the alternative hypothesis ($\mathbf{H_3}$).

Recommendations: The government should relax rules and regulations governing small businesses. The authors of this paper argue that a significant number of SMEs end up involved in unethical practices in order to survive as there is little or no government assistance at their disposal. Hence, the government should relax the legal environment, by giving new start-ups tax holidays so that they can grow into future large businesses. Furthermore, it was discovered that education improves the ethical sensitivity of SME owners. Hence, the government should roll out skills development to educate SME owners on how to handle ethical issues in their businesses. On that note, The South African Revenue Service (SARS) should rule out a number of community outreach programs aimed at educating SMEs owners on the different tax obligations they have to meet and the procedures they have to follow. On our study, some respondents expressed that they were not paying tax because they were not knowledgeable about the procedures to be followed. Also the ministry of small businesses together with other government departments such as Small Enterprise Development Agency (SEDA) should device a consortium of programmes to educate SMEs about the importance of business ethics.

In addition, SME owners are encouraged to familiarise themselves with different policies concerning, shareholders, suppliers, employees, customers and the community. This entails putting different policies in place to deal with different ethical issues such as employee enrichment, customer complaints, and a detailed corporate social responsibility stance. SME owner/managers are also encouraged to enrol for a certificate in business ethics as offered by a number of institutions in South Africa. This can take them a long way in understanding ethical dynamics in their businesses. Given that there are gender differences on the ethical behaviours exhibited by males and females, SMEs' management should take advantage of that to bring diversity in their organisations. Women tend to be philanthropic, respect relationships while men pursue the economic approach, ignoring ethics at times to maximize profits. Hence, merging these two approaches can result in organisations which are profitable while at the same time ethically sensitive. Overall, the government has a critical role to play in instilling a national culture which is ethically sensitive. This can be enforced by introducing punitive laws to individuals and companies which display unethical behaviour. Teams should be set and deployed to inspect ethical standards and policies in different companies. This should be implemented as a holistic approach, starting at national level until the community level. The authors of this study believe that this is one of the best approaches to end unethical behaviour among individuals and SMEs in South Africa.

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Understanding the Theory of Consumption in the Context of a Developing Economy

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Abstract: This paper synthesizes the theory of consumption using some Nigerian contexts. The argument on what determines consumption is yet an unfinished task. We tested the general consumption function using Nigerian data covering 1981-2012. Based on the diagnostics, we employed a vector autoregression-in-first difference approach. The result shows that previous incomes (up to two lags) may not be significant in influencing consumption in Nigeria but previous consumption levels (up to two lags) attained may do. In addition, consumers in Nigeria may reduce their consumption in the current year based on their knowledge of previous year consumption but may raise the current consumption level due to their experience of last two years consumption. This corroborates suggestions that macro-econometricians must analyze consumption beyond the general consumption function. The pattern of historical data also suggests that consumption may be difficult to predict in Nigeria. Therefore, government of Nigeria may succeed in influencing its aggregate demand which consumption is the major component if its income and tax policies are permanent, rather than being temporary.

Keywords: *Consumption, Vector autoregression-in-first difference, Nigeria*

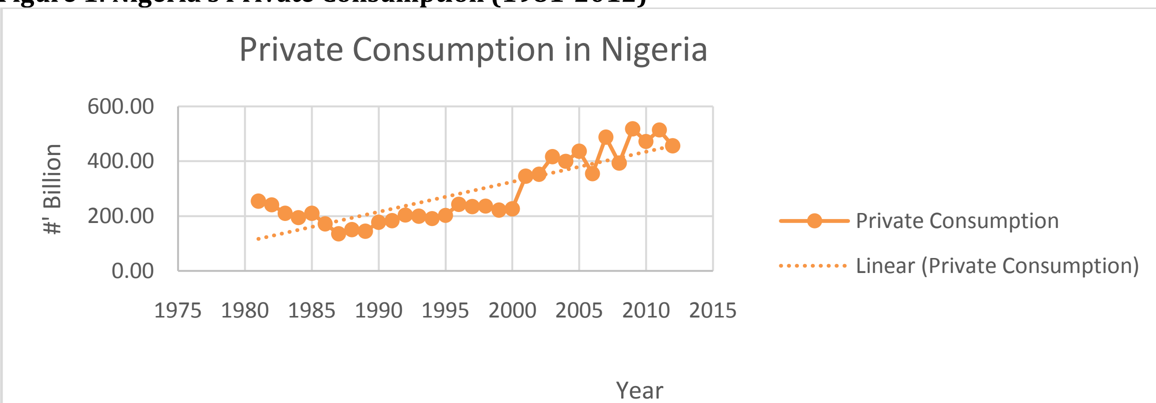
1. Introduction

Virtually everyone makes use of goods and services, that is, consumes them to derive satisfaction or utility or pleasure or happiness from them. Consumption is therefore a necessary concept in nature as well as economics. Economics itself is as old as nature, although was not formally recognized early until the13th to 14th century. Consumption as a concept goes together with saving (see Blanchard and Fischer, 1989; Parker, 2010; Romer, 2011). This is why in macroeconomics, the theory of consumption and saving are most often simultaneously treated. In technical terms, the part of income that people do not save is the consumer expenditure. Clearly, consumer expenditure connotes the amount of money, say naira and kobo expended on commodities. The generic word for good and service is commodity. While a good is tradable and tangible, service is non-tradable and intangible. For instance, if David who lives in Nigeria wants to consume a haircut service of a firm based in the United Kingdom, he has to obtain a visa to travel to the United Kingdom for that purpose. This is not the case if the good is tradable. However, there are certain services that do not require physical travelling such as receiving a lecture from any part of the world on an electronic platform. The difference between consumption and consumer expenditure is that while the former is associated with utility derivation, the latter is the expenditure made (see Chamberlin and Yueh, 2006).

An interesting question in macroeconomics is- who actually consumes? Is it the individual persons such as Ada, Tayo and Lawan or the firms such as Dangote Floor Mill, Lola Bakery and Uche Shoes Making Limited or the governments such as Keffi Local Government, Lagos State Government and Federal Government of Nigeria? The answer to this question is that, although government also consumes but consumption is the individual persons' consumptions. This is why consumption when referred to means private consumption. Expenditures on assets or capital goods by firms are what economists refer to as investment or private investment while expenditures made by governments whether local, state or federal are called government expenditure or public spending or public expenditure or government purchases. Government expenditure comprises capital expenditure, otherwise called government investment and recurrent expenditure also known as government consumption. The addition of expenses made on commodities by all the persons residing in an economy makes up consumer expenditure or consumption. This means that consumer expenditure or consumption is a macroeconomic concept.

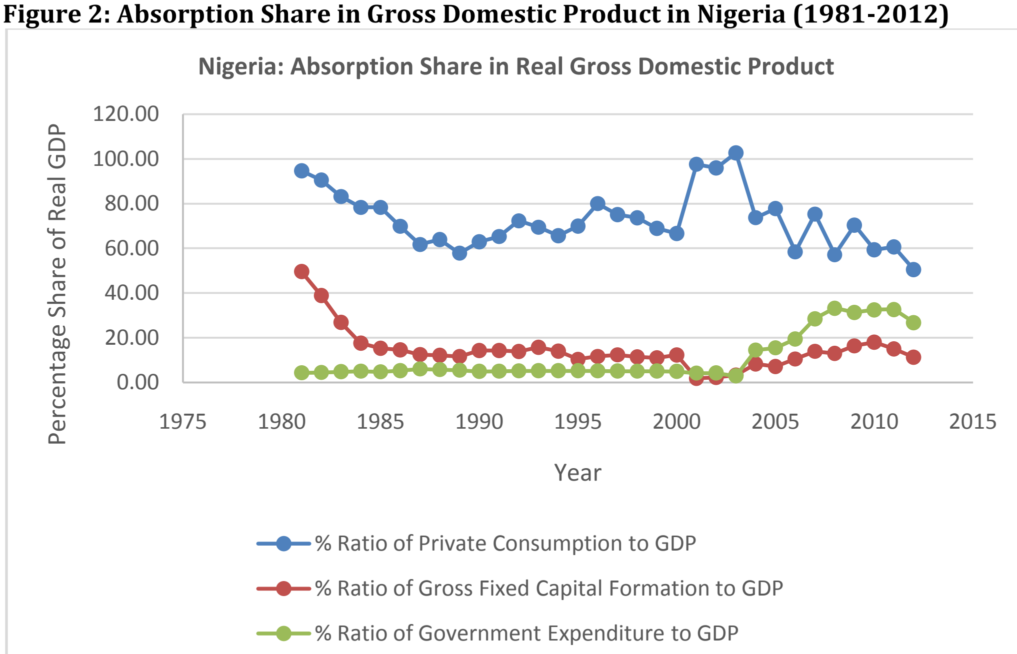
Consumer expenditure can be broken down into expenditures made on durable goods, non-durable goods and service. Durable goods are by nature or fabrication not used up in the process of consumption while in the case of non-durable goods; they are used up when consumed. Therefore, durable goods stand the test of time but non-durable goods do not last. Service shares the same features with non-durable goods. Service is instantly used up in consumption process. Examples of non-durable goods are fresh tomatoes, bread, pepper and injection needle while examples of durable goods are eye glasses, laptop, television set, house furniture, and mattress. Examples of services are teaching, lecturing, coaching, hawking, selling, consulting, auditing and accounting. Consumption is the largest component of aggregate expenditure or aggregate demand (see Chamberlin and Yueh, 2006). After investment, it is the next volatile variable in the aggregate demand function. It occupies a pertinent role in growing an economy. Although, contemporary economists have laid more emphasis on raising investment levels to stimulate economic growth, consumption roles in economic growth has remained significant since 1930s when Maynard Keynes argued for consumption against investment as a needed ingredient for growing an economy (see Keynes, 1936). Without consumption, firms will fold up and investment will dwindle.

Figure 1: Nigeria's Private Consumption (1981-2012)



Source: Author's computation from data obtained from Central Bank of Nigeria Statistical Bulletin, 2014

Figure 2: Absorption Share in Gross Domestic Product in Nigeria (1981-2012)



Source: Author's computation from data obtained from Central Bank of Nigeria Statistical Bulletin, 2014

We show the movements of private consumption pattern in Nigeria in figure 1 with a linear curve across it to depict deviations from the overall average consumption in 1981-2012. The graph reveals that consumption levels were above the overall average level in 1981-1985; 2003-2005; 2007 and 2009-2011. Over the reference period, the lowest consumption level in Nigeria was recorded in 1987 while the highest value was recorded in 2009. Absorption includes private consumption, investment (represented by gross fixed capital formation) and government expenditure. Figure 2 shows the share of each of the components of absorption in GDP. The figure reveals that private consumption has always been the largest share of Nigeria's GDP with the least been 50.51 percent in 2012 and the highest been 102.77 percent in 2003 over the reference period. However, the behavior of the private consumption-GPP share like the consumption curve in figure 1 has been a form of random walk, hence unpredictable. This supports the random walk hypothesis of consumption propounded by Hall (1978). Depending on the state of the economy, consumption can be enhanced/reduced or influenced by economic policy. An example is when a country is in debt crisis and its output fell due to a long-term shock while the output is also less than absorption, the ideal dose of policy recommendations will be a reduction in consumption to the level the output has fallen and a debt ceiling. In order to increase output, there will be need for right macroeconomic policy such as reduction in interest rate coupled with and accompanied by institutional and structural policies.

The relevance of this study is in three folds. First, it simplifies the theory of consumption using the Nigerian context to aid understanding of the concept to Nigerian readers. Second, readers from any part of the world can understand at a glance, the developments in theories of consumption overtime, given an up-to-date discussion provided in a synopsis format. Finally, it unravels the methodological challenges in analyzing consumption theory. We divide the study into five sections. Following this introduction is a theoretical and methodological review on consumption in section two. In the third part, we present the methodology while the discussion of the findings comes up in the fourth section. The final part gives the concluding remarks.

2. Literature Review

Revising the Theoretical and Methodological Issues in Consumption: Stylized Facts: The theory of consumption started with the work of Maynard Keynes in 1936 when he propounded the **Absolute Income Hypothesis (AIH)** or otherwise called the Keynesian consumption theory. He used intuition to submit that current disposable income is what determines current consumption. As at that time, the knowledge of econometrics has not become profound. He was the first to come up with marginal propensity to consume (MPC) and average propensity to consume (APC) in attempt to describe the relationship between aggregate consumption and current disposable income. Marginal propensity to consume is the change in consumption due to an extra change in disposable income while average propensity to consume is the ratio of consumption to disposable income. In equation (1), as put forward by Keynes, C_t is current consumption; a is autonomous consumption; b is the marginal propensity to consume and Y_t represents current disposable income.

$$C_t = a + bY_t \text{ .... } (1)$$

There are three features of the Keynes' postulate on consumption. First, the marginal propensity to consume is between zero and one. Second, the average propensity to consume falls as income increases and lastly the major driver of consumption is income and not interest rate contrary the argument by the Classical School. Empirical works on consumption using short time-series households' data were in support of Keynes' proposition (Chamberlin and Yueh, 2006). However, studies that used long time-series did not show a falling APC as income increases (Chamberlin and Yueh, 2006). The paradox of Kuznets (1942)is on empirical anomaly between the comparativemagnitude of MPC and APC. He said changes in APC depends on the value of the autonomous consumption. When the autonomous consumption is zero, people spend an equal share of their increase income, hence MPC = APC. This happens in the long run. However, in the short-run, the autonomous consumption is greater than zero, thus people spend less share of the increase in their income. In this short-run, MPC < APC. While there is a proportinal relationship between disposable income and consumption in long-run, there is non-proportional relationship between the two variables in the short-run.

A study by James Tobin revealed that increases in asset properties owned, aftermath-war urbanization, diversities of new consumer goods after war and increasing proportion of the aged in the entire population have shifted the short-run consumption function upwardly in a slowly manner thereby showing a scenario where MPC is less than APC in the short-run but because the upward shift in consumption returns to the long-run consumption, MPC will be equal to APC in the long-run (see Parker, 2010). Another consumption hypothesis is the **Relative Income Hypothesis (RIP)**. This was described in the work of James Duesenberry

(1949). The time series version of this theory shows that individual consumption depends on his past highest income while the cross-section version saays thatindividual consumption is dependent on the consumption pattern of the Jonesses in ones group. The time series version leads to a ratchet effect where individual consumption does not fall significantly when income falls because consumers would like to maintain an initial consumption level attained during a high income period by reducing their savings. Both the Absolute Income Hypothesis and the Relative Income Hypothesis have become outdated in modern macroeconomics. Although the two hypotheses were of relevance in the 1950s and 1960s, they failed to address the problem of consumption smoothing by not considering intemporary choice of the consumer in weighing his consumption and saving choices from the present and future income conditions. In particular, the RIP has methodological problem which has to do withchallenges in modeling interdependent utility.

Contemporary research on consumption are predicated largely on the Irving Fisher's consumption model. It says that in order to achieve a high level of utility, the consumer is faced with an intertemporal choice where he chooses to consume more today and save less thereby having to reduce consumption in the future if he does not borrow or consume less today and save more thereby increasing his consumption in the future. Where he borrows, he pays interest rate. So, the amount he borrows in the future so as to consume will depend on the rate of interest. When he saves today, he also earns interest rate. If we assume borrowing (or lending) interest rate and saving interest rate to be the same (that is, zero interest rate spread), his current income has more value than his future income because he earns interest on it if he saves today and his present consumption is more expensive than future consumption because of the interest rate charged on borrowing for consumption purpose in the future or because his future consumption is based on income saved, which yielded interest. The consumer has an intertemporal budget contraint which describes his lifetime income or resources that can be expended on current and future consumptions (see Fisher, 1930 and Chamberlin and Yueh, 2006).

Franco Modigliani and his co-researchers namely Albert Ando and Richard Brumberg propounded the Life Cycle Hypothesis (LCH) in the mid-1950s (see Parker, 2010). Their work showed that consumption is determined by income, represented by Y and wealth designated by W in equation (2). Notice that a and b are arbitrary consumption coefficients.

$$C = aW + bY \text{ .... } (2)$$

Income is said to vary in a way that can be predicted over somebody's lifetime. Consumption smoothing over someone's lifetime is done by borrowing and saving. In 1957, Milton Friedman gave the Permanent Income Hypothesis (PIH). This says that individual persons experience both transitory and permanent changes in their incomes. They can borrow or save to smooth their consumptions whether expected or not.

$$C = C^P + C^T \text{ .... } (3)$$

$$Y = Y^P + Y^T \text{ .... } (4)$$

Permanent income (Y^P) is the expected income while permanent consumption (C^P) is the planned consumption as well as a constant proportion of the permanent income . The income that is not expected is transitory (Y^T) while consumption that someone does not plan for is transitory (C^T). There is no relationship between transitory and permanent consumption as well as between transitory and permanent income. The association between transitory consumption and transitory income is also zero. What determines consumption, according to this hypothsis is permanent income. The LCH and the PIH assumed that households live finitely and infinitely, respectively. The Diamond Overlapping-Generations (OGs) and Ramsey Cass Koopmans (RCK) models of growth built their consumption models taking a clue from the LCH and PIH, respectively (see Diamond, 1965; Weil, 2008 and Romer, 2011). However, the RCK model has both finite and infinite horizons analysis (see Romer, 2011).

Besides, Robert Hall came up with the Random-Walk Hypothesis in 1978. He said that fluctuations in consumption over time cannot be predicted if the Permanent Income Hypothesis is true and given the assumption of rational expectations about future income. Mainwhile, David Laibson in his Pull of Instant Gratifification Hypothesis in 1997, submitted that people end up saving less than they desire because of their option for more consumption today so as to satisfy their immediate want. This hypothesis has argued that psychology effect is also critical in analyzing what determines consumption (see Laibson, 1997 and Chamberlin and Yueh, 2006). Laibson had continued to work on his hypothesis in 2000, 2004, 2011 and the latest edition published in 2013 in conjunction with Christopher Harris (see Harris and Laibson, 2013). This edition was coined as the "instantaneous gratification model" which works with general utility functions under both perfect and imperfect markets. Besides, government can use the model to make linear and non-linear rules in the long-run. Another interesting thing about the model is that it also yields a unique equilibrium even under the assumption that the households live endlessly. As a result, a range of problems relating to models that are dynamically unpredictable or inconsistent are solved. This model, apart from giving one yardstick of analysing welfare, it also reinstates the initial submission that people tend to behave in a way that they overconsume.

Arising from the theories of consumption, there are many consumption drivers. A number of the factors include current disposable income; interest rate; future income; wealth or total assets; urbanization drive; rational expectation of the consumer; permanent income and proportion of the aged people in the total population; retirees and unemployed persons in the population. Others include proportion of the employed persons in the population; varieties of new consumer goods and services; past peak income; consumption pattern of friends, colleagues, associates or other persons known or encountered or seen; uncertainty, precautionary saving, financial market constraints, financial market deregulation and psychological factors. On the empirical scene, some of the variables that have been used include total wealth, financial wealth, real interest rate, housing wealth, nominal interest rate, inflation-adjusted income, relative price of non-durables/ durables, withdrawal, mortgage equity, long-term interest rates and demographic factors. Building expectations into the consumption model have included exchange rate (by forward looking or learning approach), wages, prices, stock prices, adaptive or implicit approaches.

Modeling the multivariate consumption function is problematic and an issue of ideology based on econometric knowledge. Private consumption and disposable income as highlighted in Keynes' analysis is a settled matter. However, several empirics have shown that consumption is not largely dependent on disposable income. As earlier enunciated, the RIP's argument of influence of consumption pattern of people in ones group has also been set aside or outdated. Arising from PIH, salaries and wages, contributed pension and gratuity, and profits are some examples of permanent incomes while bonuses, bursaries, gifts and grants are transitory incomes. Permanent consumption is the normal consumption expenditure. Expenditures such as unexpected car repair expenses, temporary college tuition expenses and unexpected medical bills are transitory consumption. In econometric modeling, permanent income can be defined as the magnitude of a fixed yearly income flow that would have equal present value as the (probable uneven) anticipated actual income flow (Parker, 2010). Therefore, to compute permanent income from a budget constraint, there must be a known future income path. Early researchers, with the aid of adaptive expectations model assumed that permanent income is obtainable from a function of current and past incomes that is both linear and stable (see Parker, 2010). The flaw of this technique that renders it undependable has to do with differentiating between known permanent and temporary incomes. The stochastic or disturbance term in a regression of consumption can be recognized as transitory consumption (Parker, 2010). Permanent income can also be expressed as wealth multiplied by real rate of interest (Parker, 2010).

Measuring expectation is also a problematic econometric issue. There are no definite and reliable data series on the expected values of macroeconomic variables in the future. At best, any expected value is based on probability after taken care of downside and upside risks. The expected variable can be true or untrue or close to truth or far from it. Its falsehood and truthfulness are functions of mastery and luck. Since 1970s, econometricians have moved from deterministic models to stochastic models in order to include rational expectations (Parker, 2010). One mathematical way of analyzing expectation is by developing a linear operator (see Romer, 2011). Since a quadratic consumption function will yield a linear marginal utility, expectation has, therefore been factored into the consumption function. The implication is that the principles of certainty equivalence is observed when quadratic utility functions are used, Certainty equivalence means that the same decision is made with maximizing expected utility that would have involved maximizing actual utility with certainty that the variables will change in a particular way in the future. Quadratic utility functions are prevalent in stochastic models since such models simply go with certainty equivalence (Parker, 2010). However, quadratic utility function is limited because of its bliss point making it an approximate of a true utility function. This is because in reality, marginal utility cannot be negative. Quadratic utility functions have parabola shape, which have a peak such that when consumption exceeds the peak value, marginal utility becomes negative. One option in solving this problem is by including bliss consumption in the quadratic utility function.

3. Methodology

To sum up the past and contemporary discussions on what make people to consume, current disposable income is often used as an underlying factor in consumption analysis. This enables economists to draw a two-quadrant graph of consumption-disposable income relationship while holding other consumption drivers constant. Therefore, drawing from the work of Keynes (1936) on consumption, most often, economists state consumption function in contemporary fashion as:

$$C = C_0 + C_1 Y_d \text{ .... (5)} \qquad [C_0 > 0;\ 0 \leq C_1 \leq 1]$$

Where in equation (1), C represents consumption; C_0 stands for consumption intercept otherwise or popularly known as autonomous consumption; C_1 is the slope of the consumption function, which is commonly referred to as induced consumption, and Y_d is the disposable income. The autonomous consumption is the consumption that does not depend on income. It is probably that someone dashed the consumer the money. Simply, he does not earn the income but he consumes. We do not consider a situation where people derive the income from unethical means. Although, the knowledge of ethics or philosophy underpins the genesis of economics as a body of knowledge, economics especially positive economics does not recognize ethics as such in the analysis of economic problems. Nevertheless, unethical activities are part of underground economic activities. In aggregating economic variables like consumption and saving, these activities are not considered.

In Africa, for example, where the underground economy is large, the gross domestic expenditure which private consumption is a component has been said to be under-estimated. This calls for legislations to reduce the size of the underground economy and their full implementations. On the other hand, induced consumption is that consumption that depends on income; hence it is the marginal propensity to consume. Given the fact that individuals must consume even when they do not earn income, the autonomous consumption will always be a positive value, although it has been found in the literature to be zero in the long run. The disposable income earned is shared between saving and consumption; hence the sum of changes in saving and consumption with respect to changes in income is always equal to 1. Supposing that there is a whole saving of disposable income (a rare or impossible case indeed in a whole economy). Consequently, the marginal propensity to consume (MPC) which is the ratio of change in consumption to change in disposable income will be zero and the marginal propensity to save (MPS) which is the ratio of change in saving to change in disposable income will be 1. The reverse holds for MPC and MPS when we consume all the disposable incomes. This is also a rare case in the whole economy. However, there are occasions where some people consume more than they save. Sometimes people do not even save any amount, they borrow or sell their assets to consume. This is the case of negative saving or dissaving. Economic theories on consumption have explained that whole saving or consumption of disposable income by masses is impossible. Therefore, MPC and MPS must always fall between zero and one.

In equation (5), the autonomous consumption is not zero because we do not assume a long-run situation. The autonomous consumption is a positive value as earlier stated. The induced consumption is between zero and one but most of the time greater than zero but less than one since people must save in the economy. In most developed economies, the induced consumption is high. This is because consumption levels are far ahead of saving. However, the use of C_0 and C_1 in equation (5) is arbitrary. In order to test the consumption- disposable income model, we employ the real per capita gross national income (RGNI per capita) obtained from the National Bureau of Statistics archives to represent disposable income since there is no distinctive data on Nigeria's disposable income from the Government agencies. Although, there are forecasts on the variable by some individual research bodies but the data seemed unreliable. We believe that RGNI per capita is a close proxy of disposable income since the latter comes from personal income, which is a derivation from GNI. In addition, both RGNI per capita and disposable income are policy-adjusted variables. Disposable income is tax-adjusted income (that is, fiscal policy-adjusted income) while RGNI per capita is inflation-adjusted income (that is, monetary policy-adjusted income). Data on private consumption is not a problem. We easily obtained it from the Central Bank of Nigeria Bulletin, 2014. The data employed covered the period, 1981-2012.

As an initial econometric step, we used the Dickey-Fuller Generalized Least Square (DF-GLS) approach to depict the nature of the two variables. Examining the stationarity of a variable is considered in a number of ways but the DF-GLS has been noted as one of the cutting-edge methods (see Ng & Perron, 2001; Elliott et al., 1996). Comparable to the Ng-Perron technique, DF-GLS checks no unit root at either difference stationary or trend stationary. The two shapes of DF-GLS are constant, and constant and linear trend. We state the test equations as:

$$\Delta Z_t = \eta_0 + \eta_1 Z_{t-1} + \sum_{i=1}^{n} \pi_i \Delta Z_{t-i} + \nu_t \qquad (6)$$

$$\Delta Z_t = \eta_0 + \eta_1 Z_{t-1} + \eta_1 t + \sum_{i=1}^{n} \pi_i \Delta Z_{t-i} + \nu_t \qquad (7)$$

$$H_0: \quad \eta_1 = 0 \qquad H_1: \quad \eta_1 < 0$$

From equations (6) and (7), Z_t stands for the time series variables and ν_t represents time and residual. Equation (6) is the test model with constant only while equation (7) is for constant and linear trend. Engle & Granger (1987) gave a cointegration method that comprises two steps for a uni-variate model. The first step is to estimate the long-run equation, which implies the equilibrium equation. We state such an equation for our model in equation (8)

$$C_t = \beta_0 + \beta_1 Y_t + u_t \text{ ...... } (8)$$

The notation of C_t remains the current consumption; Y_t is income; β_0 and β_1 are the consumption intercepts while u_t commonly known as the stochastic term represents other omitted variables.

The estimated residuals of the ordinary least squares (OLS) from equation (8), which is $\hat{u}_t = C_t - \hat{\beta}_0 - \hat{\beta}_1 Y_t$ are a gauge of disequilibrium. To test for cointegration, the $\hat{u}_t$ is tested for stationarity. If it is stationary or has no unit root, there is cointegration but if it is not stationary, there is no cointegration. Where cointegration exists, an error correction mechanism (ECM), which is the second step of the Engle-Granger procedure, is done. This measures the speed of adjustment towards long-run or extent to which deviation from long-run is corrected in the short-run.

In a situation where the variables are I(1) but not cointegrated, an ECM procedure cannot be pursued. A vector autoregressive (VAR) involving first difference of the variables is appropriate (see Salisu, 2015). We state as follows in equation (9), a ρ^{th} order vector autoregression with exogenous variables x.

$$y_t = C_0 + A_1 y_{t-1} + \text{........} + A_\rho y_{t-\rho} + B_0 x_t + B_1 x_{t-1} + \text{..........} + B_s x_{t-s} + u_t \text{ .... } (9)$$

In equation (9), C_0 is as earlier defined just as y_t and x. The notation $A_1 \text{.......} A_\rho$ stand for the coefficients of the autoregression involving lag one to ρ while $B_0 \text{........} B_S$ denote the coefficients of the distributed lag from one to s.

4. Findings

The results in table 1 shows that the variables are integrated of order 1. This means that we reject the assumption or null hypothesis of unit root or non-stationarity after first difference of the variables. In essence, the variables are stationary after first difference. This is for both consumption models with intercept or constant as well as with constant and linear trend.

Table 1: Dickey Fuller (DF)-GLS Unit Root Test

Variable	T-Statistics	1%	5%	Order of Integration
ΔPrivate Consumption[a]	-2.67**	-2.64	-1.95	I(1)
ΔPrivate Consumption[b]	-3.23*	-3.77	-3.19	
ΔIncome[a]	-2.59*	-2.64	-1.95	I(1)
ΔIncome[b]	-6.92**	-3.77	-3.19	

Notes: [a] stands for constant model and [b] denotes constant and linear trend model. Δ indicates that the variables are in their first difference. The asymptotic critical values of Dickey Fuller GLS unit root tests are in their respective levels of significance. ** (*) signifies the rejection of the null hypothesis at 1 % (5%) significance level. We approximated all the values to two decimal places.
Source: Authors' Computation

We conducted a first difference of the variables because they are not stationary at level. Running a regression involving the variables at level or raw state of the data will amount to obtaining a spurious or nonsense regression. This error is costly in regression analysis because spurious models are not desirable. Therefore, with the result that the variables become stationary after first difference, our estimated consumption model becomes desirable. The DF-GLS residual (-1) for the constant model for consumption, constant and linear trend model for consumption, constant model for income and constant and linear trend model for income are all negatives which are -0.78, -1.06, -0.63 and -1.25, in that order, which means that these models for which stationarity of each variable is based are viable. The study proceeds to test whether consumption and income have a cointegrating or long-run or equilibrium relationship using the Engle-Granger two stage approach. We presented the results in Table 2. There is no cointegration of the variables because the residual has a unit root. This is so because the t-statistic value of -2.13 in absolute term is less than the Engle-Granger critical value of -3.46 in absolute, for constant model at 5% significance level (see Enders, 2012). Therefore, we cannot pursue an error correction mechanism.

Table 2: Engle and Granger Two-Stage Cointegration Test

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.13	0.24
Test critical values:	1% level	-3.68	
	5% level	-2.97	
	10% level	-2.62	

*MacKinnon (1996) one-sided p-values.
Source: Authors' computation

The result of the Vector autoregression-in-first difference is in Table 3. The effect of first lag of income on consumption is correctly signed, though infinitesimal and insignificant. On the other hand, the effect of second lag of income on consumption is negative and a-theoretic but significant at 10% level. Immediate past year and last two years consumption exhibit significant impact on current consumption at 10% and 5%, respectively.

Table 3: Vector Autoregression-in-First Difference

Variables	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	-0.342337	0.190960	-1.792712	0.0793
C(2)	0.393287	0.194158	2.025600	0.0484
C(3)	0.000412	0.000442	0.932097	0.3560
C(4)	-0.000770	0.000430	-1.790108	0.0797
C(5)	9.644677	7.654333	1.260028	0.2138
C(6)	90.10232	86.92103	1.036600	0.3051
C(7)	24.94558	88.37671	0.282264	0.7790
C(8)	-0.007908	0.201002	-0.039345	0.9688
C(9)	0.229187	0.195731	1.170929	0.2474
C(10)	2641.739	3484.091	0.758229	0.4520
Determinant residual covariance		2.81E+11		
Equation: COND1 = C(1)*COND1(-1) + C(2)*COND1(-2) + C(3)*YD1(-1) + C(4)*YD1(-2) + C(5)				
Observations: 29				
R-squared	0.562535	Mean dependent var		8.484481
Adjusted R-squared	0.489625	S.D. dependent var		53.97695
S.E. of regression	38.56143	Sum squared resid		35687.62
Durbin-Watson stat	1.853966			
Equation: YD1 = C(6)*COND1(-1) + C(7)*COND1(-2) + C(8)*YD1(-1) + C(9) *YD1(-2) + C(10)				
Observations: 29				
R-squared	0.143781	Mean dependent var		4346.643
Adjusted R-squared	0.001077	S.D. dependent var		17561.81
S.E. of regression	17552.35	Sum squared resid		7.39E+09
Durbin-Watson stat	2.212408			

Source: Authors' Computation

In order to test the joint significant of consumption at first and second lag as well as income at first and second lag on consumption, the Wald test is used. The results are, respectively, in Tables 4 and 5. The Chi-square p-value of zero in Table 4 shows that the past consumption levels are significant in explaining consumption levels in Nigeria at 1% and 5% levels.

Table 4: Wald Test on Joint Significance of Consumption Lags on Current Consumption

System: %system

Test Statistic	Value	Df	Probability
Chi-square	21.97447	2	0.0000
Null Hypothesis: c(1)=c(2)=0			
Null Hypothesis Summary:			
Normalized Restriction (= 0)		Value	Std. Err.
C(1)		-0.342337	0.190960
C(2)		0.393287	0.194158

Restrictions are linear in coefficients.
Source: Authors' Computation

Table 5 reveals that income at first and second lags are not jointly significant in explaining the changes in the consumption level in Nigeria. This means that other factors other than income may be pertinent in determining what majorly influence people's consumption in the country. This finding is contrary to the results many empirical studies in the past that recognize the potent role of the influence of income in determining consumption (see Keynes, 1936; Chamberlin and Yueh, 2006; Parker, 2010; Amin, 2015). One explanation to our result is that the culture of interdependence remains strong in Nigeria. The income of an individual can be shared with those of have-nots in his family. As a result, his income may not strongly determine his consumption level.

Table 5: Wald Test on Joint Significance of Income Lags on Current Consumption

System: %system			
Test Statistic	**Value**	**Df**	**Probability**
Chi-square	4.249563	2	0.1195
Null Hypothesis: C(3)=C(4)=0			
Null Hypothesis Summary:			
Normalized Restriction (= 0)		Value	Std. Err.
C(3)		0.000412	0.000442
C(4)		-0.000770	0.000430
Restrictions are linear in coefficients.			

Source: Authors' Computation

5. Conclusion

This study gave a synthesis on the major theroretical and empirical issues on consumption as relates to its meaning, funtion, theories and determinants. Starting from the Absoulte Income Hypothesis (AIH) propounded by the father of macroeconomics, Maynard Keynes in 1936 to David Laibson's Pull of Instant Gratifification Hypothesis (PIGH) published in 1997 and the latest edition published in 2013 in conjunction with Christopher Harris, consumption function remains a multivariate concept. Therefore, macroeconomists are faced with the problem of which variable to select when analyzing factors determining consumption. There are also econometric challenges as to how effective and reliable to measure some of the theoretical variables like permanent income, permanent consumption, transitory income, transitory consumption, rational expectation and psychological factors. However, econometricians have made much success than failure on the problem. Due to the fact that the AIH and Relative Income Hypothesis (RIH) are not forward looking about how to smooth consumption and the fact that interdependent utility function suggested by the RIHhas methodological problem, both hypotheses have been abandoned. Nevertheless, any consumption function build-up even up to the contemporay time often takes its root from the AIH where disposable income is a foundational determinant of consumption. Our test of the general consumption function shows that income's effect on consumption in Nigeria may be negligible and its two lags combined may be insignificant. Rather, previous consumption may be significant in influencing current consumption in the country. By implication, this may suggest that Nigerian government would be expected at any time to gauge its present economic indices(for example, changing components of the aggregate demand) with those of previous years than putting blame on previous governments. This is because consumption is the largest component of aggregate demand in Nigeria. There is nothing new about government actions, for instance in the area of debt accumulation, being strategic and trying to play a ponzi game with the masses. What is important for every government is to deliever on its election promises.

One implication of the PIH and LCH is that people do not respond to policy favourably when they know that the changes in the policy is temporary. For instance, if a government fixes income tax surcharge to say 10 percent because of high inflation in the economy so as to reduce aggregate demand as a temporary measure, people may use part of their savings to maintain their previous consumption or reduce it slightly. Experiences have shown that consumption only falls a little and inflation either increases or remains unchanged or reduces slightly. This means that government would have overestimated the expected deflation from the tax policy. Permanent policies have more impacts on the economy than the temporary ones. It suffices that government must indicate whether its policy is permanent and where it is temporary and not harsh, government may choose to be silent. Where the policy is very harsh and temporary, it will be better if government choose not to be silent. However, the fact remains that government cannot fool all its citizens through its policies. Governments must always be credible with its policies to raise the belief of the public thereby making itspolicies more effective. This study has reinforced the abandonement of the PIH on the ground of weak explanatory power of income in explaining consumption. Since the extent of private consumption in a country can throw some lights on welfare of a citizen, it can be suggested that increase in a country's income as well as those of its citizens are not the altimate for gauging welfare.

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Work Intensification: A Stumbling Block to Work Life Balance?

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Abstract: Of recent, studies on work intensification have surfaced in many sectors of the work environment and, with work-life balance being triggered by numerous variables. Employees are working harder and faster to meet tight deadlines and the speed of work has escalated resulting in a negative association with their health. The study aims to assess whether work intensification hinders work-life balance and affects employees' daily tasks. A quantitative approach was selected for the study and, both descriptive and inferential statistics were utilized. Hypotheses testing were part of the study and most were partially accepted. The simple random sample was chosen and a sample of 100 employees was drawn. Data were collected using a self-developed questionnaire. The results showed that work intensification and work-life balance occurred at varying degrees and improvements were required in several areas. The adverse results of work intensification and high-involvement work processes have a tremendous impact on the employees' work-life balance. The study culminates with a projection on recommendations, conclusion and, practical implications are reflected upon based on the study.

Keywords: *Work intensification, work intensity, work demands, work-life balance, working conditions*

1. Introduction

Today's organizations strive to change their work patterns to align with the changing world of work and to meet both strategic goals and competitive challenges. These pressures intensify the demand for employees' performance optimization. Intense work pressures, cost factors and, work intensification has affected the psychological well-being of employees and; meeting deadlines, long work hours, working at a faster pace and technological changes, amongst others, are often the underlying causes of work intensification. Work life balance, a core component for quality of life, balances the demands of a person's work and family responsibilities. In line with this, jobs are placing value on knowledge than physical skill (O'Connor, 2005) and employees' work demands have become more mental than physical (Naswall, Hellgren & Sverke, 2008). During the 1990's, work intensification was an important feature of the European labour markets (Burchell, Lapido & Wilkinson, 2002; Green, 2001; Green & McIntosh, 2001). Studies on labour intensive industries and high performance work systems have contributed to work intensification. Work intensification is the pace needed in a job (intensive work intensification) or the number of hours required in a job (extensive work intensification) (Green, 2001). It is also associated with employee stress, reduced job satisfaction, workplace injuries and employee health, amongst others (Burchell et al., 2002). According to Green (2004), limited research on work intensification is because of the scarcity of usable measures of work effort and, the origins of work intensification are beginning to accumulate (Green, 2004). Work effort involves employees' physical and/or mental input with work task performance (Burchell et al., 2002). Information technology too has contributed to information overload, including a faster pace of working (Sparks, Faragher & Cooper, 2001) with technological advancements affecting manual labour (Naswall et al., 2008). Today, work intensification is evident with office-based employees too.

The social aspect with work and family is linked to changes in the nature of employment (Crompton, 2006) and, the transition to the new economy has resulted in shifting boundaries between work and home (James, 2011).Work-life balance safeguards a well-functioning interaction between the life roles and, achieving an acceptable balance is subjective to perceptions which is conducive to peoples' circumstances (Nitzsche, Pfaff, Jung & Driller, 2013). Of recent, organizations are becoming more flexible as the attention with work-life balance is on the equilibrium in both roles with emphasis on the level of involvement, amount of time and individual satisfaction (Voydanoff, 2007) and, require constant negotiation between role demands as employees strive for financial security. Organizational assistance provides training and support to employees to cope with work-related and non-work related demands such as, parental training and childcare facilities (de Klerk & Mostert, 2010). The aim is to have a win-win solution for organizations and employees. A balance in quality of work life brings about organisational productivity and with employees being satisfied with their personal needs.

The study is important for many reasons. Firstly, the aim is to show that the study can be conducted in organizations other than labour intensive ones. Secondly, organizations strive to fuel their growth objectives by investigating factors that contribute to work intensification, taking corrective actions to rectify this; and instituting programmes to balance employees' work and personal domains and to enhance employees' overall well-being by creating a less intense work environment. In this way, companies can be productive and adapt to the requirements of a global nature. The paper aims to investigate whether work intensification is a stumbling block on work-life balance in a public sector organization. The key variables for work intensification (organizational and technological change, work intensity and ergonomic factors, work-related stress and psychological factors, volume of workload and job insecurity) and for work-life balance (work-family conflict, work flexibility, managerial/supervisory support, child/elderly care and employee wellness) will be explored in the study.

2. Literature Review

Organizational change: In today's work environment, one cannot obliterate the brutal recessionary period and, organizational changes have been driven by changing legislation, globalization and technological changes. Organizations have a radically transformed workforce that is diverse, highly global, virtual and empowered and; decision-making is decentralized, establishing more fluid and flatter organizational structures (Tucker, Kao, & Verma, 2005). In the lower hierarchical structures, workers take decisions instead of managers (Tucker et al., 2005). The volatile market compels organizations to align the demand and supply of labour by employing strategies (Burchell et al., 2002), firstly, to build a workforce with both core (permanent) workers and peripheral temps and then to attempt to vary the length and intensity of the hours employees worked (temporal flexibility) (Burchell et al., 2002). Functional flexibility has become more prevalent (Burchell et al., 2002), whereby the labour force shows versatility in taking many and differing work tasks due to circumstances (Atkinson, 1984 cited in Allvin, Aronsson, Hagström, Johansson & Lundberg, 2011).

Technological change: Technological change creates market expansion, competition, better quality of products and services, including new decision-making processes in a knowledge-based economy. Hence, a need exists for new managerial styles on control and the management of processes. Globally situated companies have promoted an electronic mail (e-mail) culture which has consequences for employees (Waller & Ragsdell, 2012) and, creates stress due to e-mail-related pressure (Hair, Renaud & Ramsay, 2007 cited in Waller & Ragsdell, 2012). The advantages of e-mail are cost savings, speed, storing and processing information, locational flexibility and increased access to new people, amongst others (Waller & Ragsdell, 2012); whereas the disadvantages include lack of confidentiality with message interception, and system and information overload (Waller & Ragsdell, 2012). So, employees work faster, do more and others may engross themselves into their work and/or technology as their only priority (Porter & Kakabadse, 2006) The theory of flow perspective shows that a person's mindset facilitated by information technology leads to intense involvement in an activity that nothing else seems to matter (Porter & Kakabadse, 2006).

Work intensity and ergonomic factors*:* The impact of work intensity on employee well-being which impacts on families, co-workers, and the organisation has the potential to disrupt the efficient functioning of business and threaten the organisation's financial viability (Burke et al., 2010). Managerial control strategies include the redesign of job tasks and the implementation of new control technologies to increase the pace of work and performance quality (Beynan, Grimshaw, Rubery & Ward, 2002 cited in Burchielli, Pearson & Thanacoody, 2006). Burke, Singh and Fiksenbaum (2010) projects on internal personal factors and external environmental factors that drive work intensity. Ergonomics which is associated with safety, well-being and performance optimizes employees' working conditions (Down, 2001). Thus, their emotional well-being and physical activity need a supporting work climate (May, Reed, Schwoerer, & Potter, 2004). Health problems and occupational disorders relate to long working hours of sitting (Alnaser & Wughalter, 2009) and, ergonomics optimizes the interaction between employees' and their working environment (Pile, 2001), including the interaction between people and the work system as in the positioning of computer equipment which affects posture and eye fatigue (Down, 2001).Of recent, the concept of dynamic sitting in the development of office chairs has been encouraged (Dainoff, 2007) as ergonomic chairs accommodate several adjustable features (Alnaser & Wughalter, 2009).

Work-related stress and psychological factors: Stress is characterized by the sources of workplace stress, an employee's perceptions and appraisals of a particular stressor and; with threatening stressors, the emotional aspect is reaction evoked (Rothmann, 2008). Job related stress stems from work-related factors (van Zyl,van Eeden, & Rothmann, 2013) and; stress takes the form of being debilitative or facilitative (Barrett & Campos, 1991 cited in Walinga & Rowe, 2013). Van Zyl et al. (2013) cite decreased productivity, changes in work attitudes, low morale and increased absenteeism, as the symptoms of stressed employees. Stressors are linked with work circumstances, including a person's characteristics, resources and the social environment (Baba, Jamal & Tourigny, 1998 cited in Pasca & Wagner, 2011). Work intensification is theorized according to a stressor-stress-strain framework, whereby the intensification of work is conceptualized as the stressor leading to stress, resulting in psychological, behavioral or physiological strains (Burchell et al., 2002). Burnout which develops with high work stress levels influences individual job performance negatively (Huang, Du, Chen, & Huang, 2011) and is characterized by emotional exhaustion, increased mental distance from one's job (cynicism), and reduced professional work efficacy (Nitzsche et al., 2013).

Volume of workload: High workloads which are negatively associated with job satisfaction have a positive association with job-related anxiety, exhaustion and work-related depression (Burchell et al., 2002). Sonnentag and Bayer (2005) emphasize two specific workload types that are, chronic workload and day specific workload in a work environment. Workload is detrimental to quality of work life (Sue Ling, Chang & Lien Yin, 2012) and, the outcomes of workload manifests in physical and psychological health. With a reduction in irregular working and multi-tasking the resultant effect is reduced performance (Subramanyam et al., 2013). The psychological stressors of having to work fast, having conflicting demands and the amount of physical labour used is perceptual workload. With an imbalance between worker demands and abilities, the higher the level of stress (Rehman, Haq, Jam, Ali & Hijazi, 2010). This imbalance is a poor fit between the work environment and the ability to tackle work situations due to excessive demands or the individual not being fully prepared to handle the situation (Rehman et al., 2010).

Job insecurity: Job insecurity, which contributes to feelings of helplessness (De Witte, 2005) is defined as the perceived threat of job loss and concern related to that threat (Sverke, Hellgren, Näswall, Chirumbolo, De Witte & Goslinga, 2004).The antecedents of job insecurity are divided into variables on a macro level, for example region; individual characteristics, for example, age and occupational level; and personality traits (de Witte, 2005). Job insecurity and the concern about job loss (van Zyl et al., 2013) is viewed in the context of change and is the phase preceding unemployment (Van Wyk & Pienaar, 2008). With quantitative job insecurity, the worry is about losing the job itself, whereas qualitative job insecurity relates to losing important features of the job, such as, a decline in working conditions or a lack of career opportunities (Sverke & Hellgren, 2002 cited in Dachapalli & Parumasur, 2012). Prolonged job insecurity is detrimental to the workers psychological well-being and concern is about the trauma of future job loss (Burchell et al., 2002).

Work-family conflict: Family friendly organizational arrangements, such as, flexible working hours and childcare arrangement, amongst others (Allvin et al., 2011) accommodates work and family demands. People face high demands in life spheres (Allvin et al., 2011) and working longer hours results in a more aggravated work-family conflict (Matthews, Swody & Barnes-Farrell, 2012). Conflict is evident when work demands exceed resources contributing to a state of disequilibrium with work and home domains, resulting in psychological, emotional and physical strain (McNamara, Pitt-Catsouphes, Matz-Costa, Brown & Valcour, 2013). The more hours an individual works, the less satisfaction there is with work-family balance (McNamara et al., 2013). Longer working hours increases the negative spillover from the work environment to the home (Dillworth, 2004; Kinnunen, Geurts & Mauno, 2004 cited in Forma, 2009).

Work flexibility*:* Increased flexibility in the labour market has become a necessity (Goulding & Kerslake, 1996) and, changes in the work environment impacts on occupational stress levels (Webber, Sarris & Bessell, 2010). According to Naswall et al. (2008), the conditions of work have become boundaryless, implying a deregulation or re-regulation. The increased flexibility of when and where work can be performed bares the risk of embarking on home life and creates an imbalance between work and non-work roles (Naswall et al., 2008). Work obligations shift from a company's authoritative rules to the individual and increases the responsibility for the work performed (Naswall et al., 2008). High job flexibility allows for work-life interaction and a state of balance, whereas low job flexibility limits this and creates conflict and imbalance (Webber et al., 2010). Additionally, the value of flexibility has the potential to diminish the benefits of flexibility (Lawton, 2010). Flexible working arrangements can have low rates of utilization due to employee fear on the adverse effects on their careers (McNamara et al., 2013). Yet, Hannabuss (1998) argues that flexible working patterns are advantageous for employers than employees.

Managerial/supervisory support: Helpful supervisors can have a positive effect on work-life balance (Singh, 2013) by reducing the negative spill-over from the work to the personal domain, and hence decrease work-life conflict (Chan, 2009 cited in Singh, 2013). Therefore, their support is linked with diminished work-life conflict (Anderson, Coffey & Byerly, 2002; Hammer, Kossek, Zimmerman & Daniels, 2007 cited in Lauzun, Morganson, Major & Green, 2010) and, can be more effective than formal organizational policies that provide work-family support in understanding the variances in the affective, intentional and behavioral outcomes in employees (Behson, 2005). They create an environment that encourages balance (Lauzun et al., 2010) and, provide emotional support (caring and empathic understanding) including a flexible work schedule (Lauzun et al., 2010). Their support relates to resources and to solve work-related problems and express concern for employees non-work-related problems (Tayfur & Arslan, 2013).

Child/elderly care: With childcare assistance, there are benefits with improved retention, increased performance and productivity (Babu & Raj, 2013).Mothers are more likely to be at home with a sick child (Northcott, 1983 cited in Babu & Raj, 2013) and are often absent from work. Caring for elderly dependents requires the satisfaction of demands that are based on the needs of the care recipient (Gordon, Pruchno, Wilson-Genderson, Murphy & Rose, 2012). Women with elder care responsibilities report lower job security, receive lower levels of supervisory support, including reduced access to flexible working arrangements (Gordon et al., 2012). Organizational assistance in this regard helps employees to cope with their family circumstances (Anderson et al., 2002).

Employee wellness: Employee Assistance Programs (EAPs) provide assistance and information on personal matters (family and health) and work matters (work demands and work-life balance) that influence employee performance and well-being (Kinder et al., 2008). EAPs identifies employee concerns and designs interventions for this, and other services include counseling, financial support, child and eldercare services and health information (Kinder et al., 2008). Problems that are addressed across an entire spectrum makes for a happier and healthier employee (Pallarito, 2006). Integrated programs provide employees with a single point of contact to access services and coordinate the provision of services relating to employee wellness and work-life balance (Pallarito, 2006). Today, employers have shifted focus to the strategic value of promoting work-life balance, considering the impact it has on employee engagement and overall organisational performance (Lazar, Osoian, & Ratiu, 2010).

Aim of the study: The aim of the study is to assess whether work intensification is a stumbling block to work-life balance in a public sector organization. The constructs for work intensification (organizational and technological change, work intensity and ergonomic factors, work-related stress and psychological factors, volume of workload and job insecurity) and for work-life balance (work-family conflict, work flexibility, managerial/supervisory support, child/elderly care and employee wellness) were explored.

3. Methodology

Research approach: The research methodology has been designed to assess employee perceptions on whether work intensification is a stumbling block to work-life balance in a public sector organization.

Respondents: The study was undertaken in a public sector organization, in KwaZulu-Natal, South Africa. Respondents were office-level employees and, the sample comprised of both male and female respondents of varying age, marital and race groups, with varying educational qualifications and years of service. Due to questionnaire apathy, the adequacy of the sample for work-life balance was determined using the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (0.573) and the Bartlet's Test of Spherecity (965.610, p = 0.000). Similarly, the adequacy of the sample for work intensification was also determined using the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (0.626) and the Bartlet's Test of Spherecity (978.130, p = 0.000). The questionnaire was self-developed and a simple random sampling method was utilized. The majority of the sample comprised of 54% female employees, with 46% being male and 15% were managers, 18% were supervisors, 65% were employees and 2% constituted nil responses. In terms of age, 13.% were under 25 years of age, 39% were between 25-34 years, 31% were between 35-44 years, and 17.0% were 45 years and above. In terms of race 8% were Coloured employees, 11% were White, 24% were Indian and 57% were African in this organization. In addition, 13% of employees had a standard 8-10 qualification, 37% had a Diploma certificate, 18% had undergraduate degrees, 29.05 had post-graduate degrees, 2% had Post-graduate Diploma/Certificate and there were no responses from 1% of the employees. In addition, 43% were 0-5 years in the organization, 18% were 6.10 years, 18% were 11-15 years, 9% were 16-20 years and 11% were 21 years. With regard to the number of children, 28% had one child, 22% had two children, 12% had three children, 2% had four children and over and lastly 36% had no children. In addition, 56% were single in this organization, 35% were married, 6% were divorced and 3% were widowed.

Measuring instrument: A self-developed questionnaire was utilized. Section A constitutes the demographic data which is measured using a nominal scale with pre-coded option categories. The items for Section B consist of 55, of which 30 items related to work intensification and; 25 items related to work-life balance. Items were measured using a 5-point Likert scale constituting strongly disagree (1), disagree (2), neutral (3), agree (4) and strongly agree (5). Pilot testing were conducted and the same protocol was adopted for the distribution of the main sample. The pilot testing confirmed that the questionnaire was appropriate with relevance and construction.

Measures: The validity of Section B was assessed using Factor Analysis. A principal component analysis was used to extract initial factors and an iterated principal factor analysis was performed using SPSS with an Orthogonal Varimax Rotation. Only items with loadings >0.4 were considered to be significant. Factors with latent roots greater than unity were extracted from the factor loading matrix. The results from the Factor Analysis confirm the validity of the instrument (Table 1).

Table 1: Factor Analysis - Validity of the instrument

Work-life balance			**Work intensification**		
Factor	**Eigenvalue**	**% of Total Variance**	**Factor**	**Eigenvalue**	**% of Total Variance**
1	3.34	13.35	1	3.84	12.39
2	3.04	12.18	2	2.62	8.46
3	2.83	11.30	3	2.33	7.50
4	2.14	8.56	4	2.27	7.33
5	2.08	8.33	5	2.17	6.99
			6	2.80	6.71

The reliability of the questionnaire was determined using Cronbach's Coefficient Alpha. The overall alpha coefficient for work intensification was 0.616 indicating internal consistency and reliability. The overall alpha coefficient for work-life balance was 0.590, also showing internal consistency and reliability (Table 2).

Table 2: Reliability - Work Intensification and Work-life Balance

Work Intensification	**Work-life Balance**
Cronbach's Coefficient Alpha	Cronbach's Coefficient Alpha
0.616	0.590

Administration of the measuring instrument: The time frame was three months for the administration of the questionnaires which was conducted by an employee of the organization. Electronic and hard copies were utilized.

Statistical analysis: Descriptive and inferential statistics were utilized for the analysis of the quantitative data. The data collected was captured on Excel and the Statistical Package for Social Sciences (SPSS) was used to perform all statistical analyses. The results were presented using tabular and graphical representations.

4. Results

Employees were expected to respond to the constructs relating to work intensification and work-life balance using a 5 point Likert scale, which were analysed using descriptive statistics (Table 3).

Table 3: Descriptive Statistics-Dimensions & Sub-dimensions of Work Intensification and Work-life Balance

Dimension	Mean	95% Confidence Interval Lower Bound	Upper Bound	Variance	Std. Dev.	Min.	Max.
Work Intensification							
Organizational Change	3.37	3.23	3.51	0.519	0.720	1.00	5.00
Technological Change	2.84	2.74	2.95	0.278	0.527	1.00	4.00
Ergonomic Factors	3.54	3.40	3.67	0.457	0.676	2.00	5.00
Work-related Stress & Psychological Factors	2.75	2.62	2.88	0.424	0.651	1.00	5.00
Volume of Workload	3.43	3.30	3.56	0.421	0.649	1.00	5.00
Job Insecurity	3.10	2.96	3.24	0.485	0.697	0	4.00
Work-life Balance							
Work-family Conflict	2.71	2.59	2.83	0.349	0.590	1.00	4.00
Work Flexibility	3.63	3.47	3.79	0.650	0.806	1.00	5.00
Managerial/ Supervisory Support	3.37	3.19	3.55	0.801	0.895	1.00	5.00
Child/Elderly Care	2.99	2.87	3.10	0.327	0.572	1.00	4.00
Employee Wellness	3.44	3.31	3.58	0.474	0.688	2.00	5.00

Table 3 indicates the varying degrees on work intensification, based on mean analysis. Against a maximum attainable score of 5, there is room for improvement for each dimension. Ergonomic factors, which are fairly high, require the least amount of improvement as opposed to work-related stress and psychological factors. Top managers need to ensure that ergonomics factors are addressed for employees' comfort. Employees cope with volume of workload, despite an increase. This can be assessed as employees work beyond the normal work hours. There is room for improvement with organizational change and; new reporting structures and prompt dissemination of information addresses such concerns. Technological change and work-related stress and psychological factors require the greatest attention. Training must accompany new technology and, by assessing the increased responsibility, stress levels can be minimized. In addition, with work-life balance factors, work flexibility, followed by employee wellness requires the least improvement in contrast to work-family conflict. The flexibility and freedom of choice over work arrangements contribute to reduced absenteeism and employee loyalty. An interactive wellness forum is advisable to share health-related information. Although managerial/supervisory support is moderate, a supportive work climate with emphasis on organizational culture and values are needed. Greater attention is required with child/elderly care and; the needs of working parents and those with care giving responsibilities must be considered. Workshops facilitated by professional coaches solve many problems with work-family conflict.

Frequency analyses were also computed for the sub-dimensions of the study. In this regard, 68% of employees agree that with changes, the content of their jobs have changed; whereas 22% disagree that as new staff join the organization, new reporting structures come into place. Also, 70% of employees agree that with technological change their work revolves heavily with computer work which involves prolonged periods of sitting; whereas 67% disagree those technological advancements have led to the demand for speedy responses with work matters. With work intensity and ergonomic factors, 76% agree that they make adjustments to their work space when performing their duties; whereas 19% disagree that staff feel free to address problems regarding ergonomically supportive work stations. With work-related stress and psychological factors, 63% agree that a certain level of work stress compels them to exert greater effort; whereas 57% disagree that an increase in responsibility leads to their stress levels. Also, 81% agree that they are able to cope with work even if their workload volume increases; and 60% disagree that there are times when the quantity of their workload compels them to work beyond the normal work hours. In addition, 63% of employees agree that they are willing to accept a job change so that their financial security is intact; whereas 34% disagree that with job insecurity their overall well-being is negatively affected. With regard to work-family conflict, 55% agree that there are days when employees experience work-family conflict which affects their quality of life. Furthermore, 69% disagree that they are constantly trying to avoid conflict with their work and personal life. In addition, 77% agree that flexible work helps employees to balance work with family life, effectively and; only 7% disagree that a compressed work week can help employees to achieve a better work-life balance. With managerial/supervisory support, 61% agree that supervisors strive to ensure that staff performs optimally. On the contrary, 17% disagree that supervisors consider flexibility when considering home activities. In addition, 63% of employees agree that employee wellness is a top organizational priority; whereas 21% disagree that staff are given the chance to partake in decision-making with employee wellness.

Hypothesis 1: There exists significant inter-correlations amongst the sub-dimensions of work intensification (organizational and technological change, work intensity and ergonomic factors, work-related stress and psychological factors, volume of workload and job insecurity), respectively.

Table 4: Intercorrelations: sub-dimensions of Work Intensification

Dimension		Organizational change	Technological change	Work intensity and ergonomic factors	Work related stress and psychological factors	Volume of workload	Job Insecurity
Organizational change	r	1					
	p						
Technological change	r	-0.083	1				
	p	0.414					
Work intensity and ergonomic factors	r	0.212*	-0.178	1			
	p	0.034	0.076				
Work related stress and psychological factors	r	-0.097	0.380**	0.029	1		
	p	0.336	0.000	0.771			
Volume of workload	r	0.057	0.123	0.296**	0.336**	1	
	p	0.576	0.223	0.003	0.001		
Job insecurity	r	0.051	0.318**	0.226*	0.127	0.219*	1
	p	0.616	0.001	0.024	0.209	0.029	

**p<0.01, *p<0.05

Table 4 reflects the inter-correlations with the sub-dimensions of work intensification:

- Organizational change correlates significantly but inversely with work intensity and ergonomic factors at the 5% level of significance. Technological change correlates significantly with work-related stress and job insecurity respectively at the 1% level of significance.
- Work intensity and ergonomic factors correlates significantly with volume of workload at the 1% level of significance. Work intensity and ergonomic factors correlate significantly with job insecurity at the 5% level of significance respectively.
- Work-related stress correlates significantly with volume of workload at the 1% level of significance.
- Volume of workload correlates significantly with job insecurity at the 5% level of significance.

Hence, hypothesis 1 may be partially accepted.

Hypothesis 2: There exists significant inter-correlations amongst the sub-dimensions of work-life balance (work-family conflict, work flexibility, managerial/supervisory support, child/elderly care and employee wellness), respectively.

Table 5: Inter-correlations: sub-dimensions of Work-life Balance

Work-life balance		Work-family conflict	Work Flexibility	Managerial/ Supervisory support	Child/Elderly Care	Employee Wellness
Work-family	r	1				
conflict	p					
Work Flexibility	r	0.110	1			
	p	0.274				
Managerial/Super-	r	-0.034	-0.267**	1		
visory support	p	0.738	0.007			
Child/Elderly Care	r	-0.040	-0.023	0.232*	1	
	p	0.696	0.818	0.020		
Employee	r	-0.115	-0.103	0.209*	0.218*	1
Wellness	p	0.255	0.308	0.036	0.029	

Table 5 reflects the inter-correlations with the sub-dimensions of work-life balance:

- Work flexibility correlates inversely with managerial/supervisory support at the 1% level of significance.
- Managerial/supervisory support correlates with child/elderly care and, with employee wellness at the 5% level of significance, respectively.
- Child/elderly care correlates with employee wellness at the 5% level of significance.

Hence, hypothesis 2 may be partially accepted.

Hypothesis 3: The sub-dimensions of work intensification significantly inter-correlate with the sub-dimensions of work-life balance.

Table 6: Correlations: sub-dimensions of work intensification and work-life balance

Dimensions		Work-family conflict	Work Flexibility	Managerial/ Supervisory support	Child/Elderly Care	Employee Wellness
Organisational change	r	-0.061	0.018	0.197*	0.131	0.009
	p	0544	0.859	0.049	0.195	0.933
Technological change	r	0.368**	0.132	0.149	0.062	-0.155
	p	0.000	0.190	0.138	0.537	0.124
Work intensity and ergonomic factors	r	-0.254*	0.021	0.393**	0.181	0.087
	p	0.011	0.837	0.000	0.072	0.391
Work-related stress and psychological factors	r	0.533**	0.090	0.232*	0.331**	0.159
	p	0.000	0.372	0.020	0.001	0.115
Volume of work-load	r	0.062	0.264**	0.332**	0.025	0.174
	p	0.540	0.008	0.001	0.807	0.083
Job insecurity	r	-0.042	0.195	0.015	0.041	0.123
	p	0.678	0.052	0.886	0.686	0.224

Table 6 reflects the following correlations and hence, hypothesis 3 maybe partially accepted:

- Work-family conflict correlates with technological change and, with work-related stress and psychological factors at the 1% level of significance. Work-family conflict correlates inversely with work intensity and ergonomic factors at the 5% level of significance.
- Work flexibility correlates with volume of workload at the 1% level of significance.
- Managerial/supervisory support correlates with work intensity and ergonomic factors and, with volume of workload at the 1% level of significance. Managerial/supervisory support correlates with organizational change and work-related stress and psychological factors at the 5% level of significance.
- Child/elderly care correlates with work-related stress and psychological factors at the 1% level of significance.

Table 7: Correlation (Spearman's rho): Work Intensification and Work-life Balance

Dimension		r/p	Dimensions of Work-life Balance
Dimensions of Work Intensification	r	1	
	p		
Dimensions of Work-life Balance	r	0.399	1
	p	0.000**	

Table 7 reflects that there is a significant relationship between work intensification and work-life balance. Hence, hypothesis 3 is confirmed at the 1% level of significance.

Hypothesis 4: The dimensions and sub-dimensions of work intensification significantly account for the variance in determining employee perceptions of work intensification.

Table 8: Multiple Regression: The Effect of Work-life Balance Factors on Work Intensification

Model	**R**		**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	0.359ª		0.129	0.120	0.33504
2	0.423ᵇ		0.179	0.162	0.32697
	Unstandardized Coefficients		Standardized Coefficients		
Model	**B**	**Std. Error**	**Beta**	**t**	**P**
1 (Constant)	2.689	0.131		20.508	0.000
Managerial/Supervisory Support	0.143	0.038	0.359	3.804	0.000
2 (Constant)	2.233	0.205		11.201	0.000
Managerial/Supervisory Support	0.150	0.037	0.376	4.070	0.000
Work-family Conflict	0.136	0.056	0.224	2.428	0.017
Excluded Variables					
Employee Wellness	-0.016	-0.169	0.866	-0.017	0.939
Work Flexibility	0.129	1.337	0.184	0.135	0.905
Child/Elderly Care	0.160	1.686	0.095	0.170	0.926

Evidently 12% of the variance in work intensification (Table 8) is due to the effect of work-life balance factors. In addition, two sub-dimensions of work-life balance significantly account for the variance at the 5% level of significance, and these factors include managerial/supervisory support and, work-family conflict. The Beta values in Table 6 indicate that managerial/supervisory support (Beta=0.376) has a negligibly higher impact on work-life balance than work-family conflict (Beta= 0.224). Hence, hypothesis 4 is accepted. Caution is expressed with regards to the low R square value especially when used for the purpose of prediction.

Hypothesis 5: The dimensions and sub-dimensions of work life balance significantly account for the variance in determining work-life balance in this organization.

Table 9: Multiple Regression: The Effect of Work Intensification factors on Work-life Balance

Model	R		R Square	Adjusted R Square	Std. Error of the Estimate
1	0.514[a]		0.265	0.257	0.31839
2	0.543[b]		0.295	0.281	0.31330
	Unstandardized Coefficients		**Standardized Coefficients**		
Model	**B**	**Std. Error**	**Beta**	**t**	**p**
1 (Constant)	2.425	0.139		17.488	0.000
Work-related Stress & Psychological Factors	0.292	0.049	0.514	5.937	0.000
2 (Constant)	2.172	0.184		11.799	0.000
Work-related Stress & Psychological Factors	0.248	0.053	0.438	4.706	0.000
Volume of Workload	0.109	0.053	0.191	2.053	0.043
Excluded Variables					
Technological Change	0.046	0.490	0.626	0.050	0.841
Job Insecurity	-0.041	-0.473	0.638	-0.048	0.961
Work Intensity & Ergonomic Factors	0.096	1.067	0.289	0.108	0.902
Organizational Change	0.123	1.437	0.154	0.145	0.976

Table 9 indicates that 26% of the variance in work-life balance is due to the effect of work intensification factors. Furthermore, work-related stress and psychological factors and, volume of workload significantly account for the variance at the 5% level of significance. The Beta values indicate that work-related stress and psychological factors (Beta=0.438) has a considerably higher impact on work intensification than volume of workload (Beta= 0.191). Hence, hypothesis 5 is accepted. However, caution is shown with regards to the low R square value especially when used for the purpose of prediction.

5. Conclusion and Recommendations

It is recommended that with regard to w*ork intensity and ergonomic factors* the organization must consider employees' working capacity by accommodating their needs. By consulting an ergonomics committee many problems are solved especially with their valuable input in design principles. Down (2001) emphasizes that ergonomics optimizes employees' working conditions in terms of safety and performance. Furthermore, in order to reduce the *volume of workload* timeous workload reviews is needed for workload re-distribution. Workload is a source of mental stress that involves the intensity of job assignments (Shah, Jaffari, Aziz, Ejaz, Ul-Haq & Raza, 2011) and; workers are compelled to work harder and faster (Burchell et al., 2002). The prompt dissemination of information on *organizational change* must be practiced to create awareness and; strategic initiatives, such as training must be in place. Arrowsmith (2003) opines that the internationalization of competition coupled with merger and acquisition are amongst the major transformations occurring. With *job insecurity,* timeous communication on managers' assurance must be provided on employee status and the future existence of their jobs. Additionally, De Witte (2005) opines that job insecurity contributes to employees' helplessness. *Technological changes* necessitate the training of employees for a transition to new ways of working. It is recommended that work be re-allocated to reduce the burden of work intensification that comes with technological changes. Naswall et al. (2008) assert that new technology can also render jobs less labour-intensive.

Work-related stress and psychological factors are compelling factors that must be addressed to create the following: a comfortable work atmosphere; social support activities (team retreats) for stress reduction; self-assessments on stress levels to generate awareness and coping strategies; employee training to develop problem-solving and conflict management skills to reduce stress. When the relationship between employees and their environment exceeds their resources and jeopardizes their well-being, this is the psychological nature of stress (Burchell et al., 2002). It is recommended that managers institute *work flexibility* for a content workforce and for the freedom of choice over work arrangements to reduce absenteeism and; for results to be in line with financial performance and quality improvements. In line with this, Jang (2009) opines that employee perceptions on the flexibility of work schedules are enhanced with supervisors and supportive cultures. Voluntary support group sessions to stimulate open discussions, including an online interactive wellness forum must be instituted as a strategic initiative for *employee wellness.* Many employers are interested in health and productivity due to the added costs that come with employee illness, absenteeism, and costs with recruiting and retaining top talent (Mudge-Riley, McCarthy, & Persichetti, 2013). With *managerial/supervisory support* organizational values must be emphasized, including a work climate for collaboration and employee engagement. With supportive supervisors or managers it is less likely for employees to experience work-family conflict (Gordon et al., 2012).

A supportive work environment must be instituted to accommodate *child/elderly care* assistance with an on-site day care facility and; adopting a work climate to share workloads so that elderly care responsibilities is accommodated. Working and caring for an older person is an intense experience due to the conditions of elder care responsibilities which can occur with a crisis and with this increasing over time (Gordon et al., 2012). Furthermore, the organization must foster a supportive workplace culture for engagement with work-life balance initiatives to address the concerns of *work-family conflict*. The organization can employ a psychologist, institute special leave policy and hold on-site workshops facilitated by professional life coaches. Work-family conflict impacts on the mental health negatively which includes depression and anxiety disorders (Kelly & Moen, 2007).

With the implementation of the above recommendations relating to work intensification and work-life balance the organization would overcome numerous obstacles. Furthermore, the study, based on full-time office workers reveals that work intensification and work-life balance can be conducted in organizations other than labour intensive ones. Managers need to take cognizance of, for example, technological change and organizational changes which impacts employees' job content and functions. Public sector organizations need to readdress the volume of employees' workload. With their obsessional commitment, managers need to adjust the work environment to accommodate work demands and non-work responsibilities including the provisions of child and elderly care support. The variance in work-life balance was due to the effect of work intensification factors. Work-related stress and psychological factors had a considerably higher impact on work intensification than volume of workload. Similarly, the variance in work intensification was due to the effect of work-life balance factors. Managerial/supervisory support had a slightly higher impact on work-life balance than work-family conflict. The study is significant for practical reasons and managers need to use these fundamental points to probe assumptions and shift boundaries. Organizations and policy makers need to seriously consider the implications associated with the effect of work intensification on work-life balance.

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Analysis of Structural Transformation on Agricultural Sector in Indonesia

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Abstract: Indonesia's economy is currently undergoing a sharp shift of structural transformation. This is evident from the change in the proportion of major sectoral contributions to GDP in Indonesia. The agricultural sector in 2000 accounted for 15.60 percent of the national GDP. This sector is experiencing a gradual downward trend in 2015 which only contributes 12.18 percent. On the other hand there is an increasing contribution to GDP for the trade sector from 16.15 percent in 2000 to 18.06 percent by 2015. The study aims to identify the structural transformation of the agricultural sector in Indonesia, identify fiscal policy, appropriate development programs and can be implemented. The research methodology used is to explore the theory and implementation of several other countries by using SWOT analysis. The results of this research analysis found that the shift of structural transformation in the agricultural sector has the potential to cause negative impacts on several macroeconomic indicators such as GDP per capita persector and workforce of the sector. Therefore, there are several fiscal instruments that can be recommended, among others through credit programs such as Credit for Business Programme, subsidies and agricultural credit. Moreover, it can be done through agricultural insurance schemes and programs to increase infrastructure spending in agriculture so that the structural transformation is expected to keep Indonesia's economic growth more inclusive.

Keywords: *Transformation, Agricultural Sector, Fiscal Policy, Economic Growth*

1. Introduction

Indonesia is an agrarian country with a large proportion of its population dependent on the agricultural sector. The agricultural sector is the mainstay sector that accounts for half of Indonesia's economy through foreign exchange contributions on exports of rubber, coffee, cocoa, tea and palm oil products. While the plantation is a provider of employment in rural and remote areas, and is a significant employer absorber. Currently the Indonesian economy is undergoing a sharp shift or structural transformation. This can be seen from the major sectoral contribution to GDP in Indonesia. The significant changes in sectoral contribution to GDP from 2000 to 2015 are the contribution of the Agriculture and Mining sector which shows a downward trend year after year. The agricultural sector in 2000 contributed 15.60 percent to the national GDP. However, this sector experienced a gradual downward trend until 2015 which became only 12.18 percent of total GDP. Similarly, the mining sector experienced a drastic downward trend in 2000 of 12.07 percent to only 6.74 percent in 2015.

On the other hand, there is a gradual increase in the contribution of the trade sector to GDP from 16.15 per cent in 2000 to 18.06 per cent by 2015. In the transport sector there has been a significant contribution to GDP from 4.68 per cent in 2000 to 10.78 percent by 2015. This is the question, why this happens. Whether for the primary sectors in general will experience a downward trend over time and instead the technology-based (tertiary) sectors will generally increase its contribution to Indonesia's GDP as well as the trade and transport sectors. How do other countries experience a shift in structural transformation? Is there any relation to structural transformation with economic growth and how the impact of structural transformation on macro indicators such as labor, poverty and per-capita income of the sector. Furthermore, how the role of government in managing this structural transformation through fiscal policy instruments that become its authority. The expected benefits of this study are that descriptions and clear impacts related to the structural transformation of the agricultural sector in Indonesia can be made, so that the Government can adopt appropriate policies to optimize economic benefits and eliminate the negative impacts.

2. Literature Review

Structural Transformation and Growth: Structural Change Theory is a theory that focuses on the mechanisms of economic transformation experienced by developing countries, which was originally more subsistence and focused on the agricultural sector to the structure of a more modern economy and is dominated by industry and service sectors. (Todaro: 1991 in Mudrajad Kuncoro: 1997 in Sudarmono: 2006). Herrendorf et al. (2013) said that "the level of employment shares, value added shares, and final consumption expenditure shares. Employment shares are calculated by work by sector, depending on availability. Value added shares and final consumption expenditures are typically expressed in current prices ("nominal shares"), but they may be expressed in constant prices ("real shares"). They argue that there is a strong link between structural transformation and a country's economic development, labor productivity, number of hours worked, business cycle, income inequality, and others. Basically, economic development has four main dimensions: (1) growth, (2) poverty alleviation, (3) economic change or transformation, and (4) sustainable development of agrarian society into industrial society. Structural transformation is a prerequisite of the improvement and sustainability of growth and poverty alleviation, as well as support for the sustainability of development itself. Development in Indonesia has succeeded in spurring high economic growth, marked by changes in the structure of the economy. The process of changing the structure of the economy is characterized by: (1) the decline in the share of the primary sector of agriculture, (2) the increasing share of the secondary sector ie industry, and (3) the share of the tertiary sector (services) is more or less constant, but its contribution will increase in line with economic growth (Kariyasa, 2017).

Lessons Learned From Vietnam, Ethiopia and OECD Countries: Over the last 20 years Vietnam's economy has experienced high growth rates. Real GDP increased at an average annual growth rate of 7 percent between 1986 and 2008. This economic expansion is accompanied by a drastic shift in the composition of Vietnam's GDP, from the agricultural sector to the services and manufacturing sectors. The most drastic changes occur in the agricultural and manufacturing sectors. The agricultural sector accounted for 34 percent of GDP in 1986, but after that its contribution declined steadily to the level of 17 percent in 2009. On the other hand, the manufacturing sector experienced a significant growth of 17 percent in GDP in 1986 and then up to 25 Percent of GDP in 2009, exceeding the share of agriculture in 2003 (Mc Caig and Pavcnik, 2013). The service sector accounts for the largest GDP, with contributing 46-54 percent during the period. Mining and excavation never accounted for more than 6 percent of GDP. Vietnam also experienced a large expansion of labor, an annual average labor increase of 2.4 percent, accompanied by drastic changes in the employment structure. Major shifts occurred in the sectoral composition of Vietnam's GDP and the role of structural change in Vietnamese economic development in the 1990s and 2000s. Vietnam began measuring the contribution of structural change to the growth of aggregate labor productivity. Vietnam found that the reallocation of labor from agriculture to service and manufacturing industries, all sectors with relatively higher labor productivity, played an important role.

In 1986 Vietnam started a series of reforms known as Doi Moi, or "renovation", gradually transforming the economy from central planning to regulating the market economy. The key role of reforms in agriculture, the business sector, and integration of Vietnam into the global economy can contribute to the shift of labor from the agricultural sector. These reforms have the potential to affect not only the movement of labor from the agricultural sector to manufacturing and services, but also the allocation of labor to home industries, state-owned enterprises, foreign-owned enterprises, and private sector companies. Another case with Ethiopia. Some reasons why Ethiopia requires structural transformation. The first reason is related to the growth of the labor force and the increased surplus of agricultural employment that must be diverted to non-agricultural work. Each year there is a new labor force and is estimated to be about four hundred thousand people. The second reason why Ethiopia requires structural transformation is linked to low agricultural productivity and consumption deficits in rural areas. This is due to the formation of households at a young age and an increase in the proportion of marriages has increased the number of households over time. Children born to one father have actually formed a group of villages (household groups). Of the 11,749,925 households in rural Ethiopia, 56 percent of them are households of many children and the rest of them are many labor households. Many children's households have higher consumption requirements and lower economic support ratios. The number of households of many children increases consumption and land requirements. Meanwhile, agricultural labor productivity in rural Ethiopia remained at the same level for decades despite the growth of rice production. Rice production growth is a result of increased inputs (especially land), and not because of technological advances and institutional innovation (Teganu, 2011).

The third reason why Ethiopia requires structural transformation is because of the geo-political situation. The fourth reason is related to the increasing trend of globalization, especially the improvement of worldwide communication system and the current economic condition, high mobility especially from financial resources and trade. To take advantage of the greater opportunities created by the global market the economic structure of Ethiopia must change and focus on some kind of specialization. On the other hand, the facts show that developed countries, such as members of the OECD and some countries such as Turkey, Malaysia, China and other emerging economies, are successful in carrying out their structural economic transformation. Namely a country that in the early days of livelihood most of the population and its economy relied on the primary sector. In a relatively short period of time (25-50 years), most of the people and economies depend on the secondary sector and the productive, competitive and sustainable tertiary sector. For example, at the beginning of the construction period, about 40-70 per cent of the population of OECD countries (USA, Canada, Western Europe, Japan, South Korea, Australia and New Zealand) work in agriculture, forestry and fisheries. The contribution of this primary sector to GDP is about 40 - 75 percent. After becoming a developed country, the people who work in agriculture, forestry and fisheries are no more than 15 percent of the total population. While the contribution of these three primary sectors to GDP is still quite large which is about 20 - 45 percent. The majority of the population and its economy turn to the more productive and competitive sectors of secondary and tertiary.

Growth and its determinants: Economic growth is a process of per capita output growth over the long term, in the other sense that economic growth is the process of increasing the production of goods and services in the economic activities of a society (Yunan, 2009). Economic growth is the process of changing a country's economic conditions on a sustainable basis to a better state over a certain period. Economic growth can also be interpreted as a process of increasing the production capacity of an economy that is realized in the form of an increase in national income. The existence of economic growth is an indication of the success of economic development (Sitindaon, 2013). Meanwhile, according to Josep Schumpeter in Sitindaon (2013), economic growth occurs when there is innovation from entrepreneurs (entrepreneurs). In this case, innovation is the application of new knowledge and technology in the business world. Innovation has the effect of introducing new technologies, generating higher profits, leading to imitation of innovation, the imitation of new technology by other entrepreneurs who can increase their production. Judging from the Neo Classical economic growth, the Model pioneered by Stein in 1964, later developed further by Roman and Siebert. According to this theory, regional economic growth will be greatly determined by the ability of the region to increase its production, while the regional production activities are not only determined by the potential of the region concerned, but also the mobility of labor and inter-regional capital mobility. Classical Neo followers assume that the mobility of factors of production, both capital and labor, at the beginning of the development process substandard. Consequently, at that time capital and skilled labor tends to be concentrated in more developed areas so the economic growth gap tends to widen (Sitindaon, 2013).

Meanwhile, according to the view of classical economists, there are 4 factors affecting economic growth, namely population, stock of capital goods, land area and natural wealth, and the level of technology used. The classical economists who gave his opinion on economic growth were:

- Adam Smith, that economic growth is characterized by two interrelated factors namely population growth and total output growth. Growth of output achieved is influenced by natural resources, labor (population growth), and the amount of inventory.
- David Ricardo and T.R Malthus, that the increasing population growth factor doubled at a time will lead to abundant labor. Ricardo's opinion is in line with the theory put forward by Thomas Robert Malthus, stating that food (production) will increase according to the count arithmetic (one, two, and so on). While the population will increase according to geometrical progression (one, two, four, eight, sixteen, and so on) so that at some point the economy will be at the level of subisten or stagnation. (Sitindaon, 2013)

Simon Kuznet in Masli (Accessed 2016) defines economic growth as the capacity of a country to provide economic goods for its population, the growth of this capability is due to technological advancement, institutionalization and the necessary ideological adjustment. The results showed that simultaneously bank kerdit, export value, government expenditure, and the amount of labor significantly influence the growth of Indonesian economy at 99% (@ = 1%) confidence level with coefficient of determination (R2) of 98,46%.

While partially the result of analysis indicate that bank credit, government expenditure, and number of labor have positive effect to economic growth in Indonesia. This means that Indonesia's economic growth will increase significantly with the increase of bank credit, government expenditure, and the amount of labor, while export value has no significant effect (Yunan, 2009). Concludes that factors affecting economic growth are (1) Manpower defined as people aged 15 years or older who work, find work, and are doing other activities, (2) Dependency ratio is defined as the ratio between groups The population aged 0-14 years who are not economically productive and the population aged 65 years and over belong to a group of non-productive people with the age group of 15-64 years included in the productive group. Population growth is a population change at any time, and can be calculated as a change in the number of individuals in a population using "per unit time" for measurement. Population growth is one of the important factors in general socioeconomic problems and population problems in particular. Because in addition to affect the number and composition of the population will also affect the socio-economic conditions of an area or country and the world (Sitindaon, 2013).

Growth and Government Fiscal Policy: In general, fiscal policy is understood as a policy made by the government to direct the economy of a country through government expenditures and revenues (in the form of taxes). Changes in the level and composition of taxes and government expenditures may affect aggregate demand variables and levels of economic activity, variable resource dispersion patterns, and income distribution variables. The government's fiscal policy is aimed at influencing the economy or with the government's fiscal policy trying to steer the economy toward its desired state. Through fiscal policy, governments can influence the level of national income, employment, national investment, and may affect the distribution of national income. The function of fiscal policy is a stabilizer instrument in maintaining the economic stability, consistent evidence of the fiscal policy impact on the economic growth is through the structure of government revenue and expenditure management, so that it can develop the economic growth (Sirait, 2013). Fiscal policy is certainly different from monetary policy, which aims to stabilize the economy by controlling the interest rate and the amount of money in circulation. Based on this, we can understand that the main instruments of fiscal policy are expenditure and taxes. Fiscal policy is the implementation of the operational form of government budget policy in managing state finances. The policy direction emphasizes the allocation of state expenditure and state revenue, especially taxation. For example high taxes, or even tax exemptions in the control of the economy to achieve national goals. The objectives of fiscal policy are to stimulate and encourage economic growth, to control economic stability, to create social justice for society, to expand and create employment, to realize the distribution and distribution of income and to prevent unemployment and to maintain price stability (Financial Note and State Budget Development Plan, 2015).

The focus of the discussion is how government fiscal policy can efficiently allocate budgets on capital accumulation and labor supply. In this general model, the growth rate and the level of government fiscal policy can affect output growth. There are empirical test models using cross-section data in 107 countries. Empirical results using data on growth rates during the period 1970-1985 show the significant and negative impacts of government fiscal activity on the output growth rate both in the short and long term (Engen and Skinner, 1992). In a study of the impact of tax increases on output growth (Aziz, 2016), 10 percent tax increase is predicted to reduce output growth by 3.2 percent per year. Large long-term effects also occur in expenditures where a 10 percent increase in budget is expected to reduce output growth by 1.4 percent per year. Thus, the study proves that government spending, tax rates will have the greatest long-term negative impact on private sector productivity.

Implementation of Fiscal Policy in Agricultural Sector: The Central Bureau of Statistics (BPS) has published some data on agriculture census results in 2013, which revealed that in 2003 Indonesia's food imports only reached US $ 3.34 billion, but 10 years later or in the 2013 census implemented it has risen more than Quadrupling to US $ 14.90 billion. The data above becomes one indication that Indonesia has not succeeded in realizing food self-sufficiency. Rising food imports are among others attributable to: (1) increased consumption of Indonesian food, (2) increasing population of Indonesia. The conclusion is based on data from the National Population and Family Planning Agency (BKKBN) in 2012 which states that the estimated population of Indonesia in 2013 is 250 million people and by 2025 the population of Indonesia is expected to reach 400 million (Aziz, 2016). Some of the fiscal policies that have been and are being implemented by the Indonesian government in order to reduce the problems in the agricultural sector are as follows:

Credit Program: In the past decade, the Indonesian government has actually tried its best to revitalize this sector of agricultural financing. The Government has rolled out various credit models that are divided into two models of credit financing schemes, risk guarantee schemes and interest subsidy schemes. Agricultural credit under a default risk guarantee scheme (in this case the people's business credit program) is intended for prospective borrowers who have not-bankable but feasible characteristics. This credit is intended for prospective borrowers who have not met the credit / financing requirements of the implementing bank as reflected in the provision of collateral and other credit requirements / financing in accordance with the provisions of the implementing bank. However, at the same time the debtor is deemed to have been feasible because it has a business which is expected to provide a profit so that it is considered will be able to pay interest and return the entire principal loan obligations within the agreed time period between the executing bank and the debtor. Meanwhile, agricultural credit with interest subsidy scheme is credit given to prospective borrowers who have fulfilled loan / financing requirements from implementing bank as reflected in the provision of collateral and fulfillment of credit requirements / financing in accordance with the provisions of the implementing bank. However, at the same time the business is considered not yet able to provide profit to pay interest and return all the principal loan obligations in the agreed time period between the executing bank and the debtor. This condition is the government's consideration to provide interest subsidy (with certain amount) to the debtor. (Aziz, 2016)

Agriculture Insurance: The agricultural sector is one sector that still plays an important role in Indonesia. Based on current prices until 2012, this sector contributes a GDP output value of Rp1.190 trillion or about 14.44 percent of total GDP of about Rp8,241 trillion. This sector is also still able to absorb the workforce of Indonesia about 39.96 million inhabitants. Every Indonesian farmer is entitled to protection in the face of all problems such as price risk, crop failure, high cost economy practice, and climate change. This is one of the principles mandated in Law Number 19 Year 2013 on Farmers Protection and Empowerment. The character of business in the agricultural sector will usually encounter very high uncertainty risks such as natural disasters such as floods, drought, pest attacks, climate change factors, as well as the certainty of risk of market price fluctuations in these commodities. This if left further will affect the stability of national food security (Aziz, 2016).

Infrastructure Spending In Agriculture: The government actually has a lot to play in the development of the agricultural sector, one of which is the procurement of agricultural equipment and agricultural infrastructure development in Indonesia. One of the infrastructure that is the focus of the government is the irrigation infrastructure where in the condition up to 2012 the irrigation infrastructure network in Indonesia is currently 7.23 million hectares according to data from the Ministry of Public Works, from the data it turns out there are only about 4.41 million hectares Irrigation networks that are still in good condition (Aziz, 2016).

3. Methodology

The research methodology used to answer the main objectives of this study is a combination of methods:

- Exploration of theory and implementation in other developing countries related to structural transformation, economic growth, fiscal policy, and others. In this study, the authors take examples of cases in the countries of Vietnam, Ethiopia and OECD countries to compare with the transformation of the agricultural sector to be lesson learned.
- Analysis of economic data such as GDP and Indonesian labor and cases in the countries of Vietnam, Ethiopia and OECD countries to be mapped according to indicators of Strength, Weakness, Opportunity and Threat (SWOT) in order to find the right policy solution.

4. Results and Discussion

The biggest challenge of the economy in the current era of globalization is how to make the Indonesian population prosperous, let alone Indonesia has a very large population. The population of Indonesia is 252.16 million people (BPS, 2013). This large population is a major consideration of the central and local governments, so that the direction of the Indonesian economy is built to meet the food needs of its people. Based on this consideration, the agricultural sector becomes an important sector in the structure of the Indonesian economy. However, this sector is currently getting less serious attention from the government. One of them is the lack of protection of farmers from the importation of agricultural goods, the low credit for the agricultural sector and some other policies that do not provide optimal benefits for the agricultural sector. In addition, there are still many agricultural development programs that are not directional and not optimal.

The Impact of Structural Transformation: The course of agricultural development in Indonesia to date has not yet been able to show maximum results. This is evident from the level of farmers' welfare and contribution to national income. Therefore, agricultural development in Indonesia is an important development of the overall national development. There are several reasons why agriculture development in Indonesia plays an important role, partly because of the huge and diverse potential of natural resources, its contribution to substantial national income, its contribution to national exports is also considerable. In addition, the large population of Indonesia is dependent on this sector and its role in the provision of community food and become the basis of growth in the countryside. However, Indonesia's huge agricultural potential, in fact until now most of its farmers are still classified as poor. In the introduction section has been discussed that there is an indication of structural transformation in the Indonesian economy due to changes or shifts in the contribution of each sector of the Indonesian economy in the formation of GDP. In Table 1 below is a complete picture of the process of structural transformation of the economy of 2000 to 2015. In the table it can be shown that the agricultural sector from year to year has decreased consistent and significant contribution. This indicates if this condition is left alone or there is no maximum effort from the government then the contribution of this sector in the next 50 years will be zero. The problem that arises is not just the value of its contribution to GDP, but to be noticed is the potential for huge unemployment in Indonesia if the agricultural sector is allowed to collapse, because this sector can accommodate nearly 40 percent of the total workforce in Indonesia. At the same time the eight other sectors of the economy need more assistance from human resources (except the mining sector) so that it can be ascertained to the other eight sectors can not absorb labor migration from the agricultural sector. The following Table 1 shows the contribution of each sector to GDP from 2000 to 2015. The agricultural sector shows a downward trend.

Table 1: Sectoral Contribution on Indonesian GDP (Constant Price) 2000 - 2015 (%)

Sector	2000	2005	2010	2011	2012	2013	2014	2015*)
Agriculture	15.60	14.50	13.17	12.78	12.53	12.26	12.06	12.18
Mining	12.07	9.44	8.09	7.72	7.37	7.07	6.72	6.74
Industry	27.75	28.08	25.80	25.72	25.59	25.55	25.50	25.46
Electric, Gas, etc	0.60	0.66	0.78	0.77	0.77	0.77	0.77	0.79
Construction	5.51	5.92	6.48	6.46	6.52	6.58	6.67	6.69
Trade, Hotel, ets	16.15	16.77	17.30	17.75	18.07	18.09	18.02	18.06
Transport, etc	4.68	6.24	9.42	9.79	10.13	10.52	10.95	10.78
Finance, etc	8.31	9.21	9.55	9.58	9.66	9.83	9.91	9.90
Services	9.34	9.18	9.41	9.44	9.35	9.32	9.40	9.39

Source: BPS-Statistics Indonesia, 2015; *) Projection, Data Prosessed

If this really happens then in the next 50 years Indonesia will experience a tremendous economic crisis caused by social and financial problems due to the huge unemployment rate. The current structural economic transformation in Indonesia will sooner or later affect the overall economic condition of Indonesia, both macro and micro. In fact, structural transformation is a matter already discussed by (Todaro, 1991) that this condition will inevitably occur in developing countries, namely the transition from an earlier subsistence economy and focusing on the agricultural sector to a more modern and highly dominated economic structure Industry and services sectors. The sectors most affected by the structural transformation are the composition of the persector labor and the income composition of the per capita of the sector.

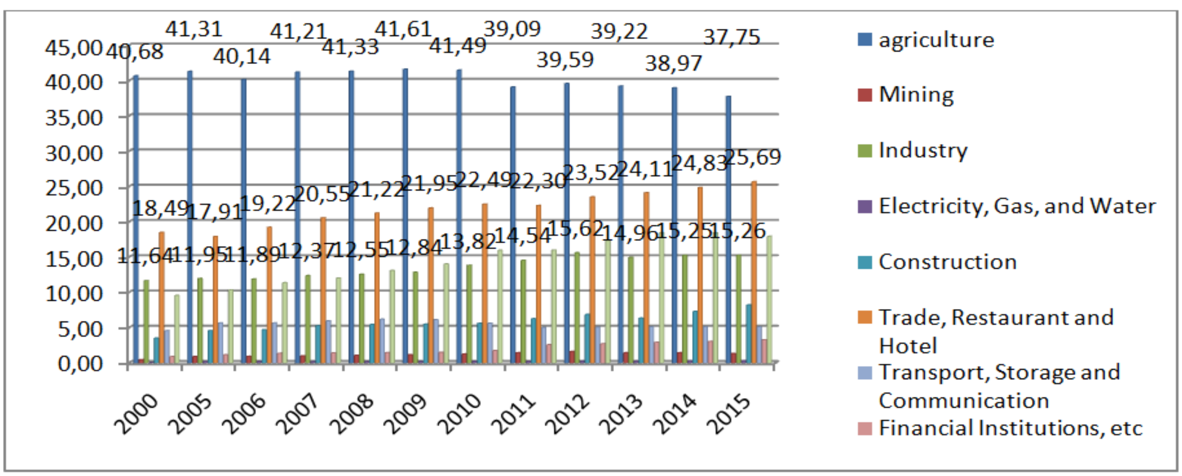
Composition of Labor Persector: According to (Herrendorf et al., 2013) that structural transformation must be related to 3 basic problems, two of which are about the transfer of labor and added value to GDP. Our labor structure is still dominated by agricultural sector around 32.87 percent (BPS-Statistics Indonesia, 2015), followed by trade, hotel and restaurant sector at 22.37 percent, and service sector at 15.60 percent. The average proportion of labor from 2000 to 2015 for the agricultural sector was 36.69 percent, while the trade and other sectors were 21.21 percent, and the manufacturing industry had an average proportion of 12.96 percent. This can be seen in Table 2 below. This data shows the important role of the agricultural sector which is the sector where the majority of Indonesian workers depend on their income to live. Proportionally the amount of labor in the agricultural sector is still the largest. On the other hand, when viewed from the trend of the number of manpower in the agricultural sector from year to year both percentage and nominal it can be explained that the workforce in this sector continues to experience a significant decline. As shown in Graph 1 below.

Table 2: Indonesian Labour by Major Sector 2000 - 2015 (In Percentage/Portion of Total)

Sector	2000	2010	2011	2012	2013	2014	2015	Average
Agriculture	45,28	38,35	36,39	35,19	34,78	34,00	32,88	36,69
Mining	0,50	1,16	1,34	1,42	1,27	1,25	1,15	1,16
Industry	12,96	12,78	13,54	13,88	13,27	13,31	13,29	13,29
Electricity, Gas, and Water	0,08	0,22	0,22	0,22	0,22	0,25	0,25	0,21
Construction	3,89	5,17	5,83	6,09	5,63	6,35	7,15	5,73
Trade, Restaurant and Hotel	20,58	20,79	20,76	20,90	21,38	21,66	22,37	21,21
Transport, Storage and ets	5,07	5,19	4,66	4,49	4,52	4,46	4,45	4,69
Financial Institutions, etc	0,98	1,61	2,40	2,40	2,57	2,64	2,84	2,21
Community Service, etc	10,66	14,75	14,87	15,40	16,36	16,07	15,62	14,82
Total	100,00	100,00	100,00	100,00	100,00	100,00	100,00	100,00

Source: National Labor Force Survey, BPS-Statistics Indonesia, 2015. Data prosessed

Grafic 1: Indonesian Labour by Major Sector 2000 - 2015 (In Million People)



Source: National Labor Force Survey, BPS-Statistics Indonesia, 2015

For example, in 2010, the proportion of labor in the agricultural sector reached 38.35 percent with a nominal amount of 41.49 million workers. However, in 2015 the number dropped dramatically to 32.88 percent or there are about 3.74 million within 5 years. Meanwhile, in the same period, there was a significant increase in the trade sector from 22.49 million workers (in 2010) to 25.68 million people working in this sector.

Similarly, in the industrial sector from 13.82 million people (2010) to 15.25 million people (2015), the services sector is from 1.7 million people (2010) to 3.26 million people (2015) and the sector From 15.97 million people (2010) to 17.93 million people. The authors are very confident that there is a shift of labor from the agricultural sector to the other four sectors (trade, industry, services, and financial sectors.

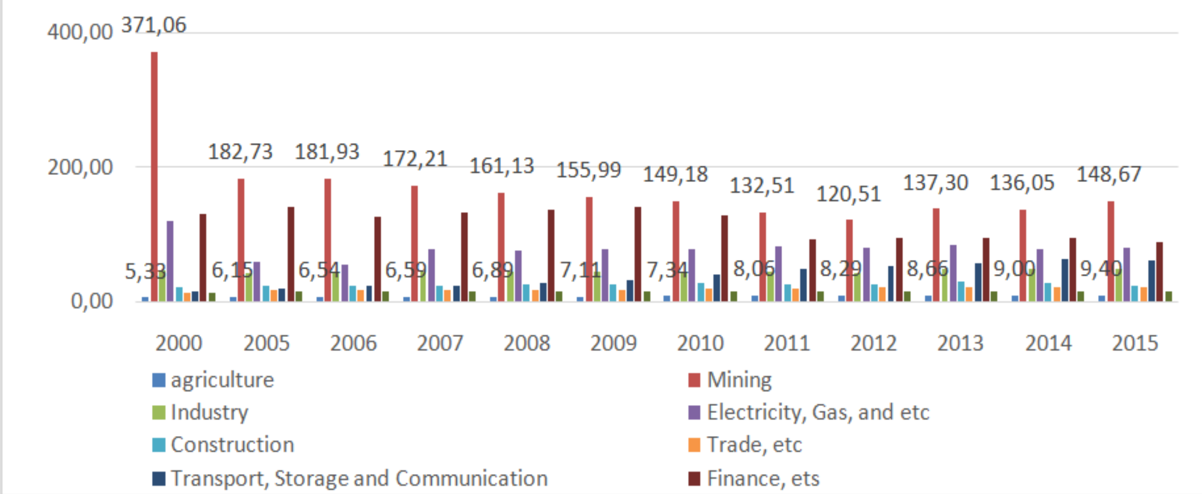
Composition of Perkapita Persector Revenue: Table 3 below illustrates the composition of per capita income in Indonesia for the last 15 years between 2000 and 2015. In Table 3 and Graph 2 it can be seen that, per capita income for labor employed in agricultural sector is still very low compared to other sectors. Although from year to year shows the numbers that continue to rise but the nominal increase is not so significant. Up to 2015, per capita income in this sector is only Rp9.40 million. The difference is so far as per capita income in other sectors (especially mining, transport, finance, electricity and industry). This is what then makes the agricultural sector abandoned by its workforce to move in other sectors.

Table 3: Income Composition of Per Capita Economic Sector (in millions of rupiah)

Sector	2000	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Agriculture	5,33	6,15	6,54	6,59	6,89	7,11	7,34	8,06	8,29	8,66	9,00	9,40
Mining	371,06	182,73	181,93	172,21	161,13	155,99	149,18	132,51	120,51	137,30	136,05	148,67
Industry	46,22	41,12	43,24	43,50	44,45	44,40	43,19	43,58	42,92	47,29	48,63	48,58
Electricity, Gas, and etc	118,84	59,51	53,73	77,29	74,56	76,83	77,11	80,65	80,00	84,30	77,54	79,42
Construction	21,90	22,69	23,89	23,19	24,09	25,56	26,82	25,40	24,94	28,68	26,66	23,72
Trade, etc	12,14	16,40	16,26	16,56	17,14	16,79	17,81	19,62	20,12	20,78	21,12	20,47
Transport, Storage and Communication	14,28	19,33	22,04	23,89	26,85	31,42	38,79	48,20	52,53	57,17	62,30	61,47
Finance, ets	130,82	141,22	126,35	131,23	136,17	140,70	127,06	91,61	93,84	93,90	95,13	88,26
Community Service, etc	13,55	15,57	15,03	15,12	14,74	14,67	13,65	14,57	14,13	13,99	14,85	15,23

Source: National Labour Force Survey and GDP BPS 2015 / Indonesian National Statistic Board: 2015, Data Prosessed

Grafik 2: Indonesian GDP Persector Percapita (in Million Rupiah)



Source: National Labour Force Survey and GDP BPS 2015 /BPS-Statistics Indonesia, 2015, Data Posessed

The unfavorable condition of Indonesia's economic structure is caused by the leapfrog of Indonesia's economic structural transformation from the primary economic structure based on natural resources, namely the agriculture and mining sectors directly to the tertiary economic structure (third) such as trade and transportation sector. This has the potential to cause shocks to the national economy which has an effect on the slow economic growth. The slowdown in economic growth is also caused by several things, among others, the basic capital of economic development in the not ready condition such as the availability of human resources (labor) and technology. Structural transformation will have the potential to achieve success if the shift runs gradually ie by not leaving the structure of secondary economy / industrialization. When the industrialization stage has been achieved well and strongly, structural transformation towards a higher stage such as the trade and other tertiary sectors will result in more inclusive economic growth. This inclusive economic growth is expected to encourage the acceleration of economic development that will be felt by the wider community. In line with the occurrence of this structural transformation, the Indonesian agricultural sector is experiencing problems in increasing the amount of food production. This is because the narrowness of agricultural land is being used. Increasing population growth makes the need for land for residence and various means of life support community also increases. The development of industry also makes agriculture irrigation technical decreasing. In addition, the level of agricultural productivity per hectare is also relatively stagnant. One of the causes of this productivity is that the water supply to irrigate agricultural land is also reduced. Therefore, many reservoirs, dams, waterways and irrigation systems still need to be repaired.

SWOT analysis: If you see the character of a developing country from the geo-political, social, security, economic, natural and human resources, then things that happen in Vietnam and Ethiopia (as discussed in the above section) are also likely to occur In Indonesia, such as the enormous increase in labor force in each year, the tendency to transfer the profession to other sectors by leaving the agricultural sector, and others. This should be the government's concern to prepare fiscal and non-fiscal strategic measures and policies in order for this process of structural transformation to generate inclusive economic growth. That is, economic growth that can be felt widely by the entire population and felt by all parties. It is the Government's duty to manage this shift in structural transformation, thus not the beginning of the economic crisis and the destruction of the national economy. These strategic measures and policies could start from the SWOT analysis of the agricultural sector as the authors show below.

Tabel 4: SWOT Analysis

Strengths	**Weakness**
Have a large contribution potential in GDP	Positioned not as a Priority sector
Absorbs large workforce	Vulnerable to Climate Change
Provider of food (primary needs) for the population	The Difficultness of Financing Acsebilitas for the perpetrator
Opportunities	**Threats**
Opening employment	1. The existence of green growth challenge
Extremely wide farmland	2. Impact of Regional Autonomy Policy
Potential Natural resources are very large	3. Accessibility difficulties get agricultural input support
	4. The existence of global competition and open market

Source: Illustration Writer

Many roles and contributions of the agricultural sector to the Indonesian economy, so the sector is still urgent to continue to be built and developed. There are 4 key variables to overcome the problems of agricultural sector transformation. The key is how the government can take an optimal and strategic role through the optimization of fiscal policies that have been implemented so far such as credit programs for the people, agricultural insurance programs, and infrastructure finance programs. Another thing is how the government can maximize the advantages and opportunities of this agricultural sector and can reduce the weaknesses and obstacles that occur, for example through some programs and policies. One such policy is to provide easy access to financing and capital for farmers, improvement and development of agricultural infrastructure such as dams, reservoirs, irrigation canals, and others. In addition, the government should provide ease of market access for farmers to sell their products at harvest time, such as export access. It also encourages and focuses superior research activities optimally in searching for superior plant seeds, bio agricultural technology, fertilizers, agricultural and other engineering improvements.

One of the policies to be taken is to scale up program priorities and to strengthen linkages, roles and alignment of programs between institutions and other institutions, to make fiscal and non-fiscal policies in the sectors of agriculture pro-people such as targeted subsidies. Another thing is to continuously improve cooperation between central and local government, industry sector and research and development institutes or universities to realize food self-sufficiency in Indonesia. Including controlling the implementation of agricultural land conversion to other needs/life sectors, as well as improving and encouraging a conducive investment climate in agriculture. In addition, the task and role of the government is no less important is to provide subsidies for agricultural output, for example by buying rice farmers at a price above market prices so that income and welfare of farmers increases, oversee the course of regional autonomy in order not to harm the agricultural sector and always encourage the synergy between development Agricultural sector and green economic growth. In the end how fiscal policies or development programs that the government promotes can boost output growth (economic growth) rather than vice versa, the implementation of fiscal policy or other development programs actually degrade the economic growth as discussed by Engen and Skinner (1992) in the previous section. The point is how to make fiscal policy one of the saviors and guards of a structural transformation that is detrimental to a sector in this case is the agricultural sector, and how to implement government policies that support a more inclusive economic growth where the results can be perceived by all groups community.

5. Conclusion and Recommendations

The Indonesian economy as well as other emerging economies are currently undergoing structural transformation from the agricultural sector to industrial sectors, services and trade. The average labor sectors that contribute in the agricultural sector from 2000 to 2015 are still quite dominant at 36.69 percent. The task of the government is to maintain the structural transformation with appropriate fiscal policy and development programs to avoid potential negative impacts. One of the development programs that can be recommended as a result of the transformation of the agricultural sector in Indonesia is to encourage more inclusive economic growth. Several fiscal policy instruments that can be applied include the provision of credit programs such as Credit for Business program, Investment Credit and Credit for Food Security and Energy. In addition, subsidies in agriculture such as credit interest subsidies, fertilizer subsidies and seed subsidies to farmers can also be provided. Likewise can be applied agricultural insurance schemes, programs to increase infrastructure spending in agriculture, giving easy access to banking for farmers and the ease of licensing for entrepreneurs in the field of agriculture.

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Plastic Money and Electronic Banking Services Espousal vis-a-viz Financial Identity Theft Fraud Risk Awareness in a Developing Country

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Abstract: Exploitation of plastic money coupled with electronic banking services has come as expediency to financial establishment customers in Zimbabwe. This paper sought to analyze plastic money and electronic banking services espousal vis-a-viz financial identity theft fraud risk awareness in Zimbabwe banking sector via banks' websites. The theoretical underpinning for this study is Routine Activity Theory. The study used qualitative content analysis research technique for examination of the text content data through the consistent taxonomy process of coding and classifying themes or patterns to submit a painstaking considerate of financial identity theft fraud awareness by the banking sector in Zimbabwe. A sample size of 14 banks (including commercial, merchant and building societies) was used and the banks were arbitrarily chosen on the basis of website accessibility and ease of use of the data. The study findings suggest that there is very little financial identity theft awareness in Zimbabwe by the banking sector through their websites to the general public whilst there is amplified adoption of plastic money and electronic banking adoption. This study proposes a need to amplify the information and inform plastic card and electronic banking customers of the types of financial identity theft fraud. Plastic card and electronic banking is an urgent area to focus on for banking institutions and should inexorably capitalize in it. Financial identity theft information should be easily retrievable and conveyed in a manner that makes reasonableness to the varied customers.

Keywords: *Plastic money; electronic banking, identity theft; fraud risk*

1. Introduction

Financial liberalization and technology insurgency have endorsed the expansion of new-fangled and extra proficient release and dispensation means as well as more novel products and services in banking sector. Exploitation of plastic money coupled with electronic banking services has come as expediency to financial establishment customers. Plastic money[1] and electronic banking services have become a workable preference for financial service providers and customers interface. Plastic cards and electronic banking innovations have productively become an indispensable part of the up-to-the-minute transaction system, providing a wide array of services to the customers, and have achieved much recognition at global level and have considerably grown over the years (Pudaruth, Juwaheer & Madoo, 2013). However, the archetypal crime of the information epoch is identity theft[2], which refers to the malicious use of personal identifying data (Kahn & Roberds, 2008) or can be defined as the deliberate transfer, possession, or usage of any name or number that spots another person, with the target of perpetrating or assist a crime (Kahn & Liñares-Zegarra, 2013; Elbirt, 2005; Irfana & Raghurama, 2013). It is a type of impersonation that facilitates someone to perpetrate fraud and normally results in financial damage to the individual and financial gain to the impersonator (Radin, 2007). More so, financial identity theft involves the withdrawal of money by identity thief using personal information of a victim from his or her bank account and generally the victim is unaware that their identity has been stolen (Perl, 2003). This form of criminology is made feasible by the aforementioned contemporary payment systems where merchants are willing to tender goods and services to aliens in exchange for a guarantee to pay, provided the undertake is supported by data that tie the buyer to a particular account or credit history (Anderson, Durbin, & Salinger, 2008).

In other developed and emerging countries such as America and South Africa financial identity theft is the top growing crime, happening when the criminal gains confidential information from an individual or business

[1]Plastic money refers to the make use of credit or debit cards as a substitute for cash for goods and services payments.
[2] Identity theft, also known as identity fraud, happens when an individual's personally identifying information is used without permission and/or knowledge by someone else (often a stranger) (Radin, 2007).

and utilizes it to get right of entry into private financial accounts (Brody, Mulig & Kimball, 2007; Farina, 2015; Sanchez, 2012; Kahn & Liñares-Zegarra, 2013). Owing to the incessant technological progression and the nearly omnipresent use of electronic gadgets and the internet, financial identity theft is a crime that can take place virtually anywhere (Farina, 2015). This dawn of the information age has fashioned fresh challenges to the capability of individuals to guard the solitude and security of their personal information (Saunders & Zucker, 1999). Identity theft has become one of the most money-spinning criminal events eased by the capacious information obtainable on the internet and the reported episodes of identity theft have increased at an unmatched tempo (Elbirt, 2005; Aïmeur, & Schonfeld, 2011; Perl, 2003). Most customers are ignorant of the amount of data they divulge over the internet services proposed by search engines, social networking sites, e-commerce web sites and free online tools (Aïmeur, & Schonfeld, 2011). The increase of online services in which customers are confirmed by a username and password, is ever more browbeaten by identity theft actions (Moskovitch, Feher, Messerman, Kirschnick, Mustafić, Camtepe, & Elovici, 2009). Financial Identity theft fraud is a problem heart-rending the whole society and often is an entryway crime, in which stolen or fraudulent identities are used to steal money, claim eligibility for services, hack into networks without permission (Nokhbeh, Manoharan, Yang, & Barber, 2017).

Another titanic cost of financial identity theft, to businesses is the loss of customer confidence and therefore creating awareness is one of the most imperative outfits in fighting identity theft (Brody, Mulig, & Kimball, 2007). In addition financial institutions and consumers have to work in partnership to thwart further incidences. With sophisticated technology and unrelenting educational outreach by businesses, financial institutions and educational organizations, there will be a decrease in the level of identity theft taking place (Brody, Mulig & Kimball, 2007). As financial institutions progressively more offer online or electronic banking services and plastic card transactions to their customers, they must face issues of consumer trust in electronic service. If financial institutions, in cooperation with their customers, make it safe to adopt plastic and electronic services consequently, building the best controls to prevent fraud and protect customers is of significant magnitude (Irfana & Raghurama, 2013). There is extensive conformity that financial identity theft fraud causes financial smash up to consumers, lending institutions, retail establishments, and the economy at large (Hoofnagle, 2007).

Developing countries societies frequently experience derisory level of literacy when using electronic banking systems and it is apparent that except the financial organizations take all the indispensable and realistic steps to educate its clients, they stand a risk of paying robust indemnities for the loss of money online through identity theft (Granova & Eloff, 2004). Unpredictably, there is petite first-rate public information presented about the extent of the crime and the genuine damages it causes. Zimbabwe has not been an exception to the adoption of these innovations and the adoption has been driven by the recent liquidity challenges. The principal financial regulator, Reserve Bank of Zimbabwe have strongly encouraged espousal of plastic money (credit cards, debit card, visa card etc) and electronic innovations (Electronic Funds Transfer Systems (EFTs), mobile banking, personal computer, banking and internet banking). The usage of plastic cards and electronic transactions in Zimbabwe by customers and merchants has just dramatically increased. Nevertheless, adoption of plastic money and electronic innovations in Zimbabwe has not been related to the awareness and education on financial identity fraud security. It is therefore imperative for the financial institutions in Zimbabwe to give financial identity theft fraud awareness information to the general populace through disclosure on the websites. Against this backdrop this paper seeks to analyze plastic money and electronic banking services espousal vis-a-viz financial identity theft fraud risk awareness in Zimbabwe banking sector via banks' websites. The following sections of the paper covers contribution of the study, theoretical framework, empirical and literature review, methodology, findings and discussions, conclusion and implications.

Contribution of the study: This study makes a valuable contribution given the fact that qualitative empirical studies and literature on plastic money and electronic banking services adoption in relation to financial identity theft fraud risk awareness in the context of Zimbabwe as a developing nation are relatively very rare. Consequently, it would serve as a roadmap for banking institutions, regulators, policy makers and financial consumers to design strategies to better promote financial identity theft fraud risk awareness in Zimbabwe.

Theoretical Framework: The theoretical underpinning for this study is Routine Activity Theory which was coined by Cohen and Felson (1979). Crime is considered to be the corollary of the incidence of a stimulated offender, the presence of a suitable target, and the absence of a capable guardian (Hutchings and Hayes, 2009). Cohen and Felson (1979) suggested that there is an increased probability of victimization when individuals are positioned in high risk locations, are attractive targets, lack of a capable guardian and are in the reach of a motivated offender. Routine activity theory is traditionally drawn upon to underscore the role of offender motivation, target suitability, and effective guardianship in explaining victimization patterns (Drawve, Thomas & Walker 2014). Even though the routine activity approach was formerly written to account for direct-contact offenses, it seems that the viewpoint also has utility in elucidating crimes at a distance (Reyns, 2013).

Routine activity theory has been used to explicate cybercrime at individual level, but not at national level (Kigerl, 2012). According to Hutchings and Hayes (2009)'s findings indicate that potential victims who take on high levels of routine activities relating to computer and internet banking use are more probable to be attacked by motivated offenders. More so, Reyns (2013)'s results suggest that individuals who use the internet for banking are fairly more likely to be victims of identity theft than others. Correspondingly, online shopping and downloading behaviours augmented victimization risk. Reyns, Henson & Fisher (2011) found that specifically, antecedents measuring online exposure to risk, online immediacy to motivated offenders, online guardianship, online target charisma, and online deviance were noteworthy predictors of cyber aggravation victimization. However, Leukfeldt (2014) concluded that personal background and financial characteristics play no role in phishing victimization and only "targeted browsing" led to amplified risk. As for ease of access, using trendy operating systems and web browsers does not guide to superior risk, while having the latest antivirus software as a technically proficient guardian has no effect. The results showed no one has an augmented likelihood of becoming a victim. Consequently, banks could play the role of capable guardianship. There is therefore a need to pick identity theft earlier as Albrecht; Albrecht & Tzafrir (2011) found that if identity theft is detected before time, consumers can guard themselves from the immense and tricky costs of identity theft. Paek & Nalla (2015) in Korea their results propose that education level, routine online activities and fright of identity theft victimization are positively associated with identity theft persecution. Concurring to the above it was found that certain routine activities openly influence the possibility of encountering identity theft (Reyns & Henson, 2015).

2. Literature Review

In this modern world of information technology, many fraudsters prey on their fatalities via the internet given the level of revelation of personal information in many of current information age transactions. Two of the most frequent traditions that thieves obtain personal information to aid them in identity theft are phishing[3] and pharming (Brody, Mulig, & Kimball, 2007). Phishing employs mass e-mail messages to charm recipients into divulging personal information. The emails assert to be from one's bank or other organizations but are in fact would have been sent by fraudsters (Brody, Mulig, & Kimball, 2007; Irfana & Raghurama, 2013). These e-mails classically contain a link that takes the recipient to a phony website indistinguishable to the original website and one is asked to verify or update personal information. The personal information is taken by the fraudster who would use the information to access online bank account (Irfana & Raghurama, 2013). It is also known as web spoofing which involves fraudulent email and web sites that swindle gullible users into disclosing confidential information (Chou, Ledesma, Teraguchi & Mitchell, 2004). Phishing is a form of social engineering based on technical exploits (for instance, password sniffers intercepting encrypted passwords and key loggers capturing the victim's keystrokes) or a blend of both technology and social engineering (Hutchings and Hayes, 2009).

[3] The word "phishing" comes from an analogy to fishing; the email is bait used to lure in "fish" from the "sea" of internet users. The "f" is changed to "ph" in keeping with computer hacking tradition (Lynch 2005:259)

Social engineering practices (Spear Phishing, Pharming and Smishing) are most habitually used where perpetrators fake as legitimate companies appealing for personal details targeting profiled groups based on needs for goods and services, getting better their success; bypass social engineering, as a substitute targeting software ensuing in the automatic redirection to illegitimate mock websites; and use SMS text messages to aim mobile internet users (Williams, 2015). In a similar scheme Vishing involves a person calls pretending to be a bank representative seeking to verify account information (Irfana & Raghurama, 2013). Pharmers, on the other hand, shed a broad net for the credulous (Brody, Mulig, & Kimball, 2007). Pharming is the installation of malicious code on one's computer without any acknowledgement or an e-mail attachment that installs malicious code on a computer which leads to a fake website insecurely resembling bank's website and without knowledge one provide financial identity details (Irfana & Raghurama, 2013). Moreover, electronic banking credentials can also be gained by malware that is fixed on computers without users' knowledge, normally by clicking on a link allied to fouled software in an unsolicited email (Williams, 2015). Malware has been intended to log users' keystrokes, insert fake web pages (browser in the middle attack) and execute illicit actions on computers, in an endeavour to capture passwords and personal banking information (Williams, 2015). Malware includes keyloggers and spyware. Spyware is installed on a victim's computer and with the use of a keylogger permits a fraudster to not only spy on what websites are visited, but also record what keys are hard-pressed such as online banking passwords (NSW Justice, 2011).

On the other hand, plastic card fraud is defined as using plastic payment cards, such as ATM, debit, credit or store cards to withdraw money without permission or prior knowledge from a financial institution (NSW Justice, 2011). Plastic card fraud frequently happens via the illegitimate gaining and/or use of card information and the personal identification number (NSW Justice, 2011). In most cases cards used to commit fraud are usually lost or stolen cards which could be used intact or changed by re-embossing and re-encoding, or forged cards that are completely new (Smith & Grabosky, 1998). To counterfeit a card it is essential to know the details of an existing legitimate cardholder consequently the craving of reprobate to acquire rightful plastic card details from other sources such as the internet (Smith & Grabosky, 1998). Occasionally information on the card's magnetic strip is obtained through "card skimming". This is when a genuine card is obtained for a few seconds to facilitate it to be passed over a magnetic tape reader so that a phoney copy may be made (Smith & Grabosky, 1998). Another technique is "buffering", which entails transforming the information kept in the magnetic strip of the card or gaining security codes electronically (Smith & Grabosky, 1998). Nonetheless, according to Pudaruth, Juwaheer & Madoo (2013) in their analysis they revealed that customers have acknowledged plastic cards as a helpful means of effecting payments since plastic cards proffers worldwide acceptance. Even though plastic cards are valuable, Sakharova & Khan (2011) found that payment card fraud is causing billions of dollars in losses for the card payment industry and the brand name can be affected by loss of consumer buoyancy due to the fraud. This requires the supply of awareness information as Vincent (2005) concluded that provision of information about credit card functioning in India and payment settlement is a good thing to both the merchants and customers. In the same vein Kaseke (2012) found that individual factors such as education level had a bearing on the use of plastic money. In support to that Archer (2012) implicated that consumer education on identity theft fraud leads to pressure that consumers need to utilize all behaviours that can reduce risk and loss.

Irfana & Raghurama (2013) concluded that many individuals or organizations are not observant enough and do not take proper safety measures whilst online. Subsequently, this directs to fraudsters detaining their personal information and performing all types of fraudulent transactions on the internet. For this reason, users of e-banking should make sure that they follow protected principles when giving away or accessing sensitive information. Moir & Weir, (2009) specifically found that a predominantly high occurrence of agents who had before dealt with phone calls that they measured doubtful. Moreover, there were agents within such surroundings who had previously been presented money in exchange for customers' details, or who know of beneficiary workers who received such offers. Ultimately, they found that specific practices within contact centres may add to the probability of identity theft. All in all, Milne (2003) concluded that identity theft is a severe and progressively more ubiquitous crime, and consumers need to take precautionary measures to lessen the chance of becoming a victim and that consumer education appears to be satisfactory for several identify theft preventative behaviours. Steyn, Kruger & Drevin (2007) found that educational and awareness activities pertaining to email environments are of utmost significance to manage the amplified risks of identity theft. Dzomira (2016) found that internet fraud awareness to the general public via website is stumpy by many Southern African banks. Even though some banks have internet fraud information on internet banking applications, however, the bona fide usefulness of this information is timid.

3. Methodology

The study used qualitative content analysis research technique for examination of the text content data through the consistent taxonomy process of coding and classifying themes or patterns Du-Plooy-Cilliers, Davis, & Bezuidenhout (2014) to submit a painstaking considerate of financial identity theft fraud awareness by the banking sector in Zimbabwe in the wake of espousal of plastic money and electronic services. A sample size of 14 banks (including commercial, merchant and building societies) was used and the banks were arbitrarily chosen on the basis of website accessibility and ease of use of the data. The sample size was premeditated considering the exactitude of how closely the sample value relates to the population value of 19 banks (commercial, building societies, merchant and savings bank) and suggested 'equal precision' of 10% (Brink et al., 2013) and, in this study, 74% (14 banks) of the total population was used as the sample size. Information on plastic money and electronic services banking fraud awareness was retrieved from each bank's website in the sample size. QDA Miner a qualitative data and text analysis software package was used for coding textual data and annotating, retrieving and reviewing coded data and documents. Coding sequence was done on the salvaged libretto marking sections of data. The descriptive statistical analysis was done using frequencies, cluster analysis, similarity matrices, and crosstab matrix.

4. Findings and Discussion

Adoption of Plastic Cards and Electronic Banking: The table below shows the espousal of plastic cards and electronic banking by the 11 banks constituting the sample size. The scoring of the variables was basically dichotomous, where a variable scores 1 if adopted and 0 if it is not. The results suggest that all the 11 banks (100%) have adopted the use of plastic cards and electronic banking services in Zimbabwe.

Table 1: Adoption of Plastic Cards and Electronic Banking

Bank	Plastic Card Adoption		Electronic Banking Adoption	
	Score	%	Score	%
Bank 2	1.00	100%	1.00	100%
Bank 3	1.00	100%	1.00	100%
Bank 4	1.00	100%	1.00	100%
Bank 5	1.00	100%	1.00	100%
Bank 6	1.00	100%	1.00	100%
Bank 7	1.00	100%	1.00	100%
Bank 8	1.00	100%	1.00	100%
Bank 10	1.00	100%	1.00	100%
Bank 11	1.00	100%	1.00	100%
Bank 13	1.00	100%	1.00	100%
Bank 14	1.00	100%	1.00	100%
Total	11	100%	11	100%

Financial Identity Theft Fraud Risk Awareness Coding frequencies: Coding frequencies from Table 1 below constitute the list of all codes in the codebook along with their category to which they belong. It was found that phishing/pharming has the highest count of 7 (26.90%) in 7 (50%) cases. This shows that only seven banks out of 14 banks have disclosed phishing/pharming awareness on their websites to the general public. Malware and vishing have 3 counts (11.5%) each and from 3 cases (21.4%) each followed by hacking/cracking, key-logging, and lost/stolen card with 2 counts (7.7%) each from 2 cases (14.3%) each and lastly skimming, smshing, social engineering, swim swap fraud, card cloning, 419 scam and ATM card fraud with 1 count (3.8%) each from 1 case (7.1%) each. These results suggest that the bulk of the banks in the sample size have no disclosure of all the identified financial identity theft fraud types hence all the banks in the sample size have adopted plastic card and electronic banking services. This also suggests that the banks need to increase the awareness of financial identity theft risk as this would adversely affect the full implementation of plastic money and electronic banking services. The results concur with Kahn & Liares-

Zegarra (2016)'s findings that certain forms of identity theft episodes affect positively the probability of espousing credit cards, stored value cards, bank account number payments and online banking bill payments. More so, Geeta (2011)'s findings suggest that there has been an augment in identity theft in the last few years which could pose a grave quandary in the future, resulting in loss of confidence by the customer towards internet banking.

Coding co-occurrence similarity: The co-occurrence similarity index shown in Table 2 below allows the selection of the similarity measure used in clustering. Ochiai's coefficient measures the mere occurrences of specific codes in a case without considering their frequency. Ochiai's coefficient index is the binary form of the cosine measure which is represented by *SQRT (a^2/((a+b)(a+c)))*, where *a* represents cases where both items occur, and *b* and *c* represent cases, where one item is present but not the other one. From Table 2 below 419 scam and ATM fraud; ATM card fraud and card cloning; 419 scam and skimming; ATM card fraud and skimming; and card cloning and skimming have a coefficient of 1 each indicating that they occur more often. Vishing and key-logging have the second highest coefficient of 0.816 followed by swim swap fraud and hacking/cracking with a coefficient of 0.707. From the results there is an indication that the bulk of the combinations have a nil coefficient reflecting that the disclosure is very low.

Table 2: Coding frequencies

Category	Code	Count	% Codes	Cases	% Cases
Financial Identity Theft Fraud	Phishing/Pharming	7	26.90%	7	50.00%
Financial Identity Theft Fraud	Malware	3	11.50%	3	21.40%
Financial Identity Theft Fraud	Skimming	1	3.80%	1	7.10%
Financial Identity Theft Fraud	Smshing	1	3.80%	1	7.10%
Financial Identity Theft Fraud	Vishing	3	11.50%	3	21.40%
Financial Identity Theft Fraud	Hacking/Cracking	2	7.70%	2	14.30%
Financial Identity Theft Fraud	Key logging	2	7.70%	2	14.30%
Financial Identity Theft Fraud	Social Engineering	1	3.80%	1	7.10%
Financial Identity Theft Fraud	Lost/Stolen Card	2	7.70%	2	14.30%
Financial Identity Theft Fraud	SIM swap fraud	1	3.80%	1	7.10%
Financial Identity Theft Fraud	Card cloning	1	3.80%	1	7.10%
Financial Identity Theft Fraud	419 Scam	1	3.80%	1	7.10%
Financial Identity Theft Fraud	ATM card fraud	1	3.80%	1	7.10%

Table 3: Coding co-occurrence similarity

	419 Scam	ATM card fraud	Card cloning	Hacking/Cracking	Key-logging	Lost/Stolen Card	Malware	Phishing/Pharming	SIM swap fraud	Skimming	Smshing	Social Engineering	Vishing
419 Scam	1												
ATM card Fraud	1	1											
Card cloning	1	1	1										
Hacking/ Cracking	0	0	0	1									
Key-logging	0	0	0	0.5	1								
Lost/ Stolen Card	0	0	0	0	0	1							
Malware	0	0	0	0.408	0.408	0	1						
Phishing/ Pharming	0	0	0	0.535	0.535	0	0.436	1					

SIM swap fraud	0	0	0	0.707	0	0	0.577	0.378	1				
Skimming	1	1	1	0	0	0	0	0	0	1			
Smshing	0	0	0	0	0	0	0	0.378	0	0	1		
Social Engineering	0	0	0	0	0	0	0	0.378	0	0	0	1	
Vishing	0	0	0	0.408	0.816	0	0.333	0.655	0	0	0.577	0	1

Case similarity matrix: Table 3 above shows clustering performed on banks; the matrix used for clustering consists of cosine coefficients computed on the relative frequency of the various financial identity theft fraud types' awareness. The more corresponding two cases will be in terms of the share of codes the higher will be the coefficient. Comparisons were based on which codes appear in each case, without taking into account the number of times each code appears. From the results Bank 7 and Bank 10; and Bank 8 and Bank 11 clusters have highest coefficient of 1 each. This means that the corresponding banks have similar financial identity theft fraud disclosures. Bank 6 and Bank 8; and Bank 6 and Bank 11 clusters follow with a coefficient of 0.84 each and the least coefficient is 0.28 belonging to Bank 13 and Bank 14 cluster; Bank 4 and Bank 14 cluster, and Bank 3 and Bank 14 cluster.

Table 4: Case similarity matrix

	Bank 2	**Bank 3**	**Bank 4**	**Bank 5**	**Bank 6**	**Bank 7**	**Bank 8**	**Bank 10**	**Bank 11**	**Bank 13**	**Bank 14**
Bank 2	1										
Bank 3	0.72	1									
Bank 4	0.4	0.82	1								
Bank 5	0.42	0.71	0.71	1							
Bank 6	0.44	0.59	0.59	0.64	1						
Bank 7	0.46	0.4	0.4	0.42	0.44	1					
Bank 8	0.46	0.72	0.72	0.76	0.84	0.46	1				
Bank 10	0.46	0.4	0.4	0.42	0.44	1	0.46	1			
Bank 11	0.46	0.72	0.72	0.76	0.84	0.46	1	0.46	1		
Bank 13	0.72	0.64	0.64	0.52	0.59	0.4	0.72	0.4	0.72	1	
Bank 14	0.4	0.28	0.28	0.32	0.36	0.4	0.4	0.4	0.4	0.28	1

Cross tabulation matrix: The dialog box, Table 4 above explores the correlation between financial identity theft fraud awareness and banks in Zimbabwe as defined by values of categorical variable. The dialog box counts the total number of times financial identity theft fraud awareness has been unveiled by each bank making the sample size. The top most exhibits are shown by Banks 14; 13; 4 and 3 with 4 counts each of the financial identity theft fraud types out of 12 types. Bank 5 has 3 counts only whilst Bank 6 has 2 counts and the rest have 1 count each. The results propose that there is very low disclosure of financial identity theft fraud by banks in Zimbabwe whilst all the banks comprising the sample size have adopted plastic money and electronic banking services for their customers. The banks are not adequately providing financial identity theft awareness to the general public on their websites.

Table 5: Cross tabulation matrix

	Bank 2	**Bank 3**	**Bank 4**	**Bank 5**	**Bank 6**	**Bank 7**	**Bank 8**	**Bank 10**	**Bank 11**	**Bank 13**	**Bank 14**	**Pear-son's R**	**P value**
Phishing/ Pharming	0	1	1	1	1	0	1	0	1	1	0	-0.138	0.342
Malware	1	1	0	0	0	0	0	0	0	1	0	-0.246	0.233
Skimming	0	0	0	0	0	0	0	0	0	0	1	0.531	0.047
Smishing	0	0	0	1	0	0	0	0	0	0	0	-0.209	0.268
Vishing	0	1	1	1	0	0	0	0	0	0	0	-0.564	0.035

Hacking/ Cracking	0	0	1	0	0	0	0	0	0	1	0	0.117	0.366
Key-logging	0	1	1	0	0	0	0	0	0	0	0	-0.496	0.06
Social Engineering	0	0	0	0	1	0	0	0	0	0	0	-0.127	0.355
Lost/ Stolen Card	0	0	0	0	0	1	0	1	0	0	0	0.117	0.366
SIM swap fraud	0	0	0	0	0	0	0	0	0	1	0	0.448	0.083
Card cloning	0	0	0	0	0	0	0	0	0	0	1	0.531	0.047
419 Scam	0	0	0	0	0	0	0	0	0	0	1	0.531	0.047
ATM card fraud	0	0	0	0	0	0	0	0	0	0	1	0.531	0.047
Total	1	4	4	3	2	1	1	1	1	4	4		

Generally, the study's results are supported by other scholars' findings and conclusions. Vincent (2005)'s study conclusion that provision of information about credit card functioning in India and payment settlement is a good thing to both the merchants and customers. Also the results correspond with Kaseke (2012)'s findings that individual factors such as education level had a bearing on the use of plastic money and that a number of problems were encountered by consumers in relative to security. Archer (2012)'s findings correspond with this study's results. The results implicated that consumer education and awareness on identity theft and fraud leads to pressure that consumers need to utilize all behaviours that can reduce risk and loss. Moreover, the findings support Milne (2003)'s conclusion that consumer education appears to be satisfactory for several identify theft preventative behaviours. The findings concur with Steyn, Kruger & Drevin (2007) who found that educational and awareness activities pertaining to email environments are of utmost significance to manage the amplified risks of identity theft. As well, Dzomira (2016) found that internet fraud awareness to the general public via website is stumpy by many Southern African banks. Even though some banks have internet fraud information on internet banking applications, however, the bona fide usefulness of this information is timid.

5. Conclusion

It is therefore concluded that there is very little financial identity theft awareness in Zimbabwe by the banking sector through their websites to the general public against an amplified adoption of plastic money and electronic banking services. This study proposes a need to amplify financial identity theft awareness information and enlighten plastic card and electronic banking customers of the types of financial identity theft fraud they are likely to encounter. Plastic card and electronic banking is an urgent area to focus on for banking institutions and should inexorably capitalize in it. Financial identity theft information should be easily retrievable and conveyed in a manner that makes reasonableness to the varied customers. Also, to curb financial identity theft risk linked with plastic card and electronic banking activities conducted both locally and externally, banks should make ample disclosure and consciousness of financial identity theft information on their web sites to the universal public and take apt measures to warranty adherence to financial customer privacy requirements relevant in the jurisdictions to which the bank is providing plastic card and electronic banking services. More so, it is concluded that Routine activity theory is incomparable among theories of criminology in that it seek out to expound changing plastic card and electronic banking fraud hounding risks among individuals and the accountability of illicit location in the episode of criminal events committed online. At the heart of routine activity theory is the thought that crimes can only grow when three fundamentals of a situation are in existence: plastic card and electronic fraudsters, plastic card and electronic users, and ineffectual financial guardians. When these three situational bare bones come together in place and time, the likelihood of plastic card and electronic banking fraud event happening is significantly amplified predominantly in the deficiency of awareness.

Study Implications: This study affords a profound understanding on financial identity theft awareness factor impacting on plastic card and electronic services embracing. This study proposes a policy by banking regulators or overseers in Zimbabwe for increasing the financial identity theft fraud awareness information and informs financial customers of plastic card and electronic fraud committed by fraudsters. The information must be out in the open to the general public on the website of each banking institution not only to offer such information, when a customer has logged in on the internet application to transact. This would make plastic card and electronic banking fraud material readily retrievable. Moreover, banking regulators in Zimbabwe must pass regulations that make banking institutions to take apt measures to ensure adherence to customer privacy requirements applicable in the country. The banking regulators also should make policies towards the prioritization of financial identity theft fraud risk by banks on their risk registers. That is the banking institutions, therefore, should prioritize financial identity theft fraud risk aspects on banking institution's risk register so as to stand competitive advantage in the contemporary technologically sophisticated epoch.

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