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-RESEARCH ARTICLE-

CHALLENGES IN THE IMPLEMENTATION OF INTEGRATED DEVELOPMENT PLAN AND SERVICE DELIVERY IN LEPELLE-NKUMPHI MUNICIPALITY, LIMPOPO PROVINCE

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─Abstract─

The local sphere of government remains an important role player in ensuring effective delivery of services and basic infrastructures. The developmental role accorded to local government requires adequate administrative capacity and the implementation of sound strategic tools. The Integrated Development Plan (IDP) is one of the tools that assist local authorities in executing their developmental mandate. In practice, local authorities have been struggling with ineffective implementation of IDP which resulted in service delivery upheavals. The purpose of this study was to examine the challenges faced by the Lepelle-Nkumphi municipality in the implementation of IDP and service delivery. This study adopted a qualitative semi-structured interview to gather data from the participants who were selected through purposive sampling method. The participants include 15 municipal officials, IDP steering committee, ward councillors and committees. Data was analysed using qualitative thematic content analysis. It was found that the implementation of IDP is critical for the enhancement of service delivery and basic infrastructure. In the course of

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implementation, the municipality was faced by various administrative and management challenges. This study unravelled key challenges, including shortage of resources, incomplete projects, inadequate community participation, political meddling and limited capacity. As a result, the municipality has not fully achieved its implementation plan and service provision. In light of the aforementioned challenges, the municipality should emphasise the advancement of the participation of the community in the planning and implementation process. It is equally important for the municipality to seek ways of enhancing institutional organisational capacity for efficient utilization of its resources to improve implementation and service delivery.

Key Words: Integrated Development Planning, Service Delivery, Municipality, Basic Infrastructure.

JEL Classification: H7

1. INTRODUCTION

The local sphere of government remains an important role player in ensuring effective delivery of services and basic infrastructure. The developmental role assigned to local government requires adequate institutional capacity and the implementation of sound strategic tools. Local municipalities have the mandate to provide their communities with services which are a priority, well-informed by a consultative process, and sustainable (Dlamini & Reddy, 2018). One of the strategic tools put in place to assist local authorities in accelerating service delivery is the Integrated Development Plan (IDP). The main purpose of IDP is to improve and accelerate the delivery of municipal basic services (Maake, 2016; Mathebula, 2018).

South African local municipalities have been implementing IDP to enhance basic service delivery in their area of jurisdiction. However, the challenge of service delivery remains an unresolved and alarming issue in almost all South African municipalities (Dikotla, Mahlatji & Makgahlela, 2014). Poor provision of basic household services including water, electricity, and sanitation and refuse removal is what has characterised many municipalities in South Africa (Beyers, 2015). In different parts of the country, residents have shown their dissatisfaction and frustration in the form of sporadic violent service delivery protests which pose social unrest and political challenges. This suggests that municipalities should promote their developmental role with a view of overcoming centralised and fragmented planning practices of the apartheid era.

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Integrated development planning is one of the tools that promotes an integrated and participatory approach in which all sectors and affected individuals must be legally consulted (Cash & Swatuk, 2010). Municipalities are unabatedly given a role to play in service delivery enhancement in their areas of jurisdiction. All municipalities in the country have a policy mandate to ensure better coordination in order to maximize their administrative functions, budgeting and planning (Tsatsire, Taylor & Raga, 2010). Municipalities continue to face service delivery challenges despite the effort exerted by the provincial and national government spheres to build the local planning capacity through the introduction of the integrated development planning process (Mashamba, 2008; CoGTA, 2009; Akinboade, Mokwena & Kinfack, 2013: Makalela, 2016).

Local municipalities are struggling with implementation of IDP and service delivery. The planning and implementation of IDPs did not result in sustainable services, particularly within rural areas (Maake, 2016). Mathebula (2018) also argues that IDPs were not properly, efficiently and effectively implemented to carry out and deliver services as intended.

Given the above context, the aim of this study was to examine the challenges faced by the Lepelle-Nkumphi municipality in the implementation of IDP and service delivery. The specific objectives were to determine challenges in implementation of IDP and to suggest the necessary strategic interventions to improve municipal service delivery.

This paper comprises four sections. The first section reviews the relevant literature on the subject area. Secondly, this paper presents the research methodology adopted for conducting this study. Thirdly, it provides the findings from the qualitative interview. In section four, the main conclusion and recommendations will be presented.

2. LITERATURE REVIEW

Integrated development planning is the strategic and participatory process of formulating a comprehensive plan. It is a process through which municipalities develop their Integrated Development Plan (IDP) (Meiklejohn & Coetzee, 2003). The IDP is the outcome of the planning process which guides all developmental activities in a municipality. The IDP is the principal strategic planning instrument that guides and informs all planning, budgeting, management and decision-making in a municipality (Mathye, 2002).

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According to Dlamini and Reddy (2018), the implementation process of IDP includes a number of steps. In the first step of the IDP implementation process, municipalities are expected to carry out a situational analysis of the current context in their area of jurisdiction. The second step of the implementation process emphasises the formulation of strategies which involve development of a common vision and objectives in the short-term, mid-term, and long-term among multiple stakeholders. The third step involves development of operational strategy, and emphasis on the designing of project proposals by setting up objectives, targets and indicators. The fourth step includes the screening, adjusting, consolidating and approving of project proposals, thereby ensuring an integrated process between preparation, implementation and delivery. The fifth step focuses on the decision and endorsement of the IDP projects. The last step of the implementation of the IDP process involves the assessment of whether the IDP is compliant with the requirements of the legal framework (Dlamini & Reddy, 2018). Municipal officials and IDP representative forum members need to properly conceptualise and understand the implementation process of IDP in order to improve and speed up service delivery at the local level.

Some scholars argue that the effectiveness of a municipality to successfully plan and implement IDPs is largely dependent on the ability of the municipality to allocate budget to a variety of development projects and programmes within the IDP (Valeta & Walton, 2008). To inculcate budget with planning, municipalities need to use the Service Delivery and Budget Implementation Plan (SDBIP), (Valeta & Walton, 2008).

The SDBIP is an annually adopted document that contains projections of the revenue to be collected by the municipality, and operational and capital expenditure to be incurred by the municipality. The municipality, to successfully plan and implement the IDP to deliver on its mandates, is largely dependent on the ability to plan and allocate public resources in a developmental and sustainable manner (Phago, 2009).

Tsatsire et al. (2010) argue that establishing and maintaining sound intergovernmental relations becomes vital in ensuring the success of local government implementation of the IDPs. It is anecdotally evident that at the core of IDP implementation, municipalities must first position themselves to achieve full integration and coordination of sector specific plans in the IDPs (Beyers, 2015). However, Mojapelo (2007) maintains that sector plans are normally developed as standalone plans and independent from one another, which results in

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fragmented programmes and projects that are not entirely contributing to the vision of the municipality. Given the capacity challenges confronting local authorities, the national and provincial governments are taking a decisive role to address capacity and skills for the local implementation process.

The IDP contributes positively in enhancing service delivery by the municipalities, as it identifies key developmental objectives which are translated into programmes and projects that reduce the underlying causes and symptoms of service delivery backlogs and delays (Sinxadi & Campbell, 2015). The IDP as a policy framework reduces poverty through multi-sectoral programmes that include a variety of developmental initiatives including provision of services such as water, sanitation, electricity and housing (Phago, 2009). However, critiques have been raised regarding the failure and inability of the IDP to enhance service delivery (Tsheola & Mokgokong, 2012).

3. METHODOLOGY

The aim of this study was to examine the challenges in the implementation of IDP and service delivery in Lepelle-Nkumphi municipality. This municipality is one of the local municipalities within the Capricorn District Municipality in Limpopo province and is located in the southern part of the Capricorn District. The municipality is predominantly rural with a population of approximately 230 350 people. It comprises of 30 wards which consist of a total of 94 settlements. About 95% of the land falls under the jurisdiction of traditional authorities (Lepelle-Nkumpi Local Municipality, 2016).

This study adopted an interpretivism paradigm. An interpretivism paradigm is based on a life-world ontology that argues all observation is both theory and value-laden and investigation of the social world is not, and cannot be, the pursuit of a detached objective truth (Leitch, Hill & Harrison, 2010). It is characterized by a need to understand the world as it is from a subjective point of view and seeks an explanation within the frame of reference of the participant rather than the objective observer of the action (Ponelis, 2015).

The research design selected for this study is a qualitative case study. The qualitative design produces holistic understandings of rich, contextual, and generally unstructured, non-numeric data (Mason, 2002). A qualitative study provides an opportunity for participants to interact during the research process (Creswell, 2009). According to Hanekom (2006), the qualitative research method enables researchers to investigate social phenomena. The qualitative research design was specifically employed in this study to investigate the perception of

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participants on the challenges in the implementation of IDP and service delivery in the local municipality.

The study area, Lepelle-Nkumphi municipality, is situated in Limpopo province. The municipality was selected because the researchers are familiar with the area and due to the fact that it is one of the underperforming municipalities in the province. A total of 15 key informants were selected purposefully from municipal officials, IDP steering committee, ward councillors and ward committee members. The main criteria which was used for selecting the key informants was whether a participant was involved in IDP and service delivery. Qualitative data was collected using face-to-face semi-structured interview method. The data analysis used in this study was a qualitative thematic analysis method which involves description, classification of the data into themes, and sub-themes and interpretation.

4. FINDINGS OF THE STUDY

The qualitative data gathered in this study were analysed through thematic analysis, that is, in terms of themes and sub-themes that emerged from the interviews. The following key themes and sub-themes were identified in this study:

- Challenges in the Implementation of IDP: poor community participation, inadequate financial resources, abandoning of projects, political meddling
- Perception on Service Provision
- Suggestions by Participants: strengthen community participation, efficient use of financial resources (especially MIG grant), better coordination between local government and sectoral departments, improve reporting and feedback platforms.

4.1. Challenges Faced by the Municipality in Implementation of the IDP

The findings from respondents confirm that, irrespective of the rural-urban context, the implementation of IDP is a strategic tool for eradicating service delivery backlogs through effective planning and efficient utilisation of available resources. Below are the selected responses from the municipal officials.

- "IDP is highly important for the municipality as it serves as a tool for eradicating service delivery backlogs because it directs an order in terms of the municipal planning. IDP addresses the intended needs of the communities and that is through the community-based planning whereby we go visit every ward in the

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municipality asking the community members to identify and prioritize the development needs." (The IDP Officer).

- "IDP assists in terms of prioritization of services. The communities inform us about their service delivery issues in our area of jurisdiction… As the municipal officials heading the planning directorate, we strive to ensure effective planning and implementation of the IDP and by so doing we gather the community members and ask them about their different needs in their area of jurisdiction and then at a later stage ask them again to prioritize the intended and identified needs." (Public Participation Officer).
- "IDP is a very important tool for the municipality to use in terms of planning … It further serves as an integrative document that includes all the development plans of the municipality… It anticipates covering both public and private sector development initiatives." (LED Manager).
- "IDP serves as a tool for prioritization of community needs against the available resources or the budget. The IDP serves as a mechanism within which the performance of the municipality can be measured… IDP is also a project management tool because it makes the identification of the diverse projects possible in accordance with the time frame for implementation." (The IDP Manager).

The findings of this study are in line with the literature and support the view that the implementation of IDP is very critical to eradicate service delivery backlogs (Valeta & Waton, 2008). The implementation of IDP would assist communities in rural areas who are suffering from lack of services. The main challenges in the implementation of IDP and service delivery are presented as follows:

As the findings suggest that inadequate public participation was one of the challenges encountered by the municipality in the implementation of IDP, the remarks below are an indication of the overall response:

- "Inadequate public participation is a serious concern that inhibits the planning and implementation of the IDP in the municipality." (IDP Officer).
- "Ward consultation meetings for identification and prioritization of community needs are tending to violence and civil unrest." (IDP Officer).

The above finding is supported by the literature which suggests that inadequate public participation in the planning and implementation of the municipal IDP is found to be a problem affecting almost all South African municipalities (Phago, 2009).

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The study found that the municipality encountered financial difficulties during the implementation of IDP. The remark below is an indication of the overall response:

"The municipality experiences lack of funds to address the extreme needs of communities and that is mostly attributed to the non-payment of certain municipal services by the communities (revenue collection) such as refuse removal, property rates and water…. the main reason for non-payments of such services is simply because the municipality is predominantly rural as opposed to urban municipalities whereby people are able and willing to pay for services." (The IDP manager).

This study shows that municipalities experienced some form of managerial problem in terms of completing a project. The remark below is an indication of the overall response:

"The reason for abandoning various projects in the municipality is mainly because of fraud and insufficient funds to finish up the projects… And that makes the municipality have lots of white elephant projects or projects that are futile in communities." (The IDP Officer).

This study indicates that political meddling is one of the problems that the municipality struggled with during the implementation of IDP. A respondent remarked the following*:*

"If the municipality is to implement a particular project in one of the wards of the municipality, it sometimes becomes a problem when councillors intervene and command the municipality to implement the project in their respective wards". (The IDP Officer).

As a result, the delivery of services is delayed because services are delivered where they are not supposed to be delivered. There is a need for separation of functionalities between politicians and administrative officials (Beyers, 2016). It can therefore be concluded that in dealing with the above-mentioned problems for planning and implementation, municipalities need to revisit and genuinely produce credible IDPs that take account of the real issues of the people with a clear separation from different office bearers of the municipality.

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4.2. Views of Participants on Service Provision

The finding confirms that the implementation of IDP has contributed to eradicating service delivery backlogs in rural areas of the municipality. Below are the selected responses from various municipal officials:

- Relatively the municipality has delivered services well, although not all programmes and projects have been implemented… However, the projects implemented through the IDP have brought relief in some ways, like roads, water, electricity and other infrastructure development programmes." (The LED manager).
- "There are lots of water pipes in communities without running water. There is lot of broken municipal water pipes and the budget for maintenance is available, but pipes are not being fixed." (The public participation officer).
- "In the municipality we are having improved delivery of services to rural communities. They have improved and there are up-to-standard sanitation facilities and electricity… that is because some of the people during the community meetings appraise the municipality for the delivery of services." (The IDP manger).
- "The municipality has relatively effectively delivered an ample amount of services because many rural communities in the municipal wards have water, electricity and sanitation among other services." (The IDP officer).
- "The municipality has delivered service to the rural communities… However, the service delivered is based on the resources allocated." (The LED manager)

The literature provides mixed results regarding the effectiveness of IDP on promoting service delivery. Some authors argue that IDP has contributed to enhance service delivery at the local level (Sinxadi, & Campbell, 2015). On the other hand, critiques have been raised regarding the failure and inability of the IDP to enhance service delivery (Tsheola & Mokgokong, 2012). In the researchers' view, although the IDP has contributed towards reducing service delivery backlogs in the municipality, the intention of accelerating service delivery has not been exclusively attained due to challenges related to implementation.

The findings further revealed that the beneficiaries of service delivery are somehow not fully satisfied with the current level of services in their area, meaning that much should be done to improve the access to and quality of

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services provided to rural communities. The remarks below are an indication of overall responses:

- "Currently there is a problem of water shortage in the ward; however, we tried to remedy the situation by having a Two Days per Week Programme, whereby we open up the water from the reservoir in trying to address water crises in the ward." (The ward councillor).
- "Many households in the ward have access to electricity but the problem is the fact that the villages continue to grow. Moreover, those who cannot afford to buy electricity, more especially the destitute households and old people/pensioners, are encouraged to apply for free units." (The ward executive committee member).
- "There is no refuse collected in the ward because of the rural nature of the municipality; however we are still urging those who are able and willing to pay municipal tariffs to do so… because currently people collect their refuse and dump it in the yard, some in the street and the bush." (The ward executive committee member).
- "Some have improved services delivered to them and they are satisfied; however, it is an ideal for everyone in the community to receive improved services." (The IDP manager).
- "To a certain extent, services have been delivered to the communities and they are satisfied, while in the other areas some developmental needs are still a work in progress." (The IDP officer).

The literature suggests and confirms that there is a public dissatisfaction regarding services delivered by municipalities. This study confirmed that the municipality has experienced similar service delivery dissatisfactions by the beneficiary community due to inadequate and unreliable service provision.

4.3. Views of Participants to Improve IDP implementation

Participants of this study suggested improvements in the implementation of IDP and service delivery in specific areas as follows:

Respondents explicitly indicated that the major areas that need improvement in the implementation of the IDP are public participation and non-attendance of community consultation meetings. The suggestion below provides an indication of the overall responses:

- "Communities need to take charge and get full control of their own development." (The IDP officer).

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- "There is a need for a revamp in public participation processes… That is because public participation is one of the tools of local government which ensures that there is democratic governance and accountability. Therefore, it is important for the municipality to have a structured way of engaging their communities." (The LED manager).

According to the respondents of this study, one of the areas that need improvement is public financial resource utilisation, specifically the efficient utilisation of the Municipal Infrastructural Grant (MIG). The suggestion below provides an indication of the overall responses:

"There is clearly a need for the municipality to have an efficient usage of the MIG grant to support various projects and programmes of the municipality… because with failure to utilize such funds the government will take back the money for that current financial year, unless the municipality can convince the government as to why they did not utilize the money for infrastructural projects in the municipality". (IDP officer).

Respondents indicated that clear collaboration between local and provincial departments could explicitly assist the municipality to achieve its developmental mandates. Respondents of this study reflected the following sentiments:

- "There is a need for the collaboration between local, national and provincial department in terms of the IDP priorities …. Sometimes you find a situation whereby the provincial department constructs additional classrooms in a school where the very same school is in a perfectly good condition, as opposed to the nearest school which has dilapidated classrooms…. But because there is no collaboration, funds are spent in areas where they are not supposed to be". (The IDP manager).
- "There is need to revamp the consultation processes particularly in terms of stakeholders, and that includes the public, private, civil society organisations, Non-Government Organisations and the communities." (The LED Manager).
- "The municipality has a schedule for consultation processes in the consolidation of the IDP. However, if stakeholders are not pitching up, then it becomes a problem… For example, the Department of Agriculture wants to implement a particular project to be consolidated in the municipal IDP, so that process must be in consultation with the various stakeholders." (The LED manger).

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Respondents highlighted that the municipality needs to improve reporting and feedback mechanisms. The suggestion below provides an indication of the overall responses:

"There is a need for reporting on any issue affecting the communities in the IDP programmes… The municipality must also have or create platforms for feedback with all the communities in the municipality concerning the IDP projects and programmes." (The LED manger).

5. CONCLUSION AND RECOMMENDATION

The aim of this study was to examine the challenges in the implementation of the Integrated Development Plan (IDP) and service delivery in the Lepelle-Nkumpi municipality. The findings from the literature review suggest that the implementation of the IDP is key to enhance municipal service delivery as it identifies key developmental objectives which are translated into programmes and projects that accelerate service delivery. Additionally, IDP promotes a multi-sectoral and integrated approach that includes a variety of developmental initiatives, primarily water, sanitation, electricity, refuse removal and housing, to alleviate poverty.

The results from qualitative interviews suggest that the IDP has assisted the municipality in addressing service delivery backlogs. The municipality has extended infrastructure including roads to benefit the community. The IDP related service and infrastructural projects have benefited the community by increasing access to basic services. The results from qualitative interviews further indicate that the municipality had encountered a number of challenges in the implementation of IDP, such as shortage of resources, incomplete projects, inadequate community participation and political meddling.

To address the aforementioned challenges, the national and provincial governments should give emphasis to capacity building and skills development to enhance the competency of local municipalities to plan and allocate budget to projects and programmes. It is further recommended that the relationship between the three spheres of governance needs to be strengthened to develop sound intergovernmental relations. Likewise, the municipality and sectoral departments should improve coordination and integration to improve implementation of programmes and projects related to service delivery. Moreover, the relationship between communities and local municipality needs to be strengthened through enhancing participation in the annual IDP review and budget allocation.

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The main limitation of this study is its geographic scope and qualitative nature. Future research should focus on a large scale and mixed method to get better understanding of the subject matter. It is recommended that future researchers think about the content analysis using categorization and interpretation methods which involve both deductive and inductive approaches. Future research should also be done on abandoning of projects as one of the critical issues facing local municipalities in South Africa.

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-RESEARCH ARTICLE-

THE GOVERNMENT REFORM ON HEALTHCARE FACILITIES FROM THE STANDPOINT OF SERVICE QUALITY PERFORMANCE

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–Abstract–

The Indonesian government reforms in healthcare shift the management philosophy of healthcare from sellers' market to consumers' demand that providing high-quality service and achieving a patient's satisfaction become critical issues. Currently, service quality performance (SERVPERF) has been gaining popularity for measuring patient satisfaction instead of the classic SERVQUAL due to the critics that one cannot examine customer expectations, but only the level of quality of the received and realised service. The main objective of this research is to examine the effect of the service quality on the

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entire satisfaction of outpatients toward radiology facilities in public hospitals of South Kalimantan province, Indonesia. The primary data consisted of 360 outpatients serving as respondents and the relationship among constructs are analysed using partial least square (PLS). The developed model was validated by identifying service quality performance of the respective healthcare and rating the domain demanding the executive endeavour to improve. The results denoted that the dimensions of SERVPERF are accurate in the south east Asian country of Indonesia. Reliability, tangibility, assurance, empathy and responsiveness were rated as preferences, respectively. Since the highest form of satisfaction is displayed in the form of patients' loyalty, the scheme of applying service quality betterment to preserve patient trustworthiness then relies on the degree of patient contentment. This phenomenon suggests that the assessment of patient preferences would embrace the standing point of patients' satisfaction with healthcare providers.

Key Words: Patient satisfaction, Service Quality Performance (SERVPERF), Radiology healthcare facilities

JEL Classification: 138

1. INTRODUCTION

Indonesia's healthcare system is experiencing major reform driven by urgency triggering this movement. Commencing from 2014, the Indonesian government has budgeted healthcare funding to schools of medicine and hospitals owned by local government to develop the quality of patient care by launching the National Social Health Insurance Scheme (Supriyana et al., 2019). Before this policy, only government employees, soldiers and police officers were secured by health insurance. Consequently, the Indonesian authority stipulated concern for the healthcare sector and encouraged the urgency for public and business sector cooperation (Boyle & Plummer, 2017). These initiatives indicate the authority's commitment to improve hospital administration and management in a patient-centred business to alleviate patient satisfaction.

Along with the government's recent initiatives, Indonesian patients are more knowledgeable and proactive in opting for their healthcare preferences. In main big cities of Indonesia, more agents of health are growing , mainly the ones from the neighbouring countries of Singapore and Malaysia (Ormond & Sulianti, 2017) offering the sophistication of their healthcare facilities. The result is that Indonesia loses a significant share of domestic healthcare market spending, as nearly 1.5 million Indonesian people go to neighbouring countries to search a more

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sophisticated medical treatment with an approximate outflow of $1.4 billion yearly (Arifah et al., 2018). This phenomenon indicates there is soaring insistence for renewed hospital-based business as patients are sufficiently knowledgeable and very demanding to the kind and level of health services they would like to experience. Consequently, Indonesian hospitals are currently running in a brand new, complicated and competitive environment. As such, healthcare providers need to operate efficiently by investigating a clear division between the service quality and satisfaction in the Indonesia healthcare market.

Numerous researchers have examined patient satisfaction in developed countries in the field of healthcare services (Rajiani et al., 2018); however, to the authors' knowledge, no research has been conducted in Indonesia. As one of the highest economic growths in the world, doing business in this country requires a comprehensive understanding of people's preferences, mainly when running a business in the public sector. Along these lines, the present investigation is aimed at setting up a scale for evaluating the administration nature of hospitals in the developing country of Indonesia. In this investigation, SERVPERF concept that has been validated in developed countries is adjusted to make the scale setting applicable for Indonesia to assess outpatients' impressions of service quality towards radiology facilities in state-owned hospitals.

2. LITERATURE REVIEW

The starting point in the service industry is the understanding of the factual nature of the consumer and service provider (Rajiani & Kot, 2018). In Asia, numerous researchers have considered the convergence among service quality and consumer loyalty in a few hospitality industries, especially hotels and restaurants (Cao & Kim, 2015, Arsawan, Rajiani & Suryantini, 2018) as well as in Montenegro, a small central European country (Popovic et al., 2018), Consumer satisfaction is general conduct that is dependent on the client experience when purchasing an item or expending of a service that is executed through an appropriate response in the gap between what the client expects and what he/she gets (Lai & Chen, 2011).

Further, Lee, Lee and Yoo, (2000) presume that the clients are (dis)fulfilled just when they have seen and encountered the service. This means the service quality evaluation goes before the clients' fulfilment, making the service quality regularly observed as the prerequisite (Amin et al., 2013) and the thought that the service quality directly affects satisfaction has been generally recognised (Chen, Chen & Lee, 2013). This condition is also applicable to healthcare domains that require the organisation persistently to convey the quality services for the satisfaction of

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the patient which is considered as one of the pivotal components of this business (Sumaedi et al., 2016).

Since health services are competing in a new arena (Le & Gerald, 2015, Stefko et al., 2017), examining patients' perceptions have been increasingly becoming critical in the evaluation of healthcare quality. In this manner, scholars and professionals still identify dynamic instruments to assess service quality in healthcare (Gadowska & Różycka, 2016; Shafiq et al., 2017). Further, the expanded patient desires make healthcare service workers work harder to distinguish the elements crucial to develop healthcare benefits leading to patient's fulfilment.

Due to its popularity, the SERVQUAL tools have been widely applied to assess the service quality of various businesses, including healthcare (Swain, 2019). The SERVQUAL scale comprises five dimensions of service quality, namely tangibles, reliability, responsiveness, assurance and empathy (Parasuraman, Berry & Zeithaml, 1991). Items comprising of 40 questions were engaged into two articulations – one to survey expectations and one to evaluate perceptions utilising a seven-point scale going from strongly agree (7) to strongly disagree (1). However, some debates arise on the number of dimensions, handling of expectations and the application of gap values between perceptions and expectations (Kiran & Diljit, 2017). Briefly, researchers have shown two critical critics about the SERVQUAL. First, it is regarded that it takes too long to answer 44 questions. The second problem is the ambiguity of the expectation and the truth that assessing perceptions and expectations simultaneously can create boredom and misperception. Therefore, Upadhyai et al. (2019) advocates an alternative tool called SERVPERF by employing the scale of performances to examine drivers of satisfaction in healthcare. The SERVPERF model shows performance solely measures, or provider high-quality measurements emphasise only organisational performance, as perceived by customers, instead of focusing on the gap between the consumers' perceptions of overall performance versus their expectations of provider quality (Akdere, Top & Tekingündüz, 2018). Shortly, the primary distinction between SERVQUAL and SERVPERF is that the service excellence is evaluated in simple terms, which is via the dimensions of end users' perceptions rather than their expectations.

In line with the massive reforms in the public sector (Rajiani & Ismail, 2019), the management of public hospitals in Indonesia has focused primarily on investment in the technological side of healthcare to upgrade the capacity of diagnosis and treatment for patients (Handayani et al., 2015). However, there has not been any

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evaluation framework officially applied in assessing the service quality in Indonesian public hospitals providing high-tech service in terms of radio-diagnostic and radiotherapy. Therefore, the evaluation of healthcare quality in the context of patient satisfaction may contribute to the existing gap in the process of evaluating the quality of healthcare in Indonesian public hospitals.

Based on previous research and theoretical assumptions, we formulated our central hypothesis, that there are significant differences in the assessment of SERVPERF in healthcare from the patient's satisfaction standpoint.

3. METHODOLOGY

This research is to highlight the significance of five dimensions of service quality of radio-diagnostics and radiotherapy. Convenience samples of 360 outpatients from 10 public hospitals located in South Kalimantan province in Indonesia were asked to respond to questionnaires. The hospitals share the same characteristics as they serve mostly patients with middle to low socio-economic background. To enlarge the rate of responses, questionnaires have been dispensed and gathered in the hospital surroundings before discharge of the outpatients. The questionnaires with five-point Likert scales were adapted from Akdere, Top and Tekingündüz (2018) with 15 items used to describe the quality dimensions of tangibility, reliability, responsiveness, assurance and empathy. Patient satisfaction in healthcare is reflected in satisfied patients who will recommend to family members and reuse the service (Rajiani et al. 2018). Path analysis with PLS was employed to investigate the relationship between patient satisfaction and the dimensions of SERVPERF. Though CB-SEM and PLS-SEM are both applicable for sample size $n > 100$, PLS-SEM was used in this research due to its capability to explain and to predic theory aligning well most types of business research, which typically aims at testing a theory while offering recommendations for management practice (Hair et al., 2012).

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4. RESULTS & DISCUSSION

Table 1 previews the descriptive statistics on outpatients' demographics.

Table 1: Demographics of participants (n = 360)

Characteristics		Frequency	Percentage (%)
Gender	Male	187	52
	Female	173	48
Age	Under 25 years	11	3
	25–35 years	126	35
	36–46 years	151	42
	Over 46 years	72	20
Educational Level	Primary/Secondary School	36	10
	High School or equivalent	72	20
	College /Graduate School	252	70
Insurance Coverage	Government	324	90
	Private	36	10

Table 1 indicates that 52% of the respondents were males, while females comprised 48% of the participants. More than 75% of the participants were between the ages of 25 and 45. Over 65% of the respondents graduated from college or graduate school and 90% had government-sponsored healthcare coverage. Table 2 displays the mean score in the SERVPERF model.

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Table 2: Means of SERVPERF

SERVPERF Mean	Items	Mean
Tangibility (3.18)	The clinic has up-to-date equipment	3.25
	The hospital's physical offices are outwardly appealing.	3.05
	The hospital's workers show up neatly.	3.10
Reliability (4.84)	The hospital gives its service at the time it guarantees to do so.	4.82
	When patients have problems, the hospital's workers are thoughtful and reassuring.	4.93
	The hospital is precise in its billing.	4.78
Responsiveness (4.93)	The hospital personnel tell patients precisely when service will be performed.	4.95
	Patients obtain immediate service from the hospital's personnel.	4.92
	The hospital's personnels are always ready to assist patients.	4.94
Assurance (4.82)	. Patients feel secured in their interactions with the hospital's employees.	4.98
	. The hospital's employees are knowledgeable.	4.80
	. The hospital's personnel are polite.	4.88
	. Employees get sufficient aid from the health facility to do their tasks well.	4.65
Empathy (4.65)	. The hospital's employees provide patients individual attention.	4.55
	. The clinic has the patients' satisfactory pursuits at heart.	4.76

Viewing the SERVPERF measure strictly, the most elevated amounts of view on service quality were related to patients' contentment of feeling secured when interacting with the staff (4.98); telling patients when the service will be performed (4.95); being ready to consistently support patients (4.94); being thoughtful and consoling (4.93) and receiving immediate service from the clinic's workers (4.92). However, impression of the patients concerning the physical appearance of the building (3.05) and the tidiness of representatives (3.10) were

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positioned last. The mean score of the physical assets was the lowest (3.18) among the five service quality elements, while others were better than expected. In general, SERVPERF mean was determined at 4.48. The service quality measurements distinguished by the patients to be the most significant were responsiveness (4.93), reliability (4.84) and assurance (4.82). The inner model of the research is displayed in Figure 1.

PLS-SEM demands reflective measurement models to evaluate reliability and validity by observing the average variance extracted (AVE) instead of examining the classical Cronbach's alpha. The AVE value of 0.50 and higher indicates a reasonable degree of validity as this figure reflects that the latent variables have accounted for more than half of indicators' variance (Hair et al., 2012).

The summary for reflective outer models of the research is shown in Table 3.

Figure 1: The inner model

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Table 3: Average variance extracted (AVE)

Latent Variables	Items	Outer Loadings	Average Variance Extracted
Tangibility	The clinic has up-to-date equipment	0.83	
	The hospital's physical offices are outwardly appealing.	0.90	0.85
	The hospital's workers show up neatly	0.81	
Reliability	The hospital gives its service at the time it guarantees to do so.	0.84	
	When patients have problems, the hospital's workers are thoughtful and reassuring.		0.78
	The hospital is precise in its billing	0.72	
		0.79	
Responsiveness	The hospital personnel tell patients precisely when service will be performed.	0.70	
	Patients obtain immediate service from the hospital's personnel.	0.72	
	The hospital's personnels are always ready to assist patients	0.85	0.75
Assurance	. Patients feel secured in their interactions with the hospital's employees.	0.81	
	. The hospital's employees are knowledgeable.	0.80	
	. The hospital's personnel are polite.	0.88	0.83
	. Employees get ample aid from the health facility to do their tasks well.	0.82	
Empathy	. The hospital's employees provide patients individual attention.	0.85	0.81
	. The clinic has the patients' satisfactory pursuits at heart.	0.77	
Satisfaction	. I recommend the service to family members.	0.75	
	. I will be back to this healthcare again for medical treatment		0.73

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Latent Variables	Items	Outer Loadings	Average Variance Extracted
		0.70	

Table 3 shows all average variance extracted (AVE) values are greater than the recommended 0.5, indicating high levels of convergent reliability among all reflective latent variables (Hair et al., 2012). This way, convergent validity is confirmed.

The SEM results are displayed in Table 4.

Table 4: The SEM results

Path	Coefficient	R^2	P-Value	Conclusion
Tangibility → Satisfaction	0.87	0.425	0.00	Significant
Reliability → Satisfaction	0.89	0.624	0.00	Significant
Responsiveness→Satisfaction	0.31	0.382	0.04	Significant
Assurance →Satisfaction	0.85	0.419	0.00	Significant
Empathy →Satisfaction	0.35	0.392	0.02	Significant

The result reveals that tangibility in terms of offices physical appearance, sophisticated equipment and presence of workforce is positively related to patients' contentment in healthcare facilities. In addition, reliability, which is the capacity of healthcare to perform the guaranteed quality consistently and precisely, is positively associated with patients' satisfaction in healthcare facilities. Likewise, responsiveness, which alludes to the readiness to support clients and perform immediate service, is undoubtedly connected with patients' fulfilment. Further, assurance that depicts the learning and obligingness of representatives and their capacity to motivate trust and confidence in clients is positively related to patients' satisfaction. Lastly, empathy, thinking about others and giving individualised thoughtfulness regarding clients, is positively associated with patients' comfort in healthcare facilities.

To sum up, the five-basic factor estimation model was observed to be substantial and stable to be utilised in deciding the excellence of the healthcare facilities. Out of these five components, three elements (reliability, tangibility and assurance) produced strong significance.

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The model goodness of fit is measured with the Stone–Geisser Q-square test for predictive relevance (Nitzl & Chin, 2017) with the formula:

$Q2 = 1 – (1 – R1\ 2)\ (1 – R2\ 2)\ ...\ (1- Rn\ 2)$

The coefficient of determination (R2) for tangibility, reliability, responsiveness, assurance, empathy is 0.425, 0.624, 0.382, 0.419 and 0.392 respectively. Based on these figures, the Q-square predictive relevance is calculated as follows:

$Q\ 2 = 1 - (1 - R1\ 2)\ (1 – R2\ 2)\ (1 – R3\ 2)\ (1 – R4\ 2)\ (1 – R5\ 2)$

$= 1 - (1 –0.\ 425)\ (1-0.624)\ (1-0.382)\ (1-0.419)\ (1-0.392)$

$= 1 - (0.575)\ (0.376)\ (0.618)\ (0.581)\ (0.608)$

$= 1 – 0.047 = 0.953\ (95.3\%)$

Since Q-squares is approaching one, the model is robust and the predictive relevance requirement is excellent.

Results acquired show that in drawing up a sentiment of the administration quality, Indonesian patients give various degrees of significance to different parts of the service. Patients *feel secured in their interactions with the hospital's employee,* (sub-dimension of assurance) and telling *patients precisely when service will be performed,* (a sub-dimension of responsiveness) have become the performance of quality attributes perceived by respondents. Inclusion of the performance of these two items as the highest rank indicates that Indonesian healthcare facilities in South Kalimantan province have been successfully implementing the reform as in the past most employee's government-linked business were famous for being slow in performing the service for the community (Abbas, Hadi & Rajiani, 2018). Achieving excellence in this dimension may be due to the successful implementation of the National Health Insurance Program in 2014, which is a realisation of the National Social Security mandated by the law (Supriyana et al., 2019). This program authorises each resident to get extensive healthcare facilities covering promotive, preventive, therapeutic and rehabilitative administrations with a moderate expense through a protection framework. During the treatment, a guaranteed member only needs to pursue the set up systems and produce an enrolment card to get the service. The benefit of the program experienced by most Indonesians may justify why the incumbent, Mr Joko Widodo, was re-elected the president.

The direct observation reveals that the dissatisfaction with waiting time, which is common in healthcare (Yuswanto et al, 2018), has been resolved by limiting the

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number of patients to reduce the waiting time as well as booking through SMS, where the patients can monitor their waiting line so they can estimate how long they have to wait.

The tangibility of the hospital in terms of possessing visually attractive physical facilities and the neatness of employees were ranked as the lowest items. The healthcare manager should focus on this, as the tangibility of quality healthcare service is the main reason for apprehension of the advertisers (Mahmood et al., 2017). The field that legitimately impacts the quality is office design for it is used to give and to offer the service. Simultaneous with the quick development of technology, as well as a variety of necessities, it is urgent for healthcare to redesign the inside interior of their offices to meet a high level of service quality and the best flow of the activities.

To conclude, specific attributes of healthcare service providers are a focal part of the arrangement of quality service. The SERVPERF model, because of clients' involvement in the service experienced, distinguishes passionate work as an attractive quality including responsiveness, civility and comprehension/knowing the client, as an essential dimensional trademark. A tangibles dimension usually alludes to appearance, which considers the physicality of the surrounding and the work force. In this manner, it is recognised that the disposition and presence of forefront employees are vital and clients rate gracious, supportive and compassionate staff as a deciding role in service quality.

Since most public hospital buildings in Indonesia date back to the colonial period, the building is old and out of date. The gloomy appearance of the building affects the way of dressing as most of employees do not dress neatly as reported by respondents. The healthcare provider should be sensitive to this issue to improve service performance due to the importance of personal appearance.

5. CONCLUSION

The discoveries of the present investigation are very attention-grabbing as they are justified the SERVPERF estimations in the public hospital which have never been confirmed specifically in the Indonesian setting after reformation in public service. Further, the replication of past SERVPERF model in developed nations which is examined in society of Indonesian public hospital will open entryways for further research to broaden the present model by utilising the justified model from the current examination together with some other essential elements. The consequences of the present investigation additionally expose that reliability, tangibility and assurance are the fundamental measurements of estimating service

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quality; not only in business but also in the public sector. This finding implies that public hospitals must redesign their business model to be more customer-oriented, as in the business sector. However, patients treated in public hospitals expect different service to those visiting private hospitals (Dumitrescu et al., 2014). This study indicates that responsiveness is essential for public hospital patients, but is not a determining dimension for private hospital patients. Therefore, further research should be extended to the Indonesian private hospitals' client sector to provide solid models for Indonesian healthcare facilities to develop high-quality healthcare services.

Despite the fact that developed countries are richer and more proficient in providing excellent healthcare services, developing countries like Indonesia are also able to perform superior healthcare services with inadequate funds by combining the political and collegial will. Thus, the model of Indonesian National Health Insurance Program can be a reference for other developing countries as well as a model for sustainability program as projects of health systems research frequently suffer from poor sustainability (Flessa & Meissner, 2019).

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-RESEARCH ARTICLE-

EFFECT OF DISAGGREGATED COUNTRY RISK SHOCKS ON FINANCING DECISIONS OF THE JSE LISTED FIRMS

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─Abstract─

Firms in South Africa and other developing countries are facing a rapid increase in capital cost accompanied by an increase in leverage as a result of operating in uncertain environments, which complicate firms' financing decisions and strategies. This paper examined the impact of rising leverage levels on firm's cost of capital and the effect of country risk shocks on cost of capital and financing decisions among JSE listed firms. A dynamic panel model estimated with two-step system generalised methods of moments (GMM) was used to analyse panel data from 198 listed non-financial firms. The results suggest that the rising debt levels of JSE listed firms are negatively associated with weighted average cost of capital and cost of debt. Cost of equity was found to be an increasing function of firm leverage. High financial risk was found to be associated with an increase in cost of capital, high political risk associated with an increase in cost of equity and weighted average cost of capital (WACC), while an increase in economic risk is

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associated with high WACC and cost of debt. The study establishes that disaggregated country risk shocks significantly affect firms financing decisions.

Key Words: Cost of capital, Leverage, Country risk components, GMM

JEL Classification: G10, G32

1. INTRODUCTION

The proponents of the capital structure theory, Modigliani and Miller (1958), assuming a perfect market in a world without taxes, initially argued that the capital structure of a firm is irrelevant in determining the cost of capital of a firm. Subsequent studies (Jensen, 1986; Myers, 2001; Myers & Majluf, 1984) challenged this position based on the existence of market imperfections, asymmetric information and agency costs. The development in financial theory later reveals that leverage lowers the cost of capital due to tax shield brought by debt financing. The global credit research by Moody's (2017) reveals that South African firms have low leverage compared to global standards. This is supported by de Souza (2016), who documents that leverage levels of firms in developing economies are very low and are reported to be almost half of the firms in developed economies. In the South African context, leverage is rising from previous low levels among JSE listed firms.

Developments in capital structure theories reveal that debt financing is cheaper and the tax shield advantage lowers the average cost of capital of a firm and increases firm value (Yuan & Motohashi, 2014). However, in practice, South African firms are experiencing an increase in the overall cost of capital, stagnant investment and decay of value as leverage levels increase. The expectation would be a reduction in cost of capital and an increase in value following increased use of cheaper debt but the cost of capital is reported to be on an uptrend and investment is stagnant among South African firms (Fosu, 2013). This trend leaves many unanswered questions and one of them is the role leverage plays on a firm's cost of financing among South African firms. Alternatively, one could ask whether the development indicates a different phenomenon, which can be explained by the peculiar characteristics of developing economies such as higher risk, sluggish economic growth, poor credit ratings and low financial development. This may be the case for South Africa, which suffers from high levels of corruption, civil unrests (demonstrations and strikes) and high crime (Asiedu, 2006). Above all, the lack of precision on policy and structural reforms is also a concern for investors. In the presence of such uncertainties, lenders may require higher return on their capital and this may influence firms' financing

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decisions. Against this backdrop, it is worthwhile to explore South African evidence on the empirical association between cost of capital and capital structure taking into consideration the changing country risk dynamics. The present paper, therefore, examines the effect of political, economic and financial components of country risk shocks on the JSE firms' financing decisions.

2. LITERATURE

The proponents of the capital structure theory, Modigliani and Miller (1958) (M&M), initially assumed a frictionless perfect market and posit that the capital structure of a firm does not affect its weighted average cost of capital (WACC). This means that the cost of capital of a firm is independent of its capital structure. M&Ms argument was based on the fact that as firms introduce cheaper debt in the capital structure, the overall risk increases and shareholders will demand a higher return for their investment and, hence, wiping off any benefits of cheap debt and the firm's WACC will remain unchanged (Aivazian, Ge, & Qiu, 2005). In such a world, M&M argue that the value of a firm sorely depends on its ability to generate income (Antoniou, Guney & Paudyal, 2008). Taking taxes into consideration, Modigliani and Miller (1963) later show that leverage reduces the cost of capital due to the presence of interest tax shield. However, the irrelevance M&M proposition was based on perfect markets, which do not exist in the real world with inevitable factors, such as transaction costs and information asymmetry. Subsequent studies such as Jensen and Meckling (1976) and Myers and Majluf (1984) challenged the M&M irrelevance proposition; as a result, different theories were developed based on the existence of imperfect markets, asymmetric information, agency costs and country risk dynamics.

The trade-off theory puts forth that an optimal capital structure that maximises the value of a firm can be identified and maintained at a level where the WACC is minimum (Myers, 2001). This optimal capital structure is a trade-off between the benefits (tax shield) and costs of debt financing (financial distress) (Bas, Muradoglu & Phylaktis, 2009). Thus, the increase in leverage initially reduces the cost of capital (at this point the benefits of debt outweigh the cost) to a certain point, where any benefits from tax shield will be eroded away by any addition in debt financing (Akhtar, 2005). From the agency cost theory perspective, the interaction of bondholders, managers and shareholders generates friction, which induces under-investment and over-investment incentives (Jensen, 1986). In the context of increasing leverage, Jensen and Meckling (1976) proposed a trade-off between agent costs and benefits (Aivazian et al., 2005). The pecking order theory suggests that when seeking external finance, firms look for ways to minimise the

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cost of capital; hence, a preference for internal funds before considering external financing (Myers & Majluf, 1984). The market timing hypothesis argues that financial managers move in and out of financial markets to take advantage of any mispricing in the market to reduce the overall cost of capital; predicting that firms increase debt when it ultimately reduces the overall financing cost.

The capital structure theory sparked a lot of controversy in corporate finance and empirical studies present varying results warranting further investigations. Singh and Nejadmalayeri (2004) found a negative relationship between leverage and cost of capital in French firms, this study showed that French firms were able to minimise the cost of capital by increasing the debt level. Similarly, Narayanasama (2014) found a direct relationship between leverage and cost of capital in a sample of 32 firms analysed with simple correlation analysis. Additionally, a study by Okiro, Aduda and Omoro (2015) found a positive relationship between capital structure and cost of capital for 56 firms listed on the East African Community Securities Exchange.

Contrary to the study that found a direct relationship between capital structure and cost of capital, Sagala (2003) concludes that such a relationship is unique to each firm, in a study of Kenyan firms, and cannot be generalised. This suggests that the change in capital structure does not always affect the cost of capital. For example, a study by Khadka (2006) on 15 Nepalese firms found that the relationship between leverage and cost of capital was not significant. Therefore, there are mixed empirical results on the effect of capital structure on a firm's cost of capital, where some studies found a positive relationship, some a negative and others found no relationship between the two variables. These divergent views by different studies can be explained by the absence of capturing the country risk shocks, which tend to cause shifts in financing decisions of firms. Thus, further analysis, which examines the role of country risk in the relationship between capital structure and cost of capital, is crucial and can shed more light on the dynamics that affect corporate financing decisions.

3. EMPIRICAL APPROACH

3.1. Data, sampling and variables

To ascertain the impact of country risk on capital structure and cost of capital, the study considered all JSE listed firms. Listed firms were selected due to availability of reliable financial data. The final sample constituted 198 firms after excluding financial firms and firms with no data for the post-apartheid sample period (1995 to 2018). Financial firms were excluded from the sample because of their more stringent regulations; therefore, their capital structure form exhibits

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regulatory requirements than firm's discretion. Secondary data from firm's financial statements obtained from Bloomberg database were used. Following previous studies by Aivazian et al. (2005), Yuan and Motohashi (2014), capital structure (the combination of debt and equity) was measured as a leverage ratio (ratio of debt to total assets); the higher the leverage ratio, the more debt financing used by such firms. The cost of capital was measured in three different ways. Cost of equity, which reflects the required return on equity holders, cost of debt the required return on lenders and WACC, the required return on company assets. The cost of debt was measured as a ratio of interest payments to debt (Dang, 2011). In line with empirical studies, the capital assets pricing model was used to calculate the required return on equity as follows:

$$k_e = r_f + \beta(R_m - r_f) \quad (1)$$

Where k_e is cost of equity, r_f is the risk-free rate measured by the return on the short-term government bonds, R_m is the return on the overall market and β is the sensitivity of the stocks returns to the returns of the market. WACC was measured as a weighted average cost of firm financing as follows:

$$WACC = \sum W_i * k_i \quad (2)$$

Where W_i is the weight of financing source i measured in market values and k_i is the cost of financing source i (debt or equity).

Country risk data developed by the ICRG were used. The three risk indices (financial, political and economic risk) were used. The ICRG methodology assesses financial risk index through the stability of exchange rates, international liquidity and the proportion of foreign debts (Cermeño & Suleman, 2014). Financial risk assesses the ability of an economy to pay its obligations. Economic risk evaluates the economic weaknesses and strengths through the economic risk components such as inflation, GDP growth and GDP per capita (Howell, 2011). When economic strength outweighs weaknesses, there is low economic risk (Suleman & Randal, 2016). Political risk measures the economy's political stability. In assessing political risk, the ICRG methodology uses different components including military in politics, corruption, government stability, conflict, democratic accountability, law & order among others (Howell, 2011). Standard variables used in the empirical literature as control variables include asset tangibility, firms with more tangible assets are expected to have a lower financing cost, liquidity where liquid firms are expected to raise capital at a lower cost, sales to control for firm size, where larger firms are expected to enjoy lower borrowing rates (Sengupta & Dasgupta, 2002) and earnings variability measured

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by the coefficient of variation of annual earnings estimated as a ratio of standard deviation of earnings divided by its mean.

3.2. Model specification

The cost of capital was expressed as a function of country risk, leverage and control variables, which include assets tangibility, size, earnings variability and liquidity.

$$Cost\ of\ capital_{i,t} = (Country\ risk\ componets, leverage, \sum_i^n Control\ variables)$$

To examine the impact of country risk and leverage on firms cost of capital, this study considered a dynamic panel model, which captures the effects of previous financing costs on the current cost (Yuan & Motohashi, 2014) and reduces auto correlation that may arise from model misspecification (Arellano & Bond, 1991).

A general panel model takes the following form:

$$y_{i,t} = \alpha_0 + \beta_1 x_{i,t} + \sum_i^j Z_{it}\beta + \varepsilon_{i,t} \quad (3)$$

Where $y_{i,t}$ is the dependent variable for firm i at time t, x_{it} an independent variable and Z_{it} a vector of explanatory variables with j factors (j=1..., 4). $\varepsilon_{i,t} \backsim N(0, \sigma^2{}_\varepsilon)$ random disturbance and assuming $\sigma^2{}_\varepsilon > 0, \in (\varepsilon_{i,t}, \varepsilon_{j,s}) = 0$

Equation 1 was extended to a dynamic panel model which takes the following general form:

$$y_{i,t} = \gamma y_{i,t-1} + \sum_i^j x_{it}\beta + \varepsilon_{i,t}; |\gamma| < 1 \quad (4)$$

Where $y_{i,t-1}$is the lagged dependent variable. Three different specific models for the three costs of capital measures (WACC, cost of equity and cost of debt) were estimated in the following form:

Model 1:

$$WACC_{i,t} = \gamma K_{i,t-1} + \beta L_{i,t} + \vartheta F_{i,t} + \lambda EC_{i,t} + \pi P_{i,t} + \xi S_{i,t} + \psi \sigma_{EBT} + \varrho AT_{i,t} + \phi LQ_{i,t} + \varepsilon \quad (5)$$

Model 2:

$$Ke_{i,t} = \gamma K_{i,t-1} + \beta L_{i,t} + \vartheta F_{i,t} + \lambda EC_{i,t} + \pi P_{i,t} + \xi S_{i,t} + \psi \sigma_{EBT} + \varrho AT_{i,t} + \phi LQ_{i,t} + \varepsilon \quad (6)$$

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Model 3:

$$Kd_{i,t} = \gamma K_{i,t-1} + \beta L_{i,t} + \vartheta F_{i,t} + \lambda EC_{i,t} + \pi P_{i,t} + \xi S_{i,t} + \psi \sigma_{EBT} + \varrho AT_{i,t} + \phi LQ_{i,t} + \varepsilon \quad (7)$$

Where $WACC_{i,t}$is the weighted average cost of capital, $Ke_{i,t}$ is the cost of equity and $Kd_{i,t}$ is the cost of debt. $L_{i,t}$ is leverage, a ratio of debt to assets. $F_{i,t}$, $EC_{i,t}$, $P_{i,t}$is financial, economic and political risk respectively. $S_{i,t}$; σ_{EBT}; $AT_{i,t}$ and $LQ_{i,t}$ respectively are firm size, earnings variability, asset tangibility and liquidity. γ; β; ϑ; λ; π; ξ; ψ; ϱ; ϕ are parameters to be estimated.

The study employed the system GMM estimation methodology given that the lagged dependent variable $K_{i,t-1}$ may introduce autocorrelation with error term and dynamic bias. Possible omitted variables, measurement errors and bi-directional relationship may lead to the independent variables being correlated with the error term, giving rise to endogeneity problems. In such conditions, the traditional estimation techniques used in previous studies (Khadka, 2006; Narayanasama, 2014) are inefficient and the GMM technique attests to it being the suitable technique (Roodman, 2006). The system GMM technique is robust in dealing with endogenous variables, serial correlation and heteroscedasticity. The technique increases efficiencies by creating a system of equations through differenced instruments, instrumenting levels equations and levels instruments differenced equations (Blundell & Bond, 1998). The lagged and levels endogenous instruments makes the endogenous variables predetermined and eliminates correlation with the error term. Blundell and Bond (1998) established that GMM is handy in controlling heteroscedasticity, correlation of errors overtime and endogeneity. Through first differencing, equations 3-5 are transformed to

$$\Delta K_{i,t} = \gamma \Delta K_{i,t-1} + \beta \Delta L_{i,t} + \vartheta \Delta F_{i,t} + \lambda \Delta EC_{i,t} + \pi \Delta P_{i,t} + \xi \Delta S_{i,t} + \psi \Delta \sigma_{EBT} + \varrho \Delta AT_{i,t} + \phi \Delta LQ_{i,t} + \varepsilon \quad (8)$$

The firm fixed effect that does not vary over time is removed by differencing. The source of autocorrelation is K_{it-1}, which is controlled by instrumentation with differenced instruments and past levels instruments.

4. EMPIRICAL RESULTS

4.1. Descriptive statistics

The descriptive statistics of sample data show, over the period under study, that JSE listed firm's cost of capital as measured by WACC averaged 9.28 percent,

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cost of equity 9.8 percent and cost of debt 6.45 percent. The average cost of capital is comparatively higher than the average cost of capital for US firms, which averaged 7 percent and 6.9 percent for European firms (Angelopoulos et al., 2016). This signifies higher risk, as investors demand a higher return for their capital invested, implying that for JSE listed firms to generate value they must invest in projects with a return in excess of 10 percent on average. The descriptive statistics further show that cost of debt variation is higher than the WACC and cost of equity, as shown by a higher standard deviation of 3.1 percent, indicating unstable borrowing rates in the South African debt market. On average, the ratio of debt to total assets is at 16 percent, indicating that South African firms use leverage conservatively compared to developed economies standards with debt ratios in excess of 40 percent. JSE listed firms finance their assets with more equity than debt. There is higher variation of the debt ratio, as indicated by a higher standard deviation of 13.6 percent relative to mean, which implies lack of consistency and stability in JSE listed firm's financing strategies. Regarding country risk components, the descriptive statistics show that political risk has the lowest risk points, 67.37, indicating higher risk and financial rating has the highest rating, 75 percent (37.75/50), indicating lower risk compared to political and economic risks. Political risk rating has the highest standard deviation, 3.48, implying higher volatility and instability of the political environment in South Africa over the sample period.

4.2. Cost of capital and leverage

Table 1 depicts the regression results of the dynamic panel models on cost of capital, country risk and capital structure. Three models were estimated to examine the impact of increasing leverage levels of the South African firms and country risk dynamics on the cost of capital. The results provide evidence that there is a statistically significant negative relationship between leverage and WACC and cost of debt, implying that firms with high leverage enjoy lower average cost of financing. The findings are inconsistent with the M&M 1958 proposition, which asserts that the cost of capital of a firm is independent of its capital structure. The results are in line with later developments in financial theory that dismissed the M&M irrelevance proposition owing to the non-existence of perfect markets. The trade-off theory argues that WACC initially declines with an increase in leverage due to the use of cheap debt and tax shield advantage (Myers & Majluf, 1984). Thus, a negative relationship between leverage and cost of capital is expected. South African firms leverage levels are increasing but the findings suggest that these firms are still operating at lower leverage than the

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optimal level as shown by the inverse relationship between WACC and leverage. Implying that increase of leverage in the JSE firms is not yet detrimental and they still have room to exploit the tax shield advantage.

The results are consistent with Huang (2006) in Chinese firms and Singh and Nejadmalayeri (2004) who found a negative relationship between capital cost and capital structure in French firms. The negative relationship between leverage and cost of debt can be explained by the reduction in financial risk as firms progress through the life cycle, since most firms and the South African economy were categorised with high growth prospects during the sample period.

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Table 1: Dynamic panel GMM estimation results

		Model 1	Model 2	Model 3
VARIABLES	**Description**	**WACC**	**KE**	**KD**
L. Dependent	lagged dependent variable	0.539***	0.367***	0.861***
		(0.00489)	(0.0182)	(0.00758)
Leverage	Debt: Total assets	-0.0199***	0.0166***	-0.0216***
		(0.00152)	(0.00322)	(0.00291)
Financial risk	Ability to pay obligations	-0.304***	-0.104***	-0.0972***
		(0.00462)	(0.0285)	(0.0161)
Economic risk	Economic strength/weaknesses	-0.0310***	0.336***	-0.047***
		(0.00383)	(0.0194)	(0.0094)
Political risk	Political stability	-0.0953***	-0.0979***	0.126***
		(0.00292)	(0.0167)	(0.0115)
CVV	Earnings variability	0.0838***	0.00474	0.156***
		(0.00598)	(0.0237)	(0.0353)
Liquidity	Cash ratio	-0.143***	-0.351***	-0.582***
		(0.0409)	(0.0991)	(0.0381)
Sales	Revenue: Total assets	-0.191***	-0.332***	-0.503***
		(0.0195)	(0.105)	(0.0449)
Tangibles	Tangible: Total assets	-0.113***	0.505***	-0.0737***
		(0.00732)	(0.0374)	(0.0250)
Observations		1,620	1,620	1,620
Number of ID		176	176	176
Instruments		138	78	127
AR (2)		0.35	0.28	0.10
Hansen test		0.25	0.51	0.63

*Corrected standard errors in parentheses, The AR (2) tests for autocorrelation and the Hansen test tests for over identification of instruments, *** p<0.01 significant at 1% level, ** p<0.05 significant at 5% level, * p<0.1 significant at 10% level.*

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Heavy reliance on equity financing as indicated by low debt to assets ratio also explains the negative relationship. This low leverage may be a result of the increasing cost of debt (high cost of debt in SA). Consistent with M&M (1958) for cost of equity the study found a statistically significant positive relationship between cost of equity and leverage, suggesting that as South African firms are increasing their leverage the cost of equity is also going up. As firms introduce more debt into their capital structure, the present value of financial distress costs increases as there is higher probability of bankruptcy. The higher financial distress costs outweigh all the benefits from tax shield and cheaper debt; hence, higher financial risk (Myers & Majluf, 1984). As financial risk increases, equity holders will demand a higher return for their invested capital to neutralise the additional risk; hence, a positive relationship between cost of equity and leverage. Consistent with dynamic stability, the coefficient of the lagged dependent variable is less than one. The lagged dependent variable is positive and statistically significant. There is a direct relationship between current cost of capital and previous period cost implying that firms with high cost of capital are likely to face more capital cost in the next period. Previous cost of capital is a significant determinant of current cost of capital in JSE listed firms.

4.3. Country risk components and cost of capital

On the impact of country risk components on firms cost of capital, this research found a statistically significant negative relationship between financial risk score and the three different costs of capital (WACC, k_e, k_d). The decrease in financial risk index score (increase in financial risk) at aggregate level results in an increase in the cost of capital at firm level. Financial risk measures the country's ability to pay financial obligations; an increase in financial risk means a reduction in the ability to pay obligations; hence, the cost of capital increases as the ability to pay obligations decreases in an economy. Cost of capital is a return to lenders and investors; as risk increases, lenders will demand a higher return, raising the cost of capital for a firm high (Huang, 2006). Regarding political risk, the study found a statistically significant negative relationship between political risk index score and WACC and cost of equity. The decrease in political risk index score (high political risk) results in an increase in cost of capital, indicating that political instability and turmoil result in an increase in firms cost of capital. During political instability periods there will be higher uncertainty and lenders demand higher return for their capital resulting in increase in the cost of financing. High economic risk (low index score) is also significantly associated with high WACC and cost of debt. As economic strengths are outweighed by weaknesses, there is a

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resultant increase in the cost of capital. To stimulate growth in an economy, investment should be kept high; hence, policy makers should reduce country risk, which will then lower the cost of capital for firms. Lower cost of capital makes more investments worthwhile, while firms earn high returns from their investments and invest more.

The study found a significant positive relationship between earnings variability and cost of capital. Firms with unstable and more volatile earnings face higher cost of capital. Volatile earnings signify high risk hence higher capital cost. Consistent with Huang (2006) on firms listed on the New York Stock Exchange and (2004) in French firms, firm size was found to be negatively associated with the cost of capital. Big firms generate more sales and cashflows and are regarded as less risk; hence, they enjoy lower cost of capital (Yuan & Motohashi, 2014). Similarly, assets tangibility and liquidity were found to be negatively associated with the cost of capital. High liquid firms have higher ability to service their obligations, have less risk and face low cost of capital. Firms with more tangible assets provide lucrative collateral for lenders; hence, they attract lower capital cost.

4.4. Country risk and financing decision

To examine the impact of country risk and country risk shocks on financing decisions, the following two models were estimated extending from Equation 4.

Model 4:

$$Lev_{i,t} = \gamma lev_{i,t-1} + \vartheta F_{i,t} + \lambda EC_{i,t} + \pi P_{i,t} + \xi S_{i,t} + \psi \sigma_{EBT} + \varrho AT_{i,t} + \phi LQ_{i,t} + \varepsilon \quad (9)$$

Model 5:

$$lev_{i,t} = \gamma lev_{i,t-1} + \vartheta FRC_{i,t} + \lambda ERC_{i,t} + \pi PRC_{i,t} + \xi S_{i,t} + \psi \sigma_{EBT} + \varrho AT_{i,t} + \phi LQ_{i,t} + \varepsilon \quad (10)$$

Where $lev_{i,t}$ is a ratio of total debt to total assets a proxy for capital structure, $FRC_{i,t}$; $ERC_{i,t}$; $PRC_{i,t}$ are financial, economic and political risk shocks respectively, calculated as the change in risk rating from previous years rating.

Table 2 depicts the estimation results on country risk and firm capital structure. Model 4 shows the impact of financial, political and economic risk ratings on the firm's capital structure. Model 5 is the impact of country risk shocks on the cost of capital. Country risk shocks were calculated as the change in risk rating from period t-1 to period t. As shown in Model 4, there is a statistically significant

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relationship between country risk components and the firms leverage ratio. The study provides evidence of a negative relationship between financial risk index and leverage, implying that in periods of lower financial risk (high risk index score) firms use less leverage and more leverage during high financial risk periods. This can be explained by the motive to transfer risk to debt holders (Jensen & Meckling, 1976) as shareholders are reluctant to inject their capital due to uncertainty. Political and economic risk were found to be directly associated with leverage, with a positive relationship, implying that high economic and political index score (low risk) is associated with high leverage. In periods of low risk, lenders are more willing to extend credit; hence, an increase in leverage levels.

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Table 2: Dynamic panel data estimation country risk and capital structure

		MDEL 4	MODEL 5
VARIABLES	**Definition**	**TDTA**	**TDTA**
L.TDTA		0.666***	0.690***
		(0.00846)	(0.00942)
FR	Financial risk	-0.424***	
		(0.0515)	
PR	Political risk	0.107***	
		(0.0262)	
ER	Economic risk	0.117***	
		(0.0291)	
CVV	Earnings variability	0.515***	0.326***
		(0.0513)	(0.0512)
CASHRATIO	Liquidity	-3.092***	-2.968***
		(0.186)	(0.180)
Sales	sales/total assets	3.883***	3.718***
		(0.187)	(0.173)
Tangibility	Tangible assets/ta	2.040***	1.779***
		(0.0873)	(0.0440)
FRC	Financial risk shock		-0.360***
			(0.0462)
PRC	Political risk shock		0.0196
			(0.0192)
ERC	Economic risk shock		0.318***
			(0.0564)
Observations		1,556	1,556
Number of ID		164	164
AR(2)		0.743	0.697
Hansen		0.656	0.641

Corrected standard errors in parentheses, The AR (2) tests for autocorrelation and the Hansen test tests for over identification of instruments. *** p<0.01 *significant at 1% level*, ** p<0.05 *significant at 5% level*, * p<0.1 *significant at 10% level.*

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The study reveals that country risk shocks also affect the firm's capital structure choice. Changes in the country risk affect the firms financing decisions. Financial risk shocks are positively associated with leverage. Changes in financial risk increase debt financing as firms use more debt to transfer risk to debt holders (Jensen & Meckling, 1976). Economic risk shocks are negatively associated with leverage; in periods of high economic risk shocks, JSE firms use less leverage. No statistically significant relationship was found between political risk shocks and firm leverage. This may suggest that JSE firms may not consider political uncertainty in their financing decisions and consequently firms do not adjust their capital structure to mitigate political risk. This is explained by the nature of political shocks that tend to affect the whole country and as a result it becomes expensive for firms to borrow in an environment of political uncertainty. Overall, the effect of country risk components on firms' financing decision provides a plausible explanation for low leverage in the South African firms and other developing economies.

4.5. Model specification tests

The GMM estimator is consistent if there is no second order serial correlation in the residuals of the differenced equations. The study used the Arellano-Bond AR (2) test to test for serial correlation. The AR (2) is more than 5 percent in all five models, suggesting the absence of serial correlation. The Hansen test was used to test for over-identification of moment conditions. In all five models, the Hansen test is more than 5 percent, evidencing correct instruments identification and model specification.

5. CONCLUSION

The study employed dynamic panel data models estimated with two-step system GMM to examine the impact of rising leverage levels of South African firms on cost of capital, disaggregated country risk on cost of capital and country risk shocks on firms financing decisions. The study establishes that the rising leverage levels of JSE listed firms are negatively related with WACC and cost of debt. The negative relationship between leverage and cost of capital suggests that JSE listed firms use leverage conservatively, are still operating below the optimal levels of debt and they still have the capacity to enjoy the tax shield advantage of debt financing. Regarding country risk, the study found that an increase in financial, political and economic risk has a significant negative impact on cost of capital. The results evidence that country risk affects firm's financing decisions but political shocks do not affect firm's financing decisions. These findings reveal that external shocks such as economic, financial and political uncertainties have

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bearing implication on firms' financing decisions and can comprise firms' ability to minimise the cost of capital. This suggests country investors should earn a premium for the exposure on these risk factors, which influence company's financing decisions. Policy-makers should therefore create a conducive political, economic and financial environment for firms to attain optimum capital structure. Our findings empathise the need for considering the moderating impact of country risk components in analysing the effect of leverage on cost debt and equity.

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-RESEARCH ARTICLE-

THE IDENTIFICATION OF THE KEY SUB-INDUSTRIES AMONG COASTAL METROPOLITAN CITIES OF SOUTH AFRICA: AN APPLICATION OF THE LOCATION QUOTIENT TECHNIQUE

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–Abstract–

The future of a stable and viable economy within South African Metropolitan cities will depend on the strengthening of key industries coupled with technological advancement. The aim of this paper is to identify key industry clusters in all four coastal metropolitan cities of South Africa namely Cape Town, eThekwini, Buffalo city, and Nelson Mandela Bay. Location quotient analysis is employed as a method to determine the industries that are playing key roles in the

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economic development and growth of the metropolitan cities. This paper uses a four-point 2002, 2007, 2012 and 2017 as the latest employment data available and a five-year interval is used as optimal data in terms of capturing potential structure change in the local economy of the coastal metropolitan cities in South Africa. Findings of this paper show that sub-industries in the manufacturing and service sectors have been the main drivers of the economic development in these metropolitan cities. Despite the creation of new technology, new business and new jobs to spearhead economic development in South Africa, the results obtained from this study indicate that some of these metropolitan cities are actually characterised by economic stagnation in some of their sub-industries that are supposed to be the key role players in economic growth.

Key Words: Location quotient, industry cluster, metropolitan cities, South Africa.

JEL Classification: O1, P25, P52, R10

1. INTRODUCTION AND BACKGROUND

The South African economy is based on natural resources in the primary sector. In 2017, the South Africa's economic growth has been driven by the primary sector particularly, agriculture and mining. The momentum in the other sectors has been weak. South Africa should transform its economy based on industrial skills that establish a domestic and international comparative advantage, which requires high productivity and innovation (World Bank, 2018).

Innovation has been regarded as the engine or driver of economic growth and development, especially during the past 30 to 40 years when the neo-Schumpeterian theories of economic growth became more popular (Ray, 1980; Van Duijn, 1983). Schumpeter (1939, 1961), seen as the "founder of innovation theory", made a crucial contribution to the study of the role of innovation in development. The neo-Schumpeterian theories expand on Schumpeter's growth theory, by not only focusing on innovation by the individual entrepreneur but viewing innovation as a process that takes place in a complex system (Hanusch & Pyka, 2007; Carlsson, 2007). Although the studies, since the 1980s to the1990s in the different schools of thought are mostly in agreement about innovation being important for economic development, they differ in the degree of importance of innovation as well as how innovation contributes to economic development. Empirical evidence of the correlation between innovation and economic development is supplied by studies from a neo-Schumpeterian view, such as those

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proposed by Howells (2005), Archibugi and Coco (2004), and Fagerberg and Srholec (2008).

The innovation system includes interaction among all the different actors or participants such as enterprises (producers, suppliers, competitors, etc.), academic and research institutions, the public sector and other institutions, who contribute to innovation (Paterson, Adam & Mullin, 2003 & OECD, 1997). These actors or participants do not necessarily interact consciously with one another. According to Nelson (1996), "*There is no presumption that the system was, in some sense, consciously designed, or even that the set of institutions involved works together smoothly and coherently. Rather, the 'systems' concept is that of a set of institutional actors that, together, play the major role in influencing innovative performance.*"

Carlsson (2007) distinguishes between national, regional, sectoral and technological innovation systems. According to Carlsson, national systems of innovation (NSI) refer to innovation activities within national boundaries where regional systems of innovation (RSI) refer to innovation activities within regional boundaries. Sectoral innovation systems focus on individual sectors or industries and technological innovation systems is about a particular technology or set of technologies, not bound by a specific geographical area. Metropolitan cities are typical examples of regional innovation systems. These regional innovation systems are often referred to as clusters. Different definitions are used for clusters, but most of these definitions include that clusters are localised networks of specialised organisations, whose products or services are closely linked through the exchange of goods, services and knowledge (Van den Berg, Braun & Van Winden, 2001).

The advantages of clustering that are experienced by firms include, inter alia, economies of scale and economies of scope, shared inputs of production, reduction in transport costs, reduction in production cost, knowledge spill-over, shared technology, labour pooling, shared research and support services. Furthermore more benefits also embrace competitive advantage, increased access to capital, firm infrastructure and technology infrastructure (Mattoon & Wang, 2014; Dewally & Shao, 2015; Baker, 2015; Hsu & Lai, 2013; Van den berg *et al.*, 2001). There are also positive outcomes for the innovation system in its entirety, such as higher employment, higher wages, increased patenting, firm growth and performance, enhanced growth in other industries and clusters. In addition, there are increased innovation, increased production and diffusion of knowledge and

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technology, increased competitiveness, and increased opportunities for entrepreneurial activity (Mattoon & Wang, 2014; Hsu & Lai, 2013; Garanti & Zvirbule-Berzina, 2014; Slaper & Ortuzar, 2015; Webster, 2014).

To stimulate urban economic development and employment creation, identification of high potential clusters is important in order to determine where to concentrate support and allocate investment (Garanti & Zvirbule-Berzina, 2014). Once identified, it is important to know what kind of support is needed to stimulate and enhance cluster forming and functioning. Van den berg *et al*. (2001) identify three elements that are needed for the growth of a cluster:

(a) Spatial-economic conditions such as a strong regional demand, the accessibility of the cluster, rail, road and air connections, and the quality of life in the urban area (skilled people, living environment and attitudes to innovate and co-operate);

(b) Cluster-specific conditions such as the size and development level of the cluster (the presence of one or more cluster engines, the degree of strategic interaction among companies and institutions of education and research and the level of new firm creation); and

(c) Organising capacity such as the presence of a strategy in the cluster, quality of public-private networks, and the level of societal and political support for cluster development.

Webster (2014) reasons that not all clusters need the same factors or support in order to grow. Technologically advanced industries may need large markets, well-developed infrastructure, risk-taking entrepreneurial cultures, and strong linkages between producers and consumers. Webster opined that countries that do not have an advanced infrastructure should focus on clusters of basic or emerging technologies. Yet he emphasised that support should be in terms of a stable social, political, and cultural environment that stimulates initiative, entrepreneurship, unrestrained markets, as well as an environment that ensures personal safety, protection of property rights, producer and consumer confidence, and a market that efficiently allocates resources. Martin and Coenen (2015) confirm through an empirical study, that institutions, by means of policy programmes, play an important role in the forming or growing of clusters.

South Africa is in dire need of economic development and employment creation. To improve economic growth and employment creation, the regional innovation systems and clusters need to function more successfully. The research problem is,

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therefore, the improvement of cluster performance in South Africa and ultimately economic development and employment creation. In order to achieve cluster performance, it is needed to identify key industry clusters. The aim of this paper is therefore to identify key industry clusters in the metropolitan cities of South Africa. The identification of key industries plays a role in the direction of resources to industries with high growth and employment potential. The significance of this paper lies firstly in the contribution to innovation system literature, secondly in the recommendations to policy formulation, and ultimately to the enhancement of innovation systems and economic development.

2. DATA SOURCE AND METHODS

To analyse a regional economy, different methods could be used. This paper uses economic base analysis, which has as its goal to uncover and reveal the characteristics, strengths, weaknesses, and trends that describe a regional economy (Niyimbanira, 2018; Mpumalanga Department of Economic Development and Tourism, 2017). According to Froeschle (2005), economic base analysis techniques aim to "*identify the major sources of income and employment in the local area, and to anticipate the changes in the local economic structure, both those that tend to occur naturally and those that should be encouraged in the development of the diversified industrial base*." Therefore, by applying these techniques, which use economic indicators or data, this paper reveals the characteristics that differentiate the economies of the coastal metropolitan cities and describes the uniqueness of each.

There are many different economic base analysis techniques, but this paper applies the most well-known, namely the location quotient analysis and dynamic location quotient analysis (Niyimbanira, 2018). These analysis techniques estimate the comparative advantage, competitive advantage, and competitiveness of the four coastal metropolitan cities in South Africa. This paper presents the findings of an economic base analysis applying location quotient and shift-share analysis over the period of 2002 to 2017. The data used was selected from the Quarterly Labour Force Survey (QLFS) conducted by Statistics SA (STATSSA).

2.1. Location Quotient

Location quotient (LQ) is a metric for gauging the relative concentration or specialisation of one or more industries, industry sectors or industry clusters in an area which can be a cluster, town, region or a province. The location quotient is a valuable way of quantifying how concentrated a particular industry, cluster, occupation, or demographic group is in a region (metropolitan city in this case) as

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compared to the nation. A metropolitan city's uniqueness vis-à-vis national average can be revealed by LQ analysis. Location quotients are very important techniques, because they indicate areas that have an existing concentration of workers with transferrable skills, interconnected businesses, suppliers, and related industries, or growing industry areas where employment in that sector is weak but growing (Niyimbanira, 2018).

The formula of Location quotient:

$$LQ = \frac{(X/Y)}{(X'/Y')}$$

Where: X stands for employment in the metropolitan city in industry A, Y for the city total employment, X' is South Africa's employment in industry A, Y' is the South African total employment and LQ is the location quotient.

In order to understand the formula above, let us use one of the selected metropolitan cities (Cape Town) and one industry (called A); then the equation 1 for the Cape Town City (CPT) would be re-written as follows:

$$LQ = \frac{(CPT\ employment\ in\ the\ indutry\ A)/(CPT\ total\ employment\ )}{(SA\ employment\ in\ the\ industry\ A)/(SA\ total\ employment)}$$

Therefore, "the employment LQ is the ratio of the percentage of regional employment in a particular industry to the comparable percentage in a benchmark area which is usually the national" (Blair & Carroll, 2009). After estimating the LQ, the Dynamic Location Quotient (ΔLQ) is also calculated to understand what is happening in a particular industry. This is because, when interpreting the LQ, the following two things should be looked at: (a) a particular industry may have a high LQ with a very small number of jobs which may not be important to a province's economy; (b) a high LQ industry may be experiencing a decline in the LQ over a period of time. Furthermore, this could suggest a high risk of many jobs being lost in the province. Therefore, to confirm the dynamic changes in employment, ΔLQ is estimated as a percentage change in the LQ over time and size of the industry in terms of jobs.

According to Niyimbanira (2018:101) by combining the dynamic location quotient (employment growth) and the LQ, industries in a given city could be grouped into four categories:

- Competitive or standout, also known as growing base industries;
- Emerging or pre-emergent industries;

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- At-Risk or industries that require intensive care
- Declining or industries that hold a "little promise" in terms of relative employment size and labour growth.

3. RESULTS ANALYSIS

Looking at the geographic location of the metropolitan cities studied in this paper, one may expect similar results, however, they are different in some instances. The results from the LQ equation are presented in Table 1, 2, 3 and 4 for Cape Town city, eThekwini metropolitan city, Buffalo city and Nelson Mandela Bay, respectively, and all four tables are the authors' own compilation. The results show similarity in all four metropolitan cities in terms of comparative advantage. All four have a comparative advantage in the following sub-industries: wholesale and commission trade; retail trade and repairs of goods, and health and social work. Three metropolitan cities do have a comparative advantage in food, beverages and tobacco products; textiles, clothing and leather goods; wood and wood products; transport equipment; and fuel, petroleum, chemical and rubber products. Cape Town city and eThekwini city do have a comparative advantage in the hotel and restaurant industry as well.

Table 3.1: Location Quotient of Sub-Industries in CPT, 2002-2017

	CPT			
	LQ			
INDUSTRY	**2002**	**2007**	**2012**	**2017**
Agriculture and hunting	0.38	0.50	0.73	0.95
Forestry and logging	0.20	0.17	0.22	0.22
Fishing and operation of fish farms	**2.77**	**3.29**	**4.81**	**4.21**
Food, beverages and tobacco products	**1.25**	**1.47**	**1.64**	**1.83**
Textiles, clothing and leather goods	**2.31**	**1.97**	**1.97**	**1.42**
Wood and wood products	**1.61**	**1.72**	**1.51**	**1.60**
Fuel, petroleum, chemical, and rubber products	**1.14**	**1.06**	**1.23**	**1.02**
Other non-metallic mineral products	0.91	0.88	0.92	1.02
Metal products, machinery and household appliances	0.97	0.83	0.71	0.85
Electrical machinery and apparatus	0.81	0.55	0.79	0.33
Electronic, sound/vision, medical and other appliances	**1.94**	**1.51**	**1.43**	**1.44**

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Transport equipment	0.78	0.71	0.83	0.77
Furniture and other items NEC and recycling	**1.49**	**1.30**	**1.14**	**1.26**
Electricity, gas, steam and hot water supply	0.84	1.26	0.83	0.45
Collection, purification and distribution of water	0.35	0.42	0.36	0.31
Construction	**1.41**	**1.25**	**1.02**	**1.14**
Wholesale and commission trade	**1.57**	**1.68**	**1.33**	**1.22**
Retail trade and repairs of goods	**1.19**	**1.11**	**1.05**	**1.04**
Sale and repairs of motor vehicles, sale of fuel	0.98	0.93	0.90	0.87
Hotels and restaurants	**1.41**	**1.38**	**1.40**	**1.39**
Land and water transport	1.15	0.87	0.93	0.90
Air transport and transport supporting activities	**1.84**	**1.61**	**1.68**	**1.52**
Post and telecommunication	**1.20**	**1.13**	**1.24**	**1.21**
Finance and insurance	**1.23**	**1.27**	**1.32**	**1.12**
Real estate activities	**1.55**	**1.39**	**1.44**	**1.31**
Other business activities	**1.43**	**1.19**	**1.18**	**1.21**
Public administration and defence activities	1.07	1.01	0.98	0.91
Education	0.66	0.68	0.71	0.70
Health and social work	**1.16**	**1.09**	**1.09**	**1.02**
Households	0.58	0.73	0.73	0.82

Source: *Own compilation*

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Table 3.2: Location Quotient of Sub-Industries in EThekwini, 2002-2017

	ETHEKWINI			
	LQ			
INDUSTRY	**2002**	**2007**	**2012**	**2017**
Agriculture and hunting	0.43	0.47	0.30	0.34
Forestry and logging	0.25	0.69	1.39	1.13
Fishing and operation of fish farms	0.36	0.24	0.11	0.12
Mining of coal and lignite	0.06	0.07	0.08	0.06
Mining of gold and uranium ore	0.00	0.01	0.00	0.00
Mining of metal ores	0.01	0.02	0.00	0.00
Other mining and quarrying	0.11	0.09	0.13	0.29
Food, beverages and tobacco products	1.33	1.11	0.99	0.84
Textiles, clothing and leather goods	**3.14**	**2.88**	**3.06**	**3.66**
Wood and wood products	**1.67**	**1.40**	**1.35**	**1.32**
Fuel, petroleum, chemical and rubber products	**1.64**	**1.52**	**1.44**	**1.10**
Other non-metallic mineral products	0.88	0.88	0.58	0.85
Metal products, machinery and household appliances	0.97	0.88	1.03	0.99
Electrical machinery and apparatus	1.03	0.88	0.65	0.14
Electronic, sound/vision, medical and other appliances	1.60	1.18	0.71	1.03
Transport equipment	**1.78**	**1.73**	**1.44**	**1.19**
Furniture and other items NEC and recycling	**1.34**	**1.28**	**1.32**	**1.08**
Electricity, gas, steam and hot water supply	0.87	0.70	0.55	0.53
Collection, purification and distribution of water	1.18	0.88	0.87	0.65
Construction	1.10	0.95	1.17	0.91
Wholesale and commission trade	1.17	1.25	0.84	0.89
Retail trade and repairs of goods	1.08	1.09	0.96	1.08
Sale and repairs of motor vehicles, sale of fuel	**1.33**	**1.21**	**1.14**	**1.23**
Hotels and restaurants	1.30	1.06	1.14	0.97
Land and water transport	**1.63**	**1.57**	**1.78**	**1.59**

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Air transport and transport supporting activities	**1.49**	**1.47**	**1.36**	**1.28**
Post and telecommunication	0.99	0.99	0.83	0.68
Finance and Insurance	0.89	0.95	0.86	0.66
Real estate activities	1.14	0.91	0.60	0.57
Other business activities	**1.22**	**1.14**	**1.08**	**1.07**
Public administration and defence activities	0.67	0.77	0.78	0.93
Education	0.85	0.93	1.01	1.02
Health and social work	**1.00**	**1.08**	**1.06**	**1.03**
Households	0.92	0.99	1.13	1.16

Source: *Own compilation*

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Table 3.3: Location Quotient of Sub-Industries in NMB, 2002-2017

	NELSON MANDELA BAY			
	LQ			
INDUSTRY	**2002**	**2007**	**2012**	**2017**
Agriculture and hunting	0.77	0.58	0.35	0.41
Forestry and logging	0.65	0.72	0.42	0.46
Fishing and operation of fish farms	**1.49**	**1.91**	**1.07**	**3.21**
Food, beverages and tobacco products	**1.11**	**1.26**	**1.35**	**1.22**
Textiles, clothing and leather goods	**1.58**	**1.68**	**1.23**	**1.31**
Wood and wood products	0.93	1.01	1.16	0.95
Fuel, petroleum, chemical, and rubber products	**1.93**	**2.23**	**2.14**	**1.90**
Other non-metallic mineral products	**1.47**	**1.40**	**1.21**	**1.93**
Metal products, machinery and household appliances	0.61	1.07	0.91	0.62
Electrical machinery and apparatus	**2.48**	**2.44**	**3.02**	**3.17**
Electronic, sound/vision, medical and other appliances	0.64	1.28	0.93	0.64
Transport equipment	**6.07**	**6.30**	**8.17**	**8.73**
Furniture and other items NEC and recycling	0.61	0.86	0.52	0.80
Electricity, gas, steam and hot water supply	0.54	0.37	0.36	0.34
Collection, purification and distribution of water	0.26	0.55	0.50	0.45
Construction	1.21	0.93	0.95	1.02
Wholesale and commission trade	**1.47**	**1.14**	**1.06**	**1.13**
Retail trade and repairs of goods	**1.14**	**1.06**	**1.06**	**1.11**
Sale and repairs of motor vehicles, sale of fuel	**1.12**	**1.33**	**1.41**	**1.46**
Hotels and restaurants	0.81	0.79	0.89	0.83
Land and water transport	1.08	1.22	1.14	0.98
Air transport and transport supporting activities	0.76	0.67	0.81	0.58
Post and telecommunication	1.25	1.29	1.18	1.26
Finance and insurance	0.81	1.06	0.75	1.01
Real estate activities	0.43	0.71	0.56	0.87

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Public administration and defense activities	0.97	1.02	0.95	1.11
Education	0.94	0.89	0.93	0.85
Health and social work	**1.09**	**1.10**	**1.15**	**1.08**
Other service activities	**1.04**	**1.10**	**1.07**	**1.33**
Households	0.85	0.72	0.85	0.91

Source: *Own compilation*

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Table 3.4: Location Quotient of Sub-Industries in Buffalo City, 2002-2017

	BUFFALO CITY			
	LQ			
INDUSTRY	**2002**	**2007**	**2012**	**2017**
Agriculture and hunting	**1.39**	**1.76**	**1.31**	**1.42**
Forestry and logging	**1.94**	**2.42**	**1.51**	**1.55**
Fishing, operation of fish farms	0.31	1.05	0.93	2.60
Food, beverages and tobacco products	1.27	1.11	1.04	0.91
Textiles, clothing and leather goods	1.19	0.99	0.61	0.63
Wood and wood products	0.60	0.78	1.10	0.88
Fuel, petroleum, chemical and rubber products	0.79	0.86	0.82	0.70
Other non-metallic mineral products	0.61	0.78	0.89	1.38
Metal products, machinery and household appliances	0.33	0.50	0.40	0.26
Electrical machinery and apparatus	**1.69**	**1.32**	**1.09**	**1.11**
Electronic, sound/vision, medical and other appliances	0.52	0.65	0.23	0.15
Transport equipment	**2.81**	**2.20**	**2.02**	**2.08**
Furniture and other items NEC and recycling	0.54	0.70	0.41	0.60
Electricity, gas, steam and hot water supply	0.98	0.55	0.71	0.68
Collection, purification and distribution of water	**1.32**	**1.38**	**1.59**	**1.44**
Construction	**1.14**	**1.01**	**1.23**	**1.28**
Wholesale and commission trade	0.98	0.91	1.03	1.09
Retail trade and repairs of goods	**1.01**	**1.09**	**1.34**	**1.39**
Sale and repairs of motor vehicles, sale of fuel	0.81	0.67	0.60	0.62
Hotels and restaurants	0.67	0.77	1.06	0.99
Land and water transport	0.80	0.74	0.64	0.53
Air transport and transport supporting activities	0.48	0.44	0.59	0.41
Post and telecommunication	0.70	0.68	0.63	0.64
Finance and Insurance	0.67	0.91	0.72	0.95
Real estate activities	0.26	0.56	0.60	0.91

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Other business activities	0.75	0.77	0.72	0.67
Public administration and defense activities	**1.22**	**1.21**	**1.14**	**1.29**
Education	**1.32**	**1.29**	**1.47**	**1.29**
Health and social work	**1.29**	**1.17**	**1.20**	**1.08**
Other service activities	0.88	0.96	1.02	1.21
Households	0.97	1.05	1.24	1.09

Source: *Own compilation*

One would expect the fishing sub-industry to be one of the key industries in the four coastal metros, but the results indicate that a continuous comparative advantage is only in the Cape Town and Nelson Mandela metropolitan cities. Land and water transport sub-industry's comparative advantage is found in the Buffalo and Cape Town metropolitan cities. Beside Cape Town city, the other three coastal metropolitan cities held a comparative disadvantage in the real estate activities, and finance and insurance sub-industries. Furthermore, the results from post and telecommunication, and air transport and transport supporting activities sub-industries show a comparative advantage only in two metros. Table 3.5 and 3.6 present dynamic LQs and classification of sub-industries respectively. The results from LQs and the dynamic LQ show ten standout sub-industries. These are found in the upper right quadrant in Table 3.6. These are economically important and high-performing sub-industries for those metropolitan cities, which means they should increasingly have a significant contribution to job creation. Furthermore, five sub-industries are regarded as pre-emergent and should be developed further with the aim to get them into the standout stage.

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Table 3.5. Dynamic location quotient of Sub-industries the four Coastal Metropolitan cities of South Africa

	CPT		EThekwini		NMB		BC	
	ΔLQ		ΔLQ		ΔLQ		ΔLQ	
INDUSTRY	**2007**	**2017**	**2007**	**2017**	**2007**	**2017**	**2007**	**2017**
Agriculture and hunting	33.1	29.5	10.0	12.2	-24	16.1	26.4	8.6
Forestry and logging	-15	-2.1	178	-19	10.7	10.2	25.1	3.1
Fishing, operation of fish farms	18.8	-12	-34.1	11.7	28.3	199	235	180
Food, beverages and tobacco products	17.3	11.5	-16.2	-14.4	13.5	-9.3	-11.9	-12.6
Textiles, clothing and leather goods	-15	-28	-8.3	19.6	6.2	6.5	-16.7	2.7
Wood and wood products	6.6	6.4	-16.2	-2.7	8.7	-17.6	30.4	-20.5
Fuel, petroleum, chemical and rubber products	-6.7	-17	-7.1	-23	15.3	-11.3	8.6	-14.5
Transport equipment	-8.2	-7.1	-3.1	-18	3.8	6.9	-21.8	3.1
Furniture and other items NEC and recycling	-13	10.4	-4.5	-18.6	41.2	54.1	29.4	48.6
Electricity, gas, steam and hot water supply	49.7	-46	-19.9	-3.8	-31	-5.6	-44.4	-4.7
Construction	-11	12.3	-13.7	-22	-23	6.9	-12	4
Wholesale and commission trade	7.0	-8.4	6.9	6.7	-22	6.6	-7.5	6.1
Retail trade and repairs of goods	-6.8	-0.6	1.5	12.2	-6.9	4.6	7.7	4.1
Sale and repairs of motor vehicles, sale of fuel	-5.4	-3.6	-9.2	7.1	19.5	3.9	-17.4	3.3
Hotels and restaurants	-2.3	-0.5	-18.7	-15	-3	-6.2	15.0	-6.7
Land and Water transport	-25	-3.3	-3.6	-11	12.2	-14.4	-7.8	-17.8
Air transport and transport supporting activities	-12	-9.1	-1.3	-6.2	-11	-28.2	-8.7	-31.1
Post and telecommunication	-6.1	-2.7	-0.6	-18	3.2	6.7	-3.0	2.4

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Finance and Insurance	3.7	-15	7.6	-23	31.1	35.2	36.0	32.3
Real estate activities	-10	-9.1	-20.8	-5.0	67.6	56.1	119	52.8
Education	3.6	-0.9	9.3	1.9	-5.0	-8.9	-2.2	-12.4
Health and social work	-5.9	-6.2	7.5	-2.8	1.1	-6.1	-8.8	-9.7

Source: *Own compilation*

Table 3.6 shows sub-industries which need intensive care. These are the industries that show a high LQ and negative dynamic LQ. They are also known as transforming industries. The table also indicates the standout sub-industries, which are also known as the growing base. In addition, pre-emergent sub-industries and those with little promise are shown in the lower right and lower left quadrants respectively. As indicated by Niyimbanira (2018), if medium or large industries are found in the upper left quadrant, it is an important warning that the metropolitan city is losing a major part of the contribution to the economic activity and should undertake planning and investment priorities accordingly. Furthermore, the sub-industries found in the lower left quadrant are less important to the city and are also declining in employment. The results show that the tertiary sector plays an important role in the city of Cape Town. According to Cape Town City (2016) "*commercial services encompass the wholesale and retail trade, catering and accommodation, transport, storage and communication and finance, insurance, real estate & business services industries. Commercial services comprised R169.91 billion (or 60.0 per cent) of the Metro's GDP in 2015 (the largest sector in the region). The industry grew at an average rate of 3.5 per cent per annum over the period 2005 – 2015, which exceeded the overall Metro GDP growth rate over this period, thus placing commercial services among the fastest growing industries in the Metro over the past decade*".

However, the results indicate that most sub-industries, which need intensive care in the city of Cape Town are under commercial services. This implies that the employment in those sub-industries grew earlier but at a later stage, the growth slowed down. This is confirmed by Cape Town City (2016) that employment growth slowed significantly post-recession to average 1.4 percent per annum over the period 2010 to 2015, which was marginally below the overall metro employment growth rate of 1.5 percent over the same period. The results further show that there is no standout sub-industry from eThekwini metropolitan city. This is a concern as manufacturing peaked in 2000, but is now at its lowest and is still declining (EThekwini Municipality, 2016). The other coastal metropolitan cities have 2, 3 and 5 standout sub-industries for CPT, BC, and NM respectively.

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The negative trends in many of the industries are evident mostly, since the period from 2012 to 2017. This decline in growth coincides with the lag effect of the world recession on South Africa. It is especially evident in the industries that depend on tourism, such as hotels and restaurants, and food and beverages. The growth in the Chinese economies may also have had an effect on certain industries such as the textile industry in Cape Town.

Table 3.6: Classification of Sub-industries in the four Coastal Metropolitan cities in South Africa

High LQ and Negative ΔLQ	**High LQ and Positive ΔLQ**
Textiles, clothing and leather goods (CPT)	Agriculture and hunting (BC)
Wood and wood products (eThekwini)	Forestry and logging (BC)
Fuel, petroleum, chemical and rubber products (CPT, eThekwini)	Fishing, operation of fish farms (NM)
Transport equipment (eThekwini)	Food, beverages and Tobacco products (CPT)
Furniture and other items NEC and recycling (CPT, eThekwini)	Textiles, clothing and leather goods (NM)
Hotels and restaurants (CPT, eThekwini, NM)	Wood and wood products (CPT)
Land and Water transport (eThekwini)	Transport equipment (NM)
Air transport and transport supporting activities (CPT, eThekwini, NM, BC)	Sale and repairs of motor vehicles, sale of fuel (NM)
Post and telecommunication (CPT)	Post and telecommunication (NM)
Real estate activities (CPT)	Education (BC)
Health and social work (CPT, BC)	
Low LQ and Negative ΔLQ	**Low LQ and Positive ΔLQ**
Fuel, petroleum, chemical and rubber products (BC)	Agriculture and hunting (CPT, eThekwini)
Transport equipment (CPT)	Forestry and logging (NM)
Electricity, gas, steam and hot water supply (eThekwini, BC, NM)	Furniture and other items NEC and recycling (NM, BC)
Sale and repairs of motor vehicles, sale of fuel (CPT)	Land and Water transport (BC)
Land and water transport (CPT)	Education (eThekwini)
Education (NM)	

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4. CONCLUSION

South Africa is in dire need of economic development and employment creation. To improve economic growth and employment creation the regional innovation systems and clusters need to function more successfully. Hence, the paper presents the status of the sub-industries in the coastal metropolitan cities, which are Buffalo City; Cape Town; eThekwini and Nelson Mandela Bay. Although, some sub-industries are doing well (standout), there are many other sub-industries that need more attention as they are important and high contributors to those Metropolitan cities' economies. The future of a stable and viable economy within the South African Metropolitan cities will depend on the strengthening of key sub-industries coupled with technological advancement. In other words, in countries such as South Africa where cities remain more economically attractive, local economic development and technology investment need careful of concord to be strategically provided in order to strengthen employment creation opportunities. These metros' capacity to improve where sub-industries are in need of intensive care will depend on sustaining the strong institutions and good governance, which in return depend on political economy. Policies should especially focus on the creation of an environment that is conducive to innovation and the improvement of innovation systems in order to support industries in the third quadrant and to enhance industries with high potential in employment creation. Overall dynamics in sub-industries in the Coastal Metropolitan cities might not be unique to these economic regions only and future research on a similar topic is needed for inland metropolitan cities of South Africa. In addition, there is a need for future studies on causes of industry failure at the micro and macro level in South Africa.

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-RESEARCH ARTICLE-

INVESTIGATING THE HUNGARIAN MONEY DEMAND FUNCTION: POSSIBLE IMPLICATIONS FOR MONETARY POLICY

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─Abstract─

Historically, research focusing on the money demand function developing economies (especially Eastern European transition economies) was a difficult undertaking because of under-developed financial systems and the unavailability of data. This study aims to assist in filling this gap in the literature by employing three different estimation techniques to estimate the M1 and M2 money demand functions for Hungary. The study uses quarterly data for an 18-year period, obtained from the IMF's International Financial Statistics database. The results based on the bounds testing procedure as well as the other two approaches confirm that a stable, long-run relationship exists between the demand for money and its determinants. The results' robustness is enhanced by the similarities between the results of the various approaches used in the study. The money

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demand function can therefore theoretically serve as a tool to measure the effect of monetary policy decisions and in determining what parameters of the money demand function to adjust in order to yield the required effects. It is suggested that, in the case of Hungary the M1 money demand function might be the most appropriate model on which monetary policy decisions should be based.

Key Words: Money demand, Hungary, stability, ARDL, cointegration

JEL Classification: E4, E40, E41

1. INTRODUCTION

The estimation of a stable money demand is a crucial element of conducting monetary policy, as it allows monetary authorities to play an active role in affecting adjustment in the monetary supply variables (Achsani, 2010:54). A growing demand for money is closely associated with improving macro-economic conditions, as consumers are assumed to demand more currency for their increased consumption needs. The money demand function thereby serves as a tool to measure the effect of monetary policy decisions and determining what parameters of the money demand function to adjust in order to yield the required effects. Research on the money demand function has historically been conducted in developed economies due to the substantial data availability and well-developed financial systems (Calza & Zaghini, 2010:1663; Johansen, 1992:313). Developing economies, especially Eastern European transition economies, have been subject to much less scrutiny given that well-developed financial systems and data are often not available.

Hungary has historically experienced hyperinflation, weak financial institutions and less developed financial systems, which have made the estimation of a stable money demand function a daunting task. Given the substantial institutional and structural changes that Hungary has undergone since the early 1990s, it could be argued that the relationship between the monetary aggregate and the explanatory variables in the money demand function had changed drastically. This could therefore have had an impact on both the existence of a long-run relationship and the stability thereof. This presents a case to examine whether a well-defined and stable money demand function exists this long after significant monetary reforms in Hungary. The question for this study is whether a long-run money demand function exists for Hungary and whether this function is stable. This study contributes in this regard by employing three different estimation techniques in estimating the M1 and M2 money demand function. There are no studies, to our

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current knowledge, which employ more than one estimation technique in determining the money demand function for Hungary. The Johansen approach to cointegration and the vector error correction model have not been employed in research on the money demand function and this is another facet in which this study contributes to the literature.

2. THEORETICAL IMPETUS AND LITERATURE REVIEW

The estimation of the money demand function requires a strong theoretical base in support of its viability as a measure of the country's monetary policy effectiveness. There have been several theories on money demand; each subsequent theory being an adaption or amendment to the previous.

The quantity theory of money, as defined by Fisher (1911:515), maintains that the general price level varies proportionately with the volume of money circulating in the economy. Fisher (1911:515) algebraically illustrated his theory through the following equation:

$$MV = p_1Q_1 + p_2Q_2 + p_3Q_3 \ldots$$

In this equation, M is the average amount of money in circulation, p_i is the average price level of a particular type of good *i*, Q_i is the total quantity of this particular good *i* exchanged during a specific period and $V = \frac{E}{M}$ is the velocity of money (*E* is a measure of the total consumption expenditure during a specific period). The occurrence of several market failures and practical inconsistencies of the original quantity theory of money demand has called into question the ability of this theory to explain the demand for real money balances. This renewed focus gave rise to a more specific formulation of the money demand function, which may be written as:

$$\frac{M}{P} = f\left(r_b;\ r_e;\ \frac{1}{P}\frac{dP}{dt};\ w;\ \frac{Y}{P};\ u\right)$$

This equation is formally defined in Friedman's (1956) *The Quantity Theory of Money – A Restatement* in which a formal exposition can be found. The main motivation behind this equation is the assumption that wealth may be held in various substitutable forms. This model also includes a measure of human wealth, w, but is not generally studied empirically given the general difficulty in

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measuring such a variable in terms of other forms of capital. The variable, $\frac{Y}{p}$, represents the real return to all forms of wealth. Friedman argues that all sources of income and consumables are contributing measures of total wealth. For this reason, a positive relationship is expected between $\frac{Y}{p}$ and money demand.

2.1. Empirical evidence

Because of the limited research conducted on the Hungarian money demand function, the empirical literature discussed here refers mostly to other Eastern European (structurally similar transition) economies. In a study for Croatia, using a vector error correction model and the Johansen cointegration approach, a stable long-run relationship for M1 money demand for the period 1994 to 2002 was found by Cziráky and Gillman (2006:105). Similarly, a study into the M1 and M2 money demand for Romania, using monthly data for the period January 1994 to August 2003, found a stable long-run relationship between the monetary aggregates and a selection of explanatory variables (Andronescu, Mohammadi, & Payne, 2004:861). This study utilised the Johansen cointegration approach in estimating an error correction model. An autoregressive distributed lag (ARDL) approach was among the modelling techniques followed to estimate the M1 money demand for Hungary for the period 1995 to 2010, using quarterly data. The demand for M1 money in Hungary according to this study was found to be stable (Dritsakis, 2011). Similarly, Buch (2001), employing an error correction framework using monthly data for the period 1991 to 1998 for Hungary and Poland, found that although a stable long-run cointegrating relationship existed prior to 1995 for Hungary, this relationship was strengthened post-1995 when a new exchange rate regime was adopted by the country.

3. METHODOLOGY AND MODEL SPECIFICATION

In this study, three estimation techniques form the focal point of observation. These are the ARDL, the Johansen approach to cointegration and the vector error correction model (VECM), and the one-step error correction model.

3.1. Data

The monetary aggregates considered in this study include the M1 monetary aggregate, which in Hungary's case includes money in circulation and demand deposits, and the M2 aggregate, which is the sum of M1 money and fixed deposits with maturities of less than two years. Consistent with the study of Payne

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(2000:1352), the natural logarithm of real GDP is used as the scale variable in this study. There is an expected positive and significant relationship between real GDP and both definitions of the monetary aggregates. The first opportunity cost variable included in the estimations is the own rate for holding money, which is measured by the interest rate on demand deposits in the case of Hungary. The relationship should be negative for narrow money demand. Also included is a measure of the inflation rate in the form of the first differenced consumer price index (CPI) divided by the current observation of the CPI. Buch (2001) included the real effective exchange rate in her study, while Dritsakis (2011) included the logarithm of the nominal exchange rate. In this study, the nominal exchange rate is opted for, which measures the units of domestic currency per base currency in the form of United States dollars. *A priori* expectations dictate either a positive- or negative influence of the nominal exchange rate on money demand, depending on whether the wealth- or substitution effect is dominant (Bahmani-Oskooee & Ng, 2002:147). Omitting variables reflecting the simplicity of cross-border currency flows could lead to serious misspecification of the model (Arango & Ishaq Nadiri, 1981:69).

The money demand function is estimated using quarterly data for the period 1995Q1 to 2013Q4. All the data have been obtained from the IMF's International Financial Statistics database. Variables that exhibit seasonality will be seasonally adjusted using the Census X-12 multiplicative procedure. These variables include the monetary aggregates, M1 and M2, the scale variable, y and the consumer price index prior to calculating the CPI inflation rate (infla). The X-12 multiplicative procedure was the preferred choice for seasonal adjustment in Calza and Zaghini (2010:1663), Korap (2011:1) and Sun, Sun and Lin (2013:512).

Furthermore, account has to be taken of the structural variables that are dealt with. Possible structural breaks in the data need to be tested for by the inclusion of an appropriate shift dummy variable. For Hungary, a possible break could be identified at 2001, which marks the onset of their inflation targeting regime. Another possible influence on model's stability could perhaps be attributed to Hungary's accession to the EU in 2004. Lastly, Hungary recovered from a recession in 2013, which could also have impacted on the money demand function.

3.2. Theoretical model specification and proposed estimation techniques

From the proposed specifications, the money demand function of the following extended form will be considered:

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$$m = \alpha + \beta_1 y + \beta_2 i + \beta_3 infla + \beta_4 exch + u \quad (1)$$

Measuring the real money balances, the natural logarithm of the difference between the nominal monetary aggregates and the consumer price index measured at 2010 prices as a measure of the general price level have been used to transform the nominal money supply to real money supply, m. The included scale variable is represented by y. The domestic interest rate is i, which is the deposit rate on sight deposits that will divided by 100 prior to estimation to simplify interpretation by the reader. The expected CPI inflation rate is given by $infla$, which will also be divided by 100 for the same reason as for *i*. Finally, the nominal exchange rate is given by $exch$, which is the natural logarithm of the nominal exchange rate, as measured by the value of national currency per base currency, which, in this case, is the United States dollar.

4. EMPIRICAL RESULTS

Expectations dictate that the money supply variable should exhibit a positive relationship with the scale variable and generally a negative relationship with the various opportunity cost variables. Literature has suggested, however, that either a positive or negative relationship could exist between the money supply variables and the foreign variables, exchange rate and foreign interest rate. This analysis will determine whether these expectations are justified.

4.1. Autoregressive distributed lag approach

The empirical part starts with augmented Dickey-Fuller (ADF) test, testing for the presence of a unit root. The optimal lag length utilised in the ADF test was determined using the Schwarz Bayesian information criterion. Depending on its individual significance for each variable, as determined in the ADF procedure, a time trend, a trend with a drift or neither of the two was included in the ADF test. The results indicate that there is a mixture of *I(1)* and *I(0)* variables, thereby making the ARDL procedure the most appropriate technique to estimate cointegrating relationships among all the variables, whether they are *I(1)* or *I(0).*

Individual VAR lag order selection tests are conducted next with the inclusion of a drift component. Based on the Akaike information criterion, the optimal lag length for both M1 and M2 as dependent variables was found to be five quarters. The model with the suggested lag is estimated for each of the M1 and M2 monetary aggregates. This model takes on the form of the underlying equation:

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$$\Delta m_t = \alpha + \sum_{j=1}^{k1} \beta_{0j} \Delta \ln M_{t-j} + \sum_{j=0}^{k2} \beta_{1j} \Delta y_{t-j} + \sum_{j=0}^{k3} \beta_{2j} \Delta i_{t-j} + \sum_{j=0}^{k4} \beta_{3j} \Delta \ln exch_{t-j} + \sum_{j=0}^{k5} \beta_{4j} \Delta infla_{t-j} + \delta_0 m_{t-1} + \delta_1 y_{t-1} + \delta_2 i_{t-1} + \delta_3 \ln exch_{t-1} + \delta_4 infla_{t-1} + \varepsilon_t$$

A priori, it is assumed that the disturbance term, ε_t, is normally distributed and contains no serial correlation (Dagher & Kovanen, 2011) and for this purpose, after each estimation of the alternative ARDL representations, diagnostic checks are conducted. If serial correlation or heteroskedasticity indeed appears to be causing spurious regression problems, additional lags should be included. According to Pesaran et al. (2001), the inclusion of large numbers of lags could result in an over-parameterisation of the ARDL model, and should be met with caution, particularly in the case of small sample sizes. Therefore, experimentation is needed to determine the number of lags.

In determining whether the variables in the model are indeed cointegrated, critical values by Pesaran et al. (2001) are usually utilised. While the critical values in Pesaran et al. (2001) are only applicable to large samples, Narayan (2005) has provided new sets of critical values that are more appropriate for sample sizes of 30 to 80 observations. Narayan's (2005) critical values have been used in numerous studies to estimate the cointegrating relationships for small samples, including Dritsakis (2011) and Duasa (2007:89). Taking into account the critical values of Pesaran et al. (2001) and Narayan (2005), the null hypothesis of no cointegration can be rejected at a one per cent level of significance. The bounds test therefore confirms the existence of cointegration for both the M1 and M2 relationship.

One major advantage of the ARDL specification is that all the included variables are not required to exhibit the same lag length (Pesaran et al., 2001). Following the work of Dagher and Kovanen (2011), the bounds testing procedure's results in this study are only reported for the most significant number of lags included for each individual first differenced explanatory variable. The Wald test is conducted for the joint significance of the long-run variables for each incremental first differenced lagged money supply variable included in the ARDL specification. An ARDL (5,1,0,1,0) model was found to be the most appropriate in the case of the M1 money demand function in this study. The estimation results are

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represented in Table 1. It should be noted that the M1 money demand ARDL specification for Hungary includes a shift dummy variable assuming values of one for the 2013 fiscal year and zero otherwise. This dummy was found to be positive and very significant in explaining M1 money demand. A possible reason could be because Hungary's economic growth recovered in 2013 after an economic recession of 1.7 per cent in 2012. Given this recovery, in a general economic climate, increasing aggregate consumption had the effect of raising the demand for money, and therefore the positive relationship.

Table 1: ARDL estimates for the M1 monetary aggregate

Long-run coefficients for the M1 money demand function					
Constant	Y	i	Exch	infla	DUM2013
1.252 (0.858)	**0.618 (2.098)	***-3.428 (-3.438)	***-0.476 (-3.118)	*-3.798 (-1.827)	***0.045 (3.362)
Short-run coefficients for the M1 money demand function					
Lag	Δm1	Δy	Δi	Δexch	Δinfla
0		0.142 (1.073)	-0.751 (-2.521)	0.008 (0.141)	-0.811 (-1.851)
1	0.064 (0.546)	-0.144 (-1.014)		0.103 (1.858)	
2	0.190 (1.856)				
3	-0.072 (-0.698)				
4	-0.091 (-0.947)				
5	0.278 (2.912)				

t-statistics in parentheses
****p<0.01; **p<0.05; *p<0.1*

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A similar procedure is followed in the case of the M2 monetary aggregate and the results are exhibited in Table 2. In this instance, an ARDL (4,4,3,6,0) for the M2 money demand function was found to be the most appropriate specification. The long-run coefficients in Tables 1 and 2 are directly extracted from the ARDL specification by dividing the estimated coefficient of the ARDL specification for the long-run variables by the long-run multiplier's coefficient. From the ARDL equation mentioned above, this would imply that the long-run coefficient for the scale variable in the form of the real GDP, for example, is calculated by $-\left(\frac{\delta_1}{\delta_0}\right)$.

Table 2: ARDL estimates for the M2 monetary aggregate

Long-run coefficients for the M2 money demand function					
Constant	Y	i		Exch	infla
2.277 (1.486)	***0.917 (6.260)	***-1.781 (-3.049)		***-0.366 (-4.320)	***4.955 (-6.109)
Short-run coefficients for the M1 money demand function					
Lag	Δm1	Δy	Δi	Δexch	Δinfla
0		0.013 (0.125)	-0.116 (-0.465)	0.018 (0.461)	-1.197 (-2.803)
1	-0.073 (-0.630)	-0.559 (-4.299)	0.842 (2.989)	0.199 (3.839)	
2	0.208 (1.992)	-0.321 (-2.504)	0.458 (1.725)	0.093 (1.848)	
3	0.034 (0.337)	-0.263 (-2.099)	0.544 (2.149)	0.106 (2.383)	
4	-0.219 (-2.011)	-0.299 (-2.569)		0.123 (2.792)	
5				0.045 (1.148)	
6				0.121 (3.045)	

t-statistics in parenthese

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****p<0.01; **p<0.05; *p<0.1*

In order to examine the short-run dynamics of the money demand functions, it is necessary to estimate error correction models. Dritsakis (2011) notes that the deviations in the long-run equilibrium of the money demand function are as a result of short-run shocks. If a long-run cointegrating relationship truly exists, there should be an adjustment from these short-run shocks back to the long-run equilibrium relationship. This adjustment process is confirmed by a significant and negative error-correction term. In Tables 3 and 4 below, the result of the error correction estimation is illustrated for the M1 and M2 monetary aggregates, respectively.

Table 3: Error correction model of the ARDL specification for the M1 money demand function

Explanatory variables	**Coefficients**	**t-Statistics**
Constant	0.003	0.958
Δm1(-1)	**0.315	2.543
Δm1(-2)	**0.272	2.332
Δm1(-3)	-0.177	-1.50
Δm1(-4)	-0.145	-1.32
Δm1(-5)	***0.287	2.80
Δy	0.122	0.856
Δy(-1)	-0.168	-1.050
Δi	***-0.770	-2.485
Δexch	0.067	1.267
Δexch (-1)	0.009	0.158
Δinfla	-0.682	-1.523
*ec(-1)	***-0.150	-2.853

*The error correction term can be calculated as lagging the residual of the long-run equation, $m = c + y - i - exch - infla + DUM2013$

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Table 4: Error correction model of the ARDL specification for the M2 money demand function

Explanatory variables	Coefficients	t-Statistics
Constant	***0.008	2.600
Δm1(-1)	0.212	1.544
Δm1(-2)	0.209	1.467
Δm1(-3)	-0.056	-0.403
Δm1(-4)	-0.134	-0.967
Δy	-0.032	-0.241
Δy(-1)	**-0.342	-2.125
Δy(-2)	-0.090	-0.580
Δy(-3)	-0.015	-0.100
Δy(-4)	-0.154	-1.030
Δi	-0.305	-0.999
Δi(-1)	0.429	1.236
Δi(-2)	0.1701	0.519
Δi(-3)	*0.539	1.743
Δexch	0.008	0.161
Δexch(-1)	*0.108	1.667
Δexch(-2)	-0.011	-0.175
Δexch(-3)	0.012	0.215
Δexch(-4)	0.047	0.814
Δexch(-5)	0.009	0.163
Δexch(-6)	0.008	0.880
Δinfla	**-1.012	-2.410
ec(-1)	***-0.260	-3.460

****p<0.01; **p<0.05; *p<0.1*

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The error correction terms in both models are negative and significant at least at the five per cent level. This confirms the presence of a long-run equilibrium relationship between the variables included in the model. In the M1 money demand function, the error correction term is -0.1495. This implies that in each quarter, the disequilibrium caused by short-term shocks is corrected by 14.95 per cent. Likewise, the absolute value of the error correction term for the M2 money demand function is larger than that of the M1 money demand function, which implies a faster adjustment process during each quarter. In this instance, 26 per cent of the disequilibrium is corrected in each quarter. Similar to the results of Dritsakis (2011), not much inference can be drawn from the short-run variables of the M2 money demand function. This is not the case for the M1 money demand function, however, where there are numerous short-run variables that are found to be significant at least at the five per cent level.

In Table 5, results of various diagnostic checks are reported. It is important that the estimated money demand functions pass all of the appropriate diagnostic checks in an effort to ensure that the results represented by the demand functions are not spurious.

Table 5: Diagnostic checks for potential spurious regression results

	M1		M2	
Diagnostic	χ^2	p-value	χ^2	p-value
χ^2_{SC}	4.35	0.360	2.63	0.269
χ^2_{BP}	16.37	0.175	23.99	0.348
$\chi^2_{Normality}$	0.49	0.783	5.04	0.081
χ^2_{ARCH}	0.41	0.982	2.63	0.622
χ^2_{RESET}	0.00	0.969	0.97	0.436

The diagnostic tests generally confirm that both the M1 and M2 money demand functions do not suffer from spurious regression results at the 5 per cent level of significance. However, it could be inferred that, at the 10 per cent level, the M2 money demand function's residuals could potentially suffer from non-normality. There is no uncertainty regarding the authenticity of the M1 money demand function's results, as it is not possible to reject the null hypotheses of no

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heteroskedasticity, no serial correlation and residual normality. According to the results of the Ramsey RESET test, there is no evidence of misspecification in any of the models.

Before concluding that both monetary aggregates are appropriate for formulating monetary policies in Hungary, it becomes necessary to ascertain whether the error correction models are stable. For this purpose, the CUSUM and CUSUMSQ stability testing procedures are used. It is important to determine whether the error correction models are stable, as it could impact on the viability of basing monetary policy on the estimated money demand functions.

From Figures 1 and 2, it is possible to draw the inference that the M1 money demand function is relatively more stable than the M2 money demand function in the case of Hungary. The practical implication is a relative more stable relationship between the M1 money stock and the key macroeconomic variables included in the analysis, making M1 the preferred measure for monetary policy. This result is consistent with that of Dritsakis (2011), who, instead of also including the deposit rate among his opportunity cost variables, included only the CPI inflation rate. The similar result while using a different specification as compared to that of Dritsakis (2011) corroborates his findings that the M1 money demand function is a more appropriate measure to base monetary targeting policies upon.

Figure-1: CUSUM (left) and CUSUMSQ (right) test for stability of the M1 money demand function of Hungary

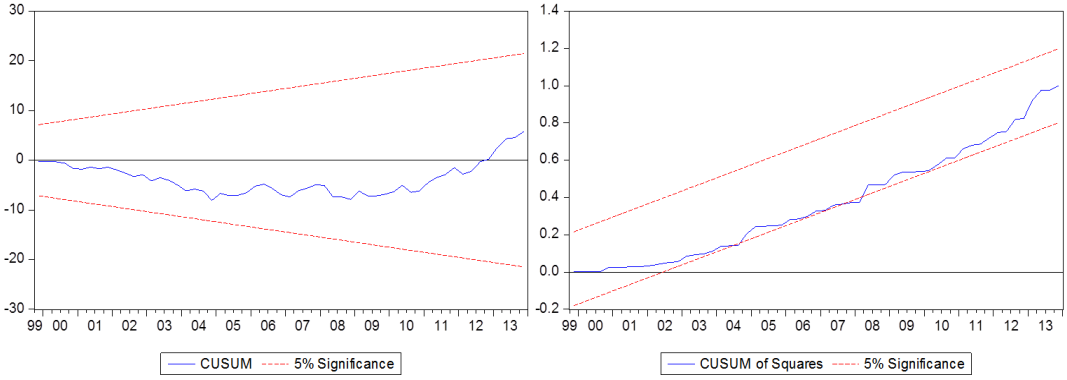

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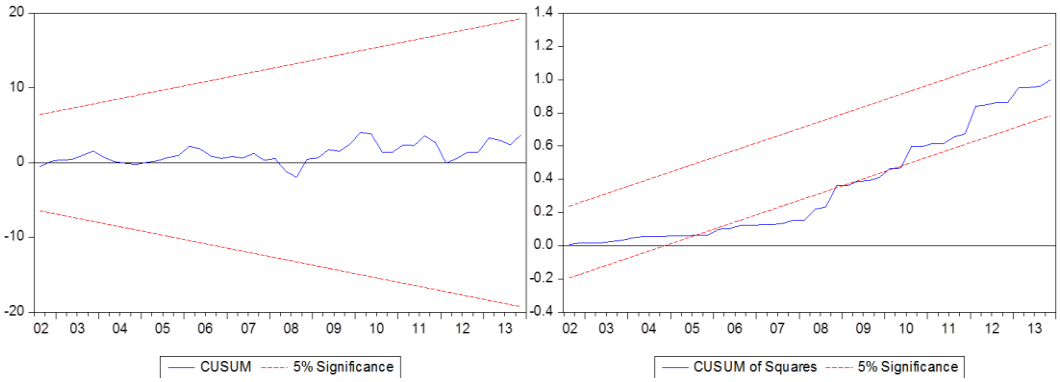
Figure-2: CUSUM (left) and CUSUMSQ (right) test for stability of the M2 money demand function of Hungary



4.2. The Johansen approach to cointegration and the one-step error correction model

In estimating a money demand function for Hungary, the ARDL approach is perhaps the more appropriate estimation method. Firstly, not all of the proposed explanatory variables are integrated of the same order, a prerequisite for the Johansen approach (Johansen & Joselius, 1990); and secondly, the Johansen approach and the VECM do not account for the fact that different variables may require different optimal lags to yield the most significant estimation results. However, as a robustness check – and following on the work of Achsani (2010:54) that included only 64 observations in his study on Indonesia – this study also estimates both money demand functions by means of the VECM procedure and the one-step error correcting model proposed by Wesso (2002). Due to limiting space, only summaries of these results are reported, with the complete set available from the authors on request.

The error correction terms in the VECM estimations of both money demand functions are negative and statistically significant at 5 per cent, confirming a long-run cointegrating relationship between the dependent variables and explanatory variables. This is further a corroboration of what was found in the case of the ARDL procedure. The speed of adjustment to long-run equilibrium is estimated at 24 per cent per quarter for M1 and 33 per cent for M2 compared to 15 per cent and 26 per cent of the ARDL procedure. The long-run coefficients in the cointegrating equations display the required signs and are significant. The

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magnitudes of the coefficients are also similar, especially with regard to the respective scale variables. The various opportunity cost variables also display the appropriate signs with magnitudes relatively similar.

The single-equation one-step error correction technique is quite similar to ARDL and also does not require all variables to be integrated of the same order. From these results, it is evident that the adjustment coefficients for both money demand functions are negative and significant –confirming adjustment towards the long-run equilibrium. The speed of adjustment coefficients is again similar to that of the previous two estimation methods, with 23 per cent of disequilibrium corrected in each period for the M1 money demand function and 34 per cent in the case of M2. The calculated long-run coefficients are also similar to that of the previous two methods. Diagnostic testing after the one-step procedure alludes to potential spurious regression results in the M2 function, while the M1 money demand function is regarded as more reliable. We acknowledge that our analysis is not without its limitations. It may for example be quite possible that we were not able to identify all prior research on the topic. However, thecomparable results, obtained from three different estimation techniques, confirm the robustness of the results.

5. CONCLUSION

The importance of estimating a stable and well-defined money demand function can be a daunting task in the case of developing countries in which limited data availability, hyperinflation and undeveloped financial systems could prove to be significant constraints. In this study, however, encouraging empirical results were found. Moreover, we argue that the results obtained could be robust given the great similarities between the results of the various empirical approaches. This strengthens the argument of this and previous studies, that a stable money demand function could well exist for Hungary. It is suggested, as was also argued by Dritsakis (2011), that the M1 money demand function might be the most appropriate model on which monetary policy decisions should be based. This argument is made given the relative stability of the ARDL specification of the M1 money demand function. What could be a disrupting finding is that the M1 variable was found to be weakly exogenous, which means that causality possibly runs in the opposite direction than what is theorised. It is suggested that further research be conducted utilising this approach in an effort to rule out uncertainty. Nevertheless, the speed of adjustment for both the M1 and M2 money demand functions was found to be slightly greater in the case of the VECM compared to

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the ARDL model. The speed of adjustment for the one-step error correction model and that of the VECM is more similar compared to the ARDL model. This would suggest that the disequilibrium is actually corrected faster than what is proposed by the ARDL procedure.

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-RESEARCH ARTICLE-

TOURISM AND SUSTAINABLE DEVELOPMENT GOALS IN THE AFRICAN CONTEXT

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─Abstract─

The leading global discourse amongst development partners for the past three years has been predominantly dominated by Agenda 2030 on Sustainable Development and the Paris Agreement. The Sustainable Development Goals (SDGs) adopted in 2015 set new global development thinking and an ambitious target for the global scene run up to 2030. Tourism, as one of the central industries to global development, proclaimed 2017 as a year of Sustainable Tourism to rally the tourism industry towards the common global agenda in a manner that tackles the global challenges. There has been an acknowledgement that even though Agenda 2030 does not put tourism at the forefront of addressing the SDGs, the industry can help address most if not all the SDGs. This qualitative research paper makes use of various selected case studies selected from the southern African region chosen randomly to highlight how tourism can assist in meeting SDGs. Drawing lessons from various cases, which include a review of the tourism organisation's annual reports and SDG Voluntary National Review Reports, highlights that in most developed and developing countries tourism has been identified as a remedy for achieving SDGs. The study found that given the nature and scope of the industry, tourism has a critical interest in the meeting of SDGs as an environmentally sensitive industry. The research argues that for tourism to be an effective vehicle for achieving SDGs, there is a need for a collaborative approach that includes various stakeholders, including academics, as the issue of SDGs is not well understood amongst tourism stakeholders, which reduces the impetus and attainment of the global goals. Such collaborative effort

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in the spirit of leaving no one behind will propel the industry on a sustainable path.

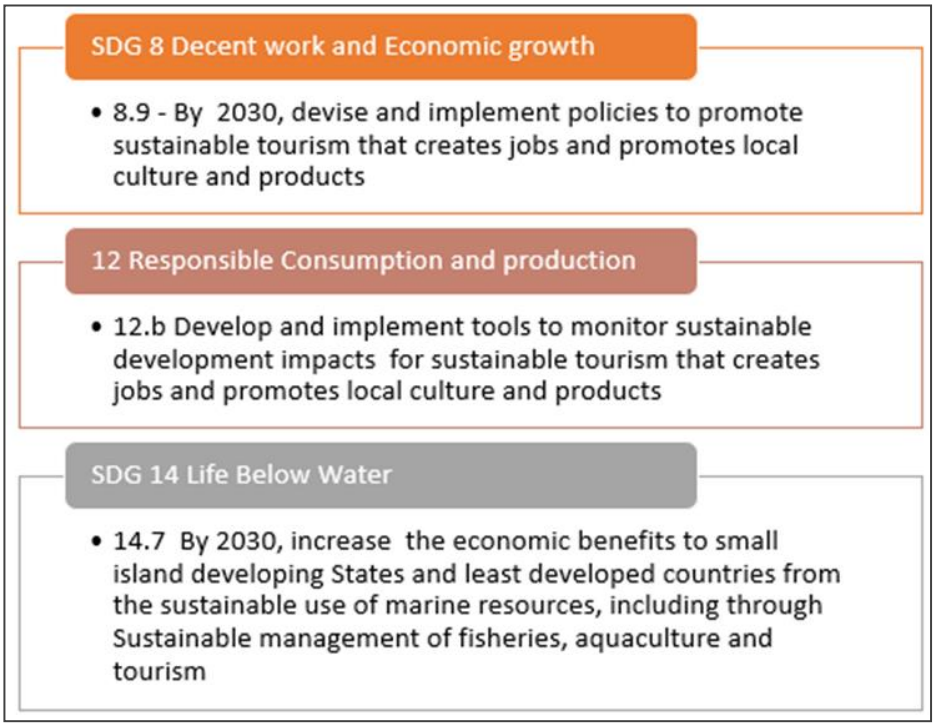
Key Words: Africa, research gaps, sustainable, SDGs, Tourism

JEL Classification: Q56

1. INTRODUCTION

The year 2017 was proclaimed a year of Sustainable Development by the World Tourism Organization to rally the tourism industry and role players to consider tourism as a tool to achieve Sustainable Development Goals (SDGs). Nearly four years after the adoption of SDGs in 2015 and two years post the year of Sustainable Tourism there has been very little work done to demonstrate how the tourism sector is and can embrace the SDGs to ensure a more sustainable tourism future. The United Nations had initially identified three areas where tourism could play a leading role, as shown in Figure 1.

Figure 1: Tourism and Agenda 2030 positioning



Source: Author

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There has been very little progress made in generating the literature by tourism geographers on tourism and SDGs. In that regard, the first dedicated academic conference on SDGs only was conducted in January 2019 for the year's post-adoption of the SDGs. As a consequence, there is very little scholarly material generated thus far to inform tourism role players on the role of tourism in achieving the SDGs. This presents problems for Africa where, according to Siakwah *et al*. (2019), "sustainable tourism governance frameworks have not comprehensively inculcated trust, justice, social capital, power and participation." It is equally sad given that there are only 11 years left to meet the 169 SDG targets set to be attained by the year 2030. Tourism presents enormous potential to address most of the targeted 17 global goals. Due to the enormity of the work that has to be covered by 2030 and the importance attached to the fulfilment of the SDGs, there have been growing calls from leading academics for the tourism industry to take urgent steps to tackle and embrace the SDGs (Scheyvens, 2018; Hall, 2019).

Customisation of SDGs by the tourism sector is a moral and ethical imperative that cannot be avoided, as it will lead to questioning some of the practices and activities in the tourism industry. It also allows the tourism industry to self-introspect in a world that is suffering from challenges, some of which are a result of tourism activities such as global warming, environmental degradation, poverty, inequality, gender discrimination and all the challenges that are associated with mass tourism especially in some western countries. Mass tourism, for example, has been blamed for damage to and loss of authenticity for cultural heritage (Frey, 2019). In another study, Moon (2018), highlights that mass tourism was leading to several problems despite the economic gains such as putting a strain on energy and water resources and a host of both air- and land pollution challenges.

In order to ensure sustainability within the tourism sector, Boluk et al. (2017) called for a critical thinking system approach within the tourism system that is global. They further pointed out there was a need for learnings from multiple world views that are devoid of the current capitalistic world view to mirror a broader approach to sustainable development in the tourism industry as idealised by Agenda 2030 for Sustainable Development. With regards to Africa and its customisation of SDGs within the tourism industry, Siakwah *et al*. (2019) indicate that from Zimbabwean and South African perspectives there were challenges to integrating tourism within the SDG framework due to governance and political misalignment of policies.

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The academic contribution in terms of the literature has often been muted in terms of research contribution in tourism geography and other critical global debates. Africa can ill afford to be left behind in this critical debate given the ramifications of such lack of a voice in a global discourse, which is critical as Africa stands to lose if it fails to fully participate in the adoption of SDGs. Frey and George (2012) argue that even though there was a buzz around the world on the issue of responsibility and sustainability within the tourism sector, in South Africa there was very little evidence of responsible and sustainable tourism adoption by the tourism sector. A similar claim was also put forward by Siakwah *et al*. (2019), who observed that the sector was mostly untransformed with little benefit to the host communities. The tourism industry in South Africa and by extension Southern Africa, where South African owned companies dominate the tourism space, has been blamed for being too white and exclusionary to black tourism actors with demand for transformation to ensure the spread of economic benefits and reduction of inequality between the rich and the poor (Rogerson, 2004; Adinolfi *et al.* 2018; Mofokeng *et al*., 2018). Failure to embrace sustainability is highly problematic, given the tourism industry's contribution to the environmental and socio-economic development of Africa. According to Dube and Nhamo (2018), tourism has a central role in economies of many developing countries, especially in Africa; hence, any challenges facing the sector need to be resolved to avoid Africa missing the opportunities that present themselves through the integration of SDGs.

Any relevant research amongst tourism geographers must, therefore, embrace the global agenda of the SDGs and by default, this will also speak to climate change, which is addressed by the Paris Agreement. The need for sustainability can never be overemphasised in the tourism industry, given the reliance on the environment and recent challenges the industry has witnessed due to mass tourism. Mass tourism has triggered anti-tourism sentiments in some parts of the world, which are partly blamed for the tourism industry's failure to achieve sustainability (Seraphin et al., 2018). In South Africa, the flocking of most urbanites to coastal beaches has often resulted in racial flares as competition for space along the country's pristine coastal beaches heats up during the summer season. Dube and Nhamo (2019) highlight the huge carbon footprint that drives climate change that is left behind by tourists during their visit to resorts using aircraft and other carbon-intensive modes of transport, while other scholars have noted the negative impact of tourism on the environment through land pollution and general environmental degradation at the hands of tourism development (Zhang & Gao,

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2016; Gössling & Peeters, 2015). This study, therefore, seeks to highlight how tourism can positively respond to SDGs, regardless of challenges on the ground, by looking at various case studies and in the process highlighting areas for tourism research and focus.

2. METHODOLOGY

Multiple case studies were evaluated using primary and secondary data analysis of relevant authoritative records such as UN Voluntary National Reviews reports, tourism company reports and the relevant literature from the SADC region. Cases were drawn from mainly Zimbabwe, Mozambique and South Africa where tourism is a critical economic driver. Case studies were drawn from tourism players such as lessons from the aviation industry, hospitality, conservation and other tourism role players in the tourism industry who come from the public and private sector. Random convenient sampling technique was used to profile success stories that can be used as learning points for SDGs customisation by tourism players from both the private and public sector. The choice of data gathering technique was informed by geographic proximity to the researcher, availability of data from the sample and cost implications. In this study, examples are drawn from learned practices from major tourism companies and parastatals that operate in the region and beyond. Content and thematic analyses were utilised to respond to the research questions of how the tourism industry in Africa can customise and embrace SDGs to ensure sustainable development within the sector.

3. RESULTS

Drawing lessons from various case studies across the tourism sector, the study shows that in as much as there are only three SDGs where tourism was directly mentioned in the Agenda 2030 document, there have been spirited efforts to present tourism as a potential solution to almost all the 17 SDGs. This makes tourism a strong partner with requisite tools that can be used to achieve sustainable development, especially in the global south, where sustainable development options are limited. This study noted that 41 countries that had submitted their Voluntary National Reviews, amongst them African countries, had identified tourism as a tool to address all the 17 SDGs and not just three as initially conceptualised in the Agenda 2030 document. The research shows that the most popular goals countries could relate to as a response for tourism in relation to SDGs include the ones that were initially identified in the Agenda 2030 document. Interestingly, countries, both developed and developing, noted the

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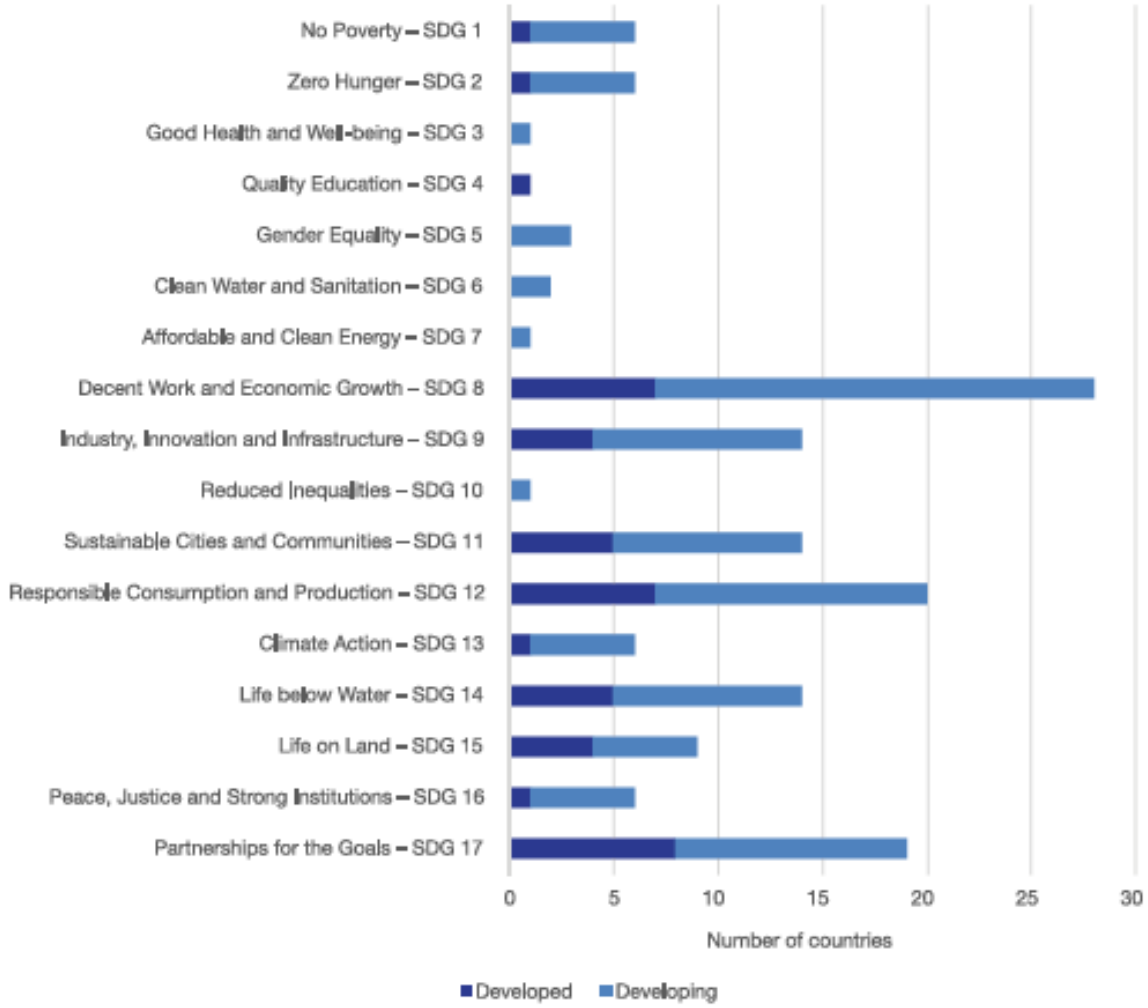
importance of tourism in response to SDG 9 – Industry, Innovation and Infrastructure, SDG 11 – Sustainable Cities and Communities and SDG 17 – Partnership for Goals whose popularity amongst countries was third in the league of countries as shown in Figure 2.

Figure 2: Number of countries mentioning tourism in relation to SDGs in their voluntary national reviews



Source: UNWTO and UNDP (2017)

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Regardless of the contribution of tourism to climate change and the potential for climate change to disrupt tourism, hence the need for the sector to respond to SDG 13, the study found that only seven countries identified tourism as a partner for climate action in line with the Paris Agreement. The tourism industry is one of the fastest-growing industries globally and so is its carbon footprint, which is expected to grow on an exponential path in the foreseeable future, particularly the aviation industry, as the demand for transport grows with the growth in the tourism sector and globalisation (Dube & Nhamo, 2019).

Academics and governments across the world have often argued that tourism is a vehicle that can be used in fighting poverty, inequality and gender discrimination. Judging by the national voluntary review reports, most governments did not seem to see tourism as a weapon to fight poverty – SDG 1, climate change – SDG 13, inequality – SDG 10 and gender equality – SDG 5 among others as can be seen in Figure 2. This is concerning as this call for tourism players to now justify the claims that have been repeated over the years that tourism is a tool for fighting poverty and inequality (Scheyvens, 2007; Sharpley & Naidoo, 2010) as government perceptions seem to be at variance with this particular claim. Siakwah *et al.* (2019) point out that there was "need for collaboration between governments, institutions, international actors, CSOs and locals to promote governance based on justice, inclusion, trust, and equitable power relations" to make tourism properly sustainable in the eyes of communities. Although several countries acknowledged the role of tourism in creating jobs, the perception amongst the countries that submitted their voluntary reviews is that such jobs do not necessarily address the challenges of poverty, inequality and gender in balance. The call is, therefore, for scholars to interrogate this view further.

Besides looking at reports from UNWTO and UNDP, the study looked at the role that is being undertaken by various tourism players such as parastatals, international safari companies, players in the aviation industry and other tourism role players where lessons for the industry can be drawn. In line with the findings above, it was noted that various tourism role players were undertaking several projects that respond to most of the 17 global goals, with some companies having already starting to report on chosen SDGs in their annual reports. Table 1 highlights some of the projects that are being undertaken by various tourism sectors and subsectors to address some of the SDGs and highlight some examples of success stories.

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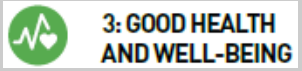
Table 1: Examples of some projects that address the SDG by the tourism industry in southern Africa

SDG	Project/Action taken and successes
	Several tourism establishments pay decent salaries that are above set minimum wage salaries and support local suppliers of produce and other materials used at establishments most do this through the adoption of approaches such as Fair-Trade Tourism The CAMPFIRE Programme in Zimbabwe is a typical example of how tourism can be used as a vehicle to fight extreme poverty
	Reduce food waste at all tourism establishments; where possible promote local production by producing their vegetable gardens and other foodstuffs where possible. Hotel Verde, Cape Town, produces its vegetable for guest meals. Some tourism companies such as Kruger in Mpumalanga have farms and plantations that produce vegetables and fruits for sale
	Hospitality sector can assist in promoting healthy living by ensuring availability and delivery of healthy meals and gym facilities or promote healthy living such as cycling and gym by guests as is the case at Hotel Verde Cape Town Airport
	Some tourism organisations are seriously involved in the building of schools and partnering communities in early childhood education development as is the case with &Beyond at their Munamba enterprise in Mozambique and Phinda in KwaZulu Natal. Some tourism companies are involved in serious research in collaboration with universities and research institutes to research that matters, for example, Grootbos private nature reserve is involved in fynbos research, &Beyond is involved in maritime ocean research and Wilderness Safaris is involved in Responsible Tourism Research working with education institutions. All these institutions are also involved in research in endangered species and restoration.
	Employment of women to higher positions in the hospitality sector through dedicated efforts that are aimed at increasing women participation in the tourism industry. Tourism establishments in South Africa employ women in the majority as part of their workforce, as is the case in most

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SDG	Project/Action taken and successes
	establishments.
 6: CLEAN WATER AND SANITATION	Construction of water purification and bottling facilities cases includes efforts by & Beyond. Most establishments across the region have adopted water-saving and water-efficient bathrooms. Rehabilitation of wetlands efforts by Hotel Verde Cape Town Airport.
 7: AFFORDABLE AND CLEAN ENERGY	Pioneering of tourism companies in green energy through the use of solar energy with a number of tourism establishments reducing their dependence on electricity from the grid. A number of establishments are running on 100% clean energy examples include Somalisa Camp in Hwange National Park World Travel Awards winner 2019 and other properties owned by African Bush camps in Zimbabwe, Zambia and Botswana; several properties owned by & Beyond, Wilderness Safaris. The aviation industry is making efforts to invest in Sustainable Aviation Fuels, in particular, the Solaris Project in Limpopo where South African Airways is a partner. Most tourism establishments use gas for their cooking with 80% of establishments in Victoria Falls using gas for cooking. ACSA is making significant strides to get some of their airports to run solar energy. Kimberly Airport, for example, is installed with a capacity to deliver 927 000 kilowatt-hours per year, George Airport 750Kw solar facility to oversee that 42% of the power used at the airport is renewable, The Upington Airport has a solar project designed to deliver 1 040 500 kilowatt-hours of power a year to meet the operational needs of the airport.
 8: DECENT WORK AND ECONOMIC GROWTH	Employment of locals by many leading tour operators in a region that is suffering high levels of unemployment examples of good practice at Hotel Verde Cape Town scooping South Africa Best Employer Brand Awards 2019. Substantial infrastructural development by tourism companies with a ripple effect on other economic sectors.
 9: INDUSTRY, INNOVATION AND INFRASTRUCTURE	The tourism industry is making strides to innovate and in the design of infrastructure that is necessary for tourism development such as innovation in hotel designs and embracing of green building technology. Examples include the Hotel

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SDG	Project/Action taken and successes
	Verde Cape Town Airport is a 6-star rated building by Green Building Council of South Africa and rated a Silver LEED by the US Green Building Council due to its innovative design as a smart building. Several shopping malls are going green and running on solar with a number of them accredited by Green Building Council of South Africa.
 10: REDUCED INEQUALITIES	Tourism transformation programmes and various entrepreneurial capacity building programmes aimed at the tourism industry are critical in assisting in reducing inequalities, e.g. the South African Department Tourism, BBBEEE and Tourism Score Card. SANParks had a dedicated programme to offer contracts to local communities in the projects they are running. Expanded Public Works Programme in National Parks to help in various conservation works as a measure to reduce extreme poverty and inequality.
 11: SUSTAINABLE CITIES AND COMMUNITIES	11.4 calls for the protection of cultural and natural heritage sites the promotion of visits to museums and various monuments and funds from tourism activities such as the tourism levies are critical in the protection of natural and cultural heritage sites, e.g. the role of South African Heritage Resource Agency.
 12: RESPONSIBLE CONSUMPTION AND PRODUCTION	Several efforts underway to reduce the carbon footprint of the tourism industry through the consumption of local products used in hotels such as the use of local artifacts. Most hotels involved in the waste separation, waste reduction initiatives, e.g. Hotel Verde Cape Town Airport reports a 98% reuse and 2% to landfill on waste with a 0% to landfill target. Wild Horizon, a company operating in Victoria Falls assists in the town cleaning.
 13: CLIMATE ACTION	Investment in energy and water-saving equipment by various tourism establishments, green buildings leading examples includes efforts by SANParks, Zimbabwe National Parks to reduce the park's carbon footprint, through activities such as the use of solar energy in national parks for water pumping and their accommodation establishments. Lead in climate mitigation, adaptation and resilience-building.

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SDG	Project/Action taken and successes
	In the aviation industry, the use of sustainable aviation fuels, utilisation of continuous descent on approach and retrofitting of aircrafts. SAA had projects in place to supply geysers to households as a measure of carbon offsets. Selling of carbon credits to travellers by aviation players The Green Tourism Incentive Programme by the National Department of Tourism and IDC in South Africa. 14 Tourism establishments in Victoria Falls had enrolled in the Green Tourism Initiative under the auspices of Green Tourism organisation.
 14: LIFE BELOW WATER	Zero plastic movement amongst tourism companies, &Beyond reports that it had gotten rid of plastic in most of its establishment similar efforts were being made by several hotels and restaurants where plastic straws were being eliminated to reduce the impact of ocean plastic pollution. Some tourism companies are partnering government agencies to ensure the protection of ocean marine life and assist in beach clean-up campaigns in a bid to protect marine life, e.g. &Beyond Pemba project under Oceans without borders.
 15: LIFE ON LAND	Regional, national parks and conservation groups involved in tourism assist in the protection and conservation of flora and fauna. There is also a lot of reclamation and restoration work that is being conducted by tourism role players to ensure sustainability. Protection of endangered species SANParks, Various Zoos, National Botanical gardens, Nature Reserves, Biospheres The aviation industry, including airports, was at the forefront of fighting anti-poaching and illegal trafficking of wildlife. Installation of a bird radar system at King Shaka International Airport to reduce the impact of aviation on birdlife other airports had similar measures in place.
 16: PEACE, JUSTICE AND STRONG INSTITUTIONS	Most tourism establishments have embraced tourism for all. Cultural museums can play an important role in promoting peace and justice, e.g. the Apartheid Museum in South Africa, Hector Peterson Memorial, The Constitutional Hill,

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SDG	Project/Action taken and successes
	Zimbabwe's National Heroes Acre and Robin Island.
	Tourism players have proved to be critical collaborators for various SDGs as funders, especially in rural setups where tourism companies are partners for development, social and environmental activities.

Source: Author

Given the vast resource and influence, the tourism industry has the potential to build on the successes made during the Millennium Development Goals to influence the adoption of SDGs by society by raising issues that are affecting the global village. This research highlights critical examples of how various tourism sectors, subsectors and role players can act as a catalyst for the promotion of SDGs in the tourism industry. An analysis of data shows that in as much as there is a build-up and coalescing around thematic areas there is little understanding of what the SDGs are by several industry players, which hamper the tackling and progress towards achievement of the global goals. It is the study's view that more can be achieved through the popularisation of these goals, probably with government and academic leadership, to ensure that no one is left behind. This can be done through workshopping of tourism industry players, which can pave the way for increased tackling of SDGs and identification of collaborations on the industry to industry and industry to government partnership. Another avenue that needs to be explored in this regard is to include SDGs in the curriculum of tourism-related courses to ensure that there is a common understanding and vision with regards to global goals. The understanding of SDGs amongst academics and researchers, therefore, becomes critical and the call for a responsive curriculum in this regard can never be overemphasised.

The successful adoption of SDGs by the tourism community will ensure the success of the tourism industry, hence addressing of SDGs by the sector is central to the continued growth of the sector. Tourism is a particularly sensitive industry that is vulnerable to climate change, which the sector must address under SDG 13. Climate change threatens tourism resorts infrastructure, (Dube & Nhamo, 2018) and flora and fauna, which are the pillars of tourism in southern Africa. It is commendable, therefore, to see various efforts that are being undertaken by the sector to address climate change. Climate change and human population growth are also seen as major threats to biodiversity under life on land and marine life (IPCC, 2018; Intergovernmental Science-Policy Platform on Biodiversity and

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Ecosystem Services, 2019), which are addressed under SDG 15 and 14 respectively. The efforts by the tourism industry to respond to these goals are critical in as much as they protect ecosystems in national parks and for the protection of coastal tourism.

Tourism has been considered a resource-intensive industry, which often results in pollution and environmental degradation (Deraman et al., 2017; Dube & Nhamo, 2019). The efforts by the tourism industry have to address such concerns, which are critical as they assist in addressing the challenges faced by the global village, as failure to address consumption patterns by the industry threatens global sustainability under SDG 12. The industry, therefore, has to embrace sustainable consumptive patterns to ensure sustainability. Africa is in a unique position as the industry is still growing, hence an opportunity to innovate and embrace responsible tourism practices. The adoption of green technology under SDG 7 and SDG 9 by the industry is imperative as the industry grows. There is, therefore, a need to learn from examples provided for in Table 1. Addressing SDG 12 has a ripple effect of addressing other SDGs by default such as SDG 6, SDG 13, SDG 15 and other related goals such as ensuring good health and well being (SDG 3) through pollution reduction.

4. CONCLUSION/RECOMMENDATIONS

The paper finds several areas where tourism is providing leadership in tackling SDGs regardless of the challenges of lack of adequate knowledge in that space. Significant effort has been made by the tourism sector, for example, in climate change action SDG 13, in addressing the goals and targets under life on land SDG 15 life on land and SDG 7 on affordable and clean energy among other areas where tourism is taking leadership. The paper provides an opportunity for the opening of debate space, which paves the way for industry-wide adoption of the SDGs. The study finds that there is an important role that academia can play in shaping the debate. There are chances that some tourism players might miss an opportunity to tackle the SDGs given the time frame left to reach 2030. Therefore, the urgency in customisation of SDGs is imperative and to ensure everyone is on board there might be a need for each player to customise as many SDGs as they can to draw benefits that go hand-in-hand with the adoption of the global goals. There is also need for African researchers to research the role of various tourism enterprises on a goal-to-goal basis to provide learning and a platform that forms the basis for global evaluation of how African tourism has customised the SDGs.

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-RESEARCH ARTICLE-

CONTEXTUALISING STAKEHOLDER PARTICIPATION IN THE GOVERNANCE OF HARARE'S INFORMAL ECONOMY SECTOR

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─Abstract ─

The purpose of this study was to explore various public participatory stakeholders in the management of the City of Harare's informal sector as well as to assess the role of stakeholders in the governance of this sector within the context of political polarisation. In doing so, the study employed a mixed method approach which included a questionnaire survey (N=195), in-depth interviews (N=12) and documentary analysis. Main observations suggested that public participation was far from being achieved due to a multiplicity of factors. Furthermore, despite the introduction of a progressive constitution and the existence of various participatory mechanisms, various challenges continue to inhibit public participation in Harare. These include lack of funding, continued central government intervention, re-centralisation of governance due to loss of political power by the ruling party, political polarisation, resistance by administrators to co-opt the public into decision-making processes and failure to adapt to change. In addition, despite commendable efforts by various stakeholders to engender stakeholder participation, there was a distinct absence of the development and implementation of effective stakeholder involvement strategies in flea market governance. The analysis also showed that the role of the Council especially that of councillors, has been diminishing over the years and conversely, City administrative officials have become more powerful beyond their line of duty. To make matters worse, currently, there are no specific legislative provisions that provide for community participation. The findings will be of interest to local government officials and scholars alike as they have a number of practical implications. There is a need to put in place a robust legislative framework that promotes citizenry involvement and that de-links party politics from development and governance of local authorities. A key policy priority should, therefore, be to inculcate a culture of inclusivity, tolerance and de-centralisation of power and governance.

Key Words: Public participation, polarisation, governance, flea markets

JEL Classification: R38

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1. INTRODUCTION

Stakeholder engagement has become one of the key tools in management and administration of the service delivery across the world (Certomà, Chelleri, & Notteboom, 2019; Seetharaman et al.**,** 2019; Rangaswamy, 2019). Drawing on its perceived effectiveness, some governments have made such engagement a constitutional requirement. For instance, the *Preamble of the 2013 Zimbabwean Constitution* makes the democratic participation in government by all citizens and communities in the determination of development priorities within their areas a constitutional value worth pursuing. The practical and theoretical arguments for such stakeholder engagement are well documented in both theoretical and empirical works (Dube & Casale, 2019; Ligomeka, 2019; Arnstein, 1969). However, it seems the benefits of stakeholders' involvement have not been realised fully in some areas of governance in the Zimbabwean local government. This could be due to high political polarisation between the two dominant political parties, ZANU PF and MDC. This often leads to the problem of a low level of participation restricted to tokenism and manipulation. This problem is clearly manifested in the governance of the informal traders in the capital city, Harare. Although recent studies have examined the state stakeholder engagement in Zimbabwe (Dube & Casale, 2019; Ligomeka, 2019) these studies have been restricted mostly to limited descriptions of cases without a thorough analysis of the nature of relationships between stakeholders and the government officials. As a result, our knowledge of the role played by a multiplicity of actors in the governance is based on speculation and conjecture. This study sought to contribute to the growing body of literature on stakeholder engagement in the governance of local government institutions by analysing its application in the context of flea markets (informal traders) in the City of Harare. This paper argues that, while stakeholder engagement is theoretically advantageous, its benefits are not realisable in the manner assumed by these particular proponents. Instead, the ruling élite is often opposed to public participation as they believe the citizenry should be subordinate to their viewpoints.

Following this introduction, the next section reviews the literature on public participation in order to clarify the role of such stakeholders in different contexts across the world. This is followed by the third section that deals with the key elements of citizen involvement that are outlined by Ebdon & Franklin (2006), as well as planning theories as the theoretical foundations underpinning this study. The fourth section describes the methods that were employed to collect data, the fifth and the sixth sections present and analyse the data using the theoretical framework and extant literature before drawing conclusions in the last section.

2. CONTEXTUALISING PUBLIC PARTICIPATION: A REVIEW OF LITERATURE

The current study applies the works of Kalandides (2018) & Drazkiewicz et al., (2015) to demonstrate the role of a multiplicity of stakeholders and how collaborative participation can lead, meaningfully, to development and diffusion of conflict leading to the implementation of acceptable and proper urban planning policies. Kalandides (2018) emphasises the need to embed participatory governance in the institutional framework as well as to recognise participation as a right in the public sphere. Meanwhile, whilst looking at four policymaking case studies in Germany, Drazkiewicz et al., (2015) argue that the success of participation is dependent upon numerous aspects of the broader framework within which processes are located, including the role of stakeholders. Furthermore, Drazkiewicz et al., (2015) have managed to showcase that through stakeholder participation and use of a variety of approaches, decisions tend to be popular and have a public buy-in.

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However, the above-mentioned scholarly works have focused too much on the centrality of decision-making resulting in some informational gaps such as the importance and lack thereof of various stakeholders. This study will address such gaps by putting stakeholders at the centre of decision-planning, making and implementation process. Using case studies of two wards in Harare, this study hopes to cause a debate on the importance of stakeholder participation in the governance of flea markets. This is because very little research has paid attention to the role, views and perceptions of flea market traders in the governance of the informal sector. The little available literature on citizen participation in local government planning and management in Zimbabwe shows that stakeholder participation remains a myth, an abstract and an ideal. This is because of undermining factors which stem from the political, socio-economic, legal and technological milieu that local governments operate in (Garcia-Zamor, 2019; Saab et al., 2018; Purcell, 2019; Chirisa, 2007; Chirisa & Bandauko, 2015; Aikins, 2013). Having taken note of the above scholarly works and variables, it becomes clear that there exists a paramount need to interrogate the manner, type, form and context of stakeholder participation in Harare's flea market sector.

3. THEORETICAL PERSPECTIVES: THE LADDER OF PARTICIPATION

This study adopts Ebdon & Franklin's (2006) key elements in citizen participation and planning. In utilising these elements as outlined in Table 1, this study is able to unpack the nature and form of stakeholder participation in Harare's flea market sector governance whereby it is observed that the existing socio-economic and political situation in Zimbabwe is influencing the role of stakeholders especially flea market operators and citizens in the area of flea markets.

Table 1: Modified adaptation of Ebdon & Franklin's key elements of citizen participation

Elements	Variables
Environment	• Organisation and form of government • Political Configuration and Population size • Legal Requirements
Process Design	• Timing and Participants (selection method, numbers and representation)
Mechanisms	• Public and Focus Group Meetings • Advisory Committees • Surveys
Goals and Outcomes	• Reduction of cynicism • Educate participants about policies • Gather input for decision-making

Source: Ebdon & Franklin (2006: 438), Researcher 2017

The study also applies planning theory as it contends that when plans are conceptualised through a strong civic involvement process, enactment of policies is likely to be relatively successful as the resulting plan will be supported by the majority of the affected communities. This is because when residents and stakeholders are involved, they "are less likely to come out of the woodwork to oppose implementation in the future (Day, 1997: 421). Furthermore, a network of support that guarantees a successful implementation emerges as stakeholders get to know and understand each other. This also results in the emergence of a

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well-organised and crafted participatory process that brings together key players in implementation into the problem-solving process. As a result, through the discussion of solutions, a road-map for implementation begins to emerge (Kantamaturapoj et al., 2018; Gandy, 2019; Gough, 2019; Natarajan et al., 2019; Williamson and Fung, 2004). In addition, according to (Day, 1997: 427) "when the professionals orchestrating the planning process bring in local knowledge, the information used to formulate plans improves, leading to a greater likelihood that the decisions made will solve the problems that necessitated planning in the first place." Neglecting public participation in planning may halt the relationship between civic involvement in the planning process and the prospect of a successful implementation. Beierle & Cayford (2002: 112) also advocate that "a strong participatory planning process has a positive relationship to implementation progress." According to Brody (2003), public participation increases accountability for and ownership of a plan, often bringing about successful implementation.

The current study applies the works of Liu et al., (2018), Ma et al., (2018), Pu et al., (2019) and Sun et al., (2016) to demonstrate how stakeholder participation can address public dissatisfaction meaningfully and lead to the implementation of universally acceptable and proper urban planning policies. The quartet in their studies show that public participation and collaborative governance in China has, over the past decade, become a key instrument in addressing public dissatisfaction over the country's governance system and is also quickly becoming an important catalyst for local economic and political development. China is important when assessing the level of civic involvement processes in Zimbabwe given the fact that, like Zimbabwe, it is one of the countries that is facing criticism over its lack of transparency and implementation of best practices in governance. Furthermore, the country is modelling its governance system along with the Chinese model through its Look East Policy. It is therefore important to compare Zimbabwe with other countries in a similar bracket on how, despite these challenges, the public is still involved in governmental processes.

Using two case studies, namely the Shanghai Hongyng Substation Project in Shanghai and the South East New Territories (SENT) landfill in Hong Kong, Sun et al. (2016) presented two juxtaposed outcomes noting that timing, the gradation of participation, participation approach as well as government's aptitude to deal with a myriad of issues from key actors, have the potential positively or negatively to impact on conflict and conflict management. These authors also articulate important public participation tenets which can be used when analysing public participation of Harare residents in the formulation and implementation of flea market policies. Issues raised by the authors such as citizen-initiated contacts and citizens surveys are important mechanisms and approaches in looking at how public participation can help governments in having their policies accepted by the general public. It further helps in evaluating whether or not the 'bottom-up' or 'top-down' participation through the use of petitions, informal participation through protests, online advocacy, advisory committees and citizens surveys can work in a heavily polarised and politically toxic society like Harare.

Furthermore, despite the invaluable insights provided by the scholarly work of Sun et al., (2016), very few scholars have managed to undertake any systematic investigation of the role of stakeholder public participation and collaborative governance in Zimbabwe which leaves both researchers and practitioners clutching at straws. The participatory and collaborative governance history of Zimbabwe is still littered with several information gaps. There is a deficiency of empirical data that looks at public participation in local authorities. This study, therefore, seeks to fill in some of those gaps.

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4. METHODOLOGICAL ISSUES

This paper draws on data for a broader study that were collected through a mixed method approach in the City of Harare (CoH), an area that falls under the metropolitan province of Harare.

4.1. Participants

The data for this study emerged from a broader project that used interviews with purposefully selected participants and randomly chosen surveys participants. Table 2 shows the profile of the respondents.

Ward		**Harare Central (N=65)**		**Mbare (N= 130)**		**Total (N)**
		Frequency	Per cent	Frequency	Per cent	
Age group	Between 18 to 25	12	18.5	25	19.2	37
	Between 26 to 35	20	30.8	44	33.8	64
	Between 36 to 45	18	27.7	39	30	57
	Between 46 to 55	11	16.9	17	13.1	28
	Above 55	4	6.2	5	3.8	9
Level of Education	No Formal Education	2	3.1	2	3.1	4
	Primary	4	6.2	4	6.2	8
	Secondary	41	63.1	41	63.1	82
	Tertiary	12	18.5	12	18.5	24
	Post Graduate	6	9.2	6	9.2	12
Gender	Female	33	50.8	71	54.6	104
	Male	32	49.2	59	45.4	91
Respondent category	Customers	50	76.9	80	61.5	130
	Flea Market Operator	15	23.1	50	38.5	65
	Total	**65**	**100**	**130**	**100**	**195**

Source: Field Survey 2018. Sample size = 195.

As shown in Table 2, in Harare Central, out of 65 respondents, 76.9 per cent were flea market customers whilst 23.1 per cent were flea market operators or vendors. In Mbare, 130 respondents were interviewed, out of which 61.5 per cent were flea market customers whilst 38.5 per cent were flea market operators or vendors. This indicates that the majority of respondents from both Harare Central and Mbare were flea market customers. This is attributable to the fact that, due to high competition and the nature of flea market trading, vendors were reluctant to be interviewed as it entailed losing revenue. Further to this, 12 participants from members, policymakers in the Harare City Council, Flea Market leaders and Non-Governmental Organisation (NGOs) leaders/lobbyists were purposely selected to participate in the study.

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4.2. Instrumentation

In order to elicit the views of both the vendors and their customers, a survey questionnaire was designed. The questionnaire included four broad themes, namely, policy formulation, institutional design, facilitative leadership and collaborative process in order to gain perspectives on and perception of flea market governance and participation. The first theme sought to comprehend the respondents' opinions on their perceptions and experiences in policy formulations whilst the second theme sought to understand the framework in which the respondents participate in flea market governance and management. A five-step Likert Scale was also one of the data collection instruments that was used whereby respondents were asked to rate their level of agreement in terms of their perceptions of public participation in Harare's flea market sector (1 = Strongly Disagree, 2 = Disagree, 3 = Somewhat Agree, 4 = Agree, 5 = Strongly Agree). The questionnaire also contained open-ended questions where respondents could express their views.

4.3. Data collection procedures

Having been granted permission to conduct field work by the Ministry of Local Government and permission from various vendor organisations and role players, the researcher engaged vendors and their customers explaining to them the purposes of the study and that their participation was voluntary. In administering the questionnaire, this study used intercept interviews. Hornik & Ellis (1988) argue that intercept interviews have become the most popular method of data collection. Upon identification of a potential respondent, the researcher used the gaze and touch techniques as suggested by Mardanbegi & Pfeiffer (2019) and Dolinski (2015), to approach potential interviewees in the most densely populated flea markets in the districts of Mbare East and Harare Central. Upon contact, the target was greeted and advised of the broad aims and goals of the study and why their input was important in contextualising issues. The face-to-face interviews took a minimum of 40 minutes. Permission was also sought to audio record the interviewees.

4.4. Data analysis

The researcher used both quantitative and qualitative data analysis techniques. With regard to interviews. All interview transcripts were processed and analysed. Firstly, all the interviews were transcribed verbatim. The transcribed data generated approximately 50 A4 printed pages. This study also utilised four (4) steps in thematic analysis. These are: the identification of major themes; allocation of codes to main themes; thematic classification of responses; and thematic integration of responses into texts. Quantitative data analysis was also utilised in focus group discussions and interviews in order to derive patterns and meanings. The Chi-square was also used to test the study's hypothesis on whether variables such as the vendors' and their customers' age, place of origin, gender and qualification determined their responses and whether or not their responses were influenced by such variables.

5. FINDINGS

5.1. Designing a framework that will clarify the role of the community in policy formulation and implementation

The Republic of Zimbabwe makes public participation, a constitutional requirement in all spheres of government. In fact, Chapter 14 of the *Constitution* emphasises that the participation of local communities in determining matters related to development in their area is important. However, although the *Constitution* provides for public participation in governance and there are various role players ranging from the President of the Republic of Zimbabwe to Ward

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Councilors and residents, there is no current legal framework to operationalise public participation in Harare. In a bid to understand as well as to unpack the views of various stakeholders that are critical to the governance of flea markets, respondents were asked whether or not the government needed to design a framework, which clarifies the role of the community in policy formulation and implementation. The responses are outlined in Figure 1.

Figure 1: It is not necessary to involve the community in policy formulation

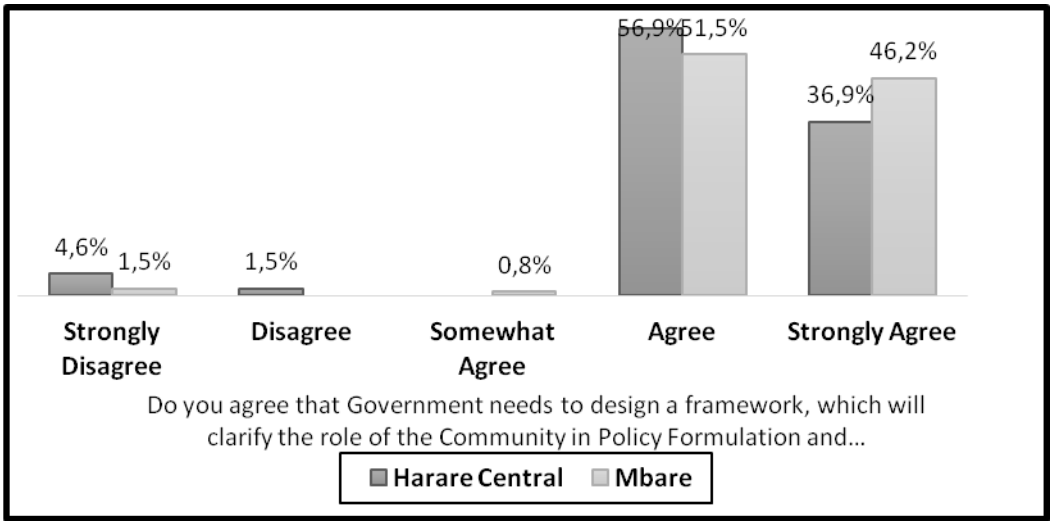

Figure 1 above reveals that 56.9 per cent agreed and 51.5 per cent of respondents in Harare Central and Mbare East, agreed strongly that government needed to design a framework, which will clarify the role of the community in policy formulation and implementation. Of those who strongly agree 36.9 per cent were from Harare Central and 46.2 per cent were from Mbare East. Other respondents are those who strongly disagreed to the statement at 4.6 per cent in Harare Central and 1.5% in Mbare East, followed by those who disagreed at 1.5 per cent in Harare Central. Only a small percentage of respondents in Mbare East, somewhat agree to the statement and that represents 0.8 per cent. This may partly be because the Zimbabwean population is highly educated and due to their standard of literacy, they understand their rights and roles. Furthermore, based on their experiences in the sector where decisions are routinely imposed on them, the respondents feel strongly the need to be consulted as well as the need to have a framework that specifically spells out the role of each stakeholder. They feel that such a scenario will lead to inclusivity and acceptability of policies. Without the buying in of all stakeholders, there is a high likelihood of friction, conflict, ostracism and lack of successful implementation of flea market policies.

Given the importance of civic participation especially during the initial stages of planning, one would have expected the City of Harare (CoH) to have an established structure of communication and collaboration with its constituents. However, from the data obtained from City officials during fieldwork, this is not the case as, most of the time residents only get involved when a policy is being implemented. Their role is that of validating or being receptors of newly formulated policy or policies. From the foregoing, it is apparent that a coordination and communication plan should be put in place through which not only the City of Harare has an established communication link with the central government but for non-state actors as well as residents to have an established platform through which they can channel their ideas.

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5.2. The need to define the role of the community if they are to be truly involved in local governance

This study also asked respondents whether or not there is a need to define the role of the community if they are truly to be involved in local governance. Findings reveal that 55.4 per cent and 44.6 per cent of respondents in Harare Central and Mbare East, respectively, agree that there is need to define the role of the community if they are to be truly involved in local government. 43.1 per cent in Harare Central and 50.8 per cent in Mbare East strongly agree with the statement. Other respondents somewhat agree at 0.8 per cent in Mbare East, followed by those who disagree at 2.3 per cent in Mbare East. Another, 1.5 per cent of the respondents in both districts strongly disagreed with the statement. The respondents feel strongly about participation and the need to define the role of stakeholders as they feel they are being left out of the flea market governance decision-making processes. The feeling among participants in the study is that the Municipality is heavy-handed in its dealings with them and that it is one-way traffic of information. As has been highlighted, the City prefers a top-down approach in the governance of the sector, rather than opting for a consultative and participatory approach that considers all the viewpoints.

When the community is fully engaged and aware of the activities and developments within their neighbourhood, it is usually as a consequence of the quality, ability and will of community leaders. The respondents were therefore asked if their involvement or non-involvement has to do with the ability of community leaders or forums, and their responses are shown in Figure 2.

Figure 2: The involvement or non-involvement of the community has to do with the ability of the community leaders or forum leaders

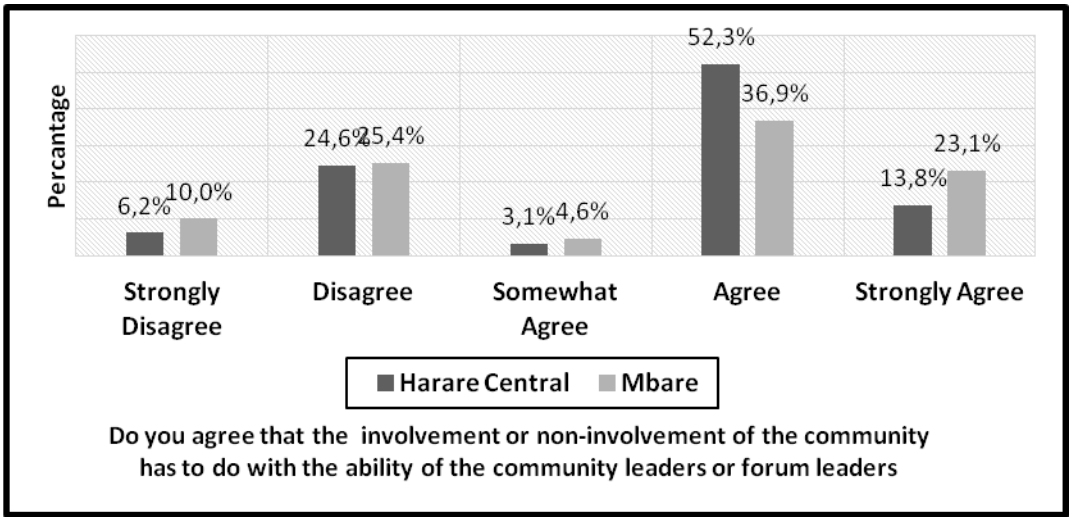

Figure 2 reveals that 52.3 per cent and 36.9 per cent of the respondents in Harare Central and Mbare East, respectively, agreed that the involvement or non-involvement of the community has to do with the ability of the community or forum leaders, followed by those who strongly agree at 13.8 per cent in Harare Central and 23.1 per cent in Mbare East. Other respondents are those who disagree with the statement at 24.6 per cent in Harare Central and 25.4 per cent in Mbare East, followed by those who strongly disagreed at 10 per cent in Mbare East and 6.2 per cent in Harare Central. Only a small percentage of respondents somewhat agreed with the statement at 3.1 per cent in Harare Central and 4.6 per cent in Mbare East. Despite the

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apathetic posture taken by vendors and citizens alike over what they perceived to be a useless political leadership that is not responsive enough, the respondents still maintain faith in their political and community leaders. Therefore, their responses in the affirmative that the capacity of community or forum leaders is a determining factor in their involvement in local affairs is significant. A community that is aware of the developments and able to interpret developments within the community is an asset as they are able to comprehend and conceptualise issues, which results in the community being able to remain engaged and involved with matters that affect them. From the above responses, it can be concluded that the respondents are aware of the importance of community or forum leaders in the articulation of their concerns, positions and viewpoints. Furthermore, the responses elicit the view that the society should be central in all decision-making processes. The above results were confirmed by the findings from the qualitative data which show that it is important to co-opt community leaders, particularly, non-state actors into local governance structures. Under normal circumstances, civil society organisations are supposed to either complement government efforts on a particular issue or to fill the gap left by the government. In fact, they have become an indispensable appendage to governance and in some countries, are now being recognised as the fifth estate of the state. In the case of Zimbabwe, since the early 1990s, there has been an upsurge in the formation of non-governmental organisations, especially in the field of advocacy, human rights, governance, and democracy, with the aim of complementing or bridging the gap left by government. The informal sector is one such sector that has seen the mushrooming of vendor organisations with the aim of representing the voice of the flea market sector which, despite, becoming one of the biggest contributors to the country's Gross Domestic Product (GDP) continues to remain marginalised, ostracised and maligned.

Due to intense lobbying and advocacy, there has been a marked improvement in relations between vendors and the CoH. Having realised their importance, the City Council now closely collaborates with vendor organisations on matters of mutual interest. Periodical meetings are held jointly with the central government with the aim of finding common ground. Furthermore, the vendor organisations' advocacy and public awareness campaigns encouraging communities to be involved in local governance, are starting to bear fruit. The public is becoming more engaged and animated on issues that directly affect them. Communities are now aware of their role and rights. They now demand more accountability and responsiveness from the Council. A closer inspection of the statistics as previously highlighted in Table 2, shows that an overwhelming majority of the respondents agree that there is need to define the role of the community if they are to be truly involved local government. Had the CoH been facilitative enough, respondents' dissatisfaction would have been minimal yet the data shows a community that is frustrated and disenfranchised with the Council's governance system.

6. DISCUSSION

The study was aimed at assessing the role of stakeholders and their effectiveness against a background of the current literature, theory and practice. It analysed the impact and effectiveness of participatory mechanisms in the promotion of an involved citizenry in Harare's flea market sector. It notes that the promulgation of the *2013 Constitution* introduced participatory democracy in Zimbabwe. Prior to its introduction, there were no provisions in the country's supreme law that provided for the involvement of the public in local governance (Jonga, 2014: 78) This has, however, changed as the new *Constitution* gives prominence and importance to public participation. It sees public participation in decision making as one of the fundamental pillars of the attainment of devolution and democracy. Their involvement also fosters efficiency and effectiveness. The new *Constitution*, therefore, provides the citizenry

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with an opportunity to partake in decisions that affect them and their communities. This has had a tremendous impact on the local government level. There has been a progressive shift from a centralised to a decentralised governance system as well as the preponderance of 'bottom-up' approach at the expense of the traditional 'top-down' system. This study evaluated the role of community in policy formulation and implementation. It argues that there is still a lot to be done for the community to be truly involved in decision-making. This study was able succinctly to establish that although the *Constitution* provides for public participation, currently there is no legal framework to operationalise public participation among local authorities, particularly in Harare. In addition, given the importance of civic participation especially during the initial stages of planning, one would have expected the CoH to have an established structure of communication and collaboration with its constituents. However, the situation on the ground tells a different story as residents only get involved when a policy is being implemented. Their role is that of validating or of being receptors of newly formulated policy or policies. The views expressed during this study and the evidence gathered validate an assertion made by the *African Capacity and Development Programme* (ACDP) that there is too much national government involvement at the local level (ACDP, 2004). Consequently, there is limited flexibility for local authorities to implement major public participatory mechanisms. Furthermore, it can also be argued that the findings are consistent with the arguments propounded by Haruta & Bianca (2010: 76) that, in Romania, even though there are mechanisms in place that provide for public participation, there is low-level citizenry involvement in the decision-making process. There is no evidence to show that Harare incorporates citizenry input in their decision-making processes. In fact, evidence points to a preference by the City leadership for a top-down and one-way communication approach. In fact, top officials from both central and local government have perfected the art of manipulation. It can, therefore, be argued that as the Arnstein (1969) typology of the Ladder of Participation suggests, the City of Harare through its Information and Publicity Department, seems to prefer non-participative processes. It has perfected the art of manipulating its citizenry whereby participation is deflected. It has also been established that Harare uses platforms for participation merely to inform and to educate communities concerning predetermined Council programmes. There is no genuine desire to engage and to obtain input from the community. FMMCs and City departments have been turned into one-way communication channels with limited channels for feedback. Consultation is merely a token and a window-dressing ritual. It is, therefore, quite apparent that there is need to put a meaningful coordination and communication channel in place through which not only the City of Harare has an established communication link with the central government but, non-state actors, as well as residents, can have an established platform through which to channel their ideas. This will not only improve service delivery but relations among all stakeholders as well. There would then be an established platform where ideas and perspectives could be shared leading to effective collaboration and to the betterment of society. These observations validate the aims and objectives of the study, where it is quite apparent that a great deal still needs to be done for Harare to achieve an egalitarian system where residents are an important stakeholder in decision-making and implementation.

The findings are a microcosm of what is happening in all the local government authorities in Zimbabwe and the Southern African region, in general. Therefore, there is an urgent need for not only the Zimbabwean government but for regional governments to review their participatory strategies to make them more inclusive and responsive to their citizens' needs. There is, therefore, need for further research on the matter, not only for Harare but Zimbabwe and the region as a whole. Although some studies such as Chikerema (2013, 2014), Chirisa,

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(2016) Masvaure, (2016), Roberts, (2004), Roberts-Lombard, (2002), and Williams, (2006) look at the dynamics of citizen participation in Zimbabwe and in the region, their studies are not exhaustive enough and thus require further scrutiny. It is quite apparent that there are a number of stakeholders in Harare and all participate in various ways in the governance of the flea market sector. Their role, opinions and perceptions help shape the informal economy policy. From the findings, it has also been established that Harare is still far from achieving full participation as envisioned by Arnstein (1969). There is no evidence to suggest that, through negotiation between citizens and the CoH, power is being redistributed. In fact, planning and decision-making responsibilities are still the preserve of the Council and are not shared by residents through mechanisms such as joint committees. Furthermore, Harare does not even have systems and mechanisms where citizens are in complete control. There are no mechanisms to ensure that the Council is held to account by its public. Citizen control of municipal decision-making processes is still a pipe dream and a distant possibility under the current governance system. Furthermore, the country's local governance architecture, as is currently instituted, does not give power to the have-nots to handle planning, policy-making and management processes on any policy or programme. As highlighted, the current leadership feels entitled to rule without any input from the electorate.

Consistent with Bond & Manyanya (2003), Chikerema (2013), Chikerema & Chakunda (2014), this study has established that participation of the Zimbabwean citizenry has been on the decline over the past two decades and is also very limited to areas such as elections, budgeting, consultative forums and public forums. It has been established that the role of councillors, has been diminishing over the years and that this has resulted in them being sidelined, even by the residents they are supposed to represent. In fact, since the turn of the century, administrative officials across local authorities in Zimbabwe have become more powerful than the elected representatives themselves. Furthermore, the policy whereby local authorities administrators are supposed regularly to consult with central government line departments to ensure that their activities are in line with national policy, have made them less accountable to local authorities' political leadership. To make matters worse, citizens no longer play an important role in modern-day Zimbabwean politics and governance processes. In fact, they are pawns in an inter-political fight and perpetual victims of incompetence and arbitrariness of city councils.

Considering the role of various stakeholders, this study looked at the role of the community participation led by community leaders, forum leaders and Civil Society Organisations (CSOs). It notes that CSOs provide an umbilical cord between the City Council and the community as most vendor organisations in Harare and Zimbabwe in general, were formed with the aim of filling the void left by local authorities. The findings dovetail with the work of Chikerema, (2013) when he argues that Non-Governmental Organisations (NGOs) play a pivotal role in complementing government efforts in facilitating local participation. Therefore, looking at the role of CSOs in Harare, this study discovered that due to public awareness programmes, advocacy and lobbying by CSOs, there has been a marked improvement in relations between vendors and the CoH. Through their efforts, the City Council now collaborates closely with vendor organisations on matters of mutual interest and hold periodic meetings with the aim of finding common ground. Furthermore, the public is becoming more engaged and animated on issues that directly affect them. Communities are now self-aware of their role and rights. They now demand more accountability and responsiveness from the Council. The seminal work of Kalandides, (2018), who looked at civic involvement and participation in Berlin, Germany, is also important as it brings to the fore many similarities between these two cities. Kalandides

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argues that the City of Berlin was able to introduce new formats of participation and communication between the Senate (government) and citizens and to strengthen direct democracy through close collaboration with stakeholders.

The findings reveal the inadequacies of civic participation in Harare. It is quite apparent that public administrators have not been doing what they are supposed to do. This is partly as a result of the rigid and autocratic nature of the *UCA* and the reluctance of the executive to change the status quo. In spite of the new *2013 Constitution* placing civic participation at the core of local governance and requiring the central government to play an enabling rather than a controlling role in local government, these provisions remain aspirational as they are yet to be put into operation. The above-mentioned findings validate Christiano (2018) argument that that decision-makers ought to play their part in building and nurturing civic consent by ensuring that citizens participate meaningfully and constructively in decision-making processes. The myriad of complaints from both vendors and various stakeholders within the Zimbabwean government and non-state actors suggest the need to involve the citizenry and to abandon the centrist approach favoured by Zimbabwean administrators. More so, from the evidence gathered during fieldwork the ideal scenario as propounded by Board & Council (2004) remains a pipe dream when they suggested that stakeholder participation should complement, not circumvent, political and decision-making processes. There is, therefore, a need to place civic involvement at the centre of flea market decision-making and to make sure all decisions in local authorities have the validation of the residents. This will not only improve accountability but democracy as well.

Like Kimemia (2011: 56), it was established that whilst vendors are gainfully contributing to the country's economic development, their rights continue to be trampled upon and their role is constantly ignored. This is despite the fact that the *2013 Constitution* and to a lesser extent, Chapter 29:15 of the *UCA* (2002), institutionalises community participation as a core function in local governance. The *Constitution of the Republic of Zimbabwe*, in particular, provides a platform for citizens to participate effectively, politically, or economically at municipal and RDC level. For example, Section 13:2 stipulates that Zimbabwean citizens must be involved "in the formulation and implementation of development plans and programmes that affect them" (*Zimbabwe, 2013*: 19). In addition, the *Constitution* provides "for the participation of local communities in the determination of development priorities within their area" (*Zimbabwe,* 2013: 123). These findings are also consistent with the views of Simonsen (2018). It is quite apparent that the decision-making structure of HCC has become increasingly beholden to moneyed interests in the form of space barons in, the same way the United States political establishment is beholden to corporate and moneyed interests. The sad reality is that the situation in Harare does not satisfy the requirements of a functioning democratic and developmental state or the aspirations of the vending community. It is a system that favours the élite and subjugates the have-nots.

This study has been able to demonstrate that trust in representatives has declined. Therefore, non-state actors having realised that there is a serious public participation deficit and trust in urban councils they have attempted to fill that gap. Having realised that municipal participatory mechanisms were facing serious constraints such as the existence of highly politicised management committees which were forcing them to deviate from their mandates, Civil Society Organisations (CSOs) such as Action Aid, Trust Africa and OSISA have partnered with vendor initiations in order to fill this gap. They have, therefore, invented other mechanisms that allow and enhance uninhibited participation in local government processes,

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especially in Harare. This has had a tremendous impact on re-igniting the citizenry's desire for participation, while at the same time reducing the level of conflict and mistrust.

7. CONCLUSION

This study examined various stakeholder roles and the impact of participatory governance processes in Harare's flea markets. It notes that, although the *Constitution of Zimbabwe* provides for collaborative governance and the formulation and implementation of policies by co-opting the citizenry in decision-making, there is a severe flea market governance crisis in Harare, which, if not addressed urgently, will lead to civil dissonance, disobedience and, ultimately to insecurity. While the roles of stakeholders are well articulated in various regulations, Acts of Parliament and even in the *Constitution* itself, there is very little, if any, that has been done to incorporate the public into policy formulation and implementation in the informal sector. In fact, there is reluctance on the part of the management of the CoH to implement fully the public participation architecture as enshrined in the *Constitution* for fear of losing power and influence. There are also misperceptions that the citizenry is less educated and poorly informed in the sphere of governance. This has unfortunately led to the engendering of one-way communication between the CoH and the ratepayers. More importantly, most of the public participation strategies currently being employed by authorities in Harare are all about manipulation as postulated by Arnstein (1969). There is, therefore, no real effort at genuine citizen participation through collaborative governance. Public administrators do not consult the public in their decision-making processes nor in the implementation of a policy that affect this important constituency.

Furthermore, the current ruling élite is opposed to public participation as they believe the citizenry should be subordinate to their viewpoints. In the rare circumstances where public participation is practiced, it is along partisan lines. In fact, from both focus group discussions and surveys, what came out clearly is that one's political affiliation is more important than what is provided for in the *Constitution*. In fact, politics triumphs and affects the quality of decisions. What is being practiced in Harare goes against the tenets suggested by Drazkiewicz et al., when they looked at various factors that influence the quality of decisions and implementation. What is evident in Harare is that there is no inclusion of varied stakeholders that represent different value systems and interests and the development of creative as well as innovative solutions due to the inclusion of different perspectives. Furthermore, there is an acute absence of incorporation of different types of knowledge through the amalgamation and accommodation of local knowledge, perspectives and interests as well as through raising awareness among stakeholders.

Finally, the obtaining situation is that of a community that is divorced from local governance systems and a national government that is involved in the minutiae of issues at the local government level. There is, therefore, an urgent need by the CoH to define the role of the community in public participation and also for the Municipality to build capacity and to empower community leaders for active public participation.

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-RESEARCH ARTICLE-

THE RELATIONSHIP BETWEEN GOVERNMENT DEBT AND STATE-OWNED ENTERPRISES: AN EMPIRICAL ANALYSIS OF ESKOM

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─Abstract─

This study empirically investigates the relationship between government debt and Eskom debt using Eskom's financial statements and government debt data from 1985 – 2017. The paper uses a Vector Autoregression (VAR) model. Variance decomposition analysis shows large forecast error variances amongst all variables. The study finds that Eskom's increase in revenue is largely attributed to tariff increases and access to various funds rather than increases in sales. The study also shows that Eskom will continue to be illiquid and insolvent, thus fiscal consolidation or privatization are suggested as fiscal strategies.

Key Words: State Owned Enterprises; Eskom; government debt; VAR;

JEL Classification: H81, C87, H11, H63

1. INTRODUCTION

1.1. Background

State Owned Enterprises (SOEs) are firms established by government as vehicles of commercial and political objectives. These firms are usually located in industries such as electricity, infrastructure, banking and water supply. Eskom is both an SOE and monopoly in the South African Electricity Supply Industry and its supply chain includes electricity generation, transmission as well as distribution. (Eberhard 2004; Gigler & McMillan 2018:1). While SOEs play an instrumental role in economic development, they also suffer from several

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challenges such as lack of productivity, inefficiency and wasteful expenditure. Their biggest challenge is the fiscal risk that they impose on the government. This occurs mainly through state guaranteed loans where SOEs are given lax credit monitoring, face soft budget constraints and are able to increase their debt levels without fear of liquidation or bankruptcy (World Bank 2014; Yi-chong 2012: 128).

John Maynard Keynes (1936) believed that the accumulation of public debt should only be used for public capital expenditure and to stabilize the economy, which is also a form of decreasing unemployment. Tanzi (2016) supports this argument by noting that Keynes proposed that public borrowing should also have a short life span since its primary use is to stabilize the economy in the short run. Thus, Keynes did not advocate for public debt to be used for government consumption or transfers, be it for social spending or even public entities. This narrative resonates with Svaljek (1997) who adds that public borrowing should not be used for balancing current accounts, inflation control, the growth of private investments, or even maintaining credibility as a state. However, this is not the case in South Africa as the National Treasury (2018) conceded that total public debt largely consists of debt accumulated for current expenditure than capital expenditure.

According to Julies (2018), the combined financial position of public institutions has been weak with its government guarantee and exposure not only too high but increasing every financial year. Of all the public institutions, Eskom constitutes on average, 75 % of government guarantees and exposure (Julies 2018). This shows how much of a contingent liability Eskom is to the public purse. According to the Development Bank of South Africa (DBSA) (2012) Eskom has had access to funds through equity injections, government loans, the African Development Bank, export credit agencies, commercial paper and capital markets. Eskom's access to funds from capital markets also meant that they received R12,25 billion for the issuance of global bonds in 2010 and its oversubscription showed a strong global appetite for South African debt (Creamer 2011:1).

In a study comparing how the government and state-owned banks allocated credit to SOEs in China during 1980-1994, Cull and Xu (2002:533) found that direct government transfers were not significantly associated with profitability. Dewenter and Malatesta (2001: 320-321), using accounting numbers, conducted a large-sample cross-sectional comparison of SOEs and privately-owned corporations from 1975 – 1995. They found that SOEs are less profitable than private firms. Although the time period is old, the results are still comparable

between private firms and SOEs today. Further challenges amongst SOEs are deteriorating fixed facilities, poor service quality, chronic revenue shortages, corporate governance and large outstanding debt levels (Kessides 2004: 2). There is little to no incentive for managers in SOEs to achieve full productivity. The remuneration of managers is independent of the organization's performance. Hence there is little incentive for sales maximisation; profit maximisation or even growth maximisation (Lypczynski, Wilson & Goodard 2013: 701). Ngwenya and Khumalo (2012) have found a negative relationship between CEO compensation and SOE performance and in 2011, they found that the salaries of Eskom's executives increased by 109%.

An important element of this study is the inclusion of financial ratio analysis in the empirical model. The study uses the current ratio and debt to assets ratio calculated from Eskom's financial statements from 1985 – 2017. According to Kumbirai and Webb (2010), financial ratio analysis is effective in distinguishing high performing companies. A current ratio measures the ability of a company to pay off its short-term debt without disturbing normal business operations (Walton and Earts 2009: 247). It is calculated as current assets with respect to current liabilities. The debt to assets ratio is a solvency ratio and is an indicator of stability and risk. A low current ratio of <1.5 implies that a company will not be able to pay off its short-term obligations even if it can liquidate all its current assets (Grains Research & Development Corporation 2013: 3). Conversely, a high current ratio of >1.5 implies that the company is highly liquid, which means that it would be able to pay off its short-term obligations by selling its current assets at a high value. Throughout the sample period, Eskom has been relatively illiquid never obtaining a current ratio that is >1.5.

A debt to asset ratio of less than 30% or 0.3 is desirable while a ratio higher than this shows that the company is in a weak financial position. The general state of Eskom is one of financial distress, so the data only confirms the details in the financial statements. Even though the debt to assets ratio trend has been generally downwards from 1985 -2017, it has still been on average, above 30%. Overall, Eskom is using debt financing for its operations, hence it has a debt to assets ratio which is close to 100%. This implies that if Eskom was not an SOE, it would have to declare bankruptcy or insolvency.

Much of the current literature on SOEs stems mainly from China due to their long rolling out of privatisation and corporatisation of their SOEs. Tian and Estrin (2007) conducted a study on Chinese publicly listed companies, one in which government has a significant share ownership. They used an Ordinary Least

Squares model (OLS) as well as an Arellano- Bond GMM regression. From the study they found that debt financing causes inefficiency in publicly listed Chinese companies. Cull and Xu (2002) also carried out a study on the behaviour of bureaucrats and state banks in allocating credit to Chinese state-owned enterprises with dated data from 1980-1994. Their findings indicated that bureaucracy was detrimental to the state banks' performance. The paper is organised in the following way: Section 2 will discuss the theoretical framework and methodology, Section 3 will outline the empirical analysis and Section 4 will conclude the study and provide recommendations.

2. THEORETICAL FRAMEWORK AND METHODOLOGY

2.1. Theoretical Framework

The theoretical framework of this study is based on the work of Keynes (1936), Tanzi (2016), Buchanan (2008), Svaljek (1997), and Hyman (2011) who view public debt from a positivist approach and support the narrative of borrowing only for stabilization purposes. Contrary to the views of Stiglitz (2015), Barro and Grilli (1994), Neck and Getzner (2001), and Ncube and Brixiova (2015), the study is of the view that the state must not engage in borrowing for fiscal stimulus packages, economic growth objectives or even transfers to SOEs as efforts of maintaining financial credibility. Borrowing should be used for capital expenditure which will benefit society in the long run in the form of employment and the creation of tangible structures (e.g infrastructure development) from this capital expenditure. Thus by extension, the study also refutes Barro's (1979) theory of the neutrality of debt, that changes to government spending do not have an effect on aggregate demand. If anything, these effects are very real and result in long term effects such as shifting the tax burden to future generations, decreasing the supply of loanable funds, and thus increasing interest rates for the average citizen. Brauninger (2005) also notes in the long run, the negative relationship between economic growth and public debt.

2.2. Methodology

This study has adopted the Vector Autoregressive (VAR) model. The choice of technique is based on its ability to explain movements in the current variables with its past values (Lutkepohl 2006). It does so by forecasting variance decomposition analyses and impulse response functions through a method called Cholesky Ordering (Harris 1995; Lutkepohl 2006; Lutkepohl & Poskitt 1991). The model is specified in log linear form and is expressed in the following way:

$$Ln\frac{GD}{GDP} = \beta_0 + \beta_1 LnEP + \beta_2 LnED + \beta_3 LnREV + \beta_4 LnSTAFF + \beta_5 LnCR + \beta_6 LnDAR) \quad (1.1)$$

Equation (1.1) stipulates that the dependent variable, government debt as a proportion of Gross Domestic Product (GDP) is a function of the electricity price, Eskom's debt, Eskom's revenue, its staff numbers, current ratio and debt to assets ratio.

2.3. Data Sources

The study used annual data from Eskom's Financial Statements during the period 1985 – 2017. The variables used from these statements are the electricity price, Eskom debt, revenue and staff. The current ratio and debt to assets ratio was calculated by the author utilising Eskom's financial statements. The data for GDP was sourced from Quantec (Easy Data)

3. EMPIRICAL ANALYSIS

3.1. Unit Root Testing

The study conducted unit root testing using the Augmented Dickey Fuller (ADF) test by Dickey and Fuller (1979) and the Phillips Peron (PP) test by Phillips & Perron (1988). The null hypothesis is non-stationarity, while the alternative hypothesis is stationarity. The study has conducted unit root tests across all three models, namely the intercept, trend and intercept and none. Testing at intercept indicates whether stationarity is present when there is a stochastic trend. This trend includes the progression of stochastic errors over time. It could also be said that this model tests stationarity when the data generating process does not forget its past errors. Testing at trend and intercept indicates whether stationarity is present when there is a deterministic trend. The inclusion of the trend and intercept when testing for stationarity often results in the series having a nonconstant mean. However it is still important to include the aforementioned models when testing for stationarity because their data generating processes could show stationarity and to ensure that the study is robust in its unit root testing. The last model, which tests for none, that is, no trend and intercept, is able to remove the deterministic and stochastic trend. This makes it is easy to see if the series will revert to a stationary white noise process.

Table 1: Unit Root Tests at Levels and First Difference

Variable	Model	**ADF (Level)**		**PP**	
		Level	**First Difference**	**Level**	**First difference**
		t-statistic	**t-statistic**	**t-statistic**	**t-statistic**
GD/GDP	Trend & Intercept	-2.669	-2.413	-1.563	-2.12
	Intercept	-2.576	-2.442	-1.423	-2.212
	None	0.325	-2.384**	0.671	-2.127**
GD	Trend & Intercept	-2.944	-2.307	-1.938	-2.089
	Intercept	-1.180	-2.279	-1.434	-1.918
	None	1.386	-1.054	5.482	-0.990
GDP	Trend & Intercept	-1.493	-4.361***	-1.468	-4.374***
	Intercept	-7.608	-2.322	-7.608	-2.094
	None	1.575	-1.325	8.214	-1.585
ED/GD	Trend & Intercept	-1.600	-7.612***	-1.433	-7.651***
	Intercept	-2.281	-6.621***	-2.295	-6.537***
	None	0.441	-6.614***	0.503	-6.526***
ED	Trend & Intercept	-1.537	-8.206***	-1.204	-10.920***
	Intercept	1.5883	-7.528***	2.001	-7.528***
	None	3.441	-5.894***	3.886	-5.909***
EP	Trend & Intercept	-2.094	-2.551	-1.172	-2.586
	Intercept	0.4681	-2.378	0.3201	-2.509
	None	1.711	-1.698**	4.732	-1.702**

R/EP	Trend & Intercept	-2.606	-8.083***	-2.480	-14.819***
	Intercept	-1.999	-7.819***	-2.084	-7.919***
	None	1.712	-7.356***	1.750	-7.316***
REV	Trend & Intercept	-1.700	-5.042***	-2.018	-5.034***
	Intercept	-0.471	-5.130***	-0.488	-5.124***
	None	6.107	-1.792**	5.892	-3.000***
STAF	Trend & Intercept	0.764	-4.003***	1.469	-3.792**
	Intercept	-0.681	-2.320	-1.024	-2.218
	None	0.248	-2.453***	0.20	-2.392**
CR	Trend & Intercept	-3.090	-5.335***	-3.004	-7.982***
	Intercept	-2.964	-5.181***	-2.964	-7.531***
	None	3.020	-5.215***	-3.020	-7.532***
DAR	Trend & Intercept	-4.154	-5.991***	-4.144	-6.652***
	Intercept	-2.429	-6.15***	-2.563	-6.962***
	None	-1.494	-6.263***	-1.50	-7.078***

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Table 2: Unit Roots tests at Second Difference

Variable	Model	**ADF**	**PP**
		t-statistic	**t-statistic**
GD	Trend & Intercept	-3.944**	-4.865***
	Intercept	-4.817**	-4.932***
	None	-4.886***	-5.003***

Source: Author's Computation from E-Views

* Statistically significant at a 10% level

** Statistically significant at a 5% level

*** Statistically significant at a 1% level

The unit root tests in Table 1 show that all variables are non-stationary at levels. The ADF and PP tests show that GDP is stationary at levels, when testing only the intercept. CR is also stationary at levels, only when the ADF test is performed with no intercept and no trend. DAR is also stationary when the PP test is performed only on the trend and intercept. Otherwise, all the variables are generally non-stationary at levels. The unit root tests also show that all variables are stationary at first difference. However, GD is still non-stationary at first difference. GD/GDP only shows stationarity when the ADF and PP test are performed with no trend and no intercept. GDP only shows stationarity when the ADF and PP tests are performed on the trend and intercept. EP is also stationary when the ADF and PP tests are performed with no trend and no intercept. STAFF is also stationary apart from when the ADF and PP tests are performed with an intercept. In table 2, GD is stationary only at second difference, therefore, it will not be considered in the study because it is I(2). Otherwise, all the variables are stationary at I(1)

3.2. VAR model results

Table 3: Correlation Probability Matrix

Correlation Probability	GD/GDP	EP	REV	ED	STAF	CR	DAR
GD/GDP	1.000						
EP	0.470	1.000					
	(0.006)	------					
	***						
REV	0.458	0.992	1.000				
	(0.007)	(0.000)	-------				
	***	***					
ED	0.344	0.972	0.956	1.000			
	(0.049)	(0.000)	(0.000)	……..			
	**	***	***				
STAF	-0.003	-0.032	-0.129	0.085	1.000		
	(0.987)	(0.861)	(0.475)	(0.637)	…		
CR	-0.110	0.398	0.457	0.358	-0.512	1.000	
	(0.544)	(0.022)	(0.008)	(0.004)	(0.002)	……	
		**	***	***	***	.	
DAR	0.246	-0.442	-0.466	-0.537	0.087	-0.297	1.000
	(0.167)	(0.010)	(0.006)	(0.001)	(0.629)	(0.094)	
		***	**	***		**	

Source: Author's Computation from E-Views 9

*Where ( ) indicates p-values and *, **, ***, indicate statistical significance at the 10%, 5% and 1% level respectively*

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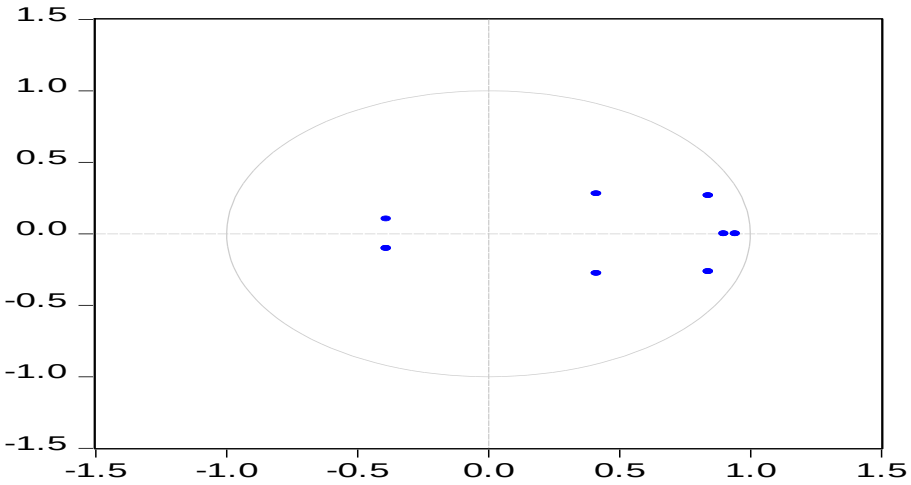
After conducting a correlation and probability matrix, STAFF, CR and DAR were all insignificant to GD/GDP so they were removed from the model. Thus, the new model is:

$$Ln\frac{GD}{GDP} = \beta_0 + \beta_1 LnEP + \beta_2 LnED + \beta_3 LnREV \quad (1.2)$$

3.2.1. VAR stability tests

Figure 1: Inverse Roots of Autoregressive Characteristic Polynomial



Source: Author's Computation from E-Views 9

Table 4: Inverse Roots of Autoregressive Characteristic Polynomial

Root	Modulus
0.945303	0.945303
0.900831	0.900831
0.841628 - 0.265675i	0.882565
0.841628 + 0.265675i	0.882565
0.414429 - 0.277926i	0.498993
0.414429 + 0.277926i	0.498993
-0.387862 - 0.103379i	0.401403
-0.387862 + 0.103379i	0.401403

Source: Author's Computation from E-Views 9

For a simple data generating process, a characteristic root has to be between -1 and 1 to be stationary. This is also the required condition for the VAR to be stable. Figure 1 shows that this is the case because all the roots lie with the unit circle. Table 4 displays these roots in decimal form, where the characteristic root is still between -1 and 1. Thus the VAR is stable.

3.2.2. VAR Empirical Results

Table 5: Variance Decomposition Analysis

Shock Variable	Period	Standard Error (S.E)	GD/GDP	EP	REV	ED
GD/GDP	10	0.194563	80.08269	9.166241	6.705858	4.045210
EP	10	0.293011	32.92000	36.99010	22.71312	7.376777
REV	10	0.344344	26.70258	29.50995	42.66586	1.121607
ED	10	0.452629	30.33573	20.19991	20.37192	29.09244

Cholesky Ordering: GD/GDP EP REV ED

Source: Author's Computation from E-Views 9

In Table 5, variance decomposition analysis was performed up to the 10^{th} period to analyse what proportion of forecast error in each variable is explained by another.

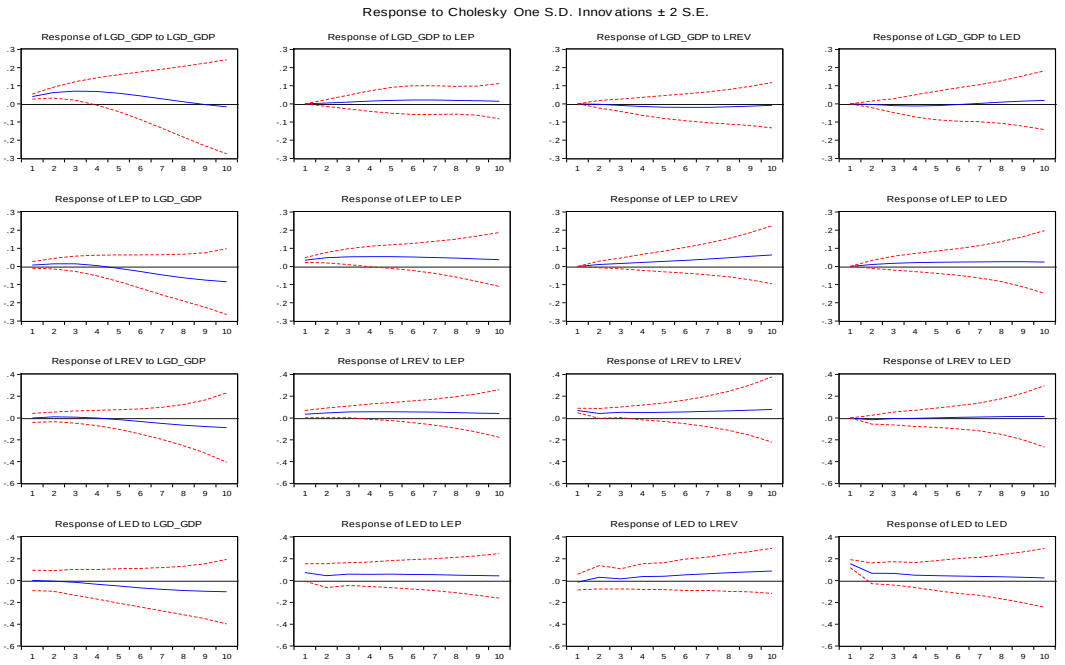
GD/GDP: Up to 9,17% of the forecast error variance of government debt/GDP is explained by the electricity price. This implies that much of the price increases at Eskom involve NERSA approving price adjustment applications from Eskom, which are later overseen by government through equity injections for example. Revenue and Eskom Debt also explain some forecast error variance of government debt/GDP but to a far less extent with revenue explaining 6,7% and Eskom Debt explaining 4,05%.

EP: government debt/GDP explains 32,9% of the forecast error variance in the electricity price. This reiterates how the government has been increasing its own debt in order to appease price adjustment applications from Eskom. The fact that Eskom's revenue presents a 22,7% forecast error variance for the electricity price is another indication that revenues at Eskom are purely driven by the electricity price. Eskom's debt explains less of the forecasting error of the electricity at only 7,38%.

REV: The electricity price explains 29,51% of the forecast error variance in Eskom's revenue. This means that Eskom has not been making tangible revenue from the efficient sale of electricity. This means much of its revenue is increased by merely increasing electricity prices. This shows a great lack of productivity. Also, 26,7% of its revenue is explained by government debt/GDP, a further indication that government bail outs, state guaranteed loans and NERSA applications form a large percentage of Eskom's revenue. Eskom debt has a lower forecast variance of 1,14% which shows that it is not a significant influence on Eskom's revenue.

ED: The forecast error variance for Eskom Debt is explained by government debt/GDP and it is up to 30,34%. This means that that much of the debt incurred by government is from being the state guarantee of Eskom's debt. Eskom's revenue and electricity price explain a large portion of Eskom debt's forecast error variance at 20,37% and 20,2% respectively.

Figure 2: Impulse response functions



Source: Author's Computation from E-Views 9

Figure 2 shows impulse response functions. These functions show how other variables respond to a particular variable when it is initially shocked, and how

these variables respond to the shock up to the 10th time period. The impulse response functions in figure 2 are similar to the variance decompositions analyses and so are their interpretations. The diagonal graphs from the top left to the bottom right indicate the impulse response functions of variables to themselves. All stationary time series are expected to mean reverting and thus converge to zero in the long run (Gujarati 2004, Lutkepohl 2006). This is the case with GD/GDP and ED, however the electricity price is far from the mean and does not appear to be mean reverting in the long run. This implies that the electricity price will continue to rise because Eskom will keep applying to NERSA for more tariff increases. Eskom's revenue is also reverting away from the mean of zero and is in fact increasing. This implies that in the long run, much of its revenues will continue to increase but most likely due to increases in the electricity price and not necessarily increases in sales.

4. CONCLUSION AND RECOMMENDATIONS

This study empirically investigated the relationship between government debt and Eskom debt using Eskom's financial statements and government debt data from 1985 – 2017. The study used a Vector Autoregression (VAR) model. Evidence from the VAR model showed that up to 9,17% of the forecast error variance of GD/GDP is explained by the electricity price. The model also showed that GD/GDP explains 32,9% of the forecast error variance in the electricity price. The same model showed that the electricity price explains 29,51% of the forecast error variance in Eskom's revenue. Also, 26,7% of its revenue is explained by government debt/GDP. The forecast error variance for ED is explained by GD/GDP and it is up to 30,34%. In summary, this model shows that the government has been increasing its own debt in order to appease price adjustment applications from Eskom. Also, revenues at Eskom are purely driven by the electricity price which means that no tangible revenue has been earned from the efficient sale of electricity. This shows a great lack of productivity and that much of its revenue is increased by raising electricity prices. Also, government bail outs, state guaranteed loans and NERSA applications form a large percentage of Eskom's revenue. As such, it is important for Eskom to increase its research and development (R&D) in experimental research to discover new and cheaper ways to generate electricity. A clear privatisation strategy is also suggested since President Ramaphosa alluded to this at this year's State of the Nation Address (SONA) by announcing the unbundling of Eskom into three business units, namely generation, transmission and distribution. Lastly, fiscal consolidation is also an avenue to explore especially if it is implemented as a fiscal squeeze.

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-RESEARCH ARTICLE-

FEMALE ENTREPRENEURS' BUSINESS TRAINING AND ITS EFFECT ON VARIOUS ENTREPRENEURIAL FACTORS: EVIDENCE FROM A DEVELOPING COUNTRY

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─Abstract─

Entrepreneurship has been considered an imperative component of economic development. This is specifically true for developing countries, such as South Africa, where economies face high levels of unemployment and poverty. Several countries have emphasised the importance of female entrepreneurship development, and evidence from the literature suggests that entrepreneurs who accumulate entrepreneurial training prove higher commitment to stay in and grow the business. As such, the aim of this study was to explore the differences in various entrepreneurial factors between South African female entrepreneurs having some form of entrepreneurial training and those who have not had such training. The methodology followed a quantitative descriptive approach using a convenience sampling method. Female entrepreneurs from all nine South African provinces were included and data were collected using a self-administered questionnaire. In total, 510 useable questionnaires were returned. Data were analysed using descriptive, reliability and validity analysis, MANOVA and

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ANOVA. From the results, four variables returned a statistically significant value: external motivation, intention to grow the business, entrepreneurship training and education and business growth factors. From these variables, all with the exception of the external motivation variable, reported higher means for the group who had previous exposure to entrepreneurial training. No differences were observed for the variables concerning internal motivation, intention to remain in business and attitude towards business. The literature supports the findings in that females who had previous entrepreneurial training reported higher means for intention to grow their business. Surprisingly, females with previous entrepreneurial training reported a lower mean for external motivation, possibly suggesting that training may affect their outlook regarding desire for wealth, applying skills and knowledge, proving oneself and improving one's status, for example. Recommendations include that government should introduce and promote special training programmes for female entrepreneurs and facilitate funding opportunities for these businesses to ensure sustained growth.

Key Words: Female entrepreneurs, South Africa, entrepreneurial training, developing country
JEL Classification: L26

1. INTRODUCTION

Today, entrepreneurship is widely recognised as a fundamental element to economic growth and development in all countries (Zaki & Rashid, 2016; Klonaridis & De Klerk, 2017; Dvorsky *et al.*, 2018; Oláh *et al*., 2019; Meyer & Synodinos, 2019). Entrepreneurship is considered a powerful engine that drives employment creation and stimulates economic growth and development (Ribeiro-Soriano, 2017). Accordingly, entrepreneurs are known as economic actors who establish business ventures, resulting in job opportunities that lead to the economic prosperity of a country (Sadaf *et al.*, 2018). Worldwide, females are showing a considerable interest in entrepreneurship, resulting in more females establishing new business ventures (Meyer, 2018). Consequently, female entrepreneurs are recognised as key contributors to economic growth (Kalinic *et al*., 2014). Unfortunately, many countries and cultures still lack seeing increased growth in the number of female entrepreneurs. Furthermore, in many developing countries, many females receive less education or training compared to males. Several studies suggest that entrepreneurial training and education contribute to forming new entrepreneurs and business ventures and, to a certain extent, preparing entrepreneurs for the business environment (Verheul & Thurik, 2001).

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The Consortium of Entrepreneurship Education (2013) specifically points out that entrepreneurship education may assist in the preparation of individuals, especially females and the youth. De Bruin *et al.* (2007) found that entrepreneurial training has a stronger effect on females than on males. In consideration of this, the following hypothesis was formulated.

H_01: There is no significant difference in internal and external motivation, intention to remain in business, intention to grow the business, entrepreneurship training and education, business growth factors and attitude towards the business between those South African female entrepreneurs who have prior entrepreneurial/business management training and those who have no such training.

2. LITERATURE REVIEW

2.1. The essence and importance of entrepreneurship

Researchers have long taken an interest in the concept of entrepreneurship (Kuckertz & Prochotta, 2018; Coulter, 2003; Gartner, 1989). Galindo and Méndez (2014) opine that there is a relationship between entrepreneurship and economic growth. Entrepreneurship is a significant driving force of economic growth and a strategy that promotes innovation, productivity and job creation (Zaki & Rashid, 2016; Greblikaite *et al*., 2015). In addition, entrepreneurs are seen as key contributors to a country's economic prosperity through new venture creation and job creation (Momani, 2017). Female entrepreneurs, in particular, are recognised as a new engine for economic growth and prosperity in a country as entrepreneurial activity became an essential source of employment for females across the globe (Reichborn-Kjennerud & Svare, 2014). Given these facts, it is crucial to develop entrepreneurial skills (Greblikaite *et al.*, 2016). Consequently, this progressive movement of females has generated employment opportunities for others since they became leaders, innovators and creators in their entrepreneurial activities (Kalinic *et al*., 2014). While the rate of females pursuing entrepreneurship globally is on the rise, and the number of female-owned businesses increased by 114 percent between 1997 and 2017 (American Express, 2017), evidence from the literature signifies that female entrepreneurs in emerging countries still lag behind their counterparts in developed countries. In addition, there is a dawdling growth rate in entrepreneurial participation among females in emerging and underdeveloped countries (Schneider, 2017; Meyer, 2019). Numerous reasons for this slow growth are apparent from the literature, such as

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gender inequality, gaining start-up funds, lack of entrepreneurial skills and education and training (Gender Equality Report, 2016).

2.2. Entrepreneurship within the South African context

When considering entrepreneurship in South Africa, the promotion of entrepreneurship continues to be an essential subject of discussion for government policymakers (Mamabolo *et al*., 2017). While South Africa is challenged by extreme levels of unemployment and poverty, it is worrying that entrepreneurial levels still remain rather low. The country proves to have one of the highest unemployment rates recorded globally, estimated at a rate of 27.6 % in the first quarter of 2019 (Stats SA, 2019). Therefore, entrepreneurship is and should be considered to be a necessary element of job creation and poverty diminution in the country (Littlewood & Holt, 2018). The importance of female entrepreneurship for economic development is also widely recognised (Dean *et al*., 2019). Conversely, the unemployment rate of South African females has been higher than that of their male counterparts, standing at 29.5 percent in 2018 (Stats SA, 2018). According to the Global Entrepreneurship Monitor (GEM) 2017/18 edition, 13 out of every 100 South African males are actively involved in entrepreneurial activity, contrasted to nine out of every 100 females. Evidence from the literature implies that the number of male-owned businesses are still greater than businesses owned by females (SA News, 2018). Moreover, South African males are more prone to start business ventures owing to an opportunity and have an intention to grow their ventures, in contrast to females who mostly start business ventures out of necessity and have no intention to stay in and grow the business venture (Irene, 2017). However, Rodriques (2018) emphasises that opportunity entrepreneurs are vital to the economic prosperity of a country. Various researchers (e.g. Kerr *et al*., 2017; Malebane, 2014) believe that different factors can encourage female entrepreneurs' intention to stay in and grow their business ventures. These factors may include: motivational factors (Hamilton & de Klerk, 2016; Pérez-Pérez & Avilés-Hernández, 2015), government support (Meyer, 2018), education and training (Irene, 2017) and attitudes (Hamilton, 2015).

2.3. Factors contributing to female entrepreneurs' intention to stay in business and grow their businesses

As with the intention to start a business, likewise, there are factors that may be linked to the intention to remain in or grow the business. Krueger and Carsrud (1993) suggest that exogenous factors, such as demographics and situations like

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government support and policy, may affect intention and the attitude of the individual. In addition, aspects linked to the individual's characteristics and motivation also directly contribute to intention and attitude (Davidsson, 1995). This intention may be affected in some way or another by various entrepreneurial factors.

The first of these factors includes motivation, which refers to a need or want that strengthens behaviour and directs it towards a goal (Bergström & Martinez, 2016). According to Thom (2015), entrepreneurial motivation is the process that triggers entrepreneurs to apply high effort levels to achieve their entrepreneurial goals. Entrepreneurial motivation elucidates why entrepreneurs start new business ventures or remain in existing ones (Segal *et al*., 2005). Kirkwood (2009) indicates that entrepreneurial motivations are often classified into internal or external categories and may also be referred to as "push" or "pull" factors. Push factors can be defined as factors urging an individual to start a new business venture due to dissatisfaction in their current form of employment (Cabrera & Mauricio, 2017). Similarly, Ismail (2012) found that pull factors are associated with necessities, such as unemployment, dissatisfaction with current employment and inadequate family income. Dawson and Henley (2012) classified financial motivations as a pull factor. On the contrary, pull factors are those factors that motivate an individual to participate in entrepreneurial activities. Furthermore, these factors are those constructive aspects that attract an individual into starting a business venture or remain in business; for example, desire for independence, aspiration to be one's own boss and self-fulfilment, while independence is the most cited factor for entrepreneurial motivation (Van der Zwan *et al*., 2016). Correspondingly, individuals motivated by pull-factors start business ventures or remain in business for the opportunity offered by the entrepreneurial activity (Verheul *et al*., 2010). Evidence from the literature suggests that females may be more motivated by push factors than by pull factors (Meyer 2018). The topic of entrepreneurial supporting mechanisms has been a well-researched subject in recent years (Phillips *et al*., 2014; Ijeoma & Matarirano, 2011). As such, a second contributing factor acting as one of these supporting mechanisms includes government support, which is offered in mainly the form of the existence of an enabling environment. Meyer *et al.* (2016) define an enabling environment as a set of cohesive conditions such as funding opportunities, physical infrastructure or entrepreneurial development programmes that impact on the development and sustainability of business ventures. Emerging countries, such as South Africa, are bombarded with socio-economic challenges facing prospective entrepreneurs

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when entering the business environment. As a result, the intention and role of government should be to promote and support small business development (Banda *et al*., 2016). South African females face various challenges when entering the business environment. Some of these challenges include unemployment, gender inequality and lack of entrepreneurial competencies (Mandipaka, 2014). Therefore, the South African government has initiated various projects to promote entrepreneurial activity among South African females, such as financial assistance programmes and business venture advisory services programmes (Crampton, 2014). A further important aspect, as noticed from the literature, is that entrepreneurship is a field that can be taught through education (Prochazkova, 2015). Entrepreneurial training or education is described as the involvement of an educator or trainer with individuals providing them with the essential skills to succeed in entrepreneurial activity (Chimucheka, 2014). The aim of entrepreneurial education or training is to develop specific knowledge and skills relating to entrepreneurship (Sinkovec, 2013). In addition, entrepreneurship training or education has an impact on job creation opportunities (Maina, 2013). Furthermore, evidence from the literature suggests that entrepreneurs who accumulated entrepreneurial training prove higher commitment to stay in and grow the business as they show a greater level of self-efficacy, skills set and confidence (Moodley, 2016). Several business growth factors that may improve female entrepreneurs' business growth have been identified by researchers. They include financing constraints, government support, training and education, experience and skills, networks, role models and socio-cultural barriers. Although these factors may not impact female entrepreneurs in the same way and may also be country- and culture sensitive, they still in some way or another affect the growth of most female-owned businesses in either a positive or a negative way (Meyer, 2018). Attitude is another important factor leading to intention and action and can be defined as a preference to react positively or negatively towards an object, individual or situation (Yao *et al*., 2016). Sanne and Wiese (2018) believe that attitude is the intention to have a positive or negative assessment and which influences an individual's intention to execute specific behaviours. Tshikovhi and Shambare (2015) emphasise that attitudes are vital in the life of a thriving entrepreneur. An entrepreneur's attitude towards entrepreneurship is the fundamental factor towards their intention to start an entrepreneurial business venture (Hamilton, 2015), remain in it and ultimately grow the business (Kritikos, 2014).

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3. METHODOLOGY

The target population was defined as South African female business owners. For the sampling frame, female business owners from several business associations' databases were drawn and represented all nine provinces. A non-probability convenience sample of 510 female entrepreneurs was used to conduct the main study. A self-administered questionnaire was used to gather the primary data from the sample. The research instrument comprised general demographic information and several scales requesting participants' response regarding intention to remain and grow their business and other entrepreneurial factors. The questionnaire was constructed using existing scales, constructing new ones based on extensive literature reviews and conducting a content review by topic experts. Responses were measured with a combination of nominal and six-point Likert-scaled questions and statements ranging from strongly disagree (1) to strongly agree (6), based on the participants' agreement or disagreement with the specific construct topic. The collected data were analysed using several statistical tests. These techniques were applied using the Statistical Package for Social Sciences (SPSS 25.0). The statistical analysis commenced with a descriptive analysis reporting on the means and standard deviations in order to identify trends. The internal-consistency reliability of the scales was assessed by computing the Cronbach alpha values. In terms of the construct validity, convergent and discriminant validity was assessed by looking at the average inter-item correlation values. Following this, MANOVA and ANOVA were used to test for significant difference in internal and external motivation, intention to remain in business, intention to grow the business, entrepreneurship training and education, business growth factors and attitude towards the business between those South African female entrepreneurs who have prior entrepreneurial/business management training and those who have no such training.

4. RESULTS AND DISCUSSION

From the 600 questionnaires distributed, 510 usable ones were returned, which resulted in an 85 percent response rate. As mentioned, the sample comprised South African female entrepreneurs actively running a business. From the data collected, 72 percent reported to be from black African origin, 16 percent white and the minority were coloureds (9%) and Asian/Indian (3%). As per the World Population Review (2019), these racial categories are similar to the overall South African race distribution. The bulk of the sample was between 21 and 30 years of age (37.3%), followed by the category of 41 to 50 years (34.7%). Equal

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percentages of the sample were married and single (34.7%), and almost 50 percent had no dependent children. As the aim of this study was to explore the differences in various entrepreneurial factors between South African female entrepreneurs having some form of entrepreneurial training and those who have not had such training, respondents were merely asked *"Have you ever received any entrepreneurial or business management training?"* Group 1 included those female entrepreneurs with no previous entrepreneurial training and Group 2 comprised those who indicated they have received previous entrepreneurial training of some sort. The various entrepreneurial factors included internal and external motivation, intention to remain in business, intention to grow the business, entrepreneurship training and education, business growth factors and attitude towards the business. As discussed in the literature section, entrepreneurial training may be a contributing factor in the success rate of a business (Maina, 2013; Moodley, 2016). With regard to the number of female entrepreneurs who indicated that they have had previous training, 69 percent have not obtained any previous training in business management or entrepreneurial-related fields. However, 27 percent indicated that they have received such training. This previous exposure to business and entrepreneurial management training included tertiary education, government programmes, as well as various short courses, including those offered by private institutions. The descriptive and reliability statistics for the sample are included in Table 1.

Table 1: Reliability and descriptive statistics

Entrepreneurial factors	Items (N=510)	Mean (max 6)	SD	Cronbach alpha	Inter-item correlation
Internal motivation	14	5.07	0.51	0.75	0.18
External motivation	7	4.87	0.72	0.73	0.26
Intention to remain in business	5	5.07	0.76	0.73	0.37
Intention to grow the business	3	5.17	0.82	0.77	0.52
Training and education	5	4.75	0.83	0.73	0.36
Business growth factors	17	4.88	0.56	0.79	0.20
Attitude towards business	14	4.96	0.60	0.82	0.25

As can be seen from Table 1, acceptable Cronbach alpha coefficients of above 0.7 were reported for all the entrepreneurial factors (Nunnally & Bernstein, 1994). Furthermore, construct validity was achieved as all the factors' average inter-item correlation statistics fell between 0.15 and 0.50, with only the intention to

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growing a business factor being slightly higher (Clark & Watson, 1995). As such, convergent and discriminant validity for all the factors can be assumed. The female entrepreneurs included in this sample were in agreeance with most of the statements as all means ranged between 4.75 and 5.17 on a six-point Likert scale. The results emanating from the mean scores suggest that female entrepreneurs intend to remain in business ($\bar{x}$ = 5.07) and grow their business ($\bar{x}$ = 5.17) and that they have a positive attitude towards their business ($\bar{x}$ = 4.96). Authors such as Kozan *et al*. (2012) and Arthur-Aidoo *et al.* (2016:232) are of the opinion that attitude in this case towards the entrepreneur's business strongly associates with the intention to grow and remain in the business.

As set out in H_01, the study aimed to determine whether there is a significant difference in the entrepreneurial factors listed in Table 1 between South African female entrepreneurs who had prior entrepreneurial/business management training and those who have no such training. One-way between groups multiple analysis of variance (MANOVA) and analysis of variances (ANOVA) were used to test this. Firstly, the MANOVA was executed to investigate whether any differences between the groups regarding training were present in the various entrepreneurial factors. Preliminary assumption testing was performed to check for linearity, normality, outliers, homogeneity and multicollinearity and no serious violations were observed. Statistically significant differences were observed between the groups with F = 2.910; p = 0.005; Wilk's Lambda = 0.959 and partial eta squared = 0.019. As a *p-value* of below 5 percent was observed, one-way between-groups ANOVA was performed to determine where the differences were present between the female entrepreneurs' prior training groups and the entrepreneurial factors (internal and external motivation, intention to remain in business, intention to grow the business, entrepreneurship training and education, business growth factors and attitude towards the business). Table 2 depicts the results from the analysis.

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Table 2: ANOVA results for differences between variables and prior training

Variable	No training	Had training	P	η^2
Internal motivation	5.052	5.133	0.107	0.005
External motivation	4.902	4.756	0.041*	0.009
Intention to remain in business	5.039	5.173	0.078	0.006
Intention to grow the business	5.128	5.291	0.046*	0.008
Entrepreneurship training and education	4.702	4.904	0.016*	0.012
Business growth factors	4.855	4.965	0.049*	0.008
Attitude towards the business	4.926	5.038	0.070	0.007

*Statistically significant difference: $p < 0.05$

Table 2 represents the results from the one-way between-groups analysis of variance conducted to explore the differences in the variables between diverse South African female entrepreneurs' entrepreneurial training groups. Four variables returned a statistically significant value: external motivation ($p = 0.041$), intention to grow the business ($p = 0.046$), entrepreneurship training and education ($p = 0.016$) and business growth factors ($p = 0.049$). From the variables that returned a statistically significant value, all, with the exception of the external motivation variable, reported higher means for the group who had previous exposure to entrepreneurial training; however, the effect sizes were small ($\eta 2 > 0.01 < 0.09$). Some might view entrepreneurial training as a prerequisite to starting a business, where others may not. Another argument states that entrepreneurs are born and cannot be taught (Prochazkova, 2015). However, some truth may lie in both arguments and it is becoming clear that some facets of entrepreneurship can indeed be refined, improved and even be taught through training (Kuratko, 2005). The importance of entrepreneurial training has been stressed by several authors (e.g. Kolvereid & Moen, 1997; Ibrahim & Soufani, 2002; Kuratko, 2005; Nabi *et al.*, 2018) and research proving the empirical value of training is also favourable. Results from this study indicated that females who had previous entrepreneurial training reported higher means for the intention to grow the business ($\bar{x}$ = 5.291), entrepreneurship training and education ($\bar{x}$ = 4.904) and business growth factors ($\bar{x}$ = 4.965) variables. Surprisingly, females with previous entrepreneurial training reported a lower mean ($\bar{x}$ = 4.756) for external motivation, possibly suggesting that training may affect their outlook with regard to desire for wealth, applying skills and knowledge, proving oneself

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and improving one's status, for example. However, this result might also be due to other factors. According to Veena and Nagaraja (2013), although most female entrepreneurs are well educated, many of them often lack an education that has a business background. Males, more often than not, have gained additional business and management skills and training, compared to females. As such, the importance of continued entrepreneurial training for female entrepreneurs is evident. Therefore, in the case of internal motivation, the intention to remain in business and attitude towards the business, there is insufficient evidence to reject the null hypothesis (H_01). Concerning external motivation, intention to grow the business, entrepreneurship training and education and business growth factor variables, H_01 is rejected and the alternative (H_a1) is accepted.

5. CONCLUSION

This study set out to determine whether differences in various entrepreneurial factors between South African female entrepreneurs with business or entrepreneurial training exist. From the results, the four variables, external motivation, intention to grow the business, entrepreneurship training and education and business growth factors reported statistical differences between the two groups. This implies that entrepreneurial training and education could indeed affect female entrepreneurs' perception about the said factors. As no differences were observed for the variables concerning internal motivation, intention to remain in business and attitude towards business, it could be assumed that the impact of business training does not have an effect on these aspects and that they might be affected by other factors such as the entrepreneur's background and environment. This study highlighted the importance of entrepreneurial training, and especially within the female cohort, as it potentially could enhance the growth ambitions of these entrepreneurs. Limitations include the quantitative nature of the findings. Future studies may include a qualitative research design to explore the deeper understanding of the entrepreneurs' responses. Future research may also explore the differences in various entrepreneurial factors between South African female entrepreneurs and female entrepreneurs from other developing countries. Recommendations include that government should introduce and promote special training programmes for female entrepreneurs and facilitate funding opportunities for these businesses to ensure sustained growth.

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-RESEARCH ARTICLE-

AN ANALYSIS ON THE ANTECEDENTS OF YOUNG EMPLOYEES' EARNING POTENTIAL IN SOUTH AFRICA

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─Abstract─

Concerns surrounding the outcomes of young people in the labour market have become a global phenomenon. None more so has this been evident than in South Africa. While finding employment seems highly unlikely for most, circumstances surrounding the outcomes of those who are employed have likewise raised alarms. Understanding what contributes to decent employment in this regard holds important relevance not only in promoting the wellbeing of the cohort, but also advancing the knowledge on the requirements to utilise their local development potential. The purpose of the study was therefore to identify the antecedents of young South African employees' earning potential. A quantitative approach and cross-sectional research design were employed, where secondary data collected through the most recent national labour market dynamics survey was used. The sample consisted of 27 493 young employees between the ages of 15 and 34 years. Descriptive statistics, cross-tabulations and a linear regression were utilised

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for the analysis. Results of the study showed the earnings potential of young South Africans to be intertwined with an array of aspects. In this regard, the remuneration prospects of young people depend on race, sector of employment and trade union membership. Outcomes were also highly gendered biased, while the impact of labour market inequalities including the lack of social capital and geographical characteristics likewise seems to affect their earnings ability. Recommendations in advancing the cohort's labour market outcomes must, therefore, include enhanced public-private partnership formation through mandatory apprenticeship programmes. This must be supported by the relaxation of labour market regulations and a strategic focus that seeks to advance both soft and technical skills.

Key Words: Earnings, employees, youth, labour market, South Africa

JEL Classification: J01, J13, J20, J23, J31

1. INTRODUCTION

The focus on quality and decent employment has gained unprecedented attention over that past few years, particularly for young people. Labour market dynamics facing the youth are influenced by a number of intertwined factors, which in most instances have proven to be structural in nature. This situation is not unique to South Africa, as the country has one of the highest youth unemployment rates in the world (Meyer, 2017; De Lannoy *et al.*, 2018). Negative employment outcomes are mostly shaped by age, gender and race, with young people representing a larger share (Branson *et al.*, 2019). The rise of non-standard employment as a result of instilling more flexibility in the labour market and reducing costs has in some way forestalled the fate of many young people with a large majority finding themselves in these kinds of employment; unstable and low paying. A growing number of young people are now being hired for a specific time and on temporary basis, reducing employment stability (Scherer, 2004). Such kinds of employment have brought about increased insecurity, low and unstable incomes, and ultimately poverty (Schmid, 2010).

This has raised some concerns as to which factors are significant in determining the earnings they receive. Classical theories of earnings determination have always argued that wage levels are established through the interaction of demand and supply in the labour market (Tanaka, 2014). On the other hand, some theories acknowledge the difference between workers, and therefore wages would according to these theories be determined by factors not related to a worker's

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productivity, but others such as institutions (Doeringer & Piore, 1985) and the productivity needed for a job (Thurow, 1975). The human capital approach contends earnings to differ primarily based on the attained physiognomies, with higher education and training as an indication of positive future earning potential (Becker, 1964).

Within the context of South Africa, studies surrounding the issue, particularly on the earnings potential of young people, have been scarce. Most have in fact focused primarily on the understanding of youth unemployment (Mlatsheni & Ranchhod 2017; Graham & Mlathseni 2015), while others (Banerjee *et al*., 2008; Ntlhola *et al.*, 2019) have focused on how trade unionism affects wages. However, the knowledge revolving around the determinants of earnings young people receive, over and above the human capital argument, is still largely limited. The study in this regard sets out to investigate the factors that determine or rather influence young employees' earning potential in the South African labour market. From this perspective, it is important to not only understand why the cohort is struggling to find employment, but more equally so, the dynamics surrounding their access to quality and decent working conditions (Mankiw *et al.*, 2018).

2. LITERATURE REVIEW

Earnings are thought to be affected by several factors such as human capital components, socio-family factors, employment and firm size, gender and family circumstance factors, mental attributes, wellbeing and appearance (Pytliková, 2013). These factors assume a pivotal role in the continuing existence of employees and their families (Bhattarai, 2017). This is particularly significant for developing countries where wage employment is extremely rare. In accordance with past research in the convention of Mincerian wages, various customary human capital controls, for example education, location and experience, are typically secured as elements deciding earnings (Mincer, 1974). An individual's earning potential reached its peak point when they have had roughly 30 years of work experience, which is by and large at around 45 years (Bhattarai, 2000).

Earnings differentials by sexual orientation in the labour market are regarded as one of the key issues (Atlonji & Blank, 1999). Even though there is no doubt that earning levels seem to increase with levels of education, certain earnings gaps are also evident between male and female employees (Nestiae, 2004). The sector of employment also seems to be one of the factors that are believed to have an effect

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on the earnings of workers. In fact, the segmented labour market theory proposes that workers in the informal sector are typically subject to lower earnings relative to their formal sector counterparts (Tansel & Kan, 2012).

The role of trade unions has sought to improve the earnings and working conditions of their members. Theoretically, unions are believed to generally reduce employment levels in the unionised sector by raising earnings above market-clearing levels by misusing their imposing firm model power (Freeman & Medoff, 1984). The high earnings in the unionised sector may cause an excess supply of labour, which puts downward pressure on the earnings of non-unionised workers. Trade unions are therefore thought to determine gains to the detriment of non-unionised workers and the unemployed (Reynolds, 2008). On the other hand, unions are believed to contribute towards the reduction of inequality through activities that advance the incomes of workers (Bryson, 2014).

According to Culpepper (2009), the geographical area is one of the essential factors that are used in determining the earnings of workers. Normally, firms gain by being in an area closer to an enormous assortment of intermediary inputs, which implies fewer costs (Amiti, 2005). Therefore, firms with the best market access can bear to pay an excess of 20 per cent higher worker earnings than those secluded from economic and market activity, i.e. rural areas (Amiti & Cameron, 2007). Young people staying in these areas are even at a detriment since they earn less income than their urban counterparts, irrespective of where the urban workers come from (Culliney, 2017). With regard to education, human capital assumes a crucial role in improving employment prospects, including future earnings (Green & Henseke, 2016). Van Der Berg *et al.* (2011) argue that the inequalities in the quality of education play an important role and can likewise contribute and sustain earnings disparities. Likewise, Hossain *et al.* (2015) find education, age (which is used as a proxy for work experience), gender and work environment causing earning differences.

Several studies have sought to understand the relationship between earnings and various personal, socio-economic factors. Gong and Van Soest (2002) confirmed the segmented labour market theory in Mexico and found that formal sector workers are better compensated for their jobs than their informal sector counterparts. Similar findings are reported by Baskaya and Hulagu (2011) in Turkey that formal workers in reality essentially earn more than informal workers notwithstanding controlling for observable qualities. Contrariwise, in Argentina,

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Pratap and Quintin (2006) found no differences among earnings of workers between the two sectors even after individual characteristics are controlled for. Comparable findings are likewise affirmed by Arias and Khamis (2008).

Nahm *et al.* (2017) studied the relationship between hourly earnings and union membership in Australia and found that unionised workers earn more than those not part of a trade union. Specifically, the results showed a 12 per cent wage premium against non-unionised male workers and an 18 per cent wage premium for female unionised workers relative to non-unionised female workers. In South Africa, for example Ntuli and Kwenda (2014) found that unionised workers significantly earn higher wages than non-unionised workers, while other studies (Bhorat *et al.*, 2012) observe the wage premium to be low, ranging between six and seven per cent when various elements such as firm size and business type among others are considered. The latest investigation by Ntlhola *et al.* (2019) presumes that unions have little earning compression impacts in South Africa.

Youth in rural regions contrasted with urban youth are not only found to experience poor work prospects in South Africa (Mlatsheni & Ranchhod, 2017), likewise they also earn lower earnings in rural Britain (Culliney, 2017). In terms of employment sector, in their investigation, Bargain and Kwenda (2011) found that earnings of workers in the informal sector come up short contrasted with their formal sector counterparts in Brazil, Mexico and South Africa, with the earnings' penalty considerably more significant in South Africa.

3. RESEARCH METHODOLOGY

3.1. Research method and data

The primary objective of the study was to investigate factors that determine the earning potential of young South African employees. The study follows a cross-sectional research design, and therefore a quantitative research approach was deemed fit and suitable. The paper used secondary data based on the 2017 labour market dynamics (LMD) dataset published by Statistics South Africa in June 2019. The dataset is constructed through the pooling of all data from the four quarterly labour force surveys (QLFS) to form an annual dataset (StatsSA, 2019). In conducting the surveys, StatsSA uses a master sampling technique in which the sample is drawn from primary sampling units (PSUs) that are equally divided into four subgroups and rotated for each quarter. The method ensures the sample to be representative across various aspects, including provincial level, metro and non-metro areas as well as geography type (urban and informal). While the survey

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attributes the collection of data across all ages (15-64) of labour market participants, for the purpose of this study, the sample was restricted to youth in the 15 to 34 years age category who were employed either on a full-time or part-time basis. As a result, the sample totalled 27 493 young employees across all nine provinces within the country.

3.2. Data analysis and model specification

By analysing the data, descriptive statistics, cross-tabulations and a multivariate linear regression were utilised using the IBM SPSS Statistics Version 25 software. Where the latter is concerned, an ANOVA model was estimated, since some of the independent variables are of a qualitative nature (Gujarati, 2003). The model that was used was specified as follows:

$$EP_i = \beta_0 + \sum_{n}^{i=1} \beta_i \chi_i + \sum_{n}^{i} \beta_i D_i + e \text{ ......} \quad (1)$$

Where ***EP*** is the earning potential; a continuous variable represented by monthly wages, $\boldsymbol{\beta_0}$ is the constant term that will capture average earnings. $\boldsymbol{\beta_i}$ is the constant term associated with $\boldsymbol{X_i}$, which is age, $\boldsymbol{\beta_j}$ is the constant term associated with $\boldsymbol{D_j}$ which are the categorical values that will be entered as dummies where the number of dummies will be *n – 1;* where *n* is the number of categories. This means that the number of variables required is one less than the number of groups that are recorded (Field, 2018). Henceforth, where there are five categories, four dummies were created and the fifth dummy served as the baseline or reference point against which all other groups were compared. Keeping in line with the aforementioned, and the primary objective of the study, the model was formulated as follows:

$$EP_i = \beta_0 + \beta_1 AGE_i + \beta_2 GEN_i + \beta_3 PG_i + \beta_4 MS_i + \beta_5 ES_i + \beta_6 GEO_i + \beta_7 SE_i + \beta_8 TU_i + e_i \text{ ..} \quad (2)$$

Here, monthly earnings served as the dependent variable, while a total of eight independent variables were included. The latter consisted of both continuous and categorical variables. Table 1 below elucidates on the coding of the explanatory variables including a description of the dummy variables that were used.

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Table 1: Explanation of the explanatory variables in the ANOVA model

Variable	Description	Coding / dummy
AGE_i	Age	Measured in years
GEN_i	Gender	Categorically coded as 1= females; 0=males
$RACE_i$	Population group	3 dummy variables created as follows: D_1 defined as 1 = Coloured and 0 = otherwise; D_2 defined as 1 = Asian/Indian and 0=otherwise; D_3 defined as 1 = Whites and 0 = otherwise; black = reference group
MS_i	Marital status	Categorically defined as 1= not married (single or widowed); 0 = married (married and living together)
ES_i	Education Status	3 dummy variables created. DE_1 defined as 1 for no schooling and 0 = otherwise; DE_2 defined as 1 for primary schooling and 0 = otherwise; DE_3 defined as 1 for secondary schooling and 0 = otherwise; tertiary schooling = reference category
GEO_i	Geographical location (measured by province)	Categorically defined as 1 = urban and 0 = rural, where the urban location was made up of Gauteng, Western Cape and KZN; while rural location entailed the six remaining provinces
$EMPS_i$	Sector of employment (includes agriculture)	2 dummy variables created. DS_1 defined as 1 = formal sector and 0 = otherwise; DS_2 defined as 1 = informal sector and 0 = otherwise; private households = reference group
TU_i	Trade union membership	Categorically defined as 1 = yes and 0 = no

Source*:* Author's own compilation

Prior to use, the model's adequacy was evaluated where correlation analysis was run with the aim of determining whether there was any presence of multicollinearity with the data used (Hair *et al.,* 2010). In doing so, the study made use of various collinearity diagnostics, including the use of tolerance values and variance inflation factors (VIF).

4. RESULTS AND DISCUSSION

As the first step in the analysis, the study provides an overview of the demographic composition of the sample. Table 2 shows the frequencies and percentages of various selected demographic characteristics. Based on the results,

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the sample seemed to showcase a distribution slightly in favour of males (56.6%) compared to females (43.4%). Moreover, from a race perspective, the distribution shows a strong similarity with national estimates, where approximately 80 per cent of the sample were black, followed by 11.1 per cent who were coloured and 6.4 per cent of the sample who were white. These similarities were also expressed in the provincial distribution. In accordance with this attribute, most of the participants were based in Gauteng (27.7%), KwaZulu-Natal (15.9%) and the Western Cape (15.9), while only 3.6 and 5.4 per cent of the sample were situated in the Northern Cape and North West, respectively.

Table 2: Demographic characteristics of the sample

Aspect	**Sub-cat.**	***F***	**%**	**Aspect**	**Sub-cat.**	***f***	**%**
Gender	Male	15552	56.6	Marital status	Married / living together	8928	32.5
	Female	11941	43.4		Not married / Living alone	18565	67.5
Race	Black	21896	79.6				
	White	3043	6.4		Western Cape	4052	14.77
	Asian	798	2.9		Eastern Cape	2610	9.5
	Coloured	3043	11.1		Northern Cape	1001	3.6
Education level	No schooling	193	0.7		Free State	1556	5.7
	Primary	1689	6.2	Location	Kwazulu-Natal	4368	15.9
	Secondary	20535	74.5		North West	1497	5.4
	Tertiary	5063	18.4		Gauteng	7626	27.7
Sector of employment	Private household	1473	5.4		Mpumalanga	2342	8.5
	Informal	5278	19.2		Limpopo	2441	8.9
	Formal	20742	75.4	Trade union membership	Yes	21551	78.5
					No	5902	21.5

Source: LMD survey data

Further results, as shown in Table 2, depict that approximately two thirds (67.5%) of the population were either living on their own or not married. This distribution most probably is representative of the age cohort of the sample. Based on the distribution according to education level, approximately three quarters (74.5%)

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attributed some form of secondary education, while less than seven per cent had no schooling or some form of primary education. Similarly, a large contingent indicated that they were employed in the formal sector (75.4) when compared to those employed in more informal sectors. These results tend to lend credence to the importance of having at least a secondary education in young peoples' pursuit in obtaining some form of stable employment (De Lannoy *et al.*, 2018).

In accordance with elucidating the factors that possibly contribute to better employment opportunities, Table 3 shows the cross-tabulation results and chi-square statistics for different earnings categories. This is done with the purpose of identifying the presence of any noticeable differences for each respective socio-economic characteristic.

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Table 3: Cross-tabulation results based on monthly earnings (%)

Aspect	Sub-category	R0-R5 000	R5 001-R18 000	R18 000+	Not disclosed	χ^2 (Sig.)
Age	14-19 years	63.2	8.6	0.5	27.7	212.293 (0.000*)
	20-27 years	55.2	14.3	4.4	26.1	
	28-34 years	48.6	18.2	6.0	27.2	
Gender	Male	49.2	17.0	5.4	28.4	84.240 (0.000*)
	Female	54.6	15.8	5.0	24.6	
Race	African/black	56.3	15.9	4.5	23.3	1937.44 (0.000*)
	Coloured	42.3	12.5	2.5	42.7	
	Asian/Indian	23.1	24.4	8.8	43.7	
	White	21.1	26.0	18.6	34.3	
Location	Urban province	44.0	18.3	6.7	31.0	483.916 (0.000*)
	Rural province	57.1	15.1	4.2	23.6	
Education	No schooling	61.1	4.1	0.5	34.2	2714.56 (0.000*)
	Primary level	68.1	4.8	1.5	25.6	
	Secondary level	56.1	15.2	2.9	25.7	
	Tertiary level	26.9	25.7	16.4	31.0	
Sector of employment	Private household	87.2	1.8	1.0	10.0	3673.65 (0.000*)
	Informal	38.5	4.9	1.4	55.3	
	Formal	52.3	20.4	6.5	20.7	
Trade union membership	Yes	38.1	32.8	9.7	38.1	1368.72 (0.000*)
	No	63.1	14.5	4.9	17.5	

*Note: * denotes 0.01 level of significance, ** 0.05 level of significance*

Source: LMD survey data

Results from Table 3 showcase that all selected attributes displayed low p-values (*sig. = 0.000*) and relatively high chi-square statistics inferring statistically significant differences in their distribution. For example, considering age, results suggest that each older age grouping had comparatively higher percentages of individuals in higher earnings categories. Similar to a gender perspective, slightly

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more males identified themselves to earn either between R5 000 and R18 000 (17%) or more than R18 000 (5.4%) when compared to females (15.8% & 5.0%). These findings also tend to resonate with those presented by Beukes *et al.* (2017).

Based on race, results from Table 3 showcase that more than half (56.3%) of the African/black individuals indicated to earn between R0 and R5 000, while Asian/Indians and white individuals had higher distribution in higher earning categories. In explaining these results, Graham and De Lannoy (2016) posit that even after the transition to democracy, Africans compared to other races have carried the brunt of the difficulties in the labour market partly due to historically low investments in education and low intergenerational transfers of human capital. In addition to this, the sample also showed noticeable differences based on geographical attributes. In fact, of those situated in urban populations, 18.3 per cent indicated that they earn between R5 000 and R18 000, and 6.7 per cent indicated to earn more than R18 000, while more rural provinces had comparatively lower distributions (15.1% & 4.2%) in these categories.

In accordance with the last two categories, distribution results for education seem to support the fact that demand in the youth labour market has shifted towards high skills (Mlatsheni, 2014). Results depicted in Table 3 show that 16.4 per cent of those attributing a tertiary level earned more than R18 000; this is significantly higher than those reported for secondary education (2.9%) as well as primary education (1.5%). Finally, given the cyclical attributes and sensitivity of demand for young work seekers, it was important to reflect on the nature of trade union membership and its dynamic with young peoples' earning potential. Results in this regard tend to suggest that membership for the youth have a positive influence on earnings potential, supporting the findings of Anand *et al.* (2016). Here, results in Table 3 show that those with trade union membership had a 25 per cent lower representation in the R0 to R5 000 earnings category. However, distributions in the R5 000 to R18 000 (32.8%) and more than R18 000 (9.7%) categories were significantly higher compared to those who are not unionised.

Subsequent to the descriptive analysis, the study employed an ANOVA regression model. The purpose of the model is to assert a view on how the dependent variable varies across the different categories of the explanatory variables. In doing so, the model assists in identifying the factors that affect the earnings potential of young South African employees. Table 4 below reports the results of the utilised model. Here, the coefficient for age is positive, suggesting a positive

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association between age and monthly earnings. This implies that the older the young people are, the higher their monthly earnings would be. The p-value for the coefficient is estimated at 0.000, suggesting that the null hypothesis indicating the coefficient = 0 is rejected at the 1 per cent level of significance. Oluwajodu *et al.* (2015), in their study, likewise showed that younger workers lack experience and therefore preference for matured workers is higher. Branson *et al.* (2019) also found young people, particularly those between 20 and 25 years, to be more likely to be in low pay employment than individuals in the 55 to 64 age bracket. In addition to earning less, earnings growth for youth is more limited relative to other age groups (Ranchhod, 2013).

Table 4: Results of the ANOVA model

Variable	*Unstd. Coeff.*		*Std. Coeff.*	*t-stat.*	*Sig.*
	B	**S.E.**	**Beta**		
(Constant)	8890.854	1160.643		7.660	0.000*
Age	121.912	26.596	0.033	4.584	0.000*
Gender (Female)	-1613.323	210.902	-0.053	-7.650	0.000*
Geographical location (Rural)	-1611.044	212.965	-0.052	-7.565	0.000*
Asian/Indian	4119.633	697.346	0.040	5.908	0.000*
Coloured	308.791	370.707	0.006	.833	0.405
Whites	7712.237	455.753	0.118	16.922	0.000*
Formal sector	1882.189	429.247	0.048	4.385	0.000*
Informal sector	1047.668	506.798	0.022	2.067	0.039**
No schooling	-9213.051	1321.258	-0.048	-6.973	0.000*
Primary schooling	-8423.913	501.703	-0.135	-16.791	0.000*
Secondary schooling	-7349.378	287.970	-0.208	-25.521	0.000*
Marital status (Married)	958.351	233.662	0.029	4.101	0.000*
Trade union membership	2405.780	264.546	0.065	9.094	0.000*

*Note: * denotes 0.01 level of significance **0.05 level of significance; VIF values (range between 1 and 5), Tolerance values are all >0.2; R-square = 0.231; Model F-statistic= 133.618, sig. = 0.000*Source: Calculations from survey data

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The coefficient for gender was negative and statistically significant (*p-value = 0.000*), suggesting that female workers on average earn R1 613.32 less compared to their male counterparts. Similarly, Ryan (2013) also found that young females earn far less than their male counterparts do, irrespective of education status. Even when they are employed, female youth encounter significant adversities (Ingle & Mlatsheni, 2017; Branson *et al.*, 2019). The coefficient for marital status, in particular for married youth, was positive and statistically significant with a p-value of 0.000, therefore suggesting that compared to being single, being married is associated with more monthly income. The high income could be explained by the added social and monetary capital partners provide (de Jongh, 2017). In this regard, having access to additional networks increases the likelihood for individuals in accessing better employment opportunities.

Schooling also seems to play a notable role in the earning potential of young people. In the model, tertiary education was used as the reference point. The coefficients for no schooling, secondary and primary education were negative suggesting that compared to those with tertiary education, having lower levels of education is associated with lower levels of monthly earnings. At the end of the earnings spectrum, those without any form of schooling earn R9 213.05 less than those with tertiary education. This is followed by those with primary schooling who, on average, earn R8 423.91 less and secondary schooling with R7 349.37 less salary income a month. These findings are statistically significant at the 0.01 level of significance. Moleke (2010) argues that as the economy changes and industries grow, there is often a considerable impact on the demand for people with higher levels of education. The lower earnings and less stable employment for those with less than tertiary schooling are also influenced by the fact that many of these young people are from previously disadvantaged schools (Branson *et al.*, 2019). Similar findings were also reported in Zimbabwe (Zhou, 2002) and India (Ahmed, 2016).

In as far as the race category is concerned, black/African was used as the reference point. Table 4 shows that white youth earn R7 712.24 more than black youth. The same is true for Asian/Indian youth who earn R4 119.63 more than their black counterparts. The p-value of 0.00 is statistically significant at the 0.01 level of significance. Race in this regard is a significant predictor of the earnings potential of young employees in South Africa. Even though the coefficient for coloured youth was positive, this was a non-significant finding. These findings are in line with those of Branson *et al.* (2019).

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There is a positive relationship between earnings and youth employed in both the formal and informal sector. Results from this point of view suggest that, on average, young people in the sectors earn more than those working in the private household sector (the reference category). The p-values are statistically significant at the 0.01 and 0.05 level of significance, respectively. These findings are in line with those of Bargain and Kwenda (2011). In addition to these results, considering the geographical location, an earnings penalty is observed for those working in the rural provinces of South Africa, who on average earn R1 611.04 less compared to youth based in the urban provinces. Considering the relatively large amount of the sample situated in these areas, the findings support the reiterations of Graham and Mlatsheni (2015). From this point of view, being situated far from urbanised areas increases material costs of job search, consequently reducing the likelihood of finding decent employment opportunities.

Finally, results from Table 4 show a positive coefficient for trade union membership, which suggests that youth belonging to a worker's union in the sample earn R2 405.78 more compared to those who do not belong to one. This positive relationship is statistically significant at a 1% level of significance. It can, therefore, be concluded that union membership is a significant determinant of monthly earnings for young employees. A significant earnings effect from unionisation is also found by Kingdon *et al.* (2006). Nevertheless, the dynamic between unionisation and youth labour market success is somewhat complex. Demographic characteristics reported in Table 2 showed that only 21.5 per cent of the sample indicated to be unionised. Isaac (2018) likewise found similar patterns in Australia and according to these findings, the global decline in union membership has resulted in a fall in the bargaining power of workers, which, in turn, has contributed to low wages growth in recent years.

5. CONCLUSIONS AND RECOMMENDATIONS

The employment outcomes of South Africa's youth workforce have undoubtedly become one of the leading concerns facing economic role players, policymakers and national authorities alike. While a large contingent of young work-seekers is finding it increasingly difficult to secure employment, concerns surrounding the conditions of those who eventually find a job have likewise gained significant consideration. In light of this, the primary objective of the study was to investigate the antecedents of young employees' earning potential in South Africa. The findings in this regard carry significant implications in broadening the

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understanding of the complexity of the dynamics surrounding the youth labour market. Earnings and consequently access to decent employment opportunities in this regard are not only dependent on the level of education and work experience, but are likewise impacted by various structural factors. Among these, various geographical and job search barriers, skills mismatches as well as the lack of access to quality social capital are evident. Furthermore, even after two decades after the country's transition to democracy, racial and gender biases still seem to limit the cohorts' labour market outcomes.

Recommendations in advancing the outcomes of young people in the labour market must, therefore, include enhanced public-private partnership formation through the implementation of mandatory apprenticeships. Moreover, work-integrated learning (WIL) programmes must be proliferated from as early as secondary education curricula. Not only will these tactics contribute to the access of sustainable jobs, but will likewise enhance the cohorts' capacity to operate in the formal economy. In addition to these strategies, policymakers should aim to facilitate the relaxation of labour market regulations and the adoption of a strategic focus that seeks to advance both soft and technical skills, which all prove crucial for positive employment outcomes. While the study adds to the body of knowledge on the nature of the labour market specifically for young employees, it is not without its limitations. These primarily revolve around the cross-sectional nature of the inquiry as well as limited insight into specific local conditions. Future studies can, therefore, adopt more longitudinal designs as well as the comparison of different local regions in identifying the specific factors that affect young employees earning potential.

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-RESEARCH ARTICLE-

THE INFLUENCE OF SUPPLY CHAIN MANAGEMENT ON THE PERFORMANCE OF SMALL TO MEDIUM ENTERPRISES IN SOUTHERN GAUTENG

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–Abstract–

Supply chain management is becoming more complex for small and medium enterprises (SMEs) and the need to improve performance seems to be significantly necessary. For SMEs to be efficient and effective towards minimising disruptions within the supply chain, ensure availability of resources and improve just-in-time delivery, information sharing coupled with supply chain collaboration and responsiveness are essential strategies to enhancing business performance. Therefore, the current study regards supply chain collaboration, responsiveness and information sharing as major factors influencing not only SMEs performance, but also allowing SMEs to better coordinate their business activities both within and outside the business environment. In this study, a quantitative research methodology was applied. Relational governance theory (RGT) provided structure to a clear understanding of information sharing among SMEs and customers, highlighting that SMEs aiming to improve their performance, should adopt the style of collaborating with the right suppliers and continuously communicating with the members of the supply chain. Confirmatory factor analysis (CFA) and structural equation modelling (SEM) results support the empirical findings suggesting that the model fits the study. The reliability and validity of the constructs (composite reliability) and the average variance

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extracted sought the empirical findings that correlate the need for SMEs to employ information sharing, supply chain responsiveness and supply chain collaboration as a determinant influence on SMEs performance.

Key Words: Supply chain responsiveness, Supply chain collaboration, Information sharing, SME performance, Small and medium enterprises, Relational governance theory

JEL Classification: L1, M15

1. INTRODUCTION

Supply chains for small and medium enterprises (SMEs) are becoming more complex and the need to improve performance seems to be significantly necessary (Skipworth, Godsell, Wong, Saghiri & Julien, 2015; Turner, Aitken & Bozarth 2018). Information sharing within SMEs collaborative relationships is an essential criterion for enhancing performance (Rao, Guo & Chen, 2015). The major challenge confronting SMEs is the misperception that sharing information may lead to competitive disadvantage (Peschken, Shukla, Lennon & Rate, 2016). As a result, many SMEs who strive to improve information sharing capabilities are slow in their capability to respond to market changes. This may also be attributed to inefficient supply chain collaboration (Omar, Jayaraman & Dahlan, 2016). The degree of information shared can generate performance opportunities for SMEs and create a means for SMEs to work collaboratively to eliminate inefficiencies in information shared (Costantino, Gravio, Shaban & Tronci, 2014). This may further lead to more opportunities for SMEs. For example, SMEs can take advantage of the information to adjust existing performance levels (Cao & Zhang, 2011). Therefore, there is a need for this article to present an investigative model to evaluate the influence of information sharing, supply chain responsiveness and supply chain collaboration on SMEs performance in the southern Gauteng region.

Although SMEs, with their entrepreneurial skills, have a significant advantage in their ability to develop rapidly, failure to enhance information sharing capability may become problematic as SMEs may lag behind in terms of being able to adequately respond to market changes in the right time and place (Maghsoudi & Pazirandeh, 2016). Information sharing can provide useful insights into market conditions and trends, thereby creating market opportunities for SMEs to gain competitive advantage and improve performance (Maghsoudi & Pazirandeh, 2016). In addition, there are not many empirical studies having supply chain responsiveness and supply chain collaboration as causal effect between SMEs information sharing and SMEs performance within the southern Gauteng region.

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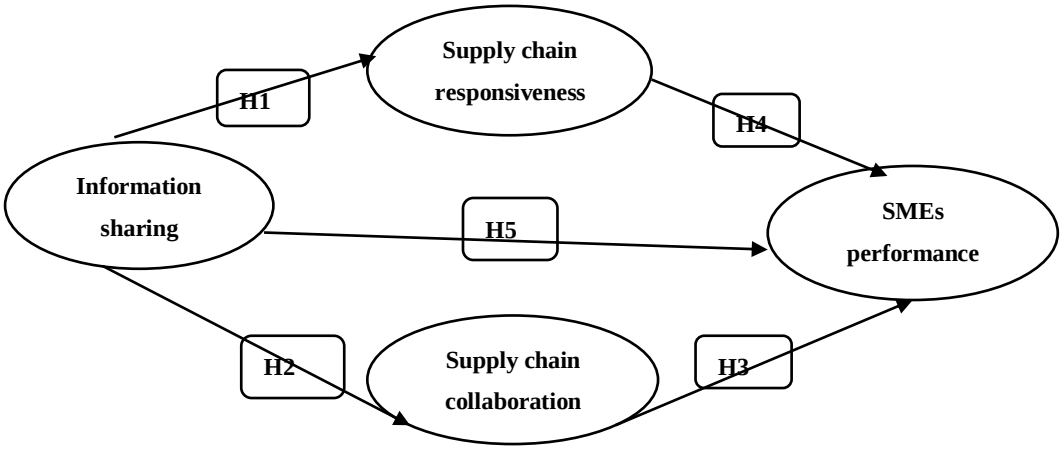
The conceptual framework in Figure 1 shows the possible influence of the research variables proposed for this article.

Figure 1: Research Model: Own Source



2. LITERATURE REVIEW

2.1. Relational governance theory (RGT)

Some researchers such as Cannella, Framinan, Bruccoleri, Barbosa-Povoa and Relvas, (2015); Kembro and Selviaridis, (2015) argue that organisations should highlight working closely and jointly with the members directly connected to the chain in order to obtain adequate information sharing within the organisation supply chain. The RGT can assist the SMEs in terms of maintaining an integrated relationship between the partners involved in the supply chain by ensuring collaboration and management of the relationship amongst parties (Gunasekaran, Lai, & Cheng, 2008). This collaboration among the members of the chain will maintain a long-term relationship as long as each partner observes that their goals are obtained together by developing the relationship and not by ending it (Pilerot & Limberg, 2011). RGT is based on expectation, rather than opportunistic performance and it can direct inter-personal and inter-firm relationships to a joint collaborative information exchange (Kembro & Selviaridis, 2015). RGT helps create an understanding of why supply chain partners must engage in information sharing by emphasising the benefit of increased cooperation (Panahifar, Byrne, Salam & Heavey, 2018).), compared to cases where parties do not share information. RGT is also useful to determine what information to share, with

whom, when and how information should be shared (Kembro, Selviaridis & Naslund, 2014).

2.2. Information sharing, responsiveness and collaboration

With the need for supply chain visibility, accurate and viable information sharing has become the strategic means for organisations collaboration within the supply chain to combat the presence of bullwhip effect and uncertainty found in supply chains (Song, Yu, Ganguly & Turson, 2016; Adams, Richey, Autry, Morgan & Gabler, 2014*)*. Having real-time and accurate information, enables an organisation to manage responsiveness and collaboration effectively, thereby, enhancing faster cash flow for smooth business operation (Rao, Guo & Chen, 2015*)*. According to Kembro *et al.,* (2014), supply chain aims at providing customers with the right product, at the right time and in the right place by utilising point-of-sales information and flexible strategy to respond to customers' changing demands. As such, collaboration and responsiveness across organisations has been strengthened over time (Fawcett *et al.,* 2007). Adequate sharing of significant information between collaborating organisations is the backbone of effective and efficiency responsiveness (Afshan, Chatterjee & Chhetri, 2018). According to Chae, Koh and Prybutok. (2014), SMEs supply chain is characterised by the effective exchange of responsive and valid information, which is widely regarded as resourceful in achieving quality collaboration throughout the chain. Afshan *et al.,* (2018) further state that the greater the quality of information shared among SMEs supply chain partners, the more likely it is for the partners to coordinate the activities in a collaborative approach.

Based on the abovementioned literature, the following hypotheses are formulated:

H1: Information sharing has a significantly positive influence on responsiveness

H2: Information sharing has a significantly positive influence on collaboration

2.3. Supply chain collaboration and SMEs performance

In the current business environment, maintaining and improving an integrated long-term relationship between SMEs partners is significant (Salam*,* 2017). As SMEs are aiming to improve competitive advantage, inter-firm relationships are important because supply chain collaboration is considered to yield organisation-specific benefits in terms of financial performance (Prajogo & Olhager, 2012). A recent survey by Haque and Islam (2018), found that organisations that are best at collaborating with suppliers have a 40 to 65 percent advantage in the cash-to-

cash cycle time over other average organisations and the top organisations have 50 to 85 percent fewer inventories than competitors. Efficient collaboration among SMEs may lead to a better inventory reduction, faster product-to-market cycle times, as well as costs and lead time reduction (Prajogo & Olhager, 2012). Therefore, supply chain collaborative practices among SMEs are important determinants of performance enhancement. Based on this, it is hypothesised that:

H3: Supply chain collaboration has a significantly positive influence on SMEs performance.

2.4. Supply chain responsiveness and performance

For SMEs to obtain a continual undisrupted revenue and competitive advantage, the attainment of agility, robustness and resilience should be considered (Halqachmi, 2013; Moyano-Fuentes *et al.,* 2016). These key characteristics serve as tools to maximising profitability, increasing customer base, long-term profitability as well as cost-saving opportunities through improved responsive efficiency (Qrunfleh & Tarafdar, 2013). The pursuit of achieving and retaining competitive advantage depends on managerial ability to incorporate supply chain strategy; of which quick order fulfilment forms a part (Song *et al,* 2016). According to Turner *et al.*, (2018), organisations that regard supply chain responsiveness as significant gradually improve as well as enhance efficiency within the inbound logistics and effectiveness within the outbound logistics. As such, these organisations may become more proactive in detecting market changes throughout the supply chain and thereby enhancing and maintaining long-term relationships with both suppliers and customers. Young, Yang and Roh, (2012*),* further argue that organisations that are responsive have a greater success in improved reliability service, improved customer service, quality improvement, cost reduction, improved organisational structure and enhance performance. Since, proactive supply chains can lead organisations to both contemporary and financial measures, SMEs can maximise the competitive advantage through improved responsiveness, which improves performance (Urban & Naidoo, 2012). Due to the above reviews, the following hypothesis is proposed.

H4: Supply chain responsiveness has a significantly positive influence on performance.

2.5. Information sharing and SMEs performance

Several researchers have empirically established the relationship between information sharing and performance. Mackelprang and Malhotra (2015) investigated that information sharing has some beneficial influence on

performance with regards to accurate inventory levels and cost reduction. Meflinda, Mahyarni, Indrayani and Wulandari, (2018) also note that accurate information sharing can result in reduced uncertainty, faster material flow, reduced inventory costs and increased customer satisfaction, thus contributing to overall performance. Accurate information sharing with customers and across the supply chain can influence positively quality product innovation and overall operational performance (Ye & Wang, 2013). According to Song and Liao, (2019), adequate information sharing is an enabler for preventing stock-outs, increasing resource productivity as well as performance. Along this reasoning, the following hypothesis is proposed.

H5: Information sharing has a significantly positive impact on SMEs performance.

3. RESEARCH DESIGN, DATA ANALYSIS AND RESULTS

The study is located within the quantitative research paradigm. This study developed a structured questionnaire with a seven-point Likert-type questions from strongly disagree to strongly agree. The study adopted a non-probability sampling approach using the convenience sampling technique, in which every element is chosen to participate in non-random ways (Rouzies, 2013:198). Convenience sampling, known as availability sampling, is a type of non-probability sampling, which relies on data collection from population members conveniently available to participate in a study. This sampling technique is appropriate for this study because it is convenient and the subjects selected are available to be tested, as every subject is invited to participate (Cooper, 2006:361). 500 questionnaires were distributed, but 323 valid questionnaires were useful for the final analysis

Out of the 323 SMEs that participated in this study, only 30 percent of respondent claims to have been in the business within 5 to 7 years. 25 percent of respondent have an annual sale of about 1 Million to less than 5 million. About 64 percent of the SMEs have fewer than 50 employees and 13 percent claims to have between 50 to 100 employees. Majority of SMEs were wholesalers which amounted to 48 percent. Manufacturing, storage or transportation SMEs were 9 percent while the agricultural, hunting, forestry or fishing were only 2 percent.

Table 1: Reliability and Validity Results

Research variables		Descriptive statistics		Cronbach's test		C.R.	AVE	Factor loading
		Mean	Std. Dev.	Item-total	α Value			
INFORMA-TION SHARING	IS1	5.02	1.872	0.692	0.896	0.869	0.625	0.730
	IS2	4.87	1.737	0.737				0.785
	IS3	5.06	1.794	0.765				0.814
	IS4	4.88	1.927	0.767				0.830
	IS5	4.88	1.837	0.761				0.820
SUPPLY CHAIN RESPONSIVE-NESS	SR1	5.27	1.597	0.571	0.823	0.824	0.500	0.637
	SR2	5.39	1.637	0.623				0.690
	SR3	5.32	1.553	0.638				0.705
	SR4	5.22	1.571	0.654				0.747
	SR5	5.23	1.624	0.598				0.695
SUPPLY CHAIN COLLABORA-TION	SC1	5.01	1.706	0.612	0.881	0.906	0.518	0.670
	SC2	4.90	1.703	0.676				0.725
	SC3	4.81	1.703	0.661				0.708
	SC4	4.95	1.685	0.675				0.727
	SC5	5.00	1.688	0.717				0.765
	SC6	5.05	1.655	0.639				0.676
	SC7	4.98	1.628	0.692				0.756
SMEs PERFOR-MANCE	SP1	5.18	1.691	0.643	0.839	0.850	0,503	0.675
	SP2	5.11	1.563	0.649				0.732
	SP3	5.01	1.575	0.656				0.723
	SP4	4.65	1.649	0.663				0.712
	SP5	4.98	1.695	0.602				0.736
	SP6	5.18	1.691	0.643				0.675

AVE: Average variance extracted; CR: Composite reliability; * Scores: 1=Strongly Disagree; 2=Disagree; 3=Slightly Disagree; 4=Neutral; 5=Slightly Agree; 6= Agree; 7=Strongly agree. **Note:** [s]ignificance leve $p<0.05$; [b] significance level $p<0.01$; [c] significance level $p<0.001$ ***Measurement CFA model fits criteria:** CMIN/DF= 1.651; NFI=0.906, TLI=0.950, CFI=0.960, IFI=0.961, RFI=0.900; RMSEA=0.034

Table 1 shows that information sharing Cronbach alpha is 0.896, supply chain responsiveness Cronbach alpha is 0.823 while supply chain collaboration Cronbach alpha is 0.882 and SMEs performance is 0.840. Each variables' Cronbach alpha varies from 0.882 to 0.840, which means that the results meet the acceptable threshold of 0.7 as recommended by (Hair, Anderson, Tatham & Black, 2006). In addition, the item to total value results range from 0.571 to 0.767. The Cronbach alpha results validate the reliability of the measurement instrument used in this article. The composite reliability values range from 0.824 to 0.906 and are considered acceptable. This indicates that internal reliability for all the variables exists. The AVE estimate reflects the overall amount of variance in the indicators, which is accounted for by the latent variables. Therefore, Table 1 confirms a good result ranging from 0.500 to 0.625. All AVE values show good representation of latent construct for the measuring items.

3.1. Discriminant Validity

In order to check if discriminant validity is present, the correlation coefficients among the research constructs should be less than 1.0 as recommended by Malhotra, (2010). Table 2 indicates that the inter-correlation values for all paired latent variables are less than 1.00 therefore confirming the existence of discriminant validity.

Table 2: Correlations coefficients

Correlations and discriminant validity				
Research variables	**IS**	**SR**	**SC**	**SP**
Information sharing	1.000			
Supply chain responsiveness	.489	1.000		
Supply chain collaboration	.513	.615	1.000	
SMEs performance	.436	.496	.548	1.000

* Scores: 1=Strongly Disagree; 2=Disagree; 3=Slightly Disagree; 4=Neutral; 5=Slightly Agree; 6= Agree; 7=Strongly agree. **Note:** [a]significance level $p<0.05$; [b] significance level $p<0.01$; [c] significance level $p<0.001$

3.2. Confirmatory Factor Analysis

A chi-square test was used to observe the general fit of the model as recommended by Herbst, (2014:87). For this article, the chi-square value over degree of freedom below 3 was achieved, which is an indication that it meets the acceptable model fit (Chinomona, 2011). For example, value for chi-square is 1.651, The NFI value is (0.906), TLI value is (0.950), IFI value is (0.961), CFI

value is (0.960), TLI value is (0.950) and RFI is (0.900), respectively. All the CFA criteria are greater than 0.9, therefore, this confirms acceptable model fit. McDaniel and Gates (2013), state that the RMSEA value must fall below 0.08, indicating a good model fit. The RMSEA value is 0.034, which is an acceptable threshold. Since the acceptable value of confirmatory factor analysis measurement model fit is secured, the study proceeds to the next stages of examining SEM model fit and testing of the hypotheses.

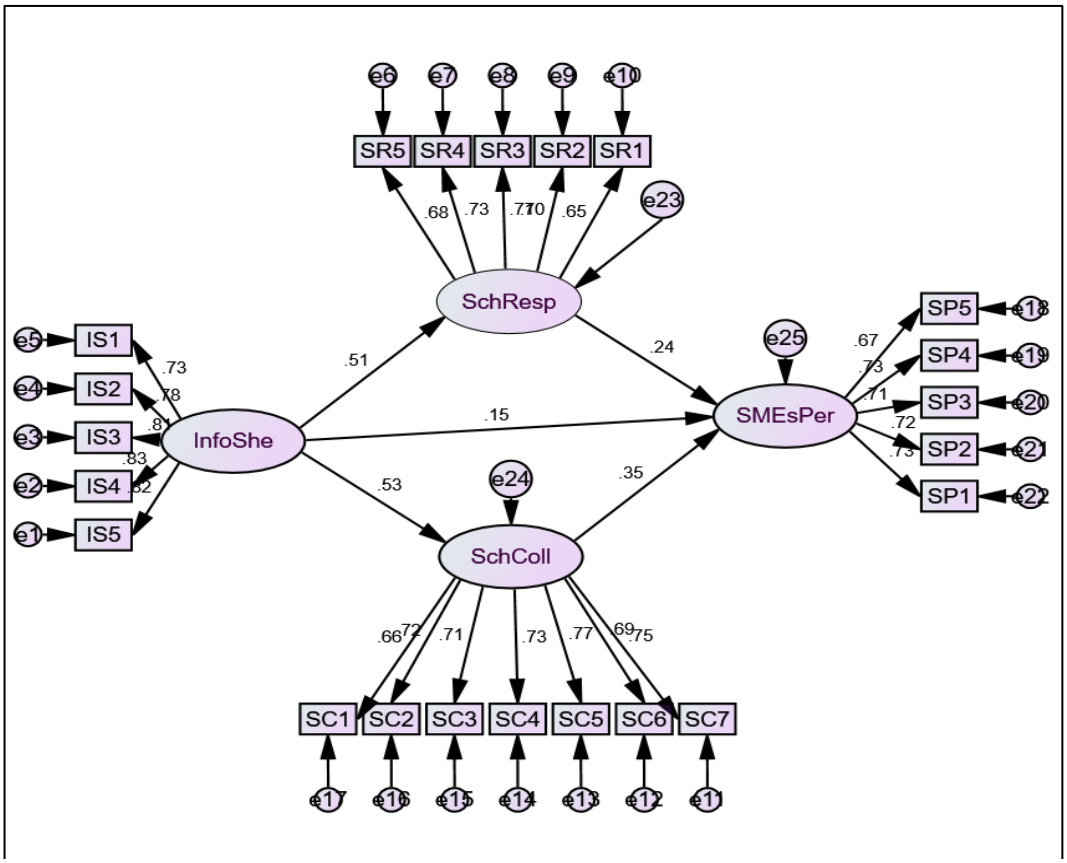
3.3. Structural Equation Model Testing

Table 3 represents the structural equation model fit results. The results show the acceptable goodness-of-fit of the model as recommended by Nunnally, (1978:212).

Table 3: Structural equation model fit results

SEM indicator	Acceptance level	Default model value	Decision
Chi-Square	< 3.00	1.899	Accepted level
CFI	> 0.900	0.945	Accepted level
RFI	> 0.900	0.900	Accepted level
IFI	> 0.900	0.946	Accepted level
TLI	> 0.900	0.932	Accepted level
NFI	> 0.900	0.900	Accepted level
RMSEA	< 0.08	0.040	Accepted level

Figure 3: Path analysis



AVE: Average Variance Extracted; CR: Composite reliability; * Scores: 1=Strongly Disagree; 2=Disagree; 3=Slightly Disagree; 4=Neutral; 5=Slightly Agree; 6= Agree; 7=Strongly agree. **Note: Measurement SEM model fits criteria:** CMIN/DF= 1.899; NFI=0.900, TLI=0.932, CFI=0.945, IFI=0.946, RFI=0.900; RMSEA=0.040

The next step examines the causal relationships that exist among latent variables by path analysis. According to Flick (2014:463), SEM emphasised that a latent variable is directly or indirectly influenced by other latent variables within a model, which can result in estimating results that portray the possibility of the latent variables being related. For this study, the estimated results elicited through hypothesis testing are presented in Figure 3 and Table 4. The literature asserts that $p<0.05$, $p<0.01$ and $p<0.001$ serve as indicators of relationship significance and positive factor loadings indicate strong relationships among the latent variables (Flick, 2014:465).

Table 4: Hypotheses results

Construct measured			Path coefficient	S.E.	C.R.	P	Label
H1: Sch_Rep	<---	Info_She	.516	.050	7.473	***	Accepted
H2: Sch_Coll	<---	Info_She	.537	.052	8.360	***	Accepted
H3: SME_Per	<---	Sch_Coll	.353	.075	3.195	.001	Accepted
H4: SME_Per	<---	Sch_Rep	.235	.068	4.740	***	Accepted
H5: SME_Per	<---	Info_She	.146	.060	1.827	.068	Accepted

4. DISCUSSION OF EMPIRICAL FINDINGS

Hypothesis 1, which states that information sharing has a significantly positive influence on supply chain responsiveness, is strongly supported (Path=0.52, P < 0.000). Therefore, **H1** confirms that SMEs with real-time information sharing initiatives can gain more efficient supply chain responsiveness throughout the supply chain. SMEs supply chains are benefited by their ability to exchange information effectively to aid quick responses to customer's changing demands. Accurate information sharing may improve SMEs chances of being more proactive in detecting market changes, re-structuring of processes to convene innovative market needs as well as adopting new product development ahead of their competitors. Therefore, the findings of **H1** strongly indicate the presence of intermediate measure of relationships between information sharing and supply chain responsiveness. Having a high path coefficient implies that SMEs business performance and growth highly depend on their ability to respond to market demand accurately at the right time, right place and in the right quantity and quality. The relationship between information sharing and supply chain responsiveness is also consistent with the findings of Chinomona and Pooe, (2013:9) and Qrunfleh and Tarafdar, (2013:547) on supply chain responsiveness. These studies claim that information sharing has a significant positive influence on supply chain responsiveness.

Hypothesis 2 further proves that the levels of quality information shared among SMEs are more likely to create an effective collaborative relationship within the supply chain (P=0.54, P < 0.000). With this, SMEs can manage inventory levels whilst being flexible in their operational lead-time. SMEs operational flexibility may lead to overcoming the presence of bullwhip effect and market uncertainties caused by lack of accurate information. The accuracy and quality of information

shared can help SMEs to collaborate successfully with partners and suppliers in a win-win position. As a result, SMEs will achieve and retain high levels of competitive advantage (Chinomona & Pooe, 2013:9; Kang & Moon, 2015:6). The path coefficient also indicates that information flow is the stronghold of efficient collaborative relationship. Therefore, information sharing and collaboration are essential business strategies that SMEs should embrace. **H2** is significant and supported.

Hypothesis 3 with significance level of (Path=0.35, P < 0.001), confirms that the ability of SMEs to implement a collaborating relationship outside organisational boundaries will likely result in faster product-to-market cycle times, costs and lead time reduction. SMEs supply chains are benefited by their ability to improve competitive advantages and inter-firm relationships are important in enhancing SMEs towards organisation-specific benefits in terms of financial performance (Kim, 2009:339). With this, SMEs are able to maintain and improve integrated long-term relationships among supply chain partners. Hence, ***H3*** is significant and supported.

Hypothesis 4 with (P=0.24, P < 0.000) empirically confirms that SMEs with a responsive supply chain capability have a greater chance of achieving success. This is true because global markets require speed to compete effectively with rivals. SMEs may further have to improve on reliability service, customer service and product quality in a quick and responsive manner to achieve business performance. The findings also authenticate that supply chain responsiveness may enable SMEs to gradually improve efficiency and effectiveness within the supply chain. SMEs supply chains are benefited by their ability to obtain a continual undisrupted revenue and competitive advantage with the attainment of agility, robustness and resilience. As a result, SMEs can gain both contemporary and financial measures by maximising their competitive advantage through improved responsiveness, which improves performance. The results of the findings are consistent with Youn *et al.*, (2012), who state that responsive SMEs have a greater success with improved reliability service, improved customer service, quality improvement, cost reduction and organisational performance. Therefore, ***H4*** is significant and supported.

Hypothesis 5 examines the direct impact of information sharing on SMEs performance. The result (Path=0.15, P < 0.068), demonstrates that information sharing and SMEs performance has a weak relationship, but it is supported. The weak relationship may indicate that information sharing does not necessary enhance SMEs performance if the information shared is not useful and not

beneficial to the success of the organisation. As such, it might be difficult for SMEs to survive if the information exchange within the supply chain is ineffective (Creswell & Creswell, 2018). Therefore, SMEs should enhance the usefulness of information gained through a collaborative relationship with suppliers and customers, which may result in responsiveness and higher levels of business performance.

5. CONCLUSION AND MANAGERIAL IMPLICATION

From the initial stage of this study, the researcher acknowledged that evaluating the findings will by no means be accomplished without its limitations. To start with, one of these study limitations revolves around the fact that the study was restrained only within Emfuleni Local Municipality SMEs. Further studies can consider basing the study within South African SME sector in general. A relatively small sample size of 500 SMEs was employed and it limited the extent at which the information can be generalised. It was also a bit difficult to gather information from the selected SMEs because of the fear that financial information that is shared may reach the tax authorities as fulfilling tax obligations for some SMEs might not have been assured. Using a closed-end structured questionnaire can also be considered as a limitation. This is because SMEs are limited to the answer the question presented to them. Opinions on how the business can be developed through information sharing, supply chain responsiveness and collaboration cannot be generalised. Some SMEs were also reluctant in completing the questionnaire especially those questions that has to do with 'return on asses' and 'annual sales. The positions of the respondents and the steps in collecting the data required for the study argue against outcomes of bias and methods variances. Future research can therefore consider the means of utilizing a multi-matched pair by collecting the data not only from the SMEs but also from the members of their supply chain in other to allow a cross-check of the data collected.

Adequate information sharing contributes to improved visibility that leads to effective coordination. A collaborative relationship built on information sharing is essential to superior performance as it assists SMEs to reach a long-term relationship with potential partners. Collaboration can also lead SMEs towards gaining long-term process planning and complete integrated processes such as, truckload utilization, manufacturing scheduling and warehouse management. In the other hand, responsiveness has contributed benefits such as faster cycle times, increasing sales and reducing distribution operation. If SMEs can understand the relationship that exist between information sharing, supply chain responsiveness

and supply chain collaboration, it will necessitate the need for them to adopt these constructs. Therefore, the general lesson from this study is that SMEs should acknowledge information sharing as the number one critical step when aiming at improved inventory visibility, quick responds time, and business performance.

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-RESEARCH ARTICLE-

THE IMPACT OF DISAGGREGATED COUNTRY RISK ON THE SOUTH AFRICAN EQUITY AND BOND MARKET

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─Abstract─

The relation between asset returns and country risk is an important issue for international investors seeking diversification opportunities in emerging markets, particularly in South Africa. This paper aims to evaluate the impact of economic, financial and political components of country risk on stock and bond returns. A non-linear autoregressive distributed lag (NARDL) model was used to analyse the time-varying dynamic relationship between the country risk components and the two financial asset markets for a sample of 15 years monthly data. We found an asymmetric relationship between country risk and asset returns of the two markets. Political risk has long-run and short-run implications on stock and bond returns, while economic risk only has short-run effects on bond returns. These results suggest that international investors should carefully consider different components of country risk when seeking diversification opportunities.

Key Words: *Financial markets, Financial risk, Political risk, Economic risk*

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1. INTRODUCTION

Over the past few decades, South African stock and bond markets have grown to become the largest and most liquid financial markets in the African continent (World Investment Report, 2018). The growth in these markets has been attributed to domestic financial liberalization, macroeconomic stability and increased private capital flows (Andrianaivo and Yartey, 2009). Despite having good indicators, South Africa's economy continues to face economic challenges, such as political instability, low economic growth, high inflation, among others (IMF, 2018). These challenges pose uncertainties arising from the instability in the political and economic environment, thus consequently increasing the risk of investing in South African markets. The risk level of a country is reflected in risk ratings compiled by rating agencies. Such ratings are among the main reference tools used by investors and governments to assess the risk level of a country (Sensoy, Eraslan and Erturk, 2016). The ratings send strong signals about a country's overall economic health to domestic and international investors. A change in country risk ratings can pose challenges for businesses and government. Prior to 2012, South Africa experienced consecutive periods of long-term credit rating upgrades but this changed after the last quarter of 2012, when economic events forced several agencies to revise credit ratings downwards. Since then, there have been numerous occasions were agencies downgraded ratings and outlook for South Africa (SARB, 2019). In 2017, two rating agencies downgraded South Africa's sovereign credit ratings to sub-investment grade, resulting in significant sell-offs of domestic bonds (SARB, 2019). The downward trend has continued in domestic bond markets, further highlighting investor concerns regarding the country's domestic challenges.

The response of asset returns to country risk indicators has been well documented in the literature. Christopher, Kim and Wu (2012) found evidence of a significant impact of country risk on emerging market assets, whereas, Sensoy et al. (2016) failed to find supporting evidence; thus, leading to the conclusion that the information conveyed by credit risk ratings about country risk, has already been factored into asset prices. Although research on the linkages between disaggregated country risk and stock markets exists (Nasr, Cunado, Demirer and Gupta, 2018; Mensi, Hammoudeh, Yoon and Balcilar, 2017; Mensi, Hammoudeh, Yoon and Nguyen, 2016; Sari, Uzunkaya and Hammoudeh, 2013), the evidence of the role of disaggregated country risk on bond markets is scant and there is no agreement on the effect of each component of country effect on stock and bond markets. Furthermore, the relationship between country risk and financial markets

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has mostly been analysed under the assumption of symmetric effects (Liu, Hammoudeh and Thompson, 2013; Sari et al., 2013) without acknowledging the asymmetric behavior of financial markets. Thus, analysing this relationship in an asymmetric manner may provide further insight on this topic as we argue that the effect of country risk components is not constant across asset return distribution. Consequently, this study employs a nonlinear approach to investigate the long- and short-run effect of the financial, economic and political components of country risk on the stock and bond market returns in South Africa.

2. LITERATURE REVIEW

This study relates to the growing strand of literature that examines the impact of country risk ratings on financial markets. The impact of country risk on financial markets has been studied extensively in developed and emerging markets (Hammoudeh, Sari and Uzunkaya, 2013; Erb, Harvey and Vistanka, 1996). Erb et al. (1996) were one of the early researchers to investigate formally the relationship between credit ratings and financial markets. The study found that country credit ratings had a significant influence on expected equity returns. The literature shows similar evidence suggesting that rating downgrades have a larger impact when compared to rating upgrades. For example, a study conducted by Brooks et al. (2004) shows that rating downgrades have a significant and negative impact on domestic stock markets and dollar value of a country's currency, while finding no significant impact of rating upgrades. Li, Jeon and Chiang (2007) found that stock returns across Asian countries were influenced by changes in their domestic as well as global markets' foreign currency sovereign credit ratings. Furthermore, Ferreira and Gama (2007) argue that the effects of downgrades are even more significant in emerging markets. This is supported by Christopher, Kim and Wu (2012) who show that rating announcements had a more significant negative influence for Latin American countries with higher foreign currency debt ratings. In contrast, Sensoy et al. (2016) found that, in general, rating announcements did not influence stock return co-movements.

While the aforementioned studies are important for understanding the impact of country risk on financial markets, there is a growing awareness of the different effects of economic, political and financial risk ratings of a country risk index. Using disaggregated country risk, Erb et al. (1996) found that a decrease in financial risk ratings increased fixed-income returns. Sari et al. (2013) found evidence of a long-run relationship for all three country risk components and stock market movements in Turkey. However, only political and financial risk

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ratings had a positive and significant impact on stock market movements in the short-run. Hammoudeh et al. (2013) found that when comparing the responses of stock markets in Brazil, Russia, India, China and South Africa (BRICS) to their own country's risk ratings, China was the only stock market to respond to changes in all country risk rating factors as well as global factors. In a similar study, Liu et al. (2013) show that the positive and negative shocks to country risk components have asymmetric effects on BRICS stock markets. Using a dynamic panel threshold model to examine the the nonlinear relationship between stock returns and country risk ratings of BRICS countries, Mensi et al. (2016) found that behaviour of BRICS stock markets mainly depended on market conditions. The analysis shows an asymmetric relationship between political and financial risk ratings and the BRICS stock market returns. The study found that an increase in financial risk ratings had a positive and significant influence on stock market performance during economic upturn, whilst a decrease in financial risk ratings had a negative effect. However, the study found no significant relationship between country risk and BRICS stock returns in the short run. In contrast, Mensi et al. (2017) show that only financial risk ratings have a significant positive effect on stock returns of GCC countries (Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the UAE) but no significant effect of political and economic risk ratings on stock returns. Nasr et al. (2018) provide evidence that economic, financial and political risk have asymmetric effects on stock market returns of individual BRICS stock markets as well as on commodity prices. Although the empirical evidence points to a relationship between country risk and asset returns, the conclusions are varied. We extend this line of research by adding bond market returns to our empirical setting to assess the impact of economic, financial and political risk on asset markets.

When examining the impact of risk ratings across stocks and bonds, Pukthuanthong, Elayan and Rose (2007) concluded that ratings provide new information to financial markets, therefore, affect bond and stock markets. The study also found that rating downgrade events have a significant negative impact on both markets. Afonso, Furceri and Gomes (2011) examined the impact of sovereign credit rating announcements of upgrades and downgrades on sovereign bond yield spreads in European Union countries and found that government bond yield spreads are influenced by changes in credit ratings and rating outlooks. Consistent with the evidence of impact of rating changes, Afonso, Gomes and Taamouti (2014) show that sovereign rating downgrades significantly increased stock and bond market volatility but there were no significant effects imparted by

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rating upgrades. Chow, Gupta, Suleman and Wong (2017) employed linear and nonlinear causality techniques to examine the relationship between economic, financial and political risk on government bond spreads for BRICS countries and Portugal, Italy, Ireland, Greece and Spain (PIIGS) economies and found a strong long run relationship between the various risks and bond spreads for both BRICS and PIIGS. However, not all risks strongly predict bond spread for both BRICS and PIIGS. For example, the study found a strong causal relationship between political risk and BRICS bond spreads, but a weak relationship between bond spreads and financial risk. Mutize and Gossel (2019) examined the impact of sovereign rating announcements on stock of 19 African countries and found that a sovereign rating downgrades resulted in negative stock and bond returns.

The study by Mutize and Gossel (2019) examined the impact of country risk ratings on stock and bond markets in the South African context but it used credit rating scores, which are not disaggregated. Thus, our study provides a complementary dimension of disaggregating the multidimensional measure of the country risk index into economic, financial and political risk factors. Knowledge of whether all components of country risk factors have the same impact on stock and bond markets is limited. Our study contributes to the growing strand of research that seeks to show a relationship between economic, financial and political risk and financial assets.

3. DATA AND METHODOLOGY

3.1. Sample and data description

The study uses monthly data spanning the period 1 January 2001 to 31 December 2015 for domestic stock index, bond index and country risk in South Africa. The period was selected based on the country risk data at the disposal of the researchers. The stock market is represented by the Johannesburg Stock Exchange (JSE) All Share Index (ALSI), which is composed of 150 JSE-listed companies, while the bond market is represented by All Bond Indices (ALBI) composed of the top 20 vanilla bonds ranked dually by liquidity and market capitalisation (JSE, 2019). Both indices are denominated in the local currency (Rand) and deflated by the CPI to reflect real asset prices. The stock and bond returns are computed as the difference in logarithm between two consecutive prices. The monthly real returns on stock and bond prices are calculated as, $r_t = \log(p_t) - \log(p_{t-1})$, where r_t is the compounded return, p_t is the real price in period t. Country risk rating information was gathered from the International Country Risk Guide (ICRG) of Political Risk services (PRS). The risk rating consists of 22 indicators categorised

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into three risk rating components, namely political risk, financial risk and economic risk. The scores range from zero to 50 for political risk and 0 to 25 for economic and financial risk (ICRG, 2017). A high risk rating value indicates a low level of risk. We also considered the logarithmic changes in components of country risk.

3.2. Model specification

The study employs a non-linear autoregressive distributed lag (NARDL) model, which is an asymmetric extension of the linear ARDL approach originated by Pesaran & Shin (1999). The NARDL used allows for jointly modelling the long- and short-run asymmetries among variables. This model was selected because it examines the asymmetric interactions across variables by distinguishing between positive and negative changes in explanatory variables via partial sums (Shin et al., 2014). The NARDL has the advantage of detecting the hidden long-run relationship resulting from cointegration of positive and negative components identified in a study by Granger and Yoon (2002). In addition, the NARDL model can test for cointegration between data series with different orders of integration as long as none of them are integrated of order 2, I (2). Before estimating the model, the augmented Dicker-Fuller (ADF) test and Kwiatkowski-Phillips-Schmidt-Shin (KPSS) test are carried out to check for stationarity and the order of integration of variables. In general, the results of the ADF test and KPSS test reveal that the financial market return series are stationary at levels and the country risk components are stationary at levels and in the first difference, therefore, justifying the need for specification that deals with a mixture of I(1) and I(0).

The standard ARDL enables the investigation of the short- and long-run relationships between country risk components and asset market returns but fails to account for the possibility of nonlinear effects, which was found to be the case in the recent literature (see Liu et al., 2013; Mensi et al., 2016; Nasr et al., 2018). We follow the NARDL methodology of Shin et al. (2014) to determine the asymmetric impact of country risk components on asset market returns. The NARDL approach is the best for examining the dynamic interaction of stock and bond markets and the three components of country risk because it allows for long- and short-run asymmetries. The NARDL model of Shin et al. (2014) is built around the asymmetric long-run equilibrium relationship:

$$y_t = \rho^+ x_t^+ + \rho^- x_t^- + u_t \quad (1)$$

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Where u_t is a stationary zero-mean error process that represents deviations from the long-run equilibrium, ρ^+ and ρ^- are the associated asymmetric long-run parameters and x_t is the vector of regressors that captures the asymmetric behaviour of each of the independent variables by decomposing them into their positive and negative partial sums, as follows:

$$x_t = x_0 + x_t^+ + x_t^-. \quad (2)$$

The general form for the positive and negative partial sums of x_t are expressed in the following way:

$$x_t^+ \sum_{j=1}^{t} \Delta x_t^+ = \sum_{j=1}^{t} \max(\Delta x_j, 0) \text{ and } x_t^- \sum_{j=1}^{t} \Delta x_t^- = \sum_{j=1}^{t} \min(\Delta x_j, 0) \quad (3)$$

Where x_t is a $k \times 1$ vector of explanatory variables.

Decomposing the explanatory variable into positive and negative partial sums allows us to examine the effects of a decrease and increase on the asset market returns. The specific NARDL model for this study is expressed as follows:

$$\Delta MKT_t = c + \delta MKT_{t-1} + \rho_1^+ ER_{t-1}^+ + \rho_2^- ER_{t-1}^- + \rho_3^+ FR_{t-1}^+ + \rho_4^- FR_{t-1}^- + \rho_5^+ PR_{t-1}^+ + \rho_6^- PR_{t-1}^- + \sum_{i=1}^{p-1} \beta_i \Delta MKT_{t-i} + \sum_{i=0}^{q-1} (\varphi_i^+ \Delta ER_{t-i}^+ + \varphi_i^- \Delta ER_{t-i}^-) + \sum_{i=0}^{q-1} (\gamma_i^+ \Delta FR_{t-i}^+ + \gamma_i^- \Delta FR_{t-i}^-) + \sum_{i=0}^{q-1} (\gamma_i^+ \Delta PR_{t-i}^+ + \gamma_i^- \Delta PR_{t-i}^-) + \beta_8 D_{1,t-i} + \epsilon_t \quad (4)$$

Where p and q are the lag orders. δ is the symmetric long-run parameter and ρ_i^+ and ρ_i^- are the long-run asymmetric parameters. MKT_t represents the return for stock or bond market in period t. ER, FR and PR represent the logged economic, financial and political risk components, respectively. β is the short-run parameter and the short run adjustment to positive and negative shocks are captured by parameter estimates $\varphi_i^+, \varphi_i^-, \gamma_i^+$ and γ_i^-. To account for the effects of the financial crises, a dummy variable (D) was created for the 2008 global financial crisis. It takes a value of one if the date falls during the period of crisis.

We estimated the NARDL equation and used the bounds test proposed by Pesaran *et al.* (2001) to ascertain cointegration amongst the variables. The null hypothesis for our bounds test is where $\delta = \rho_i^+ = \rho_i^- = 0$, for i=1,2….6. We reject the null hypothesis when the F-value is greater than the upper bound critical value. By rejecting the null hypothesis, we confirm cointegration among variables, which indicate the existence of the long-run relationship. If the variables are found to be cointegrated then the error correction model (ECM), based on the NARDL, is estimated to evaluate the short-run asymmetric effects.

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4. RESULTS AND DISCUSSION

4.1. Long-run analysis and residuals testing

The results of the ADF and KPSS test show that no variable is I(2), therefore, the preconditions of the NARDL model are met. Table 1 reports the output derived from the bounds testing procedure for cointegration in the NARDL model. The F-statistics and t-statistics are greater than the upper bound critical value at all conventional significance levels, therefore indicating a rejection of the null hypothesis of no cointegration between country risk and financial markets. This result implies that there exists a long-run asymmetric effect of changes in economic, political and financial risk ratings on stock and bond returns. The asymmetries may be due to the complexity of financial markets in which various economic agents with different preferences, risk tolerances and investment objectives interact (Nasr et al., 2018). These agents are active in different market and economic conditions, thus resulting in asymmetric responses of stock and bond markets to positive and negative changes.

Table 1: Bounds test for non-linear ARDL cointegration

	Stock	**Bond**	**5% Lower bound**	**5% Upper bound**
$\mathbf{F_{PSS}}$	31.77716	21.90262	**I(0)**	**I(1)**
$\mathbf{t_{BDM}}$	-14.88820	-12.28879	2.45	3.61

The NARDL specification is determined by applying the general-to-specific criterion. Both NARDL models are stable because the coefficients of the lagged stock and bond returns are negative and statistically significant. Furthermore, diagnostic test results show satisfactory results as there was no presence of serial correlation and heteroscedasticity in the residual series, hence we can conclude that the NARDL models are correctly specified. After confirming the cointegration among variables, we proceed to interpreting the findings of the long-run asymmetric impact of economic, financial and political risk on the stock and bond returns presented in equations 5 and 6.

$$Stock_t = -\ 0.0900FR_t^+ - 0.0059FR_t^- + 0.1632ER_t^+ - 0.0027ER_t^- - 0.2887\,PR_t^+ - 0.4242\,PR_t^- \quad (5)$$

$$Bond_t = -\ 0.1059FR_t^+ - 0.0895FR_t^- + 0.0898ER_t^+ + 0.1132ER_t^- + 0.1902PR_t^+ - 0.0248PR_t^- \quad (6)$$

From equation 5, the positive and negative changes in country risk factors have a negative impact on stock returns in the long run, except for a decrease in

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economic risk ratings, which has a positive influence. The impact of changes in political risk ratings has a higher impact on stock returns than bond returns. Furthermore, the long run effect of political risk increases and decreases on stock market returns is greater in comparison to economic and financial risk. This evidence is consistent with the argument that political risk ratings are the major drivers of changes in emerging market stock returns (Bekaert, Harvey and Lumsdaine 2002; Bilson, Brailsford and Hooper, 2002). The effect of a political risk rating decrease is larger than the impact of an increase, implying that investors over-react to bad news due to herding effects or risk aversion (Nasr et al., 2018). In contrast, an increase in economic and political risk ratings has a higher long-run effect on bond market returns than a decrease in political risk ratings. An increase in risk ratings of a country signals an increase in the probability of a country not being able to meet its obligations. Therefore, investors increase their expected required returns, which drives bond prices down and causes investors to move their capital from stocks to safer assets, such as bonds (Mutize and Gossel, 2019). However, financial risk rating changes are found to have negative implications on the performance of stock and bond markets regardless of the direction of the change shock.

4.2. Short-run analysis

The results in Table 2 show that the previous month's shocks in stock returns have a significant and negative impact on future stock returns. A similar result is found for the bond returns, such that the previous month's bond returns influence future bond returns. When looking at the impact of economic risk on financial markets, we find that a decrease in economic risk ratings in the current period and two months lagged decrease have a negative and significant short-run impact on bond returns. However, there is no evidence of a short-run relationship between economic risk ratings and stock returns. Our results are consistent with the related literature, which suggests that economic risk has no short run effects on stock markets (Nasr et al., 2018; Sari et al., 2013). The argument is that stock market returns are forward-looking indicators, whilst economic risk ratings are coincident indicators, hence they will have no impact of stock returns because the markets have adjusted for economic risk shocks (Sari et al., 2013).

The absolute value of the current period's financial risk rating increase has a higher effect than the impact of a financial risk rating decrease from two months back, whilefinancial risk rating decrease has a negative impact on bond returns. This result implies that when financial risk is high, the return investors earn on

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their bond investment will decrease. This result is consistent with the findings of Afonso et al. (2014), which indicate that credit rating downgrades have negative implications for stock and bond market performance. Out of the three country risk components, political risk is observed to have the most pronounced and significant short-run impact on both financial markets. An increase in political risk ratings has a positive short run effect on stock returns, whilst a decrease in political risk ratings generally has a negative effect. The impact of political risk rating decrease from the previous month has a negative impact on stock returns, whereas the impact is positive for bond returns. The result is suggestive of the flight-to-quality phenomenon. An explanation of this is that an increase in country risk indicates an unfavourable investment environment, which causes investors to seek high returning investments in safer markets (Mutize and Gossel, 2019; Almahmoud, 2014). The error correction term shows the speed of adjustment and it is negative and statistically significant in both specifications, indicating that there is a short-run relationship between country risk and financial market returns and there is cointegration between these variables.

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Table 2: Nonlinear ARDL ECM results

Stock		**Bond**	
Variable	**Coefficient**	**Variable**	**Coefficient**
Constant	-0.003389	constant	0.038740***
$Stock_{t-1}$	-1.136578***	$Bond_{t-1}$	-0.977543***
ER_t^+	-0.185527	ER_t^+	-0.087790
ER_t^-	0.003097	ER_{t-1}^-	-0.110684**
FR_t^+	0.102243	FR_{t-1}^+	0.103514
FR_{t-1}^-	0.006689	FR_{t-1}^-	0.087455
PR_{t-1}^+	0.328146**	PR_t^+	-0.185913**
PR_{t-1}^-	0.482090*	PR_{t-1}^-	0.024211
ΔFR_t^-	0.533992***	ΔER_t^-	-0.225689*
ΔFR_{t-1}^-	-0.148681	ΔER_{t-1}^-	0.216203
ΔFR_{t-2}^-	-0.426489*	ΔER_{t-2}^-	0.322060**
ΔPR_t^+	1.535835***	ΔFR_t^+	-0.061810
ΔPR_{t-1}^+	0.495740	ΔFR_t^-	0.143611
ΔPR_{t-2}^+	-0.167330	ΔFR_{t-1}^-	-0.410237***
$\Delta \ PR_{t-3}^+$	-1.108472***	ΔFR_{t-2}^-	-0.322425***
ΔPR_t^-	-1.341612**	ΔPR_t^-	0.283121
ΔPR_{t-1}^-	-1.434938**	ΔPR_{t-1}^-	0.914579***
Crisis	-0.040767***	ΔPR_{t-2}^-	0.281263
ECT	-1.136578***	ΔPR_{t-3}^-	0.650325**
		Crisis	0.008408
		ECT	-0.977543***
Diagnostic tests			
χ_{SC}^2	0.174839		1.048921
χ_H^2	3.600486		0.534665
χ_{JB}^2	5.326003*		12.59058***

Note: the superscripts "+" and "-" denote positive and negative partial sums, respectively.

χ_{SC}^2, χ_H^2 and χ_{JB}^2 denote the LM tests for serial correlation, heteroscedasticity and normality.

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In summary, there is a disparity in the results obtained from the NARDL estimations among the variables of interest, with regard to the sign and statistical significance of the impact of political, economic and financial risk on stock and bond markets. Our analysis provides key evidence of a strong influence of political risk in the long- and short-run for stock and bond returns. This result is similar to the related literature, which suggests that political risk is an important determinant of stock market performance in emerging markets (Nasr et al., 2018; Mensi et al., 2016; Bilson, Brailsford and Hooper, 2002; Bekaert et al., 2002). The negative response of stock returns to political risk increase can be explained by investor's risk aversion. Political risk reduces investor's willingness to invest in high risk markets, resulting in a decrease in stock returns (Mutize and Gossel, 2019).

5. CONCLUSION

An empirical analysis was conducted to investigate how changes in economic, financial and political risk ratings affect stock and bond markets using the nonlinear autoregressive distributed lag (NARDL) models. The results suggest that there exists a long- and short-run relationship between risk ratings and financial markets and that the effects of the components of country risk are heterogeneous in both markets. The effect of financial and political risk on both financial markets is asymmetric in the long and short-run. However, the impact of economic risk is asymmetric in the short-run for bond returns while showing no signs of significant asymmetric effects on stock returns. Our findings show both markets react to political and financial risk shocks, while uncertainties in economic policy indicate serious immediate implications on the bond markets.

The results have implications for domestic and international investors who need to consider the effects of financial and political stability when selecting assets for diversification. In general, the impact of a negative shock to country risk ratings is quantitatively higher than the impact of positive shocks. This means that the cost of economic, financial and political uncertainty is larger than the reward associated with economic, financial and political stability; implying that investors overact to bad news about country risk compared to good news. The uncertainty caused by rating decreases, therefore, may result in persistently low returns in financial markets which will eventually threaten the stability of such financial markets. To maintain a stable investment environment and reduce fluctuations in stock and bond markets, it is important that regulators and policymakers establish early-warning and response mechanisms for the manifestation of economic,

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financial and political risk events. We submit that investors should consider the cost associated with each of these risk factors and should thus be rewarded with a country risk premium. Henceforth, further research can explore the pricing of the country risk components within the dynamic environment of financial markets.

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-RESEARCH ARTICLE-

THE IMPACT OF MICROFINANCE PROGRAMME PARTICIPATION ON HOUSEHOLD FOOD SECURITY IN MALAWI

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–Abstract–

This article empirically examines the impact of microfinance programme participation on household food security in Malawi. There has been an increase in the role of micro activities such as microfinancing that target the poor, vulnerable, and marginalised people in development agendas. This makes it essential to assess the effect of micro activities, for example, microfinance programmes on welfare indicators such as food security. The study used cross-sectional data that was collected in Malawi for the Third Integrated Household Survey in 2010-2011. It employed the Heckman Selection Model, which was deemed applicable since the selection to participate in credit programmes is typically non-random. Total real annual consumption per household was used as a proxy to capture household food

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security. The results of the study indicate that females contribute more to the food security state of a household than males. It also established that education level significantly and positively contributes to the state of household food security. Lastly, the study established that households that participated in microfinance programmes experience improvements in their status of food security. In light of this, it recommends that policymakers expedite the operationalisation of microfinance programmes with the intent to increase participation by improving policies such as the Microfinance Policy and Action Plan (2002). There should also be an increase in adult literacy programmes and development of microfinance institutions that target women.

Key Words: Agricultural sector, microfinance, food security, household

JEL Classification: A10 D10 D13

1. INTRODUCTION

The economy of Malawi is heavily dependent on the agricultural sector, which accounts for one-third of that country's Gross Domestic Product (GDP) (Food and Agriculture Organisation [FAO], 2015). Apart from being the main source of income in Malawi, the agricultural sector is also a source of food, since it contributes much to consumption and food levels in the country. The Malawian diet is mainly composed of cereals: primarily maize, starchy roots (cassava and potatoes) and starchy fruits (plantains) (National Statistics Office, 2012). Most of the crops in the dietary needs of most Malawians are grown by poor smallholder subsistence farmers in rural areas of the country. The farmers are engaged in rain-fed agricultural production and account for three-quarters of the country's agricultural production (World Bank, 2008; USAID 2019). However, local agricultural production by smallholder farmers is affected by numerous adverse factors such as unfavourable climatic conditions, low agricultural productivity and poverty, that tend to contribute to widespread food insecurity among the population leading to food crises in the country (FAO, 2015). As a result, many people in the country are affected severely by food shortages that prevail in this situation. Thus, interest in understanding the characteristics, demand and impacts of credit for investment in both agricultural and non-agricultural sectors is becoming more important for the Malawian government because of the increasing role played by small-scale farmers in poverty alleviation and the attainment of food security (Hulme & Mosley 1996; World Bank, 2017).

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Household food insecurity remains a major problem in Malawi. The Malawi Vulnerability Assessment of 2015 projected the food insecure population to be 2,833,212; almost countrywide in 25 out of 28 districts (Department of Disaster Management Affairs [DoDMA], 2015). In light of this, quite a number of policies have been developed, and several initiatives have been implemented to achieve food security in Malawi. For instance, small-scale activities that target the rural poor, the marginalised, and the vulnerable, such as microcredit programmes have been developed to improve food security. These programmes have become an important instrument for increasing welfare in many developing countries such as Malawi (Chirwa, 2002). According to Pakrashi Maitra and Islam (2014), an important link exists between microfinance and food security in the sense that participation in credit programmes may lead to 'investment-led' benefits that result in three-quarters levels of income, consumption and wealth. In the presence of income from microfinancing organisations, households can diversify their financial resources which increases the resources available to them and releases the budget constraints they face (Ibid).

Overdependence on local agriculture exposes households to periodic unemployment and seasonal fluctuations in food security. However, income emanating from non-agricultural sources, such as microfinance programmes, could safeguard households against such seasonal food insecurity (Pakrashi et al., 2014). Many key players operate in microfinance business in Malawi. These organisations can either exist as Commercial Banks falling under the Banking Act and supervised by the Reserve Bank of Malawi (RBM), or as semi-formal institutions with several legal forms and ownership structures ranging from Non-Governmental Organisations to cooperatives, private and public companies, and parastatals (MCC, 2004). Semi-formal institutions in the microfinance sector are the most active players in providing microcredit to poor households and individuals. In terms of policy aspects, Malawi as a country recently agreed to transition from the Millennium Development Goals to the Sustainable Development Goals (SDGs). The second goal of the SDGs is 'Zero hunger' where countries are encouraged to strive to end hunger, achieve food security and improved nutrition and promote sustainable agriculture (Sachs, 2012). Micro activities such as microfinancing are some of the interventions that Malawi has taken to ensure food security in the country. Micro activities are in this case, emphasised because they are better in terms of reaching the poor and marginalised.

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Against this backdrop, the present study aims to assess the effect of microfinance programme participation on household food security in Malawi. The specific objectives of the study are to: (i) determine if participation in a formal loan organisation by a household affects food security; (ii) determine if the gender of the household head affects food security; and (iii) determine if the education level of the household head affects food security. This study seeks to fill the gap in testing various factors, including participation, that affect household food security. It also seeks to inform policymakers on the relevance and contribution of small-scale activities such as microfinance programmes in poverty alleviation and welfare improvement of Malawians by conducting a nationwide study on the impact of microfinance on food security.

2. LITERATURE REVIEW

Although most microfinance institutions are yet to achieve financial self-sufficiency, there is much evidence that poor households that participate in the formal loan programmes experience benefits accruing from increased levels of income and reduced levels of food insecurity (Hulme & Mosley, 1996). For instance, the success of the Grameen Bank in Bangladesh showed that participation in loan programmes increased the household calorie consumption by 3.11% per day and the per capita consumption per day by 2.034% (Pakrashi et al., 2014). These results further show that when compared to non-participants, households that were involved in loan programmes were able to meet their minimum daily requirements. Also, other than improvement in food, there was a notable improvement in other welfare aspects such as maternal and child nutritional status. Still, programme participation was associated with a significant decline in the prevalence of stunted growth among children under the age of five (Pakrashi et al., 2014).

In Kenya, a study conducted by Mutisya et al. (2016) found that education level had a significant effect on household food security. The probability of being food insecure decreased by 0.019 for a unit increase in the average years of schooling for a household. Educated households were more likely to get better jobs and higher income, and this, in turn, had positive impacts on food security. Furthermore, educated people invested in enterprises which contributed positively to food security. Access to credit by women also leads to positive improvements in household welfare. A study by Annim and Alnaa (2013) found that the participation of rural women in the Upper East Region of Ghana contributed positively to consumption expenditure and poverty reduction in rural households.

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The effect of rural women's participation on household food security was a 40 % increase in consumption expenditure.

Both researchers and policymakers generally acknowledge that poor rural households in developing economies lack adequate access to financial resources. The lack of access to finance, in turn, has negative consequences for various aggregate and household-level outcomes, including productivity, food security, nutrition, health and overall welfare (Diagne et al., 1996; Carman and Zamarro, 2016). Most poor households lack access to loans that can be used to improve their living standards. The reasons for this have ranged from the risk aversion of lenders to the punitive cost of credit, the requirement of collateral by most formal institutions and the misdirection of financial institutions towards certain sectors designated as priorities for the government while neglecting those that benefit the poor (Masanjala, 2002). Since most financial institutions, such as banks, require collateral, microfinance institutions have come in to provide capital to the poor, asset less rural households who would otherwise be ineligible to access credit (Pakrashi et al., 2014). The loans acquired help to supplement money for both agricultural (food production) and non-agricultural investments (small enterprises). In Malawi, several studies have been conducted to understand the impacts of microfinance programmes on poverty. However, most of these studies have not put a keen emphasis on the impacts of microfinance programmes on welfare aspects such as food security. Kwataine (2002) conducted a study on the impacts of microfinance programmes on welfare indicators within Zomba rural areas, which found that female-headed households were more likely to experience improvement in food security status than male-headed ones.

Another study conducted in Karonga district (Malawi) by Dunford (2013) found that microfinancing had positive impacts on household welfare indicators. Highly vulnerable households in villages which were enrolled in microfinancing programmes were 11.8% to 16.3 % more likely to exit the worst food security category (severely insecure). Furthermore, they also experienced a 1.3 to a 1.4-point reduction in a continuous food insecurity score relative to vulnerable households that had not been enrolled in any of the microfinance programmes. Increased levels of income from microfinance were associated with improved food security. Therefore, to fully assess the significance of micro activities in development agendas, it is necessary to study the impacts of micro activities such as microfinance activities on a national scale.

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3. METHODOLOGY

This section presents the methodology of the study, outlining both statistical and econometric methods that were applied.

3.1. Modeling framework and econometric specification

The study used econometric methods to analyse the impact of various variables, at household and individual levels, on food security. It adopts the Heckman Selection model, which was also used by Masanjala (2006). The Heckman Selection model is a two-stage model which was chosen because it has been noted that selection into credit programmes may be non-random. This model thus accounts for any selection bias.

In the first stage, a probit model is estimated to determine participation in a credit programe. The probit model is given as follows:

$$\Pr(d_i = 1) = \Phi(\gamma' Z_i) \qquad (1)$$

Where d_i is the participation status of household i: d_i=1 if the household was involved in the credit programme and d_i=0 otherwise. $\Phi(\cdot)$ is the cumulative standard normal distribution and the vector Z_i contains variables thought to affect a household's decision to participate in a credit programme. These include household level of income, household dependency ratio and household adult population size. The variable for capturing participation is access to a loan.

The model is estimated using a likelihood function:

$$d_i = \Phi(\gamma' Z_i) + v_i \qquad (2)$$

The dummy variable for participation d_i is then estimated and included in the main welfare function that will capture food security. As per the requirement of the Heckman model, the second equation is estimated using Ordinary Least Squares and is given by

$$Y_i = \beta_0 + \beta' X_i + d_i \Delta + \varepsilon_i \qquad (3)$$

Y_i is the welfare outcome variable capturing food security and is presented by a proxy, total real annual consumption per household. β_i are the regression coefficients. X_i is a vector that captures household characteristics including GENDER, a variable capturing gender of the household head. AGE, a variable

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capturing age of household head, AGE2 captures square of the age of the household head, EDU captures the education level of the household head, HHSIZE captures the household size, LOCATION captures the location of the household whether urban or rural and εi is the error term capturing unexplained part of the regression.

In order to have differences in welfare outcomes attributed to participation, a necessary condition is that participants match nonparticipants except for treatment (Masanjala, 2006). When this happens the welfare outcome, food security, is statistically independent of treatment status, d_i and the equation can be estimated as in (3). But it has been noted that selection in credit programmes is non-random, such that the dummy variable capturing participation d_i may end up being correlated with an error term ε_i and $E(\varepsilon_i d_i) \neq 0$.

In order to correct for the correlation between the error term and the dummy variable, Heckman (1988) suggests incorporating the expected value of the selection error term into the equation of the welfare outcome, food security. The correction error term is found by computing the Inverse Mills Ratio given by:

$$\lambda_i = E(v_i \mid d_i) = \frac{-\phi(\gamma' Z_i)}{1-\Phi(\gamma' Z_i)} \qquad (4)$$

The Inverse Mills Ratio is computed and fitted into the regression. Therefore the empirical welfare equation becomes

$$E(w_i \mid d_i = 1) = \beta_0 + \beta' X_i + \theta_1 \lambda_1 \qquad (5)$$

$$E(w_i \mid d_i = 0) = \beta_0 + \beta' X_i + \theta_0 \lambda_0 \qquad (6)$$

where d_i=1 if the households participated in credit programmes and d_i=0 otherwise.

An empirical problem that is common in this model is finding appropriate identification variables (Masanjala, 2006). Estimation of participation is only possible when X_i and Z_i are not common. In this case, the variables in the two models are different; thus, the model can be estimated.

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3.2. Description of Variables

3.2.1. Dependent Variable

The study uses Total real annual consumption per household as a proxy to capture food security, which is the log of total real annual household consumption. This log is used because the variable may be skewed and taking its log will make it normally distributed (Benoit, 2011).

3.2.2. Independent Variables

The independent variables are described in Table 3.1 as follows,

Table 3.1: Description of independent variables

Variable	Description
Gender	Male=1, females=0
Age	The diminishing effect of age on food security will be captured by a quadratic variable, age squared.
Education head	(levels of education for household head)1= no education, 2=primary education, 3=secondary education and 4=tertiary education.
Household size	number of people in a household
Participation	Population that participated in the scheme
Location	Location=1 urban areas, location = 2 for rural areas.

3.3. Data source and study design

The study uses data collected by the National Statistics Office in the Third Integrated Household Survey (IHS3) in 2010-2011, where a total of 12480 households were administered. The IHS3 sampling frame is based on information and cartography from the 2008 Malawi Population and Housing Census (PHC) (NSO, 2012). The study is divided into stratum, namely: Northern Region-Rural, Northern Region-Urban, Central Region-Urban, Central Region-Rural, Southern Region-Rural and Southern Region-Urban. The urban area is defined by the four major cities in the country: Mzuzu, Lilongwe, Blantyre and Zomba Municipality. The data in the study are cross-sectional, which implies different characteristics for any household.

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4. RESULTS AND DISCUSSION

4.1. Descriptive Statistics

Table 4.1: Loan Participation

Received Loan	Frequency	%
No	10,670	86.95
Yes	1,601	13.05
Total	**12,271**	**100.00**

Table 4.1 shows the number of people who participated in formal loan schemes. It shows that 86 % of the sample did not participate in any formal loan organisation, and only 13.05 % participated in loan schemes provided by formal loan organisations.

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Table 4.2: Descriptive Statistics

Variable	Mean	Std. Dev
Dependency Ratio	0.4612785	0.2634462
Adult population	2.00	1.039785
Income Level	65836.45	90997.51
Household Size	5.00	2.207536
Marital status		
Married (%)	0.7329	
Separated, Divorced (%)	0.1089738	0.3116191
Widow (%)	0.1258456	0.3316888
Never married (%)	0.0322765	0.1767406
Age	42.00	16.22512
Age squared	2039.7	1626.399
Gender	0.75	0.2178613
Education Level		
No education (%)	0.7002936	0. 165782
Primary (%)	0.1022672	0.3030117
Secondary (%)	0.1666123	0.3726446
Tertiary (%)	0.0308269	0.1728557
Location (%)	0.8180262	0.3858386
N **12271**		

The descriptive statistics in Table 4.2 capture variables for both the first and second regression models that were run in the study. The descriptive statistics show that the average household size was five people per household and that the average age of the household head was 42 years. At least 75% of the households were headed by a male 73% of household heads were married, followed by those who were widowed (12%). The descriptive statistics also show that 10% of household heads were separated or divorced, and 3% had never been married. As for education, 70% of household heads had no education, followed by those with secondary school level education (16.7%). Meanwhile, 10% had primary school as the highest level of education, and the lowest were those who had tertiary

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education with 3%. The table also shows that 81% of the households were located in the rural area, while 19% were located in urban areas. In sum, these descriptive statistics indicate that married male shaded most households; most heads had no education, and most households in the study were located in rural areas.

4.2. Regression Results

4.2.1. Probit (Discrete Choice) Model

Due to the nature of the probit model, the coefficients cannot be interpreted directly to represent probabilities (Gujarati, 2004). In order to interpret them, they have to be at the margin, that is to say, the derivatives are used, and these can be directly interpreted.

Table 4.3: Marginal effects at Means

Marginal effects after Probit, Y=Pr (received a loan)

Variable	**Margin**	Z	**P > |z|**
dependency ratio	-0.0193222	-1.43	0.153
	(0.01353)		
income level	0.1446e-07***	4.85	0.000
	(0.0000)		
adult population	0.033163***	10.98	0.000
	(0.003)		
_cons	-1.448563	-39.90	0.000
	(0.0363015)		

Standard error in parenthesis, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 4.3 presents results for the first regression model, which employed participation in credit programmes as the dependent variable which had two categories and a dependency ratio, income level and adult population as the independent variables. As indicated, the first variable presented is a dependency ratio which was found to be insignificant; hence, it was omitted. The second variable was the income level, which was found to be significant at 1%. Income level was represented by household expenditure and participation in a formal loan programme. The margin effect result was 0,14, meaning that the probability that income level will increase household participation in the credit programme is 14%. This result is in line with the apriori assumption that households that have

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high levels of expenditure tend to seek more sources of income to finance the expenses and are more likely to participate in loan programmes.

The third variable in the regression model was the adult population. The results show that there was a positive relationship between adult population and participation in a loan programme significant at 1%. This is contrary to the apriori assumption. This could be the case perhaps because, in households with higher adult populations, expenses for food, education, health and other necessities are higher, which might lead to the greater participation in microfinance to cover the expenses. From the table, the probability that the adult equivalent population in a household will increase household participation in the credit programme is 3.3%. Section 4.4.2 presents the results of the second regression model.

4.4.2. Determinants of Food Security

Table 4.4 presents the results of the second part of the regression model, which is the OLS regression. In this regression, participation was included after calculating the Inverse Mills Ratio. In the table of results, this is captured by the variable IMR.

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Table 4.4: Effect of Credit Participation on Food security

Variable	Coef.	T	P > |t|
Age	0.0029034	1.58	0.114
	(0.001835)		
Age2	0.0000151	0.81	0.419
	(0.0000187)		
Gender	-0.2445314***	-9.94	0.000
	(0.0246115)		
Education Level			
Primary	0.1922823***	12.01	0.000
	(0.0160056)		
Secondary	0.4072453***	28.70	0.000
	(0.0141874)		
Tertiary	0.9101386***	33.31	0.000
	(0.027323)		
Household Size	-0.0250615***	-6.17	0.000
	(0.004064)		
IMR	-2.79551***	-40.89	0.000
	(0.0683634)		
Location	-0.3780363***	-27.25	0.000
	(0.0138708)		
_cons	16.87193***	123.79	0.000
	(0.01362955)		

Standard error in parenthesis, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Effects from the independent variables on the dependent variable will be interpreted from Table 6.

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Age and Gender of the household head

As indicated in Table 4.4, the first variable in the regression model is age. However, since the variable was found to be insignificant, it was omitted for interpretation. The second variable is Gender of the household, which was found to be significant at 1%. It also shows that there was a negative relationship between gender and food security. Holding other regressors constant, the coefficient for gender shows that men spent 24.4% less than females implying that the male-headed households were less likely to be food secure than the female-headed households. A study by Kwataine (2002) also found similar results and attributed this trend to the higher involvement of women than men in food production.

Education level of household head

The third variable in the regression model was education level of the household, which is significant at 1% and was also found to have a positive influence on food security. Holding other regressors constant, the higher the education level the more likely to be food secure. In this case no education was used as a reference point, meaning those with primary education spent 19.2% more than those with no education, whereas heads with secondary education spent 40.7% more than the reference point and those with tertiary education spent 91% more than the reference point. The results signify that the higher the education level, the more likely to be food secure. This is in line with the apriori assumption as well as a study by Dunga and Dunga (2017). Therefore, higher levels of household head education contribute positively to food security.

Household size

Household size is the fourth variable with a p-value of 0.00. The variable negatively influences food security. Holding other regressors constant, an increase in the household size by one person decreases total real annual consumption of the household by 2.5%.

Inverse Mills Ratio (Participation)

The sixth variable is the Inverse Mills Ratio, which accounts for participation and corrects participation for selection bias. Holding other regressors constant, IMR shows that there is a significant negative selectivity bias among households. As interpreted by Masanjala (2002), a negative selectivity bias shows that those who participated in the program(loan) experience higher levels of the welfare variable,

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in this case, food security, and those that did not participate showed lower levels of food security. This implies that the mean total real annual consumption per household is likely to be higher for households that participated in loan programmes than those that did not participate in them. This is in line with the findings of Pakrashi et al. (2014) who conducted a similar study in Bangladesh and found that households that participated in microfinance programmes experienced higher levels of food security, as measured by calorie intake than those who did not participate.

Location

The last variable is location, which was found to be significant at 1%. The study shows that there is a negative relationship between the location of the household and food security. Holding other regressors constant, food security status for a household located in the rural area was lower by 37.8% compared to urban based households.

5. CONCLUSIONS

This study set out to assess the effect of microfinance programme participation on household food security in Malawi. The specific objectives were to assess the effect of gender of household head, education level of household head and participation in microfinance on household food security. This was addressed by running a Heckman Selection model to correct for selection bias. Total real annual consumption per household was used as a proxy for food security.

To assess the effect of gender of the household head on food security, the study hypothesised that the gender of a household head has a significant negative effect on food security. This was because of how the dummy variable, gender, was defined: gender =1 for males and 0 for female. The results from the study are in line with the hypothesised expectation. Men were found to be less involved in food production as well as consumption in a household. Thus they are likely to have a negative effect on food security.

Secondly, the study sought to assess the effect of education level on household food security. It hypothesised that there is a significant positive effect of education level on household food security. From the results, it is evident that those with higher levels of education had higher levels of food security, as shown by the total real annual consumption. For households where the head had tertiary education as the highest level of qualification, food security was highest by 91% while for those that had very little education such as primary education, food security was

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expected to increase by only 19.2%. Finally, the overarching goal of the study was to examine the influence of participation in microfinance on household food security. It was hypothesised that participation in credit programmes had a significant positive effect on food security. From the results, as presented by the Inverse Mills Ratio, participation had a positive effect on food security. The negative sign of the Inverse Mills ratio shows that there is a negative selectivity bias. That is to say, for households that participated in microfinance, total real annual consumption increases, while for those who did not, the total real annual consumption decreases.

6. POLICY IMPLICATIONS

The main aim of the study was to analyse the role of small-scale activities such as microfinance programmes in achieving development goals such as ending hunger and improving food security. Since the study found that participation had a positive influence on food security, policymakers should seek to enhance the operationalisation of microfinance institutions so that they are more effective. In order to achieve this policy, such as the Microfinance and Action Plan (2002), should be enhanced to promote and develop a sustainable microfinance industry that provides credit, saving opportunities and other financial services to poor and marginalised people. Furthermore, since most microfinance programmes lack adequate financial resources to enable sustainability, policymakers should seek to integrate funding for microfinance into the national budget as a development agenda in order to ensure their sustainability.

The study also found that the education level of a household head has a positive impact on food security. This supports policies such as Free Primary Education as well as the Adult Literacy Programme that can be used as a means to achieve development through welfare increment. The study also found that men had a negative effect on food security; thus, for policy makers, it is important that policies aimed at increasing food security be targeted specifically towards women. This supports the development of microfinance institutions such as the Foundation for International Community Assistance (FINCA) that provide microfinance to women.

7. LIMITATIONS AND AREAS FOR FURTHER STUDY

The results from the study are important to policy makers in development agendas that seek to be inclusive. However, there was no control over the collection or questions that were asked in order to attain the data in the IHS3. Furthermore,

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since the questions in the IHS3 questionnaire were of recall in nature the information may not be accurate in capturing actual situations on the ground.

The study used cross-sectional data, which may be good at capturing various characteristics at the individual household level, but is not adequate in capturing the time dynamics that can enhance a study of this nature. Therefore, similar research can be conducted using panel data to capture the time dynamics in the effect of microfinance programme participation on household food security.

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-RESEARCH ARTICLE-

THE EFFECT OF ECONOMIC GROWTH AND EXCHANGE RATE ON IMPORTS AND EXPORTS: THE SOUTH AFRICAN POST-2008 FINANCIAL CRISIS CASE

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─Abstract ─

Imports and exports play a vital role in every country's economy. Both of these variables depend to a great extent either on the appreciation or depreciation of the country's currency. Imports, exports and exchange rate are some of main determinants of economic growth and are also affected by economic growth. This paper aims to determine the effect of exchange rate and economic growth on both exports and imports in the South African economy. To achieve this objective, a test for cointegration was carried out using the autoregressive distributed lag (ARDL) model. This model was applied on a time series quarterly data from 2008 to 2018. The error correction model and Granger Causality tests were performed to define the short-run and causal relationship amongst variables. The regression analyses reveals the existence of a long-run relationship within the estimated variables. In support of the economic literature, the study findings indicated that economic growth positively effects on both exports and imports. Nonetheless, the analysis depicted that in the long-run, Rand appreciation leads to more imports and fewer exports. Furthermore, the Granger Causality text suggested a bidirectional causality between the exchange rate and imports; between economic growth and imports, and between the exchange rate and economic growth. Succinctly, the used variables have a causal relationship with one another. Based on the findings, the study highlighted the pertinence of economic growth and emphasised the role played by the exchange rate in maintaining the balance between imports and exports. The study recommended that both currency value

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and economic growth should be given urgent attention in order to revive the deteriorating economy of South Africa.

Key Words: imports and exports, ARDL, GDP, exchange rate, South Africa

JEL Classification: B22, B23, B26, C2, C32, F43, F62**a**

1. INTRODUCTION

A country's export of goods and services is one of the major factors in social and economic development (Konya, 2006). Nonetheless, exports do not always contribute to economic growth. For instance, if the market competition becomes more than expected; if exported products are unpopular in the markets or the targeted country for export is experiencing instability, economic growth will have to decrease (Bakari & Mabrouki, 2017:68). On the other hand, more imports are generally regarded as a reflection of the country's weakness in achieving its needs. Unlike exports, imports lead to the exit of domestic currency and weakens the trade balance, resulting in low economic growth. However, in some cases, imports are considered as a source of economic growth, particularly if they comprise electronic and hardware equipment that assists in improving and increasing investment levels (Bakari & Mabrouki, 2017:68). Based on these mentioned and other reasons, imports and exports remain a contentious subject for their ability to impact on economic and social life.

Despite its economic fluctuations, South Africa is one of the most important economic countries on the African continent (Angelopulo, 2017). Between 2015 and 2017, South Africa was the top African country exporter of manufacturing products to the rest of the world (United Nation, 2019:11). South Africa was also ranked first in Africa's agricultural exports to the rest of the world. Not only does South Africa excel in exporting to the rest of the words, its share of exports within the African continent is also highly significant (United Nations, 2019). Besides the level of exports, South Africa is one of the countries that import some goods and services. Between 2015 and 2017, South Africa was one of the top African country importers of fuel, machinery and transport equipment (United Nations, 2019). During this period, the South African currency was fluctuating and one could ask if this Rand volatility was not the reason for high exports.

A number of studies were conducted to determine the effect of both exports and imports on economic growth. Most of these focussed on the relationship between exchange rates, imports and exports while others examined the link between economic growth, export and import levels. None of these examined how economic growth and exchange rates simultaneously influence import and export

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levels. In other words, they broadly focused on one side of the equation. This paper aims to scrutinise how these two economic indicators (economic growth and exchange rate) impact on both exports and imports in the South African economy.

2. LITERATURE REVIEW

2.1. Theoretical review

2.1.1. Economic growth, imports and exports

Achieving sustainable economic growth is one of the major purposes of any country, because economic growth is fundamental to any form of development and societal wellbeing (Sulaiman & Saad, 2009). The Neo-classical theory argues that the country's level of exports and imports plays a significant role in determining economic social development (Vijayasri, 2013). The same theory argues that exports assist in determining the foreign exchange rate required by a country to import goods and services that are not domestically produced. Thus, beside the direct positive relationship that exists between exports and economic growth, exports growth creates and boosts investment opportunities and economic levels (Jordan & Eita, 2007).

2.1.2. Exchange rates, imports and exports

Sekkat and Varoudakis (2000) assert that countries that have promoted and enhanced their export levels, have also experienced depreciation in their currencies. This statement is in line with Standard Trade Theory, suggesting that a country's currency depreciation favours the country's export performance. The reason for this is that the depreciation of a country's currency makes domestic exports comparatively inexpensive to foreign buyers, as they switch their expenditure from their domestic goods and services to inexpensive imports (Appleyard, Field & Cobb, 2010). Despite the presence of numerous approaches that elucidate the effect of currency depreciation on export performances, only two approaches are considered in this paper. The first is the elasticity approach. This approach asserts that the responsiveness of quantities exported as a result of currency depreciation depends on the extent to which domestic goods and services are demanded by foreign buyers and also to the *elasticity* of domestic suppliers who export those goods or services. Demand elasticities refer to the quantity responsiveness of demanded goods and service to variations in price. Subsequently, if goods or services are price elastic, the quantity of demanded goods and services will increase more than the decline in relative prices. As a result, the total revenue from exports will increase in response to the rise of

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demanded goods and services (Alemu & Jin-sang, 2014:65). The elasticity approach is, however, criticised for not taking into account the behaviour of other markets for goods and services. Kim (2009: 214) states that the elasticity approach disregards the effects currency depreciation on macroeconomic indicators ascending from price fluctuations and production changes.

The second approach is absorption approach. Under this approach, exports level is affected by currency devaluation in two ways. The first way is the cash balance effect, where the exchange rate depreciation results in a reduction of consumptions of goods and services within the domestic market (diminished absorption). Not only this effect causes the transfer of resources towards exports production but also increases the exportable quantity of goods and services (Alexander, 1952). Nonetheless, this effect works under the assumptions that money supply is intransigent, no capital mobility and money-holders prefer to keep real cash holdings as prices rise. The second way is the effect of idle resources. I this particular case, the devaluation of the country's currency increase exports of goods and services, if these exportable goods and services do not result in a general increase in these goods' price. Additionally, the quantity of goods and services to be exported will depend on the ability of foreign buyers to absorb that increased exports (Alexander, 1952).

2.2. Empirical literature review

Following the argument that previous studies failed to determine the relationship between exports, imports and economic growth, Lin and Li (2001) re-examine the effect of international trade to the Chinese economic growth and the study results suggested uneven positive relationship between export and economic growth. Another study was conducted by Velnampy and Achchuthan (2013) to analyse how imports and exports impact on Sri Lanka's economic growth. The study findings revealed the existence of a strong relationship between imports and exports and that both of these variables possess a significant effect on the Sri Lanka economic growth. Additionally, Hussain and Saaed (2014) scrutinised the nexus of economic growth, imports and exports in Saudi Arabia. The study found the presence of a long-run relationship among variables with the absence of causality among variables. Contrary to those studies that found a long-run relationship between import-export and economic growth, the study of Mehta (2015) analysed the relationship between imports, exports and economic growth in the India economy. The study outcome revealed the absence of a long-run relationship among variables. The granger causality test results indicated that

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GDP causes exports and yet exports do not lead to economic growth. No causation was found between economic growth and imports.

On the other hand, there has been vast literature analysing the effect of exchange rate on export levels, mostly focussing on the responsiveness of exports towards exchange rate fluctuations. A large volume of literature made a comparison between short-run and long-run elasticities. This kind of analysis is significant since economic theory argues that in the absence of distortions or market failure within the economy, currency depreciation has no long-term effect on trade movement as it does not alter the relative price. However, in the short-run, the exchange rate fluctuation has a significant effect on prices and consequently causes changes in resource allocation between non-tradable and tradable goods and services (Auboin and Ruta, 2011:10). Nonetheless, Auboin and Ruta (2011) argue that in the presence of distortions or market failures, an under-valuation of the country's currency may have long-run effects on the total level of imports or exports.

Using the Vector Error Correction Model, Variance Decomposition and Impulse Response Function, Jarita (2008) investigated the influence of exchange rate fluctuations on the prices of imports and exports in Malaysia between 1999 and 2006. The study result indicated that variations of exchange significantly influence changes within import and export prices in the Malaysian trade. Contrary to Jaritas (2008) findings, a study of Moshen (2013) examined the impact of exchange rates on both import and export product prices. Results suggested that the exchange rate does not affect macroeconomic variables. Muhammad (2014) analysed the effect of exchange rate volatility on imports, and exports and, found that exchange rate depreciation positively affects exports levels.

Based on these contradicting findings from various studies, it is important to conduct a thorough analysis to determine what the South African case should be. The subsequent section focuses on the methodological framework followed by estimations and result discussion.

3. DATA AND METHODOLIGAL FRAMEWORK

3.1. Data and variables

Time series data running from 2008Q1 to 2019Q1 was used to scrutinise the effect of both economic growth and the real exchange rate on the South African imports and exports. The time frame was chosen based on the availability of data, which was obtained from the South Africa Reserve Bank (SARB). In order to

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uniformalise the used series, variables were transformed into a natural logarithm. Exports and imports were used as dependent variables, the economic growth and the exchange rate were considered as independent variables. Next section discuses the unit root test.

3.2. Unit Root Test

Various tests such as the Augmented Dicky (AD), the Augmented Dicky Fuller (ADF) and the Philip and Perron's test are used to detect a unit root within the series. In this study, the Augmented Dicky Fuller (ADF), is used for a unit root test.

Using the AR (1) model, the unit equation is expressed as follow:

$X_t = \gamma\, X_{t-1} + e_t$ ..... (1)

Where e_t denotes white noise stochastic and $|\gamma| < 1$ suggests a stationary condition

Broadly, three cases are possible:

(i) When $|\gamma| < 1$: the series is stationary
(ii) When $|\gamma| > 1$: the series is explosive
(iii) When $|\gamma| = 1$: the series has a unit root, thus it is not stationary

In other words, if $|\gamma| = 1$, then by deducting X_{t-1} from both sides of equation (1), we will have:

$X_t - X_{t-1} = X_{t-1} - X_{t-1} + e_t$ ..... (2)

$\Delta X_t = e_t$

Where ΔX_t refers to a stationary series. In this case, if the series X_t is stationary at level, it is said to be integrated of order zero and it is written as I (0). However, if it is stationary after being taken to the first difference, it is said to be integrated of order one and written as I (1). As mentioned before, ADF is used in this study for the unit root test and order of integration verification.

3.2.3. Augmented Dicky-Fuller (ADF) Test for Unit Roots

The ADF test is preferable as it rectifies some errors from the DF test. To eliminate autocorrelation amongst residuals, it adds an extra lagged term of the dependent variable. In this study that extra term is determined by the Schwartz information Criterion (SIC). Although the AIC is the most prevalent and most used, the SIC is more desired for its strictness and rigorous features (Neath &

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Cavanaugh, 1997:559). The Augmented Dicky-Fuller unit root test equation is expressed as follows:

$\Delta X_t = X_{t-1} + \sum_{i=1}^{p} \beta_i \, X_{t-1} + \varepsilon_t$ …… (3)

Where Δ is the first difference operator, p is the lag operator, t is the time subscript and ε is the error term. Using the ADF tests, the following three options are possible:

(i) Without intercept and trend (none): $\Delta X_t = \gamma X_{t-1} + \sum_{i=1}^{p} \beta_i \, \Delta X_{t-1} + \varepsilon_t$ ..... (4)

(ii) Without intercept: $\Delta X_t = \alpha_0 + \gamma X_{t-1} + \sum_{i=1}^{p} \beta_i \, \Delta X_{t-1} + \varepsilon_t$ …….. (5)

(iii) With intercept and trend: $\Delta X_t = \alpha_0 + \beta t + \gamma X_{t-1} + \sum_{i=1}^{p} \beta_i \, \Delta X_{t-1} + \varepsilon_t$ ….. (6)

The null hypothesis (H_0) for the ADF unit root test suggests that the series contains a unit root and the alternative suggests otherwise. The decision is made based on the ADF critical values and the T-statistics or P-values. If t-statistics > the ADF critical value, the null hypothesis is not rejected, meaning that the series contains a unit root. However, if t-statistics < the ADF critical value, the null hypothesis is rejected, meaning that the series has no unit root or is stationary.

4. MODEL SPECIFICATION

This study investigates the relationship between the dependent (imports and exports) and independent (economic growth and exchange rate) variables using statistical and econometric techniques. Firstly, descriptive statistics are used to provide simple and meaningful data representation. Secondary, the unit root test is conducted to ensure the stationarity of variables and their order of integration. Thirdly, the autoregressive distributed lag (ARDL) model is employed to establish the short and long-run amongst variables. The Granger causality test is used to establish the causation amongst variables. Since the application of the ARDL model on variables that are stationary after second difference I (2) as argued by Ouattara (2004), the ADF unit root test preceded the application of ARDL to confirm that none of the variables is I (2). Given that the study consists of two independent variables (imports and exports), the following two ARDL models are analysed:

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$\Delta LIMP_t = \alpha_0 + \sum_{j=1}^{k} \beta_j \ \Delta LIMP_{t-j} + \sum_{j=1}^{k} \varphi_j \ \Delta lGDP_{t-j} + \sum_{j=1}^{k} \delta_j \ \Delta LEXCH_{t-j} + \gamma_1 LIMP_{t-1} + \gamma_2 LGDP_{t-1} + \gamma_3 LEXCH_{t-1} + u_t$ …………………………… (7)

$\Delta LEXPO_t = \alpha_1 + \sum_{j=1}^{k} \beta_j \ \Delta LEXPPO_{t-j} + \sum_{j=1}^{k} \varphi_j \ \Delta lGDP_{t-j} + \sum_{j=1}^{k} \delta_j \ \Delta LEXCH_{t-j} + \gamma_1 LEXPO_{t-1} + \gamma_2 LGDP_{t-1} + \gamma_3 LEXCH_{t-1} + u_t$ ……………… (8)

Where $\Delta LIMP_t$, $\Delta LEXPO_t$, $\Delta lGDP_t$ and $\Delta LEXCH_t$ denote changes in the natural log of imports, exports, GDP and the exchange rate respectively. The α_0 and α_1 are both intercepts, k is the lag operator, while u_t denotes the white noise error term. Additionally, β_j, φ_j and δ_j determine the short-run model dynamism, whereas γ_1, γ_2 and γ_3 are the long-run coefficients. The following are the formulated hypotheses to test for co-integration amongst variables:

- $H_0 : \gamma_1 = \gamma_2 = \gamma_3 = 0$ (for no co-integration)
- $H_1 : \gamma_1 \neq \gamma_2 \neq \gamma_3 \neq 0$ (for co-integration)

Using the bound test for co-integration, the calculated F-statistics is compared to the critical values from Pesaran, Shin and Smiths (2001) table. If the value of the calculated F-statistics is greater than the upper bound critical value, then the H0 is rejected in favour of the H1, implying the presence of cointegration amongst variables. In contrast, if the tabulated critical value is greater than the calculated F-value, the H0 claim prevails and the conclusion is that variables do not cointegrate. Furthermore, if the value of the calculated F-value falls between the upper and lower bound critical values, the results are inconclusive (Dube and Zhou, 2013). The presence of cointegration amongst variables suggests the estimation of the error correction model (ECM). For the current study, ECM is expressed by the following equation:

$\Delta LIMP_t = \alpha_0 + \sum_{j=1}^{k} \beta_j \ \Delta LIMP_{t-j} + \sum_{j=1}^{k} \varphi_j \ \Delta lGDP_{t-j} + \sum_{j=1}^{k} \delta_j \ \Delta LEXCH_{t-j} + \lambda ECT_{t-1} + u_t$……………………………………………………………… (9)

$\Delta LEXPO_t = \alpha_1 + \sum_{j=1}^{k} \beta_j \ \Delta EXPO_{t-j} + \sum_{j=1}^{k} \varphi_j \ \Delta lGDP_{t-j} + \sum_{j=1}^{k} \delta_j \ \Delta LEXCH_{t-j} + \lambda ECT_{t-1} + u_t$…………………………………………………… (10)

Where the error correction term is denoted by ECT and the λ denotes the coefficient of error correction term. The subsequent section focuses on the empirical analysis and results discussion.

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5. EMPIRICAL FINDINGS AND RESULTS DISCUSSION

5.1. Descriptive Statistics

Table 1 displays the descriptive statistics of the study variables. The mean for analysed variables is 13.65947 for LEXPO, 13.67699 for LIMP, 14.89166 for LGDP and 2.312210 LEXCH respectively. Looking at these means, LGDP recorded the highest. This suggests that the quarterly economic growth is of larger magnitude as compared to other variables. The quarterly magnitude of imports and exports are close to each other (13.67699 and 13.65947), whilst the exchange rate records the lowest. Considering the variability of variables from one quarter to the other, as elucidated by the standard deviation, the exchange rate and imports are considered to encounter high variations, while economic growth appears to face low fluctuations between 2008 and 2018. The skewness is the measure of the extent to which a variable is symmetrical around the mean and is expected to be zero or close to zero for a symmetric normal distribution. Except for the exchange rate, all variables under the study are negatively skewed. Thus, they portray a left tail and concentration of data points. In respect to the kurtosis, the benchmark value is 3 for a standard normal distributed variable. Except for imports, the rest of the variables have a kurtosis values less than 3, suggesting that these variables exhibit shorter and thinner peaks. Nonetheless, the import variable has a Kurtosis value of 3.350952 which is greater than 3. Thus, it has longer and fatter tails.

Table 1: Descriptive Statistics summary

	LEXPO	LIMP	LGDP	LEXCH
Mean	13.65947	13.67699	14.89166	2.312210
Std. Dev.	0.075056	0.110637	0.057614	0.262787
Skewness	-0.648382	-1.136983	-0.396099	0.063873
Kurtosis	2.708203	3.350952	1.709466	1.551162
Jarque-Bera	3.312644	9.926408	4.299478	3.966471

5.2. Unit Root Test

The current study employed the Augmented Dickey-Fuller (ADF) (1979) to test for unit root amongst variables. The unit root test results in Table 2 indicate that all variables are integrated of order one [I (1). Since none of is integrated of order two and the sample size is not enormous, the suitable model for cointegration is ARDL.

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Table 2: Unit root results of the ADF and KPSS stationarity test

Variable	Model specification	ADF	
		Levels	1st difference
GDP	Intercept	0.7423	0.0008*
	Intercept & trend	0.9484	0.0049*
EXCH	Intercept	0.8336	0.0000*
	Intercept & trend	0.6561	0.0003*
EXPO	Intercept	0.4476	0.0000*
	Intercept & trend	0.1503	0.0002*
IMPO	Intercept	0.7228	0.0000*
	Intercept & trend	0.4848	0.0001*

Note:* rejection of null hypothesis at a 5% level of significance

Within the regression process, the optimum number of lags included in the model plays an important role. The number of optimum lags in this study was selected before the establishment of the ARDL models. Irrespective of the many criteria for lag selection, the Schwarz information criteria (SIC) was used due to its strictness. Thus, the ARDL (1, 1, 0) was selected for the imports model and the ARDL (1, 1, 2) was selected for the exports model. Table 3 displays the optimum lag for each model.

Table 3: Lag length and the best ARDL model section

Dependent variable	Selected model	Model criteria	Trend specification
Imports	ARDL (1, 1, 0)	SIC	Rest. constant
Exports	ARDL (1, 1, 2)	SIC	Rest. constant

5.3. Cointegration analysis

Having established the order of integration and best ARDL models, the subsequent step is to determine the cointegration amongst variables by applying an ARDL bounds test. Two models are applied. The first tests the cointegration between imports, economic growth and the exchange rate, while the second model analyses a cointegration between exports, economic growth and the exchange rate. The Bound test result in Table 4 suggests the presence of a long-run relationship between variables. The calculated F-statistics for both model, 10.01998 for the

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import model and 6.805066 for the exports model, is greater than all upper bound critical values at a 5 percent level of significance. Thus, the null hypothesis of no cointegration is rejected. Consequently, a long-run relationship exists between the variables of interest. These are results are in line with many other studies (Lin of Li, 2001; Moshen, 2013; Muhammad, 2014; Velnampy and Achchuthan, 2013).

Table 4: Bound tests for cointegration

	Calculated F-value	**Pearson et al. critical value at 5 % level**	
Model		Lower bound	Upper bound
Imports: ARDL (1, 1, 0)	**10.01998**	3.1	3.87
Exports: ARDL (1, 1, 2)	**6.805066**	3.1	3.87

Following Equations 7 and 8, the long-run responsiveness of imports and exports towards changes within economic growth and the exchange rate was established. The subsequent two cointegration Equations (11and 12) display the long-run coefficients obtained from regressing Equations 7 and 8.

LIMPO = -26.3694 - 0.2498*LEXCH + 2.7275*LGDP …….....…. (11)

LEXPO = 2.5747 + 0.1381*LEXCH + 0.7203*LGDP ……... (12)

These results suggest an inverse relationship between the exchange rate appreciation and the total imports of goods and services. Import levels decrease by 0.2498 percent as a response to a 1 percent increase in the exchange rate. Nonetheless, a positive relationship exists between economic growth and the import of goods and services. A 1 percent increase in economic growth leads to a 2.7275 percent increase in the total export of goods and services. On the other hand, both currency appreciation and economic growth stimulate and boost the level of domestic export of South African goods and services. A 1 percent increase in both exchange rate and economic growth results in 0.1381 and 0.7203 in exports of goods and services respectively. Similar to these findings, the study of Aliyu (2011) and Muhammad (2014) found that exchange rate appreciation expands import levels, while discouraging exports. On the other hand, they found that currency depreciation results in an increase in exports. Additionally, a positive relationship between imports and economic growth was also found in various other studies, such as those of Chandra and Love (2005); Hassan and Murtala, (2016); Rangasamy (2009); and Kumari and Malhotra (2015). Looking

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at the results in both Equations 11 and 12, one can conclude that the South African import and export of goods and services are positively affected by economic growth. The more the South African economy improves, the large the number of imports required by South African consumers.

5.4. Analysis of short-run relationships and the error correction model

In the presence of a long-run relationship amongst variables, it is necessary to investigate the property of the error correction model and the short-run relationship. The error term needs to be negative and significant to allow the model to fix any short-run shocks. Thus, using the negative and significant error term, one can determine how long it takes for the model to return to its long-run equilibrium. In the case of the current study, as suggested by the results in Table 5, the error term for both import and export models is negative and significant. While 0.442189 of shocks in the imports model are fixed each quarter, the quarterly adjustment in the export model is 0.468137. Thus, it takes approximately 2.26 quarters for the import model to reach its long-run equilibrium, it takes only about 2.14. As such, the speed of adjustment is high in the export model as compared to the export one. In terms of short-run relationships, both exports and imports are passively influenced by economic growth and currency appreciation. As seen for long-run relationships, economic growth remains the engine of changes within the export and import of goods and services.

Table 5: Error correction model and short-run relationship

	Variable	Coefficient	Std. Error	t-Stat.	Prob.
Model for Imports	D(LEXCH)	0.129351	0.055047	2.34981	0.023
	D(LGDP)	1.829386	0.544716	3.35842	0.001
	CointEq(-1)	-0.44218	0.072744	-6.0786	0.000
Model for Exports	D(LEXCH)	0.210552	0.058810	3.58023	0.001
	D(LGDP)	2.782235	0.633280	4.39337	0.000
	D(LGDP(-1))	1.480978	0.732583	2.02158	0.050
	CointEq(-1)	-0.46813	0.086208	-5.4303	0.000

5.5. Causal relationship examination

The Granger causality test was used to determine the short-run causation. Findings, as represented in Table 6, suggest a bi-directional relationship. All p-values are significant. However, the causation potent of the exchange rate towards

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the export of goods and services and one of the imports towards economic growth are both weak. They are significant only at a 10 percent level. Briefly, the short-run relationships in Table 5, are confirmed by Granger causality results exhibited in Table 6.

Table 6: Causation analysis

Null Hypothesis:	F-Stat	Prob.	Causation?	Direction
LEXCH does not Granger Cause LIMP	5.431	0.008	Yes, at 1%	⟺
LIMP does not Granger Cause LEXCH	7.883	0.001	Yes, at 1%	
LGDP does not Granger Cause LIMP	9.343	0.000	Yes, at 1%	⟺
LIMP does not Granger Cause LGDP	2.577	0.089	Yes, at 10%	
LEXPO does not Granger Cause LEXCH	7.634	0.001	Yes, at 1%	⟺
LEXCH does not Granger Cause LEXPO	2.990	0.062	Yes, at 10%	
LEXPO does not Granger Cause LGDP	11.06	0.000	Yes, at 1%	⟺
LGDP does not Granger Cause LEXPO	10.23	0.000	Yes, at 1%	

5.6. Residuals diagnostic tests

Four diagnostic tests, namely normality, serial correlation, heteroscedasticity and stability were conducted to verify both models' robustness. Results from these tests indicated that a set of the analysed series was normally distributed, uncorrelated and homoscedastic. Additionally, the stability test suggested that the model was stable.

6. CONCLUSIONS AND POLICY RECOMMENDATIONS

The study analysed and discussed the effect of economic growth and exchange rates on imports and exports in the South African economy. The reviewed literature provided a mixture of results. Some literature indicated that economic growth and exchange rates exert a positive effect on import and export levels, whilst others suggested an inverse relationship amongst these economic variables. Using the bound test for cointegration, this study found the existence of a long-run relationship between economic growth, exchange rates, imports and exports in South Africa. The study found also that, in the long-run, economic growth impacts more on imports than exports. This result suggests that South African products are highly expensive as compared to those from abroad and when the economy is at the booming stage, consumers prefer to import goods and services

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than buying from domestic markets. It was also found that the weak exchange rate favours imports while boosting exports. The granger causality test suggested a bi-directional relationship between imports, exports, exchange rates and economic growth. This implies that, in the short-run, each of the analysed variables can assist in predicting changes in others.

Since improvement in economic growth favours the consumption of imports more, probably because the high price of domestic goods and services, government and policy-makers should find a way to subsidise local producers in order to lower the cost of production and thereafter the price for domestic goods and services. This level of subsidies would prevail when the economy is booming and when the currency is weakened. Meaning that during a booming economy, subsidies will encourage the consumption of domestic goods and services and during currency depreciation, subsidies will assist in producing more goods and services for exports.

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-RESEARCH ARTICLE-

RURAL ECONOMIES AND LIVELIHOOD ACTIVITIES IN DEVELOPING COUNTRIES: EXPLORING PROSPECTS OF THE EMERGING CLIMATE CHANGE CRISIS

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–Abstract–

Even though rural economies are widely informal, they have created a variety of income, employment opportunities and food security for rural communities. In most developing countries, particularly those in Africa, Asia, Caribbean and Latin America, rural economies comprise economic activities in sectors such as agriculture, tourism and fisheries amongst others. However, in recent years, the emergence of climate change has resulted in the collapse of some of the rural businesses leading to the increase in the unemployment rate in most rural economic sectors. Climate change encompasses modification in average weather conditions or in the distribution of weather leading to unprecedented and sometimes extreme weather events. Recently, climate change has been linked with extreme episodes of rising sea levels. El Nino, La Nina, hurricanes, floods and droughts have caused a lot of damage in the rural economic sectors. The purpose of this paper is to review the prospects of climate change's impact on the rural economy with respect to employment trends. In other words, the question the

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paper intends to answer is: To what extent does climate change impact on rural economy including livelihood activities? The research method this paper used is based on theoretical knowledge derived from literature material such as academic articles, books and other sources of academic publications. The paper argues that the slow growth of rural economy, livelihood insecurity and lack of creation of new employment opportunities in rural areas can also be linked to the emergence of climate change in recent times. For instance, drought and floods have destroyed most of the rural livelihood activities and agricultural products, while tourism and fishery businesses have suffered the same fate, thus leading to fewer employment and job losses. The article concludes that, a diversification of measures to respond to climate change impacts on rural economy and needs to be devised if employment opportunities are to be created for rural communities.

Key Words: Climate Change, Rural Economy, Employment Trends, Livelihoods Activities

JEL Classification: Q54, R11, J21

1. INTRODUCTION

Economically, rural areas of many developing countries engage in diverse activities, which range from agriculture, tourism, fisheries and other related livelihoods activities (Shemsanga, Omambia & Gu, 2010; Fieldsend & Kerekes, 2015; Asha & Madzivhandila, 2016). These activities have provided employment and livelihood opportunities for rural communities for many decades now even though most of them were informal in nature. Fieldsend and Kerekes (2015) note that the nature and environmental base economy of most African countries have heavily relied on products and services from agriculture, including the agri-food supply chain, forestry, tourism and crafts which provide most of the rural population jobs and income. However, in recent times, climate change has threatened the ability of the said industries to not only create sustainable jobs and income, but also government roles to successfully develop and maintain public and private infrastructures, thus deterring progress towards poverty alleviation and food security (Olsen, 2008; Ding, Hayes & Widhalm, 2010).

Climate change has increased incidents of extreme weather events. These changing weather patterns severely influence the rural economic activities and livelihoods (Fieldsend & Kerekes, 2015; Asha & Madzivhandila, 2016; Madzivhandila & Niyimbanira, 2016). Consequently, climate change continues to pose inevitable dangers to the communities around the globe. In the Caribbean countries for instance, the extreme events of climate change-related disasters are

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aggravated when it comes to economic activities such as fishing and tourism due to the biophysical and socio-economic characteristics of these countries (Sookram, 2009). Furthermore, in this region, most economic sectors which are virtually nature-based are affected in multiple ways. For instance, high numbers of job losses occur due to natural disasters linked to climate change, reduction of productivity, decrease in tourist demand and increment of the number of violent hurricanes and other climate change-related storms (Olsen, 2008). On the other hand, in sub-Saharan Africa and many other poor Island States, cereal production which is particularly sensitive to changes in temperature and precipitation is continuously declining. The International Labour Organisation (2008) reports that, not only does climate change impact on rural economic activities and livelihoods, it also poses threats to the achievement of the Millennium Development Goals (MDGs), threats which are exacerbated by an increase in inflation, food and other human basic commodity prices. Furthermore, Olsen (2008) laments that it is developing countries which will be the hardest hit by the impact of climate change due to the fact that most of these countries are already poor and financially weak, rendering them more vulnerable to the effects of climate change.

The research method this paper uses is based on theoretical knowledge derived from literature material such as academic articles, books and other sources of academic publications. Therefore, the article provides an argument that, the current decline in rural economic activities and its employment trends can also be attributed to the impact of climate change. In order to shed more light on this sentiment, the objectives of the paper include discussing the common aspects of rural economy which include agriculture, tourism and fisheries. The objectives further embrace to discuss the impact of climate change on rural economic activities and also some of the rural economic employment features and trends and how they are declining due to climate change. Lastly, the article recommends some coping measures which rural economies may adopt amidst climate change influences on activities and the livelihood of rural communities.

2. RURAL ECONOMIES AND LIVELIHOODS ACTIVITIES: THEORETICAL FRAMEWORK

The theory pertaining to the argument of this paper is the Sustainable Livelihood Approach (SLA). This theory recognises the complex nature within which the rural income earning activities and livelihoods are entangled in, and how such activities are dependent on the environmental characteristics and the climatic conditions of a given area. In other words, the “Sustainable Livelihood Approach is defined in terms of the ability of a social unit to enhance its assets and

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capabilities in the face of shocks and stresses over time" (Morse, McNamara & Acholo, 2009:4). Furthermore, the approach seeks to identify the important assets in livelihood, their trends over time and space as well as the nature and impact of shocks and stress in terms of environmental, economic and social assets. Following this, and "after taking cognisance of the wider context (e.g. political, legal, economic, institutions, infrastructure etc.), interventions are designed to address any vulnerability of enhance livelihoods perhaps by diversification of income streams" (Morse et al., 2009:3). Since the 1990s, SLA became the dominant approach to the implementation of development interventions by a number of major international agencies. According to Morse et al. (2009) the potential strength of the livelihoods approach is that it mainstreams the environment within a holistic framework. Importantly, the livelihoods approach puts people at the centre of development. Three main activities relating to rural economy are discussed in this section. These activities fit well to SLA as they provide income earning opportunities in rural areas and their success depends on the environment and the climatic conditions they are subjected to. Firstly, for many decades now, rural economies of most developing countries particularly those in Africa and Asia have centred on agriculture and its related activities such as subsistence farming (Morton, 2007; Madzivhandila, 2014).

Even though it is done on a small-scale, agricultural production activities have contributed largely to the income and employment of most rural dwellers. However, in the Caribbean and other small island developing states, most rural and coastal communities have relied more on small-scale fishing and rural tourism. In other words, the most dominant activities in the rural economy which have created formal and informal employment are small-scale farming, rural tourism and fishing (Food and Agriculture Organisation (FAO), 2009; Sookram, 2009; National Department of Tourism, 2011; Teh & Sumaila, 2011). Agriculture or small-scale farming in general, is regarded as one of the core areas of the rural economic base in most developing countries. Small-scale agriculture can be described as an activity by rural producers, predominantly in developing countries, who farm using mainly family labour and for whom the farm provides the principal source of income (Morton, 2007; Madzivhandila, 2014). However, in other areas, the description of small-scale farmers is used to define farmers, who can be found juggling between subsistence production and also production for the market. Madzivhandila, (2014) argues that in recent times it is becoming clearer that, agricultural policy can no longer be solely dependent on when to consider aspects of rural development. However, the diminishing trail of rural activities do not only affect agriculture and its small-scale livelihood activities, since tourism

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started to surface. These aforementioned activities are also under threat and play a major role in rural employment.

Tourism is also one of the significant contributors to the rural economies of many developing countries (Sookram, 2009; National Department of Tourism, 2011; Ainley & Kline, 2014; Rogerson & Rogerson, 2014). Rogerson and Rogerson (2014) allude to the fact that in areas where it is well managed, rural tourism becomes an important source of the local economic base which rural communities depend on for income and livelihoods. In South Africa for instance, tourism is identified as a priority sector in national economic planning with a clear strategic commitment by local government in support of the National Development Plan (NDP) goals. Furthermore, outside the metropolitan areas of South Africa, tourism has assumed an equally pivotal role in economic diversification towards rural restructuring (Ainley & Kline, 2014; Rogerson & Rogerson, 2014). The success of rural tourism depends on investment and strategising around the quality and quantity of tourism-related services associated with an area where it is offered (Sookram, 2009; National Department of Tourism, 2011; Ainley & Kline, 2014). For instance, many developing countries whose rural communities are found in the coastal areas, have invested in tourism activities related to fishing.

In many countries, small-scale rural fishing or what is considered artisanal fishing contributes to rural livelihoods and in other instance towards GDP as well (Schrank, 2005; FAO, 2009; Teh & Sumaila, 2011). According to Teh and Sumaila (2011:2) the overall "global fisheries provide livelihoods to millions of coastal inhabitants and contribute to most of local and even national economies." It is estimated that, a large number of the world population, about 20 percent, rely on fishing for food sustenance and nourishment (FAO, 2009). That is, fishing provides a reliable livelihood strategy, which can generate buying power during tough economic times. It is not surprising then that in countries such as Fiji and Indonesia, most of the fishing activities including those that are exported are processed in rural areas (Teh & Sumaila, 2011). Teh and Sumaila (2011) wrote that in Fiji, rural fishermen, particularly women, play a major role in the local, national and even international supply of fishing produce. The same applies to Indonesia and also Hong Kong in China, where most of the fishing products are supplied by non-industrialised containers and lucrative live reef food fish trade (World Bank, 2008; FAO, 2009; Teh & Sumaila, 2011).

Overall, the activities of rural economies are characterised by dominance of poor people whose participation is to create livelihoods for the survival of their poverty-stricken households. Hence, with the recent emergence of climate change

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damages to the rural economies, poor households are trapped and unable to eliminate high levels of vulnerability to poverty and natural disasters (Morton, 2007; Madzivhandila, 2014). In most instances, poor households susceptible to climate change emerge from inadequate socioeconomic, demographic, and policy trends which limit their capacity to adapt to climatic aberrations.

3. EFFECTS OF CLIMATE CHANGE ON RURAL ECONOMIC ACTIVITIES

The Framework Convention on Climate Change (UNFCCC) (2007:34) describe "climate change as attributed directly or indirectly to human activity that alters the composition of the global atmosphere and that is in addition to natural climate variability observed over comparable time periods." However, it is safe to say that this is still a matter of worldwide debate. The conversion explains "human activities such as burning of fossil fuel and deforestation, produce greenhouse gases that trap heat in the earth's atmosphere as the main cause of climate change" (UNFCCC, 2007: 8). Furthermore, the framework also highlights the fact "that the main human influence on global climate is emissions of the key greenhouse gases (GHG) which are carbon dioxide (CO2), methane and nitrous oxide" (UNFCCC, 2007:8). The UNFCCC (2007:8) suggests that the solution to this will be to apply mitigate measures to "slow down the build-up of heat trapping greenhouse gases and remove them from the atmosphere". Consequently, climate change is regarded as of great concern for all aspects of human life and needs to be addressed amicably (Shemsanga et al., 2010; Fieldsend, & Kerekes, 2015; Asha & Madzivhandila, 2016; Madzivhandila & Niyimbanira, 2016). Its manifestation changes temperature and precipitation, sea levels rise, extreme events (for example, the frequency and intensity of hurricanes) and leads to the destruction of ecosystems. For instance, Trenberth, Jones, Ambenje, Bojariu, Easterling, Tank, Parker, Rahimzadeh, Renwick, Rusticucci, Soden and Zhai (2007) highlight the fact that temperatures in the Caribbean sub-region have been warming at a rate ranging from 0.0^0C to 0.5^0C per decade for the period 1971-2000. Furthermore, Trenberth et al. (2007) report that in the same region, the percentage of days with cold temperatures has decreased since the 1950s, while the percentage of days with very warm maximum temperatures are increasing. Unfortunately, the impact of climate change exerts a powerful influence on the already struggling rural economies.

The impact of climate change on rural economic activities has been observed in many forms. This includes, decline in rainfalls leading to water shortages and increased demand of water in industries such as tourism, agriculture and other

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sectors (Olsen, 2008; Ding, Hayes & Widhalm, 2010; Fieldsend, & Kerekes, 2015; Asha & Madzivhandila, 2016). Secondly, there has been an increase in frequencies of heavy precipitation in some regions leading to flood damage to tourism infrastructure, agricultural products and other livelihoods, which contribute to rural economies (Morton, 2007; Ding et al., 2010). Looking specifically at agriculture for instance, the bearing of climate change in many less developed countries has damaged production and employment opportunities at the extent that the current farm income represents only less than 2% in total, nationwide (Johnson, 2001).

Seemingly, climate change has impacted agriculture food production systems at all levels. These include, smallholders, subsistence, and pastoral farmers. In countries such as Tanzania for instance, a number of climate related disasters such as flooding, drought, widespread crop failures, livestock deaths and intensification of climate sensitive diseases are constantly being reported (Rogerson & Rogerson, 2014). In the Caribbean Basin of Aruba, Barbados, the Dominican Republic, Guyana, Jamaica, Montserrat, the Netherlands Antilles, Saint Lucia and Trinidad and Tobago climate change is causing a lot of damage to the fishing industry, particularly in areas whose activity is the primary source of food and income (FAO, 2009; Sookram, 2009; Teh & Sumaila, 2011). Marine fisheries' formal and non-formal employment have contributed a lot in most of the economies of the rural coastal areas of these countries (World Bank, 2008; FAO, 2009; Teh & Sumaila, 2011). However, in recent times the contribution has been diminishing. Climate change related stressors such as rising sea levels and flooding contributed to the degradation of coastal and marine ecosystems. Furthermore, warm temperatures are associated with faster depletion of oxygen supply in water thus affecting fisheries (Fick, Myrick & Hansen, 2005). According to Schrank (2005), in countries such as Canada, the impact of climate change on fisheries and its disintegration have been devastating. In Canada the collapse of the cod fishery led to changes in the social structure and dynamics of rural communities as the northern cod moratorium led to mass layoff of over 10 000 fishery workers (Teh & Sumaila, 2011). The layoff of workers and the struggle of a sector which constitutes rural economy due to climate change is also evident in the tourism sector.

In the tourism industry, climate change has altered and interfered with the length and quality of tourism seasons, affecting tourism operations, and influencing environmental conditions that both attract and deter visitors (Sookram, 2009; National Department of Tourism. 2011; Ainley & Kline, 2014; Rogerson &

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Rogerson, 2014). Furthermore, the direct climatic influences on tourism are driving variations in the whole system of the tourism sector. This condition is due to the fact that temperature is considered to be the most important climatic variable in demand of tourism, because outside a certain range, it affects comfort (Sookram, 2009). The condition also applies to other weather parameters such as rain, wind and also hours of sunshine. Generally, warmer temperatures alter seasonality, heat stress for tourists, cooling costs and cause changes in plants, wildlife, increased water shortages and desertification (National Department of Tourism, 2011; Ainley & Kline, 2014; Rogerson & Rogerson, 2014). On the other hand, flooding due to increased frequency of heavy precipitation and intensity of extreme storms also cause damages to historic architectural, cultural and archaeological assets and other natural resources which contribute to tourism in rural areas. Naturally, tourism activities, either on a big or small scale are vulnerable to climatic variations (Ainley & Kline, 2014; Rogerson & Rogerson, 2014).

In developing countries, climate change negatively influences the minimal infrastructure availability, which is critical for tourism business. In South Africa for instance, the loss of biodiversity in natural conservation in game reserves may impact on their appeal to the tourists (National Department of Tourism, 2011). Ironically and with its sensitivity, the tourism sector is regarded as one of the effective ways of achieving cultural preservation and nature conservation, whilst creating income earning opportunities for the rural communities (National Department of Tourism, 2011). The three rural economies' dependent sectors which are agriculture, fisheries and tourism rely more on the limited natural resource base and favourable climatic conditions and any changes to this interdependent relationship have a severe impact on the environment, livelihoods, local economy and the abilities to create employment opportunities which are already diminishing in the rural areas.

4. EMPLOYMENT TRENDS IN RURAL AREAS

In most of developing counties, rural employment opportunities are more inclined to land, water, wildlife and mineral-related sectors (Salz et al., 2006; Morton, 2007; International Labour Organisation, 2008; International Labour Organisation, 2014; Teh & Sumaila, 2011). In these areas, employment patterns and labour markets are constantly changing and sometimes decreasing due to factors such as technology, trade, finance, demographics, and demand cycles (Morton, 2007; Madzivhandila, 2014). However, changes due to climate change are already having enormous and worse influences on different levels of

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employment and the labour market. This is because climate change-related disasters directly destroy a large part of rural economies' business capital, affecting the supply-chain and business performance, undermine longer-term competitiveness and sustainability thus leading to job losses (International Labour Organisation, 2008; International Labour Organisation, 2014). The fact that most rural business activities lack insurance and disaster management plans render them more vulnerable to failure when disasters such as flooding, weather storms and drought hit them.

The impact of climate change on agricultural employment is the worst. Agriculture accounts for over 1 billion people employed and is the second greatest source of employment worldwide apart from services (Teh & Sumaila, 2011; Morton, 2007; Madzivhandila, 2014). Hence, because of climate change, in a few years down the line, the majority of these people might be forced to face change in their employment status and even have to seek employment opportunities elsewhere. Already, the agriculture sector has lost its appeal to job seekers due to minimal and seasonal income. Thus, climate change and its influences will perpetuate negative farm workers' and their families' socio-economic conditions, especially with regard to those depending on nature and the environment for their livelihood (Teh & Sumaila, 2011; Morton, 2007; Madzivhandila, 2014). Furthermore, farm workers will be impacted as well through decrease of income and the need to acquire new skills to be able to undertake agricultural techniques necessary to keep production under new climatic conditions. These conditions will also have a huge impact to employment creation and sustainability in the rural fisheries sector.

In 2004, an estimated total of "260 million people was involved in global marine fisheries, encompassing full-time and part-time jobs in the direct and indirect sectors, of which 22 million who are small-scale fishers, are situated in rural areas" (Teh & Sumaila, 2011:8). "A further 123 million were involved indirectly in secondary activities of fisheries (World Bank, 2008: 35). "A further 954 000 jobs were generated by the marine recreational sector at the same time" (World Bank, 2008: 35). This means that a huge number of the people around the globe are relying on fishing as a means of livelihood. However, there are disparities when it comes to fishing jobs, since more people practising fishing are found in developing countries than developed ones. In Asia, fishing activities constitute about 86%, however, in many other industrial regions, there has been a sharp decline in fishing. In Norway for example, the number of fishermen has decreased by 40% (FAO, 2009). Furthermore, most of European countries' fishing activities

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have declined as well. For instance, fishing activities in this area has gone as low as 0.2 percent. Above all, climate change is having a huge impact on employment activities pertaining to fisheries, the same way as affecting other industries such as Tourism.

Tourism is supposed to be the fastest growing in the employment creation sector in most developing countries, particularly those in Africa, which are rich in wildlife and other nature based tourist attractions. Olsen (2008:5) highlights that, "the hotel, catering and tourism (HCT) sector is one of the fastest growing industries globally". Actually, "at the end of 2007 the wider travel and tourism industry accounted for 10.3 % of global gross domestic products" (GDP) (Olsen, 2008:5). Furthermore, tourism is one of the well-recognised sectors generating significant employment opportunities across the globe. However, there has been a huge decline in job creation by tourism in recent times. This is because most tourism-related activities are vulnerable to climate change. For instance, because of drought and flooding, and increase in sea levels, most natural-based tourist towns have lost their significance for tourists and the majority of tourist activity coordinators have lost their jobs (National Department of Tourism, 2011; Ainley & Kline, 2014; Rogerson & Rogerson, 2014). The irony of the impact of climate change is that, the majority of those affected in rural areas are unable by themselves to devise strategies which can assist them to cope with the inevitable damages caused by climate change.

5. RURAL ECONOMIES COPING MEASURES AND POLICY IMPLICATIONS

The impact of climate change in rural areas of many developing countries are difficult to comprehend (Haggblade, Hazell & Reardon, 2010). Climate change-related stressors have diminished agricultural activities, pressurised rural tourism industry and altered small-scale fishing activities in many rural areas. Unfortunately, statistics have shown that the climatic variations will continue, thus inducing a variety of effects in rural areas of different regions worldwide (Haggblade et al., 2010; Hayes & Widhalm, 2010; Shemsanga et al., 2010; Fieldsend, & Kerekes, 2015). Madzivhandila (2014) argues that the current climate change crisis requires a re-think in development of strategies for rural development and also as a way of creating, increasing and sustaining employment. Furthermore, a re-think in rural policy development which will encourage adoption and usage of technology to create employment opportunities is required. In rural areas of developed countries such as the United States, several forces have combined and are leading significant changes in rural life through

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introduction or increasing technological skills (Shemsanga et al., 2010; Fieldsend, & Kerekes, 2015). Furthermore, improvement of both physical and ICT infrastructures can play a major role in creating new employment opportunities in rural areas. In addition, physical and ICT infrastructure can also assist in improving the level of education, skills and development of public services in rural areas (Fieldsend, & Kerekes, 2015).

In terms of tourism for example, the strategy should create a rural tourism network and develop proper and efficient disaster management systems which can minimise vulnerability to natural hazards to rural economic activities including household's livelihoods (Shemsanga et al., 2010; Fieldsend, & Kerekes, 2015). Ideally, rural policy change should take cognisance of the fact that rural areas are fundamentally different from each other in many respects, and that a single, 'solution' or 'strategy' for creation of rural employment will not be appropriate (Hayes & Widhalm, 2010not in ref list; Shemsanga et al., 2010; Fieldsend, & Kerekes, 2015). Strategies emanating from rural policy change should aim to improve the wealth-generating ability of rural areas through the creation of new sources of employment, whilst recognising the unique dimension of agriculture, which is currently weakened by climate change (Hayes & Widhalm, 2010). In other words, rural economic strategies should refocus their direction to diversify areas of investment looking at the role which other non-farm activities can play.

In many parts of Europe, diversification of strategies in search of more sustainable rural economic development has been at the forefront (Shemsanga et al., 2010; Fieldsend, & Kerekes, 2015). In these countries, diversification of activities to create employment in rural areas include intensification and investment in non-farm activities and sectors such as "rural mining, manufacturing, utilities, construction, commerce, transport, and a full trail of financial, personal, and government services" (Haggblade et al., 2010:1429). Whereas, in developing countries, diversification of non-farm activities can assist in productively absorbing labours who are losing jobs because of agriculture commercialisation (Haggblade et al., 2010; Fieldsend, & Kerekes, 2015). Haggblade et al. (2010:1430) argue that, there is already existing "evidence from a wide array of rural household surveys which suggests that non-farm income accounts for about 35% of rural income in Africa and roughly 50% in Asia and Latin America." Furthermore, "primary employment data, which offer the most widely available indicator of the scale of rural non-farm activity, suggest that these activities account for about 30% of full-time rural employment in Asia and Latin America, 20% in West Asia and North Africa" (Haggblade et al., 2010).

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In many other parts of European rural communities, agri-tourism is promoted as a strategy to diversify and promote a more secured socio-economic development (Fieldsend, & Kerekes, 2015). The advantages of adopting agri-tourism are that its activities go beyond issues of economic revival, but integrates natural resources and cultural welfares which contribute towards sustainable development of rural economic sector and livelihoods (Rogerson & Rogerson, 2014). Conversely, in South Africa, it is argued that, even though Agri-tourism benefits can be evidently immense because of its diverse nature, the strategy is largely overlooked in Local Economic Development (LED) debates (Ainley and Kline, 2014; Rogerson & Rogerson, 2014). In other words, notwithstanding its positive implications for local economic development, little has so far been explored on agri-tourism in South Africa. The country has the potential to develop agri-tourism by looking at investing in a variety of activities encompassing life outside the urban environment (Olsen, 2008; Ding et al., 2010; Shemsanga et al., 2010; Rogerson & Rogerson, 2014).

In South Africa, provinces such as Free State, Eastern Cape, KwaZulu-Natal, Mpumalanga and Northern Cape have established themselves as having a potential to grow agri-tourism as a rural economic sector which needs more investment to flourish (Rogerson & Rogerson, 2014). Interestingly, Ainley and Kline (2014) argue that in order to influence farmers to enter into agri-tourism amid climate change challenges in agriculture and tourism, it is best to think about how the investment in the sector will be accompanied by intensive building of business skills and entrepreneurship capabilities for the farmers (Ainley & Kline, 2014; Rogerson & Rogerson, 2014). The capacity building aimed at strengthening this process that should lead to upgrading of agri-tourism products and enterprises in the rural economy. In other words, capacity building in terms of formal and non-formal educational training should be provided "to create an environment that is sustainable for investments and growth, development of entrepreneurial and vocational skills, fostering entrepreneurship and innovation, creating green and decent jobs" (International Labour Organisation, 2014:3). This is important as the majority of the people who are laid-off from either agriculture, tourism or fisheries due to influences of climate change are those in rural areas with less or limited skills to establish other activities which can create sustainable jobs.

6. CONCLUSION AND RECOMMENDATIONS

The purpose of this paper is to discuss the impact of climate change on rural economies and livelihood activities. Some of the major discoveries about this topic were the complex nature within which rural activities are dependent on the

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conduciveness of the environment and climatic conditions within which they are found. The irony is that many rural economies in developing countries revolve around activities which are nature- and environmentally-based thus vulnerable to climate change-related stressors. In extreme cases, climate change disrupts these activities in ways which lead them to collapse and render the majority of rural work force getting laid-off or losing grip to their livelihood activities. The paper recommended different strategies which need to be devised in order for the rural economies to cope with the impact of climate-change stressors. The coping measures as discussed above includes the integration of agriculture and tourism (agri-tourism) to create a new niche area for employment creation. The paper also recommended the diversifying of the rural economy to non-farm, tourism and fisheries activities. This process can go a long way to revive and strengthen the diminishing and struggling activities in rural areas. Furthermore, the paper, recommended that in order for rural economies and livelihood strategies to be revitalised and strengthened, investment and provision of skills, capacity in terms of building business and entrepreneurship endeavours need to be considered. Moreover, in countries such as South Africa where rural areas remain less economically attractive and since limited economic infrastructure is available, LED and technology investments need to be strategically provided, in order to strengthen and stimulate local rural communities to create employment opportunities for themselves and others.

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