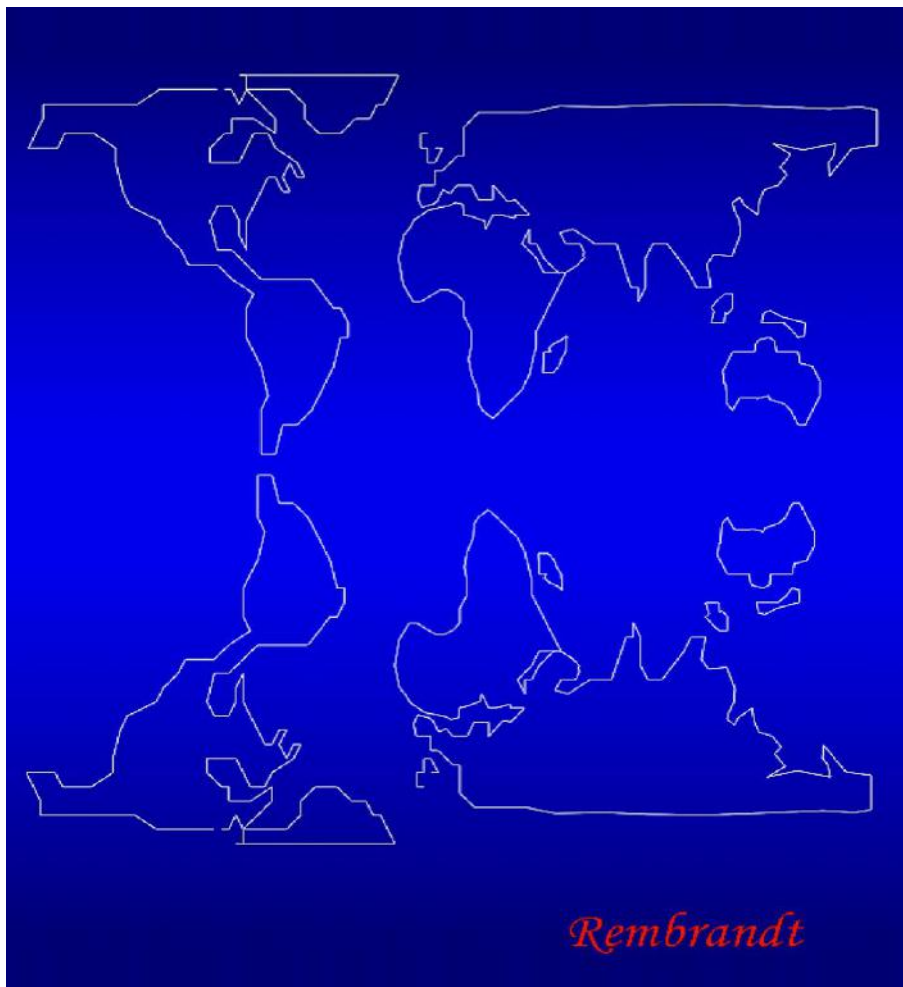


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Alternation

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Guest Editor
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2017

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Editorial: Management, Informatics and Governance

Rembrandt Klopper

The article by Matete Lerutla and Renier Steyn is titled ‘Definition of Leadership in Africa within the Twenty-first Century Context: Empirical Research on Leadership in Africa’. Granted that leadership is a widely used construct and there are numerous articles across multiple disciplines that research the ‘leadership’ phenomenon, this research investigates the construct of leadership in Africa. Much of what is written is conceptual, and empirical articles on African leadership remain sparse. The article reports on the findings of a systematic literature review that was conducted on leadership in Africa. It presents a qualitative review of empirical research, highlighting key findings and implications for future research. The research investigation followed the traditional body of knowledge framework of concepts, statements, definitions, and conceptual frameworks to systemize reports on leadership in Africa. Articles were identified, selected and analysed using the systematic literature review methodology. Articles, statements, definitions, models, typologies, theories, and paradigms were explored and interrogated in each article, so as to understand how they are linked to leadership in Africa. A total of 96 articles were extracted and analysed from eight electronic search engines. Following the application of inclusion and exclusion criteria, only thirteen articles met the set criteria – suggesting that little empirical research is conducted on leadership. The findings illustrated the extent of the current paucity of empirical research on leadership in Africa and clearly indicate a definite need to investigate it, and then to build on the understanding of African leadership through empirical research. The published articles showed that the concept of African leadership is seldom defined, measurements are typical of the Western tradition, and that the set hypotheses do not include the African cultural context. Furthermore, no Africa-specific models or theories are present. The

positivist paradigm was most often used in the existing research. The practical implications of the research is that the analysis of the literature review has provided an understanding of the extent of the lack of empirical work around leadership in Africa. There is a definite need for systematic empirical work to explore what leadership means in Africa, and to build the concept of African leadership as a concrete scientific construct. The paper concludes by providing suggestions on how to bridge the gap towards understanding leadership in Africa.

In their, 'Creating an Environment to Enhance Business Development: The Case of a Developing Country, Lesotho', Refiloe Khoase and Krishna Govender focus their research on the enhancement of business development in Lesotho. Their starting point is that, like all governments, the Lesotho government too, has to create an environment conducive for business development, which would eventually impact economic development. They explore the perceptions of business owners and managers in Lesotho on the functional interventions by government on infrastructural development, and also identify shortcomings in the current strategy. It became evident from a survey of 219 business owners and managers, that the infrastructure in Lesotho does not fully support business development, therefore, there is limited economic growth and development. However, they did ascertain that the Lesotho government has recognised the need to improve both the quality and delivery of infrastructure services, and has embarked on a series of reforms in inter-alia, the telecommunications, transportation, education and health sectors.

In 'The Survival of Female-owned Micro Enterprises in the UMkhanyakude District', Nomfundo N. Nxumalo and Irrshad Kaseeram determined factors that increase the probability of rural female entrepreneurs remaining in business for at least two years or longer. Contemporary development theory asserts that women play a prominent role in uplifting their families and developing their communities. The promotion of entrepreneurship among women in rural communities has been shown to be a formidably successful approach to development. Owing to the paucity of local studies on this topic, this project investigated the causal factors behind female entrepreneurs of the uMkhanyakude district staying in business for two years or more. Primary data were collected from entrepreneurs operating their businesses in the locality. Using the snowball sampling method, a sample of 273 entrepreneurs were interviewed by means of questionnaires. Logistic

regression was used to estimate factors that increased the probability of women staying in business. The study revealed that the higher the levels of business experience, education, business success and hours spent on business, the greater the chances of women staying in business. Financial and input constraints were major restrictions on women staying in business. Marital status, age, competition and marketing constraints were found to be insignificant factors. As most of the entrepreneurs in the uMkhanyakude district depend on stokvels and their savings for financing their businesses, the study suggest that such groups be harnessed by the DTI in the Grameen-bank type programmes manner which offer poor rural women low-cost loans for entrepreneurial purposes.

To cultivate and foster green spaces in South Africa is a very important area of participatory research. In 'The Significance of Green Space in the Living Environment: A Case of the Bekkersdal Community, Westonaria, South Africa' Engela P. de Crom and Eric J. Nealer researched the question whehter there is a positive relation between the amount of green space in the living environment of people, and people's health and their well-being, e.g. 'Do green spaces matter in this specific socio-economic environment?' The Bekkersdal Township was founded in 1945 as a mining community. As the mines in the area closed down, unemployment grew and a new informal township was established with the concomitant health, other socio-economic issues and a lack of green space in the immediate environment. The participants consisted of 520 residents of the informal settlement section of Bekkersdal who completed a questionnaire with the assistance of trained fieldworkers. The results revealed that although the residents generally have positive feelings concerning their natural environment, in particular with regard to the vegetable gardens and open areas, environmental risks, i.e. dust, noise, litter and polluted water sources, affect them considerably. Vegetable gardens are popular as they serve as a food source in this underprivileged environment. The participants also showed a great affinity for natural features i.e. trees and open areas. Research from similar surroundings indicated the various positive effects greenspaces have on people in poor living environments. This study suggests that Bekkersdal, although impoverished and plagued with many adversities, has the potential to add value to the living conditions of residents by exploring and cultivating the existing green spaces in addition to that done already. This includes incentive-driven organised environmental activities and initiatives such as clean-up operations, recycling, communal food- and medicinal gar-

dens, and the requisite training to establish and maintain such initiatives.

Vannie Naidoo's 'Analysing University Students' Quality Perceptions and Identifying Strategies in Mapping a Way Forward to Closing the Quality Gaps', engages the matter of how prospective students determine quality education, in their choice of a university. He points out that, as universities vie for the same top students nationally and internationally every year, the main drawcard is to render top quality services to these students. Service quality to a student can mean many things, e.g. by the university being a world-ranked tertiary institution of learning, by it having well-established faculty, by the institution having well-recognised and highly-skilled academics, and an efficient administration staff that have the students' best interests at heart. All these are but a few distinguishing characteristics of high quality services that can set a university apart from others. His research, then, provides a review of service quality with specific reference to service quality at universities. The SERVQUAL instrument was used to measure students' perceptions on service quality at the university of KwaZulu-Natal in South Africa. The Gaps model formed the foundation for the study. The survey conducted amongst the students at the university, indicated that there was a marked degree of dissatisfaction among students, with the services provided by the university. From the empirical results the researcher provided strategies to the university's management that could close these quality gaps and improve the services rendered to students.

Mark Livingstone and Sam Lubbe's article is titled, 'Including Pervasive Skills in an Accounting Curriculum at a Rural South African University'. As accounting programs at South African universities strive to attain and maintain accreditation with the South African Institute of Chartered Accountants (SAICA), an important component is incorporating pervasive skills into the curriculum. Their article details how a methodology was identified and adopted in order to incorporate these requirements across the four years of a yet to be accredited professional undergraduate accounting degree. The process commenced by mapping program objectives to individual modules thus facilitating a mapping and scaffolding process of the program. Focus group interviews with discipline leaders resulted in a coherent and coordinated approach to curriculum review that included consideration of the specific needs of students attending a rurally based South African University. The concept of a capstone course was also integrated into the final year of the program in order to compliment and complete concepts encountered earlier.

Future studies subsequent to the adoption of this methodology may develop or evaluate its efficacy.

Desan Iyer focuses his research on nonverbal cues or signs as a means of improving the communication skills of law students and legal practitioners. Pointing out that clients are often intimidated by the legal profession, when they seek help, or, some form of legal assistance, he argues that this is an important area in which law students should be skilled. Moreover, nonverbal communication is a key component in any form of face-to-face communication or interaction event. His research seeks to address this hiatus, in the legal curriculum, and the resultant ignorance of this important area of intellectualisation in the legal profession. His article then provides feedback on his research on this matter, involving all practicing attorneys with legal experience ranging from one to twenty years. From the study, it emerged that the current one-dimensional communicative legal system constituted a challenge to most young attorneys. The study found that an understanding of the different components of nonverbal communication and its sign structures are crucial for attorneys to gain insight into the subjective meanings that emerge during the consultation process. The findings suggest that the study of nonverbal communication amalgamated with traditional legal skills would help remove the deep-seated dichotomy that still exists between theory and practice in the LLB curricula.

Few areas of Psychology have attracted as much controversy as that of intelligence. Some experts argue that intelligence is the most important aspect of individual differences, whereas others doubt its value as a concept (Deary 2014). Focusing on this matter in their 'Emotional Intelligence and Academic Performance', the aim of the research conducted by Sonia Swanepoel and Lucille Britz, was to determine the relationship between general cognitive ability, emotional intelligence and academic performance. This, against the background of 'emotional intelligence' (EI) as defined by Salovey and Mayer (1990), and seen as a subset of social intelligence and similar to that of intrapersonal intelligence. The concept involves the individual's ability to appraise his or her own and other's feelings and emotions, discriminate among these emotions and use the emotion information to accomplish tasks to reach goals. The instruments utilized were the Learning Potential Computerised Adaptive Test (LPCAT) and Emotional Intelligence Test Body-Mind (Jerabek 1996). The sample comprised of 32 third year students studying Human Resources Management. The results indicated a positive relation between

academic performance and emotional intelligence. Inferential statistics proved that males and females do not differ significantly on the three dependent variables.

‘Management Accounting Tools for Sustainability Information Decision-making and Financial Performance’ is the title of the article by Khatutshelo Matambele and Huibrecht M van der Poll. Many organisations today are still not making use of Management Accounting Tools (MATs) to assist in providing sustainability information for decision-making and the way it influences the financial performance of an organisation. As a result it may negatively impact financial performance of organisations due to a number of errors which may include out-dated cost drivers; erroneous business decisions; inaccurate information; and human errors. Without applying MATs, managers of organisations may find it difficult to improve the day-to-day operations and take decisions to enhance the financial performance of the business. Information was collected using interview schedules, to examine whether MATs can provide sustainability information for decision-making and how it influences the financial performance of an organisation. The research was carried out among listed organisations on the Johannesburg Stock Exchange (JSE). It was established that MATs provide strategies that influence decision-making and performance, although decision-making is the responsibility of executives or directors of the organisations. The study also established that financial managers are focusing more on financial statements and the reporting on Management Accounting (MA) tasks. Hence future research should focus on the importance of segregating MA roles from those of financial accountants or managers to enable the organisation to focus on different reports for different outcomes.

Peter Mkhize’s ‘Impact of Change Commitment to Information Systems Change in the South African Construction Industry’ focuses on the fact that business competition and growth in the Information age is fuelled by rapid innovation of Information Systems (IS). In turn, he argues, business leaders demand rapid Information System adaption that would enable all stakeholders – even in the small parts of an organization – to take advantage of innovation. Therefore, organizations continuously upgrade in order to keep abreast with competitors in the global market. In this process, there is also often a lack of commitment to IS change programmes from employees who may even go to the extent of resisting Information Systems change initiatives. The research for this article investigated the associations and impact of IS change

communication and the understanding of the worth of IS change on commitment to IS change in the construction industry using a survey research design. Results indicate that both communicating IS change and the understanding of worth of IS change, are moderately related to commitment to IS change. Moreover, regression analysis results proved that understanding the worth of IS change, is a better predictor for commitment to IS change when compared to communicating IS change.

Since the turn of the century, malicious software, called malware, has been generated to infect not only computer systems but also ‘smart’ mobile phones. This malicious code is designed specifically to infect the mobile devices and disrupt the operation of the device or to send messages or make calls, resulting in financial loss to the user. Brett van Niekerk and Manoj S. Maharaj address this challenge in their ‘Mobile Malware Implications for IT Management’. Their article analyses trends in mobile malware from the listings of the malware descriptions. These trends show the increasing severity of the mobile malware problem, the introduction of new malware types, and the changing focus on the malware objectives; predictions of possible future trends are also made. The implications of these trends for organisational management are discussed, and possible countermeasures to the risks are suggested.

The topic for the research conducted by Lesley Stainbank and Kibra Adagish, is ‘Non-Financial Disclosures in the South African Mining Industry’. The aim of the article, is to analyse the nature and extent of non-financial disclosures in South African mining companies’ annual reports both pre- and post-King III to explore the impact that King III may have had on such disclosures. The research methodology adopted was a content analysis of annual reports prior to the issue of King III and then, in order to provide a second benchmarking period, more recent studies of mining companies’ annual reports after the issue of King III were accessed. These studies also used content analysis allowing for some degree of comparability. The study found that overall, the non-financial disclosures for all mining companies showed an increasing trend for the years leading up to the issue of King III. After the release of King III, the study found that although the extent of disclosures increased further, pointing to King III being the impetus for such an increase, there is still room for improvement in corporate governance disclosures especially with regard to forward looking disclosures and board of directors’ disclosures.

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Definition of Leadership in Africa within the Twenty-first Century Context: Empirical Research on Leadership in Africa

Matete Lerutla
Renier Steyn

Abstract

Orientation: Leadership is a widely used construct and there are numerous articles across multiple disciplines. In the past few years there has been growing interest to investigate the construct of leadership in Africa. Much of what is written is conceptual, and empirical articles on African leadership remain sparse. **Research purpose:** This paper reports on the findings of the systematic literature review that was conducted on leadership in Africa. The paper presents a qualitative review of empirical research highlighting key findings and implications for future research. **Research method:** The research investigation followed the traditional body of knowledge framework of concepts, statements, definitions, and conceptual frameworks to systemize reports on leadership in Africa. Articles were identified, selected and analysed using the systematic literature review methodology. Articles, statements, definitions, models, typologies, theories, and paradigms were explored and interrogated in each article to understand how they are linked to leadership in Africa. **Main findings:** A total of 96 articles were retrieved from eight electronic search engines. Following the application of inclusion and exclusion criteria, only thirteen articles met the set criteria - suggesting that little empirical research is conducted on leadership. The findings illustrated the extent of paucity of empirical research on leadership in Africa and clearly indicate a definite need to investigate it, and then to build on the understanding of African leadership through empirical research. The published articles showed that the concept of African leadership is seldom defined, measure-

ments are typical of the Western tradition, and that the set hypotheses do not include the African context. Furthermore, no Africa-specific models or theories are presented. The positivist paradigm was most often used in the research. Practical implications: The literature review has provided an understanding of the extent of the lack of empirical work around leadership in Africa. There is a definite need for systematic empirical work to explore what leadership means in Africa, and to build the concept of African leadership as a concrete scientific construct. The paper concludes by providing suggestions on how to bridge the gap towards understanding leadership in Africa.

Keywords: Leader, Leadership Practice, Africa, Conceptual Framework, Body of Knowledge

Introduction

Leadership is a concept that is known and referred to in organizations and societies as a construct associated with, or believed to be a key to organizational effectiveness or societal success (Garg & Ramjee 2013:1430). It alludes to improved business operations and performance (Mokgolo, Mokgolo & Modiba 2012:2; Thom 2014:32), and how people respond to change (Nkomo & Kriek 2011:453). The construct of leadership has received much global attention by researchers and scholars across different disciplines (Marturano & Gosling 2008:xxiii). Furthermore, Dinh *et al.*, (2014:36) state that over the last two decades, leadership theories have been advanced exponentially. Yet, despite the recognition and the ‘alleged’ importance of leadership, and amidst the increasing growth in leadership research, there is no universal understanding of what leadership is (Bolden & Kirk 2009:60). Similarly, Grint (2005:1478) argues that leadership remains an elusive and contested concept, and it is highly unlikely that an agreement on what it entails, could emerge.

Western leadership paradigms, which have dominated research on the topic of leadership, are being questioned (Bolden & Kirk 2009:69). There is a growing theoretical movement which suggests that leadership should be looked at within the context in which it is practiced (Humphreys *et al.* 2010:118; Littrell & Nkomo 2005:563; Mbigi 2000:24; Posner 2012:573; Van

der Colff 2003:258). Researchers argue along these lines that leadership practices always occur within a specific context (Mboup 2008:95; Haruna 2009:941; Jones *et al.* 2012:68; Muchiri 2011:440). To this end, it is observed that some research evolved from exploring individual leadership attributes to researching interactions and processes that form leadership practice (Avolio, Walumbwa & Weber 2009:422), thus focussing more on context.

The geographical context is one that has received much research attention in Africa. It has been observed that while global leadership practices of the eighteenth to twentieth centuries were influenced by Eurocentric theories, researchers are beginning to realize that the African context has its own values and practices that should be an integral part of leadership in Africa (for example; Bolden & Kirk 2005:5; Littrell & Nkomo 2005:563; Chatbury, Beaty & Kriek 2011:157). With this shift, there has been interest in how culture influences leadership practice in Africa (Littrell & Nkomo 2005:562; Mbigi 2000:21; Van der Colff 2003:258). Despite the interest, it was discovered that very little empirical research has been conducted to address leadership on the African continent (Walumbwa, Avolio & Aryee 2011:432). Kuada (2010:9) reiterates this and states that while a good deal has been written on the subject of leadership in Africa, there is still a shortage of academic, and particularly empirical, publications on the subject.

In a quest to contribute to the academic body of knowledge about leadership within the African context, this study presents an exploration of empirical endeavours on the subject. Literature was systematically reviewed to identify all research conducted in the last seven years where the construct of leadership in the African context was investigated. The reason for conducting a systematic literature review was to ensure that a thorough and unbiased method was used to identify, select and report on the available literature under investigation (Nightingale 2009:381; White & Schmidt 2005:54). Through the literature review process, the researchers' objective was to present and critically evaluate the standing of the current body of knowledge as it pertains to a uniquely African leadership.

Literature Review

This study is a systematic literature review of empirical research on leadership in Africa. A summary of the body of knowledge is the outcome of this study,

and will be presented under the heading ‘Findings’. These findings would traditionally be presented as the literature review. In the section that follows below, however, the focus will be on the important matter of literature reviews and specifically the uniqueness of systematic literature reviews.

A literature review is central to the argument of all academic texts as it allows researchers to present a broad perspective on the topic under investigation (Green, Johnson & Adams 2006:102). Robson (2011:51) states that literature is that which is already known and written down according to one’s research construct or theme. Furthermore, a review of the literature is important as it helps not only with the design of the research project, but also with deciding on the questions that should be investigated during the research project.

During this particular research process, the researcher used a systematic review of the literature, as opposed to using the conventional or traditional method of reviewing literature. Traditional literature reviews involve the process of identifying, locating and analysing the relevant documents regarding the topic under investigation (Robson 2011:51). The documents that are used under traditional literature review broadly include articles, abstracts, reviews, monographs, dissertations, books, and any research publication (Gay & Airasian 2003:16). Nightingale (2009:381) states that the concept of systematic review will minimize researchers’ bias on selecting and extracting empirical data. A systematic literature review is described as a quantitative process that helps to integrate empirical data by providing a summary and critique of the data (Green *et al.* 2006:106; White & Schmidt 2005:381). It is an approach that objectively reports on the current body of knowledge of a particular research topic, based on published articles (Robson *et al.* 2007:342; White & Schmidt 2005:54). This approach to reviewing literature emphasizes the relevance and comprehensiveness of the material as well as the quality of the evidence reviewed (Robson 2011:52). It has provided meaning in the context of evidence-based approaches and the synthesis of research findings (Tranfield, Denyer and Smart 2003:208; Robson 2011:103). The approach is an essential step in any pragmatic research process as it enables the researchers to identify popular, dominant or evolving issues, themes or topics, and to determine diversity of research findings (Robson 2011:103).

Nightingale (2009:381) argues that the systematic literature review methodology creates a reliable base of data accumulated from a range of

studies. Nightingale also provides the following guidelines for the methodology that should be applied when conducting a systematic literature review:

- The systematic literature review should clearly state the aims and objectives of the review;
- It should indicate the criteria for inclusion and exclusion of studies;
- It should indicate how the studies will be identified; and
- The manner in which the findings will be analysed.

Nightingale's (2009:381) aforementioned structure does not differ fundamentally from the way in which White and Schmidt (2005:293) present the systematic literature reviews. The Nightingale (2009:381) strategy will be followed to investigate leadership in Africa and to systemize knowledge in this field. This study goes further than Nightingale (2009:381), and White and Schmidt (2005:293) by specifying beforehand how the discovered literature will be analysed. The body of knowledge framework of De Vos *et al.* (2011:180) was used. As stated in the opening sentence of this section, this literature review section has not presented literature on leadership in Africa, but rather literature on literature reviews. Literature on leadership in Africa is presented as 'Findings'.

Problem Investigated

As illustrated in the introduction section, there is a growing interest in studying leadership within the context it is practiced, and Africa in particular has been one geographic context of interest. In addition, reference to 'African leadership' or 'leadership in Africa', suggests that within the African social context, the constructs of leadership or leadership practice are defined differently from the rest of the world.

However, research on leadership specifically pertaining to Africa, has not been systemized, therefore hampering the understanding of the phenomenon, and leaving a vacuum in which potential researchers need to operate. This article attempts to fill this void by investigating the extent of the empirical work that has been conducted in Africa on leadership by using Nightingale's (2009) approach for conducting the review (described above),

and the guidelines provided by De Vos *et al.* (2011:181) for structuring the content of the review (discussed below).

Research Objectives

The objectives of this research were the following:

- To locate a comprehensive collection of empirical articles on leadership in Africa;
- To structure the available literature according to a standardized scheme of organizing knowledge;
- To critically analyse how the available information corresponds to the standard scheme of a body of knowledge; and
- To make recommendations on future research that will contribute to establishing a comprehensive body of knowledge on leadership in Africa.

Research Method

The research method used in this study is linked to the purpose of this document, which is to provide a systematic and qualitative review of empirical research conducted on the topic of leadership in the African context. This section describes the process that was followed to assess and analyse contemporary academic publications on leadership in Africa.

Sampling

The sample used during any research process must be representative enough to allow for conclusions and generalizations (Creswell 1998:65). The search for relevant information was extensive, including many databases and specific material excluding irrelevant information. The main aim was to trace as many as possible published empirical articles on leadership in Africa. Green *et al.* (2006) state that at least two databases should be searched to provide for reasonable breadth and depth on the topic. To this end, two broad databases (EBSCOhost and ProQuest) were used to search for articles.

Numerous measures were established in order to be specific. The first was the use of keywords; *leader (leadership) and Africa* (African), and these keywords had to appear in the title of the article. Method* (methodology) was used as a keyword to appear anywhere in the text, as empirical articles usually have such a section. Babbie and Mouton (2001:192) indicate that when building the body of knowledge, only articles accepted in scientific research should be included. Green *et al.* (2006:105) also state that when searching for empirical literature only reputable publication journals will give credible and current information on a subject under investigation. Therefore, only articles that were reviewed, and peer-reviewed scholarly journal articles were included in the final selection. In order to ensure currency, only articles published over the past seven years (2007–2014) were incorporated. For practical reasons, the search was limited to an electronic search of articles published in English. The search was conducted over a period of six months, from March to August 2014.

In order to assess relevance (Kable & Maslin-Prothero 2012:89) the abstracts of the found articles were first read to assure the appropriateness of the article to the search criteria. The articles had to have a methodology section to suggest that they were created through empirical findings. Articles that were not published in English were excluded. In the process we decided to disregard single page articles, conference abstracts, newspaper articles, and articles that referred to leadership superficially or peripherally. In addition, articles that focused on ‘African-American’ leadership were excluded. Those that complied with the inclusion criteria were documented and removed duplicates were retrieved.

Data Analysis

The articles were analysed using the three building blocks of science as established by De Vos *et al.* (2011:46), i.e. to determine: which *concepts* were commonly investigated in empirical studies; often-used *statements* (definitions, hypotheses, propositions, and truth statements); and the *conceptual frameworks* (typologies, models, theories, and paradigms), applied during empirical work. Below is a summary of how the different building blocks were identified.

Concepts were distinguished as keywords that appeared on the keyword list of selected articles and they provided an all-encompassing view

of the subject that the article is addressing. Only concepts that were reported in the articles were stated in the findings.

Statements include definitions, hypotheses, propositions, and truth statements. Definitions were identified by sentences that included the words ‘definition’, ‘described as’, ‘defining’, and ‘viewed as’. Hypotheses and propositions were categorized and identified in the articles as statements of expected outcomes that the researcher aimed to prove, while truth statements were identified as statements that were formulated from testable claims.

Conceptual frameworks refer to typologies, models, theories, and paradigms used in the various articles. References to groupings of concepts with the same characteristics were seen as typology, references to scientific and hypothetical frameworks used to explain concepts were recorded as models, and proven frameworks – explaining underlying forces – were linked to theories.

The qualitative method of analysis used above is similar to that which Babbie and Mouton (2001:270) outlined.

Findings

During the literature review process two reputable electronic search engines, EBSCOhost and ProQuest, were used to conduct the systematic literature review. Eight databases on EBSCOhost (Africa-Wide Information, Business Source Complete, ERIC, Humanities Source, Academic Search Premier, PsychARTICLES, PsycCRITIQUES, and PsycINFO) were searched and 51 articles were retrieved that matched the selected keywords as described above. Seven databases were searched with the ProQuest search engine, (applied social sciences index and abstracts (1987-current); COS Scholar Universe information; ebrary® ebooks information; ERIC (1996-current); Library and Information Science Abstracts (1969-current); ProQuest Business Collection (1951-current); and ProQuest Central (1971-current) and 45 articles were retrieved. A total of 96 articles were found on all databases. Following the inclusion and exclusion criteria, only thirteen articles, as presented in the table below, were deemed relevant in terms of meeting the search criteria and the relevance to the study. Based on the outcome of the findings, it is evident that while a lot is written about leadership, there have only been a few empirical studies on the subject, especially in the African context, over the past seven years.

#	Author	Year	Research topic	Journal	Author's Affiliation	Research Method
1	Banatu-Gomez, M.B. & W.G. Rohrer	2011	The influence of leadership practice 'Inspiring a Shared Vision' on group norms in the organizational culture of financial institutions in Gambia, West Africa.	<i>Journal of the American Academy of Business</i>	Rowan University (USA)	Quant.
2	Bolden, R. & P. Kirk	2009	African leadership: surfacing new understandings through leadership development.	<i>International Journal of Cross Cultural Management</i>	University of Exeter (UK); University of the West of England (UK)	Qual.

3	Bush, T. & D. Glover	2013	School management teams in South Africa: a survey of school leaders in Mpumalanga Province.	<i>ISEA</i>	University of Nottingham (UK)	Quant.
4	Chatburry A., D. Beatty & H.S. Kriek	2011	Servant leadership, trust and implications for the 'base-of-the-pyramid' segment in South Africa.	<i>South African Journal of Business Management</i>	University of Pretoria (RSA); University of the Witwatersrand (RSA)	Quant.
5	El Ansari, W.	2012	Leadership in community partnerships: South African study and experience.	<i>European Journal of Public Health</i>	University of Gloucestershire (UK)	Quant

6	Garg, A.K. & T. Ramjee	2013	The relationship between leadership style and employee commitment at a parastatal company in South Africa.	<i>Inter-national Economics and Business Research Journal</i>	Tshwane University of Technology Business School (RSA)	Quant.
7	Mokgolo, M.M., P. Mokgolo & M. Modiba	2012	Transformational leadership in the South African public service after the April 2009 national elections.	<i>SA Journal of Human Resource Management</i>	University of South Africa (RSA)	Quant.

8	Ngcobo, T.M.	2010	Organic leadership associated with good academic performance: an ethnographic study of two South African secondary schools	<i>Inter-national Studies in Educational Administration</i>	University of the Western Cape (RSA)	
9	Nkomo, S. & D. Kriek	2011	Leading change in the 'new' South Africa.	<i>Journal of Occupational and Organizational Psychology</i>	University of Pretoria (RSA); University of the Witwatersrand Business School (RSA)	Qual.
10	Scott, S. & J.F.A Rarieya	2011	Professional development of school leaders: cross-cultural comparisons from Canada and East Africa.	<i>ISEA</i>	University of Calgary (Canada); Aga Khan University (Tanzania)	Mixed

11	Thom, D.	2014	Business leadership and continuing professional development of Education management teams in a South African school group.	<i>ISEA</i>	University of South Africa (RSA)	Qual.
12	Wakahiu, J.	2013	Making a difference: the role of religious women in bringing democratic leadership into Africa.	<i>Journal of Leadership, Accountability and Ethics</i>	Marywood University (USA)	Qual.
13	Ward, J.A. & S. Kiruswa	2013	Rise to Leadership: an evaluation of African Maasai Women's leadership.	<i>Journal of Inter-national Business Research</i>	Regent University (RSA)	Quant.

Table 1: Empirical articles that investigated leadership in Africa over the past seven years

Of the thirteen articles documented; five were conducted within the business discipline, four in the education sector, three in the public

administration field, and one in the spiritual discipline. Interesting to note is that only six of the articles produced were by authors from academic institutions in Africa, specifically South Africa, while seven of the articles were written by authors affiliated with universities in the United States of America.

The thirteen articles that were selected and documented – presented in Table 1 above – were then studied several times for information relevant to the body of knowledge as described by De Vos *et al.* (2011:509-513). The section does not provide a statistical view of the findings (that is a meta-analysis), but it rather provides a summary and critique of the findings, typical of a systematic literature review.

In the next section, the findings are reported using a qualitative style. Only constructs that are explicitly stated are reported in the different categories. No effort was made to assume anything that was not explicitly reported in the articles, as this would have introduced bias.

Findings Relating To Concepts

Concepts provide an overarching view of what the article is addressing and they were identified as the keywords that appear in the article's abstract. Of the thirteen articles listed in Table 1, eight did not have keywords listed. The other six articles had the keyword 'leadership' mentioned three times and the concept 'Africa/African' were listed twice. No other word was listed more than twice.

Findings Pertaining to Statements (Definitions, Hypothesis, Propositions, and Truth Statements)

As mentioned previously, *definitions* are statements by which social phenomena are understood and they provide meaning to a construct. When searching for definitions in the thirteen articles it was only sentences that included the words 'definition', 'described as', 'defining' and 'viewed as', that were considered as statements defining the concept of leadership. Only two statements were identified as definitions of leadership and the two definitions are as follows: 'Leadership is defined as an influence relationship among leaders and followers who collectively intend real changes that affect their shared purpose' (Banatu-Gomez & Rohrer 2011:161) 'Leadership is viewed as

being mainly about an individual's ability to influence the attitudes and activities of others' (Ngcobo 2010:21).

Although all of the above definitions describing leadership varied, the constant concept used to describe leadership is influence, with the others being collective and communal.

Certain articles explicitly related statements of expected outcomes (either hypotheses or propositions) which were intended to be tested through the research process. The *hypotheses* statements in the respective articles were as follows:

- Mokgolo, Mokgolo, and Modiba (2012:3-4) formulated three hypothetical statements maintaining that transformational leadership has a beneficial relationship with subordinate leadership acceptance, job performance and job satisfaction.
- Bush and Glover's (2013:21) hypothesis is that distributed leadership results in effective management (of schools).
- Ward and Kiruswa (2013:113) formulated two hypothetical statements stating that having a formal education and a mentor contribute positively to the attainment of leadership positions, while arranged marriages and increased roles have a negative impact on the achievement of leadership positions (for Maasai women).
- Garg and Ramjee (2013:1416) formulated nine hypotheses around the relationship between various leadership styles practiced in organizations (transactional, transformational, and laissez-faire) and their influence on employee commitment (normative, affective, and continuance). They indicate that leadership style plays an important role in determining levels of affective commitment, continuance commitment and normative commitment.
- Chatbury, Beaty and Kriek's (2011:57) hypothesis is that there is a relationship between servant leadership and interpersonal trust.
- El Ansari (2012:174) states that leadership relates to a sense of ownership and the member's commitment.

While the hypotheses above are from studies conducted on leadership in Africa, they do not predominantly focus on elements particular to Africa. Statements that state the relationship between constructs were described in the

preceding paragraphs. The following *propositions* were identified in the articles: Bolden and Kirk (2009:83) suggest that given that Africa has a broad spectrum of cultural, religious and ethnic diversity, the term African leadership may be too broad to define exactly what it is. They propose, however, that there is a relationship between leadership, context, and cultural factors in Africa. Thom (2014:32) suggests that business leadership competencies could improve the quality of managerial leadership (in schools). Ngcobo's (2010:31) proposition is that leadership (at African township schools) forms a basis of a culture that fosters and supports good (academic) performance. Compared to the hypotheses, these propositions seem to have more of a focus on Africa.

As statements formulated from testable claims the following *truth statements* were articulated in the respective quantitative articles:

- Mokgolo, Mokgolo and Modiba (2012:1) found that transformational leadership has a positive correlation with subordinate leadership acceptance, performance and job satisfaction.
- Bush and Glover (2013:39) report that in the South African school context, the concept of distributed leadership is used in different ways and to varying extent. As a result, it is impossible to present a blueprint for effectively distributed leadership. The hypothesis that distributed leadership results in successful management of schools and could therefore not be confirmed and generalized.
- Ward and Kiruswa (2013:118) found no relationship between education and a rise to leadership, while a positive correlation exists between having a mentor and a rise to leadership. The strongest predictor of attaining a leadership position was arranged marriages and roles outside work.
- Garg and Ramjee (2013:1411) report that there is a relationship between transformational leadership behaviours with affective, continuance and normative commitment. Transactional leadership was found to have a positive relationship with normative commitment, while laissez-faire leadership has a negative relationship with affective, normative and continuance commitment.
- Chatbury *et al.* (2011:60) report that there is a relationship between servant leadership and interpersonal trust between low level workers and their managers. The authors emphasize that these findings should

not be generalized in more complex populations who might require different business models.

- El Ansari (2012:183) reports that leadership skills (collaboration, coalition, and facilitative styles) are critical for the processes and outcomes of inter-professional partnership and sense of ownership.
- In many respects these findings don't report on anything particular in Africa, apart from applying Eurocentric principles in the African context.
- From the qualitative studies, the following statements of truth were made: Bolden and Kirk (2009:80) state that African leadership holds multiple and sometimes conflicting meanings and connotations. Africans aspire to leadership founded on humanistic principles; a more inclusive and participative leadership that values individual differences, authenticity and serving others. They conclude that leadership in Africa bears similarities to those of other regions, but cultural and contextual factors have a role to play in its construction and enactment. Thom (2014:37) found that there are distinct business leadership competencies that are lacking in education management and that need to be developed in order to improve managerial leadership in schools.
- Ngcobo (2010:25) reports that school cultures that foster communal ownership on issues of importance to the community lead to good academic performance among South African schools. He also states that the type of leadership linked to good academic performance is one which emerges organically from within an organisation – in this instance, schools.

The qualitative studies address the African context clearer than the preceding quantitative studies.

Findings Pertaining to Conceptual Frameworks

The findings on conceptual frameworks (typologies, models, theories, and paradigms) are shared in the next paragraphs.

The types of leadership (with reference to *typologies*) that were presented in the articles included value-based and charismatic leadership, distributed leadership, servant leadership, collaborative involvement,

motivational influence, inspirational leadership, leadership with intellectual stimulation, shared leadership, leadership that inspires a shared vision, split-task dual leadership, and transformational and transactional leadership (Garg & Ramjee 2013:1411-1435; Mokgolo, Mokgolo & Modiba 2012:1-9; Ngcobo 2010:19-34; Nkomo & Kriek 2011:453-470; and Wakahiu 2013:78-95). None of these has a uniquely African flavour.

The theoretical models presented below describe relationships suggested in the articles that were reviewed.

Leadership Style Influences Attitude and Organizational Performance

Some of the articles share a view that certain leadership practices or behaviours have a direct impact on organizational performance, growth, or change in behaviour. For example, Banatu-Gomez and Rohrer (2011:161) investigated the influence of leadership practice on 'inspiring a shared vision' in a financial institution. In particular, their model argues that the leadership practice of inspiring a shared vision will influence organizational growth. Similarly, El Ansari (2012:175) explored the importance of communication, collaboration, involvement of others, and providing a social/educational capacity as critical for partnership leadership. Nkomo and Kriek (2011:460) investigated how leaders effectively direct change in the new South Africa. Using the typology of visionary leadership, they argued that leading change by providing or inspiring a shared vision and values result in effective leadership. Mokgolo, Mokgolo and Modiba (2012:2) investigated transformational leadership in South Africa following the 2009 elections. They argued that transformational leadership is vital to effective organizational success. Leadership behaviour attributes associated with transformational leadership, such as influence, intellectual stimulation and inspiration were found to be beneficial to organizational success.

Leadership Style Influences Behaviour

The following were which suggest that influences behaviour:

- Garg and Ramjee (2013:1414) investigated the relationship between leadership and employee behaviour in relation to their level of

commitment. The theoretical model used in their investigation is that both transactional and transformational leadership styles play a role in employee commitment. They further report that the two stated leadership practices will further enhance organizational effectiveness.

- Similarly, Banatu-Gomez and Rohrer (2011:161) point out that specific leadership practices can nurture behaviour that fosters accountability, innovation, and sustainable change, leading to increased organizational performance.
- In another empirical research article, Chatburry, Beaty and Kriek (2011:60) report that servant leadership at the bottom of the pyramid engenders trust relationships essential for cooperation, teamwork, and collaboration between stakeholders.

Leadership Effectiveness is a Result of Shared Ownership of Responsibilities

Some articles pose a view that a context that allows for shared distribution of leadership responsibilities creates opportunities for leadership effectiveness. For example, Bush and Glover (2013:21-22) suggest that distributed leadership increases organizational success. Their model argues that distributed leadership ensures the collective use of talents in order to deliver successfully on leadership activities (Bush & Glover 2013:29). Distributed leadership recognizes that influence and leadership is not necessarily positional and that where decision making is distributed or shared across the organization, the results thereof are success and effectiveness (Bush & Glover 2013:22-32). Likewise, Bush and Glover (2013:22), using the typology of distributed leadership, argued that it has an impact on team development. Wakahiu (2013:81) argues that democratic and collaborative leadership result in collective action and ownership, while El Ansari (2012:183) argues that dispersed leadership is related to team efficacy, satisfaction, and outcomes. Ngcobo (2010:25) also suggests that leadership behaviour fostering communal or shared leadership promotes inclusiveness.

Findings Pertaining to Research Paradigms

The researchers did not explicitly state the research paradigms in the thirteen articles reviewed. Taking into account the argument in the description in

section 5, in this current research, the methodologies and data collection in the thirteen articles were used to infer the research paradigms that informed the various studies. The articles were classified into any of the three major research paradigms; positivist or post-positivist, interpretivist, and critical.

- *Positivist or post-positivist paradigms* are mostly associated with quantitative research methodologies, founded on the belief that there is an objective reality out there that can be studied through prediction and control. This paradigm argues for cause and effect in relationships and finding an objective truth by asking questions and hypothesizing upfront (Shah & Al-Bargi 2013:254-256). The methods of collecting data used by positivist researchers include questionnaires, closed-ended questions, and structured interviews. Emphasis is placed on sampling, validity, and reliability of the research findings. By reviewing the thirteen articles, six of the articles could be classified within the positivist paradigm. These studies used quantitative methodology, employed surveys as the primary research method, and relied on statistical, correlational and descriptive analyses to understand the data. The six articles that are categorized as fitting the positivist paradigms were: Bush and Glover (2013:21-40), Chatburry, Beaty and Kriek (2011:57-61), Garg and Ramjee (2013:1411-1435), Mokgolo, Mokgolo and Modiba (2012:1-9), Thom (2014:28-39) as well as Ward and Kiruswa (2013:109-120).
- *Interpretative paradigm* emerged as a criticism to positivism and their primary argument is that reality is relative and as a result there are multiple realities of phenomena. This paradigm is associated with terms such as constructionism, naturalism, qualitative research, grounded theory and ethnography (Kirkwood & Campbell-Hunt 2007:223). For interpretative researchers, the aim is not to generalize but to generate a few constructions through which there is consensus after interpreting different and subjective understanding or meaning applied to a social phenomenon (Shah & Al-Bargi 2013: 254-256, Wayhuni 2012:71). The methods of collecting data include case studies, interviews, field notes, and diary observations. By reviewing the thirteen articles, four of the articles could be classified within the interpretative paradigm as these articles used qualitative research as a

primary methodology. Data was collected using unstructured observations, questionnaires, semi-structured interviews, informal conversations, case studies, and life stories, among others. Comparative, content and thematic analyses were used to understand data by most of these researchers. The four articles that are categorized as fitting the interpretative paradigm were those of Banatu-Gomez and Rohrer (2011:156-167), Ngcobo (2010:19-34), Nkomo and Kriek (2011:453-470) and Wakahiu (2013:78-95).

- *The critical paradigm* is aimed at searching for change and improving the lives of the participant. It challenges conventional ways of conducting research by arguing that reality is shaped by social, cultural, political, and ethnic values (Shah & Al-Bargi 2013:254-256). The methodology used is dialogue aimed at facilitating transformation of the phenomenon in question. Mixed methods are the preferred method used in the critical paradigm, as they are found to be allowing both qualitative dialogue as well as the collection of appropriate data using quantitative methods (Wayhuni 2012:70). It is also argued that the researchers using this paradigm can apply quantitative, qualitative or mixed methods to design their research (Shah & Al-Bargi 2013:254-256). One article (Bolden & Kirk 2009:69-86) clearly used a critical paradigm.

Two articles (El Ansari 2012:174-184; Scott & Rarieya 2011:65-81) used mixed methods, which could have been informed by a positivist, interpretative or critical paradigm. While there is a representation of the different paradigms on the various articles, it is clear that the positivist or post-positivist paradigm remains dominant in research. In light of the observation that African nationalism and philosophy are critical in nature, it is interesting that there is limited research that uses the critical paradigm to understand leadership in the African context.

Conclusions

This article reviewed empirical research literature on the practice of leadership in the African context. The primary aim of the literature review was to reflect the extent of the body of knowledge in the field of leadership in Africa and to

identify the gaps and well-researched areas. As presented in the preceding sections, it is apparent that while there is a plethora of articles on leadership in Africa across multiple disciplines, there is a paucity of empirical data on the subject. The fact that after a thorough systematic literature review, only thirteen studies reporting empirical data could be retrieved, is evidence of the scarcity of scientific research on leadership in the African context.

With regard to concepts, most of the articles did not list concepts in their keywords section and this suggests that searching for African leadership using the keywords selected could have limited the number of empirical articles conducted on leadership in Africa. It is, in fact, a concern that so few researchers took care to state keywords, which would have made it easier to locate articles.

The results pertaining to statements were presented in four headings, namely definitions, hypotheses, propositions, and truth statements. With regards to definitions, it was found that while most articles do not define leadership in Africa, the two definitions reported did not provide any new (African) meaning to the concept of leadership. For example, the concept used to describe leadership, i.e. influence, is not unique to Africa. It is only in the Bolden and Kirk (2009:69-86) qualitative study on African leadership where there is a suggestion outlined that within the African context, cultural factors have an impact on how leadership is constructed. To this end, they report that Africans aspire to a leadership based on humanity, a leadership that is inclusive, and one that values individual differences with a need for serving those whom one is entrusted to lead.

The observations from the articles with regards to hypotheses show that the formulated hypotheses were not necessarily unique and particular to Africa. In three studies, however, propositions focusing specifically on the African context were formulated. It also seemed that the quantitative studies used traditional Western instruments. Only the qualitative studies that do not follow the more rigid empiricist model, included uniquely African themes. All articles articulated findings viz; truth statements. In line with the hypotheses and propositions, it is found that none of the truth statements are unique to Africa, except for that formulated by Bolden and Kirk (2009:80). This is also to be expected as the hypotheses never included any elements particular to Africa. If anything, the truth statements which followed from the hypotheses affirmed that Western variables acted in a very predictable manner in the African context.

The conceptual frameworks (typologies, models, theories, and paradigms) used in the different studies are not necessarily unique to Africa. Considering typologies, the example types of leadership presented, such as charismatic, distributed, inspirational, and servant leadership, are types of leadership that is reported in global research articles. It is for this reason that one cannot argue that researchers acknowledge leadership practices unique to Africa.

The theories and models used in the aforementioned studies are typically Western, and are simply applied to the African context. Furthermore, the models inferred in the published articles are very simple in nature, for example, leadership results in this or that with no context or at least no African variable listed.

As observed from the research paradigms, there is only one research study conducted that critically explored the phenomenon of leadership in the African context. Most of the other articles followed the conventional paradigms and as a result, we do not observe much difference in the findings around leadership relative to the rest of the world. Given that the African context is diverse, it might be beneficial for critical theorists to explore the concept of leadership in Africa.

The findings of this research simplify concurrence with Chatbury, Beaty and Kriek (2011:58) who stated that in general, empirical literature on leadership is mostly conducted by Western researchers. Similarly, Bolden and Kirk (2009:71) argue that existing empirical data on leadership in Africa is by Western academics who are seemingly motivated by their desire to provide Western managers with an understanding of how to do business in Africa as opposed to assisting Africans to appreciate, develop, or enhance their own approaches. To this end, the extent to which the conclusions by the majority of these articles were presented through the Western epistemological lens remains an interesting question, which should be investigated.

The final conclusion that can be drawn from this study is that the body of knowledge on leadership is inadequately developed and needs to receive serious attention if it is to be recognized in the world of science. Ideas on what could be done in this regard are presented in the recommendations section that follows.

Recommendations

There are multiple implications from the findings of this systematic literature

review. At the onset, there is a need to have more empirical research conducted in the African context. Moreover, African institutes should lead research around topics particular to the African context. For example, as identified through research, leadership in Africa or African leadership has sparked interest in the last few years and it would have been good to find empirical research spearheaded by institutions in Africa as opposed to what transpired through the current literature findings. The limited number of the discovered empirical work suggests that there is a need to investigate leadership within the African context, and there is a need for more academics in Africa to investigate leadership so that they can expand knowledge and demystify the construct of 'African leadership'. Organizations such as the Thabo Mbeki African Leadership Institute (TMALI), the African Leadership Institute (AFLI) and the African Leadership Institute, USA, among others, should be called upon to support the concept of African leadership and to fund research endeavours in this subject.

The surprising finding was the lack of operational definitions on African leadership. Though philosophers have debated the matter at length, very little has been done in the world of science. An important step towards establishing a body of knowledge on this topic would be to operationally define the meaning of leadership in Africa. In doing so, future researchers will be able to determine whether leadership in Africa is any different from leadership in other parts of the world. Thorough debate on this matter is encouraged.

Most striking about the investigation was the lack of anything particular to Africa in hypotheses, models, theories, and paradigms. Researchers seem to replicate Eurocentric research within Africa, without adding the context as a variable, and without adjusting their methodologies and paradigms to the local context. In going forward, it might be worthwhile for researchers to critically assess different research paradigms applied and to move away from conventional paradigms and methodologies.

Researchers are encouraged to make use of the practice of listing keywords, as this will assist other researchers or keen readers of the topics to easily identify concepts that are being investigated.

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Creating an Environment to Enhance Business Development: The Case of a Developing Country, Lesotho

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Abstract

One of the functions of government is to create an environment conducive for business development, which would eventually impact economic development. This paper explores the perceptions of business owners and managers in Lesotho on the functional interventions by government on infrastructural development, and also identifies shortcomings in the current strategy. It became evident from a survey of 219 business owners and managers, that the infrastructure in Lesotho does not fully support business development, therefore, there is limited economic growth and development. However, the Lesotho government has recognised the need to improve both the quality and delivery of infrastructure services and has embarked on a series of reforms in inter-alia, the telecommunication, transportation, education and health sectors.

Keywords: enhance business development, enabling environment, economic development, infrastructural development

1. Introduction

Functional intervention is the type of government intervention that focuses on all sectors of a country's economy. It requires government participation in education, health and infrastructural development. Sound implementation of functional intervention creates a favourable or enabling business environment that caters for better ways of improving market performances (Riley 2006:1; The World Trade Report 2006:75). According to Nanto (2009:1), governments have found it necessary to concentrate on the creation of competitive environ-

ments that encourage business creation and growth and prevent future crises, which leads to a promising entrepreneurial culture. Governments that focus on education and skills training will enhance human capital development. Porter (1998:627) and Hill (2009:190) stipulate that governments have complete control on improving general skills and knowledge of the nation, through establishing education institutions which upgrades the nation's skills, which may contribute to the success of manufacturing industries.

The purpose of this paper is to report on the positive outcomes and potential pitfalls that functional intervention has on the establishment and growth of businesses in Lesotho. More specifically, the primary research objective was to determine the need if any, for greater government intervention in the infrastructural development by surveying the current status to assess inter-alia, the benefits and limitations of existing strategies.

The findings of the research were expected to:

- Serve as a possible source of information for policy makers in government, and business development agencies in Lesotho, and other developing countries, and
- Contribute to research by serving as reference for researchers interested in determining the impact of the uncontrollable external forces in the macro-environment on business development in a developing economy.

This article is organised as follows: Following a brief review of the relevant literature pertaining to the functional interventions implemented by governments in developed and developing countries in general, and by the Lesotho government specifically. Thereafter, the research methodology and data analysis techniques are discussed, followed by a presentation and discussion of the significant findings and of the managerial implications thereof, as well as some suggestions for further research.

2. Literature Review

2.1 Functional Interventions Implemented by some Developed Countries to Enhance the Business Development

Developed countries is a term used to describe highly industrialised nations such as Australia, Canada, Japan, Singapore and the UK (United Kingdom)

among others, including most OECD (Organisation for Economic Co-operation and Development) member countries. Collectively developed countries are referred to as the North or Group B countries, the reason being the originality of most of them which are in the Northern Hemisphere (AGOA (African Growth and Opportunity Act) 2010; Deardorff's Glossary of International Economics: 2010).

If economies are aiming at higher levels of industrial development that can bring sustainable economic growth, there has to be amongst others, efficient infrastructure and greater emphasis on high-levels of education which interact with production. For instance, to enhance business environment, many developed economies focus more on the quality and content of their educational structures (Kader *et al.*, 2009:).

A summary view on how five different developed countries, namely, Australia, Canada, Japan, Northern Ireland and Singapore (chosen randomly), intervene using functional interventions is reflected in Table 1 below.

Table 1: Some developed countries' government strategies for business and economic development

Country	Strategies
Australia	<ul style="list-style-type: none">-The development of a flexible education system responsive to economic needs.-The development of the transport sector.
Canada	<ul style="list-style-type: none">-Investment in research and innovation.-Continuous investment in health and education services.-Encourage business to opt for worker training instead of dismissal.
Japan	<ul style="list-style-type: none">-Logistic infrastructure such as roads, ports and harbours were given priority.-Industry-academia-government partnership was implemented in all educational institutions in order to develop the training capacity of human resources that led to the creation of industries.-Health care system was developed.

Country	Strategies
Northern Ireland	<ul style="list-style-type: none">-Invested massively on its telecommunication infrastructure and the Irish are able to transact easily over the Internet indicating great use of e-commerce.-Investment in education; amongst the best educated regions in terms of performance in the General Certificate of Secondary Education (GCSE) and A-levels.
Singapore	<ul style="list-style-type: none">-Invested heavily on physical infrastructure and industrially oriented education.-Enhanced training and productivity to help its citizens with low incomes to earn better salaries.

It is evident from Table 1 that the developed countries focused on inter-alia, infrastructure, health and education development, which have contributed to economic development. For example, the rail freight works were enhanced across Australia and this has supported productivity (Australian Government 1: 2010). Canada relies on research and innovation to set them apart from other economies, and thus ensure their prosperity. The Canadians are also envied for their clean and renewable energies (Government of Canada 1: 2010).

Japan was extremely affected during the World War II and it still experiences disasters, most recently being the earthquake. Many cities were left in ashes after World War II, and close to nine million people were homeless, the country was entirely devastated, with about 40% of the infrastructure destroyed. However, in less than 15 years after the war, Japan recovered to become a strong economic country. Advanced education and efforts of industry-academia-government partnership were implemented in all educational institutions in order to develop the training capacity of human resources which led to the creation of industries (Japanese Government 1: 2011; Japanese Government 3: 2012; Japanese Government 4: 2012).

In Northern Ireland every business and school can access broadband regardless of its location and this has contributed to a massive use of e-commerce in all UK regions (United Kingdom Government 1: 2010). Singapore realised that there is a need to exchange know-how with the

foreigners in order to allow for growth and income generation. The higher education system is industrially oriented (Kader *et al.*, 2009:11; Singaporean Government 1: 2010).

From the brief discussion of the functional interventions with respect to developed countries, it can be argued that these countries have invested greatly in human capital development and this has contributed to economic growth and creation of sustainable industries. Furthermore, the development of transport sector supports productivity as goods and services are provided at a convenient time. These assumedly attract foreign and local investments, hence opportunity for growth and exchange of know-how.

2.2 Functional Interventions Implemented by some Developing Countries to Enhance Business Development

Developing countries are a collection of countries that usually lack a high degree of industrialisation, infrastructure and other capital investments, their populations are not highly modernised, and they have little or no advanced technology, or sophisticated living standards. These countries are known as the Third World or the South, due to their location which is in the Southern Hemisphere (AGOA.info, 2010; Deardorff's Glossary of International Economics, 2010).

According to the World Trade Report (2006:93), when improving the overall competitiveness of their economies, governments need to realise that there are regional differences in infrastructural demands. African industries are generally known to have poor performance and low technological efficiency, coupled with difficulties in gaining access to information. This could be partly due to lack of infrastructure and capital investment resulting in inadequate technological upgrading. According to Porter *et al.* (2004:33), in developing economies there is poor infrastructure and lack of cluster development. Kader *et al.* (2009) asserts that there is low level of industrial development in Africa, and therefore suggests that developing countries should raise the quality standard and quantity of primary schooling and basic technical education.

A brief discussion follows on a few randomly selected countries, namely, Botswana, Ghana, Rwanda, South Africa and Tanzania, and Lesotho so as to highlight similarities in emphasis.

Table 2: Functional interventions implemented by some developing countries to enhance development

Country	Functional Interventions
Botswana	<ul style="list-style-type: none">-Investing in both infrastructure and human development.-The National Human Resource Development Strategy implemented in 2009 guides training and facilitates matching of skills with economic needs through a revised Junior Secondary School curriculum which caters for entrepreneurial skills.-The Tertiary Education Policy allows potential students to get loans or grants to go to tertiary institutions.
Ghana	<ul style="list-style-type: none">-The strategy of the government is to enhance key infrastructures in the country, in the medium term.-More resources directed to the education sector.
Rwanda	<ul style="list-style-type: none">-Human and economic infrastructure development as strategies to reduce poverty; human development includes education and health and economic infrastructure includes the development of transport, energy and communications.
South Africa	<ul style="list-style-type: none">-Among the government's initiatives, include the establishment of an Infrastructure Delivery Improvement Programme (IDIP), which initially focused on the education sector, but was later expanded to provincial health, public works and transport departments.
Tanzania	<ul style="list-style-type: none">-The budget for 2009/10 was intended to improve and expand essential infrastructure services and a National Economic Empowerment Policy was implemented.-The education sector was allocated 1,743.9 billion shillings in 2009/10, an increase of 22 percent on 2008/09.-The government has put emphasis on recruiting qualified teachers at all levels and providing teaching materials.

In Botswana, in 2009, the implementation of the National Human Resource Development Strategy and, the Tertiary Education Policy resulted in the Internship Programme effectively facilitating transfer of development skills to new Botswana graduates who are unemployed. The implementation of the Tertiary Education Policy has also brought about some changes since it, inter-alia, allow potential students to get loans or grants to go to tertiary institutions. Furthermore, Botswana's economy has been transformed from a resource, to a knowledge-based economy. This major effort was achieved through the establishment of the Botswana International University of Science and Technology (BIUST) (Botswana Government 1: 2010).

In addition to becoming aware that inadequate modern physical infrastructure hinders development, Ghana identified its education as an area of weakness (SAPRIN, 2002:148; Ghanaian Government 1: 2010). Furthermore, the government realised that the poor cannot access education and health care services, due to the introduction of user fees. Therefore, the government started providing free education to all disabled children of school-going age since the beginning of 2010 (SAPRIN, 2002:148,157; Ghanaian Government 1: 2010).

The poverty in Rwanda has been caused by economic and historical factors. The country experienced a civil war which escalated into genocide. The war plunged the country into a severe economic depression with an annual GDP growth of -10 percent in 1993 and -49 percent in 1994. Since the war ended in 1995, the government introduced some recovery measures aimed at stimulating economic growth, which included rebuilding the war-damaged economic infrastructure such as roads and business premises. However, notwithstanding such recovery measures, there are still infrastructural challenges (Wangwe 2002:2). Key constraints on expansion were identified and these include skills shortages, lack of capital, lack of demand and high levels of competition, among others (SBP 2008:114).

The South African government is concerned with alleviating skills shortages, unemployment and poverty through education and training. Among the government's initiatives, include the establishment of an Infrastructure Delivery Improvement Programme (IDIP), which initially focused on the education sector, but was later expanded to provincial health, public works and transport departments (South African Government 1: 2010).

The Tanzanian budget for 2009/10 was intended to improve and expand essential infrastructure services and a National Economic Empower-

ment Policy was implemented. This policy was meant to strengthen the economic infrastructure. The education sector was allocated 1 743.9 billion shillings in 2009/10, an increase of 22% on 2008/09. This was because this sector plays an important role in the economy. Therefore, the government has put emphasis on recruiting qualified teachers at all levels and providing teaching materials (Tanzanian Government 2: 2010).

2.3 Functional Interventions Implemented in Lesotho

According to reports in Lesotho Government 6: (2009), Lesotho is aware that development of physical infrastructure is a prerequisite for development of the industrial sector. The Lesotho government acknowledges the need to provide physical infrastructure needed by a modern economy, which is based on improved quality and efficient delivery of infrastructural services.

Lesotho consequently undertook a series of reforms in its telecommunications, power, water and transportation sectors. For example, for the construction and maintenance of urban and rural roads, M873 million was set aside in 2009. However, despite this investment and allocation, there are still poor and mainly inadequate road transport networks. This weakness constrains development and economic growth (The World Bank 2004:3; 2017; Lesotho Government and European Union 2008:23; ADF 2009:5).

According to the UNDP Human Development Report 2005 concerning education, Lesotho was ranked 149 out of 177 countries on the Human Development Index (Lesotho Government and European Union 2008:13). Furthermore, The ADF (2008:10) found that there are low enrolment rates and poor quality education at secondary and tertiary levels.

The Lesotho government is however committed to increasing access to basic education and ensuring that it is relevant to the socio-economic needs of Lesotho and is of high quality. This was indicated by the declaration of 'Free Primary Education for all' (FPE) since 2000. The introduction of FPE has significantly increased the number of school children in all seven grades of primary education to 82% (UNICEF 2010). In addition, industrial development is heavily influenced by the skills taught in vocational schools (Lesotho Government, 2002:6; Lesotho Government 6: 2009).

Against the background of a brief discussion of functional interventions implemented by some developed and developing countries, including Lesotho, to enhance the business environment, the focus will now

turn to the objectives of current paper, by explaining the methodology and findings.

3. Methodology

The Ministry of Trade & Industry, Co-operatives & Marketing (MTICM) was approached for a list of the registered businesses in all 10 districts of Lesotho, however, only a list of registered businesses in Maseru was received. From the list it was evident that there were 10 341 registered businesses in the Maseru District (Lesotho Government 9, Business Ownership, 2010). Thus, the paper reports on the perceptions of a sample of businesses located in Maseru, the capital city of Lesotho. Due to limited time and financial constraints, it was not feasible to personally interview the business owners and managers. According to some researchers (Sekaran & Bougie 2010:197), using a questionnaire is an accurate and cost effective method of collecting data from a large sample in different geographical regions. Thus a survey was the appropriate method to be used to collect data from a sample of registered businesses in Maseru. The sample size generated using an online sample size calculator, at a confidence level of 95% and confidence interval of 5, from a population value of 10 341 resulted in a sample size of 370 respondents (Survey Systems 2011). However, only 219 usable questionnaires were collected.

Probability sampling, more specifically stratified random sampling was used. Since, stratified random sample assures not only the representation of the overall population, but also the representation of key subgroups of the population (Sekaran & Bougie 2010:272). The population was divided into homogenous subgroups known as strata and then a simple random sample in each subgroup was taken (Hair *et al.* 2007:173).

3.1 Data Collection

A pilot test was conducted among 10 businesses from Maseru which were also selected using simple random sampling. Although the responses from this pilot study were not included in the main study, pilot testing helped to determine the face validity of the questionnaire as well as its relevance and appropriateness. It also became apparent that since the questions were taken from an existing questionnaire (Macamo 2009), the questions were found to measure exactly what they were intending to measure.

3.2 Data Analysis

The Kolmogorov Smirnov test was used to determine whether parametric or non-parametric tests could be used to analyse the data. As reflected in Table 3, it became apparent that the data did not come from a normal distribution, thus non-parametric tests were employed to analyse the data.

Table 3: Kolmogorov Smirnov test results

	Kolmogorov-Smirnov Z	Asymp. Sig. (2-tailed)
Impact of availability of premises	4.670	.000
Premises effect on business	3.230	.000
Impact of skilled staff	3.160	.000
Skilled staff effect on business	3.653	.000

Descriptive statistics such as the mean, median, mode and standard deviation, were calculated for all the questions using Statistical Package for the Social Sciences (SPSS) for Windows Version 18.

The reliability of relevant questions was assessed by determining the Cronbach's alpha co-efficients (Sekaran & Bougie 2010:327). The results of the test were 0.738 for questions on availability of premises and staff, implying a good value, since a value of 0.7 or higher is considered to be good (Sekaran & Bougie 2010:328).

4. Findings

The majority (55%) of the respondents were male, a possible reason being that prior to 2006 when the 'Married Persons Act' was enacted, women could not contract or open bank accounts without the consent of their husbands (Lesotho Government 10: 2011).

It also became evident that although the Basotho comprised the vast majority (87%) of the sample, other populations groups, such as Indians (16%) and Chinese (11%) were also conducting business in Lesotho, implying that the government had not imposed any 'artificial' barriers to business development by foreigners. Although the presence of foreigners is competition to local

traders, this presence also creates the opportunity for indigenous businesses to become innovative and learn from the business practices of foreigners (Garg & Phayane 2014). Furthermore, Kitching *et al.* (2009) argue that ethnic diversity is an essential determinant of business growth around the world.

A large portion (60%) of the respondents were owners and 59% of the businesses were in the growth phase, with the rest (41%) being in the start-up phase. Considering that the establishment and growth of businesses in developing countries are affected by the absence of a conducive business environment (Garg and Phayane, 2014), the findings of this study become more relevant, since it would become apparent what is/not being done by the government to create this supportive environment.

It is evident from Table 4 that 49% of the respondents indicated that the ‘availability of premises’ impacted on their businesses. Not only did they complain about the high rental charges, but also expressed concern at the lack of suitable and suitable located business premises, resulting in businesses operating in remote places far away from the potential customers.

Table 4: Cross tabulation of the impact of the availability of premises with its effect on business

			Premises effect on business				Total
			Proximity to customers	Too high rent	Scarce	Not applicable	
Impact of availability of premises	Does not affect	Count	0	0	0	62	62
		% of Total	.0%	.0%	.0%	32.6%	32.6%
	Positive effect	Count	35	0	0	0	35
		% of Total	18.4%	.0%	.0%	.0%	18.4%
	Negative effect	Count	0	65	28	0	93
		% of Total	.0%	34.2%	14.7%	.0%	48.9%
Total		Count	35	65	28	62	190
		% of Total	18.4%	34.2%	14.7%	32.6%	100.0%

One of the requirements to obtain a business license is for a business to have a physical address, that is, premises from which the business operates. The premises are then inspected by the Maseru City Council (Municipality) to determine their suitability to the business. If businesses do not have adequate facilities to run their operations this requirement can compel them to end up trading informally.

It was ascertained (Table 5) that 39% of the respondents indicated that availability of ‘skilled staff’ impacts positively on their businesses as these staff do not need extra supervision or close supervision. Skilled staff also generally has good relationships with customers, thus portraying a good image of the firm (Fadahunsi 2012). Skilled employees are also an important determinant of firm growth, as they can stimulate the growth process better than employees without qualifications and experience (Elhiraika & Nkurunziza 2006:14).

Only 27% of the respondents indicated that ‘skilled staff’ impacted negatively on their businesses as skilled staff demand high salaries compared to unskilled labour. In addition, they posit that skilled staff often quit their jobs for greener pastures if the opportunity arises. Moreover, sometimes skilled staff seek employment just to gather start-up capital in order to open their own businesses, thus not committing permanently to their jobs.

Only 34% said ‘skilled staff’ do not affect their businesses. A possible explanation could be that they use cheap labour, which is normally trained ‘on-the-job’. This, assumedly, would have a positive outcome in terms of cost minimisation. Thus, anything that can be done to minimise costs, including hiring unskilled staff, is a common strategy used by business owners. This also implies that some business opportunities are neglected without proper costs/benefits analyses.

Table 5: Cross tabulation of the impact of skilled staff with the effect of skilled staff on business

			Skilled staff effect on business			Total
			No need for immediate supervision	Demand high salaries	Not applicable	
Impact of skilled staff	Does not affect	Count	1	0	66	67
		% of Total	.5%	.0%	34.4%	34.9%
	Positive effect	Count	74	0	0	74
		% of Total	38.5%	.0%	.0%	38.5%
	Negative effect	Count	2	49	0	51
		% of Total	1.0%	25.5%	.0%	26.6%
Total		Count	77	49	66	192
		% of Total	40.1%	25.5%	34.4%	100.0%

5. Discussion, Conclusions and Recommendations

Although The World Bank (2004:3; 2017); Lesotho Government and European Union (2008:23); ADF (2009:5) stated that the Lesotho government has improved telecommunication, transportation, education and health sectors, some businesses find the availability or lack of premises to impact negatively on their operations due to high rental charges. This is because adequate business premises are scarce in Lesotho. Avoiding high rent, businesses end up operating in remote places far away from their potential customers. Therefore, this inefficient infrastructure often hinders the growth of businesses. However, there are businesses which still find the availability of premises to impact positively on their operations. This indicates that businesses are faced with insufficient working premises, hence a challenge for the government to fill this gap.

Some businesses acknowledge the importance of skilled staff as they said they have necessary skills and do not need extra supervision or close supervision. They add value to the business by demonstrating their expertise.

The benefit of skilled staff is the ability to build good relationships with customers and showing a good image of the firm. When customers are satisfied they become repeat customers hence the growth of the firm. However, there are still some who believe that skilled staff are expensive to find and retain, as they demand high salaries and block businesses to maximise profits. They have a perception that skilled staff cannot be trusted as they often quit their jobs for greener pastures if the opportunity arises.

The government of Lesotho must be willing to constantly create a conducive business environment to enable firms to contribute to the economic growth. Huge infrastructure projects should be identified by the government as remedies to enhance the country's economic growth rate and creating employment. This should entail developing human capital through the establishment of highly advanced education system and the use of technology.

Free market supporters believe that if the overall infrastructure can be developed (functional intervention), firms can effectively achieve their goals, according to SBP (2008:16), enhanced infrastructure that makes it easier for businesses of all sizes to operate is needed for sustained growth. The Lesotho government has put some initiatives in place to achieve economic growth, however, this seems not to be adequate to cater for existing and new established businesses. Therefore, the major projects like the reconstruction of roads, communication network, establishment of highly advanced education system and health services should be highly emphasised.

Further research is suggested throughout the whole of Lesotho as this study was conducted in the Maseru district only. Furthermore, the survey was more on selective interventions, thus questions on functional interventions were only on physical infrastructure and education.

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The Survival of Female-owned Micro Enterprises in the UMkhanyakude District

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Abstract

The purpose of this research report is to determine factors that increase the probability of rural female entrepreneurs remaining in business for at least two years or longer. Contemporary development theory asserts that women play a prominent role in uplifting their families and developing their communities. The promotion of entrepreneurship among women in rural communities has been shown to be a formidably successful approach to development. Owing to the paucity of local studies in this vein, this project investigated the causal factors behind female entrepreneurs of the uMkhanyakude district staying in business for two years or more. Primary data were collected from entrepreneurs operating their businesses in the locality, using snowball sampling method, a sample of 273 entrepreneurs were interviewed by means of questionnaires. Logistic regression was used to estimate factors that increased the probability of women staying in business. The study revealed that the higher the levels of business experience, education, business success and hours spent on business the greater the chances of women staying in business. Financial and input constraints were major restrictions on women staying in business. Marital status, age, competition and marketing constraints were found to be insignificant. As most of the entrepreneurs in the uMkhanyakude district depend on stokvels and their saving for financing their businesses, the study suggest that such groups be harnessed by the DTI in the Grameen-bank type programmes manner which offer poor rural women low-cost loans for entrepreneurial purposes.

Keywords: Logistic regression, microenterprises, survivalists, women, entrepreneurship

Introduction

South Africa as a whole suffers from high levels of poverty, unemployment and income inequality, and in the absence of adequate social benefits, women operating microenterprises, are often a shield for their families (and by extension their communities) against the ravages of unemployment (Tshabalala 2013). Microenterprises can be characterized as a sector that is easy to enter because it relies on indigenous resources; such businesses are normally family owned and small in scale; labour intensive, using adapted technology and skills acquired outside the formal school system, and operate in unregulated and competitive markets (Kang'ethe & Serima 2014). The present study extends the definition to include survivalists, retail and service industries. According to the National Small Business Act, microenterprises are informal, usually run by the owner and the family. Moreover, the survivalists have the income generated below the poverty line, providing minimum means to keep the unemployed and their families alive. It is notable that most females in developing countries engage in economic activities that do not normally figure in labour statistics or are not recognized as work at all, such as subsistence agriculture and household activities (Francavilla, Giannelli & Grilli 2013).

Most female workers in developing countries, particularly in South East Asia and Africa, do not have salaried jobs, and are far less involved in paid economic activities than male workers. They often produce goods at home for market sale, or labour on the family farm or work in small family-run businesses (Francavilla *et al.* 2013). Women have firmly and steadily begun to extend their advantage in the economic sphere by running and managing SMEs and even ones involving large investments (Dzisi & Obeng 2013). This economic empowerment increases women's access to economic resources and opportunities including jobs, financial services, property and other productive assets, skills development and market information. However, women usually invest a higher proportion of their earnings in their families and communities than men, meaning that women save a much smaller proportion of income or nothing at all (OECD 2012).

Our study does not focus on gender equality as such, but insights into the issue assist in making sense of women's work and the role of women in development projects. Gender inequalities and lack of attention to gender in agricultural development are reported to have contributed to lower productivity, higher level of poverty and under nutrition (FAO 2011), whereas increased equality can lead to faster growth. However, without an equitable distribution of benefits from growth, its effects on women will be marginal. In addition, inequality is viewed as a human rights matter, giving rise to exclusion and failure to hear marginalised people's voices, and potentially triggering crime, disease, ignorance and poverty (Ntale, Litondo & Mphande 2014).

There are many institutions that support small businesses, such institutions include: Centre for Small Business Promotion, Ntsika Enterprise Promotion Agency, NAMAC, KHULA, The Provincial SMME Desks, Land Bank, Industrial Development Corporation, National Empowerment Corporation, and Isivande Women's Fund. However, the micro enterprises in the uMkhanyakude district are still facing financial constraints due to lack of information and information dissemination.

The present study aimed to assess whether there are differences in the performance of male and female-owned enterprises and whether age, business experience, marital status, education, business operating hours and constraints such as input, financial, marketing and competition affects the performance of female-owned business in the uMkhanyakude district. These factors were derived from the literature discussed below.

The article is structured as follows: the literature review, focuses on the theoretical and empirical aspects of gender, development and entrepreneurship; it presents the research methodology; and lastly it presents and discusses the results and the conclusion offers recommendations.

Literature Review

Harries-White and Heyer (2010) believe that rural poverty in South Africa stems from the historically generated unequal power and racial relations that reverberate into the present. Black women in particular have faced triple oppression: for being a woman, poor and black. According to Olah, Richter & Kotowska (2014), the traditional reproductive role of women was not normally thought of as breadwinners. However, since the 1970s, with the rise of feminist thinking, development agencies and practitioners have transformed the way

women are perceived and have afforded them a central role in the development agenda.

Women in Development

The Women in Development (WID) movement focuses on approaches involving equity, anti-poverty and efficiency. It was formulated in the early 1970s by a Washington-based network of female development professionals who argued that modernization was affecting men and women differently. Instead of improving women's rights and status, the development process appeared to be contributing to a deterioration of their position (May 2013). Women in Development (WID) gave primacy to women's productive roles and their integration into the economy as means of improving their status; it was part of a strategy to reformulate women's identity for development policy.

In addition to the WID agenda, there was a simultaneous effort by liberal feminists to achieve equal rights and employment equity for women in the United States. Central to the feminist's concern was the idea that women's disadvantages stem from stereotyped customary expectations held by men, internalized by women, and promoted through various agencies of socialization (Matomela 2015). Liberal feminists believed that women's disadvantages can, in principle, be eliminated by breaking down these stereotypes by giving girls better training, and exposing them to more varied role models through equal opportunity programmes, anti-discrimination legislation, and freeing labour markets. One implication of the WID approach was that there was little focus on men and on power relations between men and women.

WID advocates claimed that the failure of government to acknowledge and utilize women's productive roles within and beyond the household led to the inefficient use of resources (Cuberes, David & Teignier-Baque 2012). Improving women's access to technology and credit would raise their productivity and impact positively on national development.

Gender and Development

The Gender and Development (GAD) perspective emerged in the 1980s as a response to the failure of WID programmes to effect qualitative and lasting

changes in women's social status. GAD is a holistic approach, focusing on social, economic, political and cultural forces that determine how men and women differ as they participate in, benefit from, and control project resources and activities. This approach shifts the focus from women as a group to the socially constructed relations between women and men, and it emphasizes the need to challenge existing gender roles and relations. GAD promotes a development process that transforms gender relations in order to enable women to participate on an equal basis with men in determining their common future. According to Beneria, Berik & Floro (2016) GAD stressed the strategic needs of women and advocated a 'bottom-up' process of transforming gender power relations through individuals or groups developing awareness of women's subordination and building their capacity to challenge it. GAD emerged from frustration with the lack of progress of the WID policy in changing women's lives and influencing the broader development agenda. It saw women's real problem as the imbalance of power between women and men. There are different focuses of GAD, some of which emphasise primarily on the gender division of labour and gender roles focusing on gender as a relation of power embedded in development institutions. GAD approaches generally aim to meet women's practical gender needs and their more strategic gender needs by challenging existing divisions of labour or power relations (Moser 2012).

The present paper views entrepreneurship among rural women as their attempt to break the historical and cultural shackles of subordination to men and to assume their rightful role in society on an equal basis to their male counterparts.

Access To Finance and Barriers To Growth

Institutions like Grammen Bank and BRAC (Bangladesh Rural Advancement Committee) that provide microfinance to destitute rural women were born out of the enlightened view of women challenging gender inequality by asserting themselves in all spheres of human activity achieved through the awareness of, both individually and collectively, how power relations operate in their lives (Nai 2010). The provision of microfinance to indigent women on a group liability basis instead of any collateral has empowered them socially, economically and politically, since the 1970s; this microfinance innovation has spread throughout the world thus empowering millions (Sultana, Zaaba & Umemoto 2010).

In South Africa an interesting variant of a communal savings club for microfinance formations (commonly known as stokvels) managed by mainly women, has evolved among the working class and rural folk where each member contributes to the pool and on a rotational basis will acquire the pooled funds; should a member have an agent need for finance he/she can borrow from the pool at some nominal cost. Such informal system have empowered rural women who otherwise would not have access to credit, to become entrepreneurs (Matuku & Kaseke 2014).

The Grameen Bank was founded in Bangladesh in September 1983 as an independent microfinance institution. It is a private specialized bank with 94% of the stock owned by the poor rural borrowers and the remaining 6% owned by the government. According to Sultana *et al.* (2010), as of July 2009 the bank had 7.93 million borrowers, 97% of whom were women. One of its functions is to operate as a savings bank and provide microenterprise loans with no restriction as to the loan size. Sultana *et al.* (2010) analysed the role of credit institutions as the providers of small loans to poor women in rural Bangladesh and revealed that, aided by micro loans from then Grameen bank, women could start small local businesses that had previously been impossible for them to do. Rural financial programmes have been largely designed and implemented with the male head of household as the intended client, and they have failed to recognize women as active, productive and engaged economic agents with their own financial needs and constraints. Women constitute approximately half of the global rural labour force and, while not always counted, they are economically active in each subsector of the rural economy. Even though millions of women worldwide contribute to national agricultural output and family food security, detailed studies from Latin America, South Asia, and sub-Saharan Africa consistently indicate that rural women are more likely to be credit constrained than men of equivalent socio-economic conditions (Fletschner & Kenney 2014).

Microcredit provides an opportunity for low-income earners, including women, to improve their economic and social status. Mbonyane and Ladzani (2011) examined factors that hinder the growth of small businesses in South African townships in order to create awareness of these factors, to develop guidelines for small business owners, and to promote successful business enterprises. They determined the size of the business by the number of full-time employees, total annual turnover and total gross asset value. They found that barriers to growth included lack of awareness of government initiatives,

poor financial management, overtrading, crime, poor credit records, lack of management expertise, poor infrastructure, lack of information, and poor access to communication technology. Their results suggest that, in Kagiso Township, slow growth rate could be attributed partly to lack of support for small, medium and micro-enterprises from support institutions, and partly to their own internal weaknesses. Furthermore, they found that the most common impediments to business growth in South African townships were lack of legal knowledge, lack of funding, and a general lack of business acumen.

Perhaps number of these constraints can be addressed through the establishment of organised women entrepreneur groups with characteristics involving an amalgamation of home brewed stokvels and the imported Grammen Bank type formation.

Personal Motivation to Self-Employment

According to a study by Moses & Amalu (2010), entrepreneurial motivations often fit into push or pull categories, where push factors are characterized by personal or external factors (for example, marriage break-up, or being passed over for promotion) and often have negative connotations. Alternatively, pull factors are those that draw people to start businesses, such as seeing an opportunity. Dawson and Hanley (2012) applied the theory of push and pull factors and used a gender comparative approach to explore the nature of potential gender differences within entrepreneurial motivations. The findings suggested that both women and men appear similarly motivated by personal factors and opportunities available. Three gender differences were found, however women were more influenced than men by a desire for independence; the women considered their children as motivators more than the men did; and the men were influenced more by job dissatisfaction than the women were.

Self-esteem has been shown to reveal individuals' disposition towards business risk (Sirec & Mocnic 2012). Loarne-lemaire, Maalaoni & Dana (2017) studied gender, age and self-employment as they investigated age and gender differences in the initial motivation for starting a business. The results revealed that self-employment was a reactive rather than a productive decision for both older and young women as well as men; however, women were less inclined to seek self-employment actively as their employment option of choice.

Sirec and Mocnic explored the personal characteristics and possible differences between male and female Slovenian entrepreneurs, which could help to explain and encourage better reactions to the gender gap in Slovenian entrepreneurship. The study emphasizes the fact that entrepreneurs do not only need knowledge, expertise, and professional competencies, but also various skills and abilities influenced by personal characteristics. Their findings suggest that women identify business opportunities differently from men and also try to exploit them differently.

Gender and Performance Linkages

Small firms often remain small because they face formidable barriers to growth. Although they have higher expected growth rates than larger firms, they do not have an easy existence (Coad & Tamvada 2012): they suffer from newness and face difficulties stemming from lack of experience and knowledge, and the fact that they have not yet been legitimated or recognised in the market place. According to Kalnins & Williams (2014), enterprises managed by men are bigger and exist for longer than the ones owned by females, but the fields in which both men and women establish businesses are very similar. Coad and Tamvada (2012) examined growth and barriers to growth among small firms in India. The young firms were fragile and vulnerable, unable to weather adverse shocks, and suffered from the lack of legitimation and recognition. The barriers to growth were especially felt in female-owned firms, and often seemed to relate to raw materials and market problems. Rural firms were found to be vulnerable to problems concerning raw materials, equipment, management, and power shortages and were relatively less exposed to problems concerning labour and lack of demand.

Ramadani, Hisrich & Gerguri-Rashiti (2015) discussed some of the main gender issues affecting female entrepreneurs in Albania, Macedonia and Kosovo in South-eastern Europe and their participation in business activities at various levels. These issues include personal characteristics, motives for starting a business, characteristics of their businesses and operations, size of the business, revenues, family status, management problems and their self-perceived required competencies. Their findings indicated that women entrepreneurs in Kosovo face extensive limitations in enterprise development. Their performance normally depends on their access to resources (for example,

education, finances and markets) and to their entrepreneurial capital (for example, technical skills, employment experience, negotiation skills, strategic capabilities, business and social networks, and product supply channels).

Kobeissi (2010) examined the impact of five gender variables (female education, female economic activities, female earnings ratio, fertility rate, and gender empowerment) on the extent of female entrepreneurial activities in 44 developed and developing countries. The study found female education, extent of female economic activities, female earnings ratio, and fertility rate to be significant with two different dependent variables (female entrepreneurship start-ups per 100 adult populations and female to male entrepreneurship start-up ratio). Variable related to gender empowerment was found to be significant with one of the two dependent variables. OECD (2012b) found that growth is low for businesses whose owners did not finish high school, but having a college or university degree did not significantly affect an owner's capacity to grow.

Females' Time Allocation

Many women were fired from their jobs due to pregnancy or the illness of a family member, which meant they left the labour market. They had to start their own businesses, giving them flexible hours as a strategy for juggling the demands of family and paid work. For this reason, women tend to place a higher value than men do on having jobs with flexible hours (World Bank 2011).

Long working hours can generally be expected to result in some offsetting increase in output per men-hour. The offset is greater the more hours are worked per week or per year, but if extreme hours are worked, there is a point when reducing them can increase output. Shorter hours then result in less fatigue, greater intensity of work, fewer mistakes, better quality of output, less wastage and less absenteeism. Such personal effects are reinforced by the institutional factor. Many jobs require an individual's presence as long as the establishment remains open, but do not fully occupy him or her throughout that time so the work done can in fact be compressed and completed in fewer hours (Caruso 2014). While higher incomes pull women towards more leisure time, higher wages push them in the opposite direction and out of the home. Men are normally breadwinners since they earn more than women in the market, so

women's earning power is diminished through childbearing activities. Movement of women in and out of the labour force as compared to men is a major reason for their higher unemployment (Kyei & Gyekye 2012).

The focus of the present study is to investigate what factors affect the success of rural women entrepreneurs in the uMkhanyakude district characterised as more deprived in regards to development programmes and infrastructure. In order to do so, we concentrated on factors that increase the probability of women entrepreneurs staying in business for two years or longer.

Research Plan and Methodology

The uMkhanyakude district is located in northern KwaZulu-Natal. It is a district with five local municipalities, namely, Jozini, The Big 5 False Bay, Hlabisa, Mtubatuba and uMhlabuyalingana. It is a rural area with lack of development and poor service provision. For this reason, business development services are not readily available; few banks operate, and offer loans that are seldom large enough to enable significant growth of enterprises. The district is strategically linked to the provincial markets of KwaZulu-Natal, Mpumalanga and to the neighbouring market of Swaziland. According to the 2011 Census, the district has a population of 625,846, of which 54.76% are females and 45.24% males respectively.

In order to investigate the causal factors behind female entrepreneurs remaining in microenterprises for two years and longer in the uMkhanyakude district, this study collected primary data from entrepreneurs operating their businesses in the five local municipalities of uMkhanyakude district after the ethical clearance to conduct research was granted. Snowball sampling was used to select participants where one participant recommended several other people involved in microenterprises. This sampling technique is often used in hidden populations that are difficult for researchers to access, or in cases where a sampling frame is hard to establish. It is assumed that cases are affiliated through links that can be exploited to locate other respondents based on existing ones (Chandrasekhar & Lewis 2011).

A sample of 300 entrepreneurs was interviewed using a questionnaire instrument, however, only 273 observations were usable as 27 questionnaires were deemed to be spoilt owing to discrepancies in the responses to various questions as well as not having answered a significant number of questions.

All participants submitted a signed informed consent, and were made aware that they were free to withdraw from the survey at any time and that they were not obliged to answer questions with which they were uncomfortable. Moreover, they were informed that their anonymity would be preserved and that only general trends and patterns in the data would be reported in academic papers. The information collected via questionnaires related to entrepreneur characteristics (age, gender, marital status, education), enterprise characteristics (type of industry or sector, age of business, initial and current employment levels, sales and profits as a measure of qualitative growth in sales), major constraints and problems (source of start-up capital, access to credit facilities, marketing and competition).

After the questionnaires were returned, the data coding was coded using a statistical package for social science (SPSS) and arranged in an analysable form. Descriptive statistics and the logistic regression were generated using SPSS. Both descriptive and inferential statistics were used as tools of evaluation in the data analysis. Although a non-probability sampling technique was used to collect a data, fortuitously the data points covered the entire uMkhanyakude district with a wide variety of businesses being involved, hence it was deemed feasible to employ the parametric logistic regression approach to analyse the data.

The Logistic Model

This study uses the logistic model (see Gujarati & Porter, 2009), which has become the standard method of analysis in a situation where we have to describe the relationship between a binary response variable (i.e. $Y = 1$ or 0 and is assumed to have a binomial distribution) and one or more explanatory variables. Given the nature of the response variable it is common practice to model the outcome (1 or 0) as probabilities of the event occurring $\Pr(Y = 1)$ e.g. success of a business) or not occurring $\Pr(Y = 0)$, e.g. failure of a business). The probabilities are modelled as a function of a linear combination (or a linear predictor) of the explanatory variables (e.g. $\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_k X_k$, where the X_i 's are explanatory variables and the β_i 's are regression coefficients). Since, by definition, the probabilities must lie between 0 and 1 , the linear predictor can assume any value between $-\infty$ and $+\infty$. Probabilities are transformed into logits in order for them to be equated to the linear predictor

of explanatory variables. A logit is defined as the natural logarithm of the odds that an event happens (i.e. $Y = 1$). The following logistic regression model is derived by equating the transformed probabilities (logits) to the linear predictor:

$$\text{Logit } Y = \ln \left(\frac{\Pr(Y=1)}{\Pr(Y=0)} \right) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_k X_k \quad (1)$$

Equation (1) is estimated via the maximum likelihood method. A positive β_i is interpreted as a unit rise in X_i increases the log odds of $Y = 1$, while a negative β_i decreases the log odds of $Y = 1$. Furthermore, by taking logs on both sides the log odds model can be converted to an odds model as follows:

$$\frac{\Pr(Y=1)}{\Pr(Y=0)} = e^{\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_k X_k} = e^{\beta_0} e^{\beta_1 X_1} e^{\beta_2 X_2} \dots e^{\beta_k X_k} \quad (2)$$

Equation (2) suggests that the odds that an event occurs changes multiplicatively with changes in the explanatory variables; for example, holding all variables except X_k constant, the odds ratio that $Y=1$ when X_k changes by one unit is e^{β_k} . Z-stat are used to confirm the significance of the parameters of the above regression model. This study estimates the logistic regression model of the form expressed in equation (1).

Our logistic regression model assesses what factors increase the probability of female entrepreneurs to stay in business for two years and longer, hence in this regression the dependent variable, SFE (successful female entrepreneurs) takes on a value of 1 if female, otherwise 0. This implies that all males in the sample who operate businesses both successfully and unsuccessfully for two years and more as well as women who operated failed businesses were categorised as $Y=0$. Success was defined by an increase in factors including a rise in profitability, increase in asset values, number of clientele and number of workers (both casual and permanent). This binary dependant variable was regressed against a vector of predictors including age of an entrepreneur, marital status, education, business performance, business experience, hours the business is open per year, and business constraints associated with finance, input/supplies, competition and marketing. Theories contend that female entrepreneurs experience different constraints in business activities than their male counterparts. All the above predictor variables were

derived from the literature presented above in the literature review. The logit model based on success in female entrepreneurship (SFE) is as follows:

$$\log OddsSFE = \beta_0 + \beta_1 exp + \beta_2 edu + \beta_3 fcon + \beta_4 icon + \beta_5 mstat + \beta_6 ohou + \beta_7 perf + \beta_8 age + \beta_9 comp + \beta_{10} mcon + \mu_i$$

Equation (3): The Z-statistics generated by the maximum likelihood method is used to test for the statistical significance of the variables. The Wald test as well as the Hosmer-Lemeshow goodness of fit test is to be used to assess how well the covariates explain the dependent variable. Table 1 provides a summarised account of all the variables used in the logistic regression models together with the coding that was used in our study.

Table 1: Summary of Variables used in the Logit

Variables	Definition
<i>P_i</i> (Business Performance)	1 = increase; 0 = decrease
<i>sfe</i> (Successful female entrepreneur)	1 = successful female entrepreneur; 0 = otherwise (inclusive of both successful and unsuccessful males and unsuccessful females)
<i>edu</i> (Level of Education)	1 = illiterate; 2 = some primary education; 3 = completed primary education; 4 = completed junior secondary; 5 = have matric; 6 = have tertiary education
<i>exp</i> (Business experience)	Number of years in business.
<i>age</i> (Entrepreneurs' age)	1 = 16-24; 2 = 25-34; 3 = 35-44; 4 = 45-54; 5 = 55-64; 6 = 65 and above.
<i>mstat</i> (Marital status)	1 = married or widowed; 0 = single or divorced

fcon (Financial constraints)	1 = yes; 0 = no.
comp (Competition constraints)	1 = yes; 0 = no
mcon (Marketing constraints)	1 = yes; 0 = no.
icon (Input/supplies constraints)	1 = yes; 0 = no.
ohou (Hours operating business)	Average Number of hours a business entrepreneur operates in a year

Data Analysis

Table 2: Descriptive statistics comparing female headed enterprises and male headed enterprises.

	Entrepreneur involvement by gender				Frequency	%
	Female	%	Male	%		
Gender						
Female	-	-	-	-	134	49.1
Male	-	-	-	-	139	50.9
Business performance (perf)						
Increase	47	17.2	70	25.6	117	42.9
Decrease	87	31.9	69	25.3	156	57.1
Age of an entrepreneur (age)						
16-24	11	4.0	20	7.3	31	11.3
25-34	44	16.1	42	15.4	86	31.5
35-44	49	17.9	43	15.8	92	33.7
45-54	18	6.6	16	5.9	34	12.5
55-64	12	4.4	12	4.4	24	8.8
65 and above	0	0	6	2.2	6	2.2

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Education of an entrepreneur (edu)	17	6.2	6	2.2	23	8.4
Illiterate	2	0.7	10	3.7	12	4.4
Some primary education	6	2.2	8	2.9	14	5.1
Completed primary education	20	7.3	21	7.7	41	15.0
Completed junior secondary	66	24.2	47	17.2	113	41.4
Have matric	23	8.4	47	17.2	70	25.6
Have tertiary education						
Business experience (bexp)						
5 years and below	70	25.6	55	20.2	125	45.8
6-10 years	47	17.2	52	19.0	99	36.3
11-19 years	16	5.8	29	10.5	45	16.7
20 years and above	1	0.4	3	1.2	4	1.6
Financial Information (fcon)						
No financial constraints	57	20.9	89	32.6	146	53.5
Have financial constraints	77	28.2	50	18.3	127	46.5
Belong to savings clubs	124	45.4	90	33.0	214	78.4
Access to bank credit	31	11.3	51	18.7	82	30.0
Received government support	0	0	0	0	0	0
Competition problems (comp)						
Don't have competition	45	16.5	53	19.4	98	35.9
Have competition	89	32.6	86	31.5	175	64.1
Marketing constraints (mcon)						
Don't have marketing constr.	96	35.2	101	37.0	179	70.3
Have marketing constraints	38	13.9	38	13.9	76	27.8
Input/supplies constraints (icon)						
Don't have input constraints	87	31.9	105	38.5	192	70.3
Have input constraints	47	17.2	34	12.5	81	29.7

Marital status (mstat)						
Single/Divorced	80	29.3	88	32.3	167	61.5
Married/widowed	54	19.8	51	18.7	105	38.5
Operation hours per year (ohou)						
2000 hours and below	15	5.6	3	1.2	18	6.6
2001-4000 hours	96	35.1	85	31.3	181	66.3
4001 and above	23	8.6	51	18.5	74	27.1

Discussion of Table 2 Results

Concerning the sample observations of 273 enterprises, 49.1% were female-headed enterprises and 50.9% were male-headed enterprises, respectively. Out of 49.1% female-headed enterprises, only 17.2% experienced an increase in business performance for the past two years, whereas, 31.9% experienced a decrease in their business performance. In regard to the 50.9% male-headed enterprises, 25.6% experienced an increase in their business performance whereas 25.3% experienced a decrease in their business performance in the past two years.

Out of 11.3% overall entrepreneurs in the age group 16-24, only 4% were female entrepreneurs while 7.3% were male. Additionally, out of 31.5% entrepreneurs in the age range 25 to 34, 16.1% were women and 15.4% were men. Of 33.7% entrepreneurs in the age range 35 to 44, 15.8% were male entrepreneurs and 17.9% were female entrepreneurs. Of a total of 12.5% overall business owners between the ages 45 and 54, 6.6% were female entrepreneurs and 5.9% were male entrepreneurs. The percentage of male and female entrepreneurs who were between the ages of 55 and 64 is equal (4.4%). Lastly, 2.2% of male entrepreneurs were aged 65 and above, whereas women of this age tend not to be involved in businesses. The results show that apart from the 16-24 and over 65 years categories where men tend to dominate, in the rest of the groups, men and women tend to be evenly distributed. Incidentally these appear to be the most productive age groups, for at the lower end most participants have some years of experience and at the upper end the individuals are experienced and still have a significant amount of work life still available to them.

It was noted that 8.4% of the entrepreneurs surveyed were illiterate, for which 6.2% were females while 2.2% were males. 0.7% of female business owners reported having some primary education, as compared to 3.7% of their male counterparts. Overall, these results mean that 12.8% of respondents have not attained secondary education at all. Female entrepreneurs who have completed primary education comprised 2.2% whilst male counterparts accounted for 2.9%. Of female business owners, 7.3% completed junior secondary education and 7.7% of male entrepreneurs achieved the same level. Out of 41.4% entrepreneurs with matric, only 17.2% were male business owners and 24.2% were female entrepreneurs. Lastly, 8.4% of female entrepreneurs and 17.2% of male entrepreneurs have tertiary education. Although it is laudable that females tend to dominate males in that a greater number have matriculated and have completed tertiary qualifications, it is a cause for concern that 33% of the respondents have not matriculated.

Regarding business experience, 20.2% of male entrepreneurs reported to have 5 years and below whereas 25.6% of female entrepreneurs reported to have similar years in business. Out of 36.3% entrepreneurs with business experience of 6 to 10 years, 17.2% were female owners and 19% were male owners. Male entrepreneurs have marginally more experience compared to female entrepreneurs in the 1 to 10 years category. However, in the categories above 10 years of experience men tend to dominate, for example there were only 5.8% of female entrepreneurs with 11 to 19 years of business experience while male entrepreneurs with same years of experience amounted to 10.6%. Additionally, male business owners with 20 years of experience and above equal 1.2% while female entrepreneurs comprise 0.4%. These results are quite interesting for they suggest that the newer generation of females is more enterprising compared to the older generation. This could be due to the younger generation being more educated and liberated and hence would imply that government policies to empower women through entrepreneurship are much more likely to succeed if they are targeted towards younger women.

Although 53.5% of entrepreneurs reported not to have financial constraints, only 20.9% were females while 32.6% were males. Female and male entrepreneurs with financial constraints amounted to 28.2% and 18.3%, respectively. The questionnaire asked an open ended question regarding how they financed their operations on an on-going basis. Most of the respondents explained that they relied on their own savings, money lenders, and family members as well as their savings groups (stokvels). Interestingly, 78.4% of the

respondents have affiliations to stokvels of which 45.4% were female and 33% were male. It is this finding, where women are involved in large numbers in cooperative schemes that raises the possibility of the Grameen type financing scheme taking root in rural communities. Only 30% of the respondents enjoyed access to bank credit, of which 11.3% were females and 18.7% were male, perhaps these differences might explain why more women tend to join savings clubs. Surprisingly, a number of respondents who had access to bank credit also used these alternative (more expensive or less optimal) sources of financing which implies that they had limited access to commercial credit and is an indication that the market has failed to integrate credit worthy rural entrepreneurs fully into the banking system. What came as a shock was that none of the entrepreneurs interviewed cited government financial support as their source of start-up capital.

As expected, almost 70% of the businesses in the sample possess some form of business constraint. Moreover, female entrepreneurs tend to experience more constraints compared to their male counterparts. In regard to the nature of the constraints, apart from financial constraints the questionnaire identified competition, marketing and input constraints as the main challenges facing rural entrepreneurs. Specifically, 32.6% female business owners' cited tight competition, as compared to 31.5% male owners. 16.5% females and 19.4% males do not face competition challenges, which suggests that, to a degree, opportunities for establishing businesses in UMkhanyakude are available. Approximately 30% of the respondents appeared to have marketing and input constraints, and of these, female entrepreneurs are mostly affected by such constraints.

Regarding marital status, the study classified single and divorced entrepreneurs as one category and also clustered married and widowed entrepreneurs as another category. The findings show that out of 49.1% female entrepreneurs, 29.3% are single/divorced whereas 19.8% are married/widowed. Furthermore, out of 50.9% male entrepreneurs, 32.2% are single/divorced whereas 18.7% are married/widowed. The study revealed that most of female entrepreneurs are single or divorced, quite similar to their male counterparts.

Concerning business operation hours per year, 35.1% female entrepreneurs operate between 2001 and 4000 hour per year as compared to 31.3% male entrepreneurs in the same category. 18.8% male entrepreneurs operate their businesses from 4001 hours and above in a year.

Comparatively, only 8.6% females open their businesses for such hours. The study concludes that female entrepreneurs spend fewer hours in their businesses as compared to their male counterparts. These variations in the number of hours worked per year may be caused by female entrepreneurs largely being involved in agricultural and commercial activities which are seasonal in the case of agriculture, and limited in the context of commercial enterprises. Moreover, commitment to home based activities might be yet another factor.

Presentation and Discussion of Logistic Regression Results

The covariates reported in the findings of our regression model in Table 3 include insignificant variables such as marital status, age of an entrepreneur, marketing constraints and competition constraints. Due to its statistical insignificance, these variables are not interpreted in this paper as their interpretation is meaningless and not solid.

Interpretation of the Results: Table 3

The coefficient on business experience is highly statistically significant at the 1% level, which may be roughly interpreted as indicating that an additional year of experience in business may lead to the increase in the log-odds in favour of the women remaining in entrepreneurship by 0.144 units. A stricter interpretation arises when taking the antilog (see Gujarati & Porter 2009) which gives a value of 0.154 and may be interpreted as indicating that an additional year of experience in business increases the probability of women remaining in business by 15.4%. This result corresponds to the findings of the study by Ramadani, Hisrich & Gerguri-Rashiti (2015) who found that the performance of female owned enterprises in West, East and Southern Africa usually depends on their access to resources including technical skills, work experience and negotiation skills.

The educational level of the entrepreneurs in our study has a positive coefficient that is statistically significant at a 10% level and may be interpreted as a 1% increase in level of education may lead to an increase in the log-odds of such female entrepreneurs remaining in business by approximately 0.210 units.

Table 3: Estimates of a binary logit model based on gender involvement in SMEs

	Coef- ficient	Std. error	Z-stat	Prob.	Antilog
Constant	-2.284	0.994	-2.297	0.021**	0.898
Business experience (bexp)	0.144	0.042	3.439	0.0006** *	0.154
Education of an entrepreneur (edu)	0.210	0.120	1.745	0.080*	0.233
Financial constraints (fcon)	-0.759	0.296	-2.563	0.010**	0.531
Input constraints (icon)	-0.681	0.309	-2.204	0.027**	0.493
Marital status (mstat)	-0.497	0.335	-1.484	0.137	0.391
Operation hours per year (ohou)	0.0003	0.0001	2.742	0.006***	0.003
Business performance (perf)	0.575	0.282	2.040	0.041**	0.777
Entrepreneurs' age (age)	-0.148	0.170	-0.872	0.382	0.137
Competition constraints (comp)	0.199	0.319	0.624	0.532	0.220
Marketing constraints (mcon)	0.122	0.310	0.395	0.692	0.129
Akaike Information Criterion (AIC)	1.282	Log likelihood Deviance Rest. Log likelihood		-164.028 328.057 -189.080	
Schwarz Criterion (SC)	1.427				
LR Statistic	50.104				
Prob. (LR stat)	0.00000				

Notes: Dependant variable: SFE (1 = successful female entrepreneur, 0 otherwise)

***, **, * Statistically significant at 1%, 5% and 10% levels of Notes:

These results show that an increase in the level of education raises the probability of women staying in business by 23.3%. This implies that education plays an important role in terms of level of intellectual, technical skills and strategic capabilities, which in turn contributes positively to entrepreneurship success, and enabling women to stay in business. These findings confirm results by Kobeissi (2010) that female education is significant in all statistical estimations with female entrepreneurship activities.

The coefficient for financial constraints has a negative sign and is highly statistically significant at a 5% level. It may be roughly interpreted as indicating that the presence of financial constraints leads to a decrease in the log-odds of a woman remaining in business. However, a stricter interpretation shows that financial constraints decrease the probability of a female staying in business by as much as 53.1%. This implies that financial constraints are a major obstacle to women remaining in business. According to Mbonyane & Ladzani (2011), slow growth can be attributed to lack of financial support that small and micro enterprises receive from government support institutions.

Input/supplies constraints have a negative coefficient and this factor is statistically significant at a 5% level, suggesting that input constraints cause a reduction in the log-odds of the women entrepreneurs staying in business by 0.681. Furthermore, it reflects that an increase in input constraints reduces the likelihood of female entrepreneurs remaining in business by 49.3%. This finding is consistent with that of Coad & Tamvada (2012) that rural firms in India are vulnerable to problems relating to raw materials, equipment, management, and power shortages, but are relatively less exposed to problems concerning labour and lack of demand.

The coefficient associated with the operation-hours-per-year variable is highly statistically significant at a 1% level. It may be roughly interpreted as a one percent increase in hours a business is open each year leads to a rise in the log-odds of female remaining in entrepreneurship by 0.0003 units. When taking an antilog, the result shows that working longer hours raises by 0.03% the likelihood of a female entrepreneur in our sample population remaining in business. This result contrasts with the findings by Caruso (2014), which states that longer hours lead to exhaustion, less intensity of work, more mistakes, poor quality, more wastage and more absenteeism, whereas reduction in hours worked per year normally increases output per year. Although females tend to work fewer hours relative to males because of their roles as care-givers on the domestic front, however one is inclined to believe the results of the regression

model due to its rigor.

The coefficient of business performance is positive and statistically significant at a 5%. It may be loosely interpreted as a 1% increase in business performance leading to the increase in the log-odds in favour of women staying in business by 0.575 units. This further implies that increased business performance motivates female entrepreneurs to remain in business by 77.7%. This finding is consistent with findings by Moses & Amalu (2010) that people are motivated by pull factors which are factors that draw them to business, such as seeing an opportunity on growth and success.

The logistic regression is therefore expressed as follows:

$$\begin{aligned}\log\text{Odd } SFE = & -2.284 + 0.144bexp + 0.210edu - 0.759fcon \\ & - 0.681icon - 0.497mstat + 0.0003ohou + 0.575perf \\ & - 0.148age + 0.199comp + 0.122mcon + \mu_i\end{aligned}$$

Diagnostic Tests

In the likelihood ratio (LR) statistic under the null hypothesis that none of the regressors are significant, the degrees of freedom equals to the number of variables (10). The LR statistic is 50.104 and the P value is 0.000000, thus refuting the null hypothesis that all the coefficients are simultaneously insignificant. Therefore we conclude that variables included in the model are important determinants of female and male entrepreneurs' involvement in micro and small businesses. The unrestricted log likelihood is -164.028 and the restricted likelihood is -189.080; according to Gujarati (2012), the latter is obtained by assuming that there are no regressors in the model but only the intercepts, whereas the unrestricted log likelihood is the value obtained with all the regressors including the intercepts in the model. Our computed likelihood ratio is 50.104 and is highly significant, this means that the unrestricted model that includes all the regressors is appropriate.

Goodness of Fit Tests

It is important to emphasize that goodness of fit measures in binary regression are of secondary importance. However we use the Hosmer-Lemeshow goodness of fit statistic to test whether or not the model best fits the data. The

Hosmer-Lemeshow test ensures that the model fits better than a null model with no explanatory variables. If the test/p-value is significant, for example, if it is within the threshold of 0.05, it provides evidence that the model does not fit well.

Table 4: Wald test and Hosmer-Lemeshow goodness of fit test

	Value	Df	Prob.
F-statistic (Wt)	3.8022	10.26	0.0001
Chi-square	38.0228	10	0.0000
Hosmer-Lemeshow test	7.2159	8	0.5135
Andrews statistic	8.2973	10	0.5998

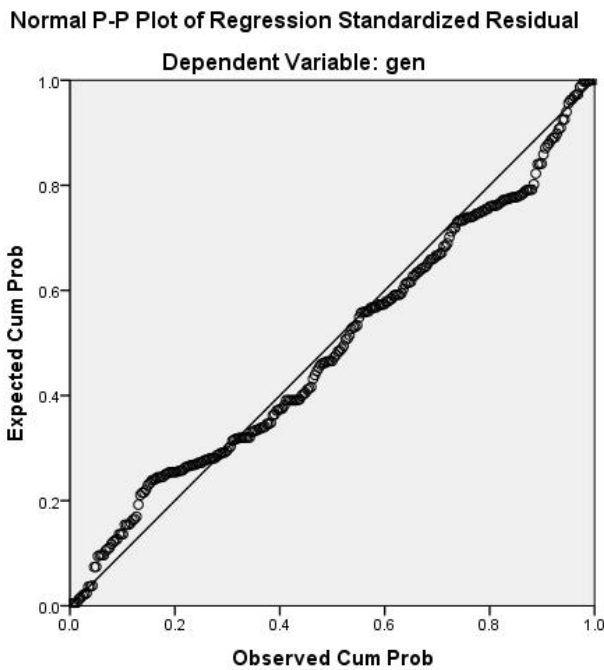
Results presented in Table 4 record the Wald test for parameter estimation of the logistic regression and the H-L goodness of fit test. The Wald test is commonly used to test the significance of estimation for each explanatory variable and thereby to conclude whether or not the variable should be in the model. As the probabilities of the F statistic and chi-square are significant, we therefore reject the null hypothesis that these determinants are equal to zero and we conclude that all the variables in this model explain the success of female entrepreneurs in business for at least two years and longer. Table 4, shows that the Hosmer-Lemeshow goodness of fit test is not significant hence its p-value is 0.5135, which means that the model adequately fits the data. Hence the traditional diagnostic statistics confirm that the restricted model is a good predictor of women staying in business for a minimum of two years or longer.

Model Diagnosis and Detecting Influential Observation

This subsection provides further evidence that our model is a convincing predictor of factors influencing women in our sample to remain in business for two years or more. Diagnostic plot for the model is shown in figure 1. After a model has been fitted, it is useful to check how well it fits the data. Computing different residuals that comprise the Deviance residuals and Standardized/ Normalised residuals and their plots, helps to judge the model fit, and Cook's distance helps to identify influential points.

The normal P-P Plot of regression standardizes residuals in figure 1 shows that the residuals follow the diagonal, which is the condition for the normal distribution. The estimated values are closely related to the actual values, indicating that the model provides a good fit.

Figure 1: Normal P-P Plot of Regression Standardized Residual



Conclusion

This study research project on rural female entrepreneurs largely because it views empowerment of women in business as an ideal approach to address poverty and unemployment in rural areas but also to shatter traditional rural biases and stereotypes that oppress women and confine them to playing marginal roles in rural development. The regression results showed that business experience, education levels, business success and hours spent in

operating the business have a positive effective on women staying in business for at least two years or more. These findings confirm the need to offer short business and financial management courses to rural entrepreneurs for the purposes of increasing the probability of them growing successful businesses. Such short courses could be offered through University community engagement projects or NGO based programmes.

Furthermore, financial constraints adversely affect the probability of women staying in business for two or more years. Ideally Grameen bank type programmes that offer poor rural women low cost loans for entrepreneurial purposes, ought to be introduced in the uMkhanyakude area. Such programmes are group-based programmes that work at the level of women cell groups that are involved in supporting and mentoring one another to run efficient businesses and to make timeous loan payments. A seasoned entrepreneur heads the cell and the cell serves as a screening mechanism to avoid adverse selection of new group members and is also involved in monitoring business operations of successful loan applicants which prevents the moral hazard problem from arising. This approach is likely to work in rural areas because stokvel programmes that have a long history in such areas operate on a similar basis and can be easily extended to assimilate Grameen type functions.

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The Significance of Green Space in the Living Environment: A Case Study of the Bekkersdal Community, Westonaria, South Africa

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Abstract

There is increasing evidence for a positive relation between the amount of green space in the living environment, people's health and their well-being. The Bekkersdal Township was founded in 1945 as a mining community. As the mines in the area closed down, unemployment grew and a new informal township was established with the concomitant health, other socio-economic issues and a lack of green space in the immediate environment. This article addresses the following question: 'Do green spaces matter in this specific socio-economic environment?' The participants consisted of 520 residents of the informal settlement section of Bekkersdal who completed a questionnaire with the assistance of trained fieldworkers. The results revealed that although the residents generally have positive feelings concerning their natural environment, in particular with regard to the vegetable gardens and open areas, environmental risks, i.e. dust, noise, litter and polluted water sources affect them considerably. Vegetable gardens are popular as they also serve as a food source in this underprivileged environment. The participants also showed a great affinity for natural features i.e. trees and open areas. Research from similar surroundings suggested various positive effects thereof on the residents. This study suggests that Bekkersdal, although impoverished and plagued with many adversities, has the potential to add value to the living conditions of residents by exploring and cultivating the existing green spaces.

This includes incentive-driven organised environmental activities and initiatives such as clean-up operations, recycling, communal food- and medicinal gardens, and training to establish and maintain such initiatives.

Keywords: Bekkersdal, green space, wellbeing, informal settlement, mining community, urban development

Introduction

There is increasing attention and evidence for a positive relation between the amount of green space in the living environment, people's health and wellbeing (Maas *et al.* 2009; Alcock *et al.* 2014). Several international studies show that more green space in the living environment is positively related to people's self-perceived wellbeing (De Vries *et al.* 2003; Maas *et al.* 2006; Mitchell & Popham 2007; Capaldi, Dopko & Zelenski 2014). People living in urban areas with more green space tend to report greater wellbeing than city dwellers that do not have parks, gardens, or other green space nearby (Kaplan & Kaplan 1989; Maller *et al.* 2006).

Since the 1970s, many European countries have developed programmes for nature conservation in urban areas. Although a certain amount of 'nature' (green space) has always been found in cities, the concept of 'nature in the city' is relatively new in South Africa. It is only over the last 15 years that certain South African cities have adopted an urban nature conservation or green space strategy (Cilliers, Muller & Drewes 2004; Shackleton *et al.* 2013). According to Boswell (1993), these strategies developed in response to changing perceptions towards the environment within the nature conservation movement, together with an increase in environmental awareness. Despite these relative early insights into the need for urban green spaces, the immense increase in urbanisation and human competition for space remains a problem.

According to the most recent survey released by the South African Institute of Race Relations (SAIRR) two-thirds of South Africa's population live in urban areas (SAIRR 2014: Online). Urbanisation is, therefore, regarded as one of the most severe impacts on the environment (Cilliers, Muller & Drewes 2004). Natural vegetation in and around South African cities is destroyed at an alarming rate and immense areas of ecologically significant

open spaces are cleared for persistent lateral growth (Cilliers 1998). Urban nature conservation issues in South Africa are overshadowed by the goal to improve human well-being, which focuses on aspects such as poverty, equity, redistribution of wealth and wealth creation (Hindson 1994). McConnachie and Shackleton (2010) also found that poorer communities had lower areas of public green space relative to more affluent areas in several small towns in South Africa. Additionally, South African cities have witnessed an increase in the number of informal settlements. These settlements, together with trends of suburbanisation, have resulted in habitat fragmentation and sprawling of cities (Cilliers, Muller & Drewes 2004). The study site Bekkersdal, a mining community situated 7 km northeast of Westonaria and 14 km south of Randfontein in the Gauteng Province of South Africa, is an example of such an informal settlement.

Study Area

Bekkersdal was established in 1945 and served mainly as a settlement for migrant Africans who worked in the surrounding cities, towns and gold mines (Van Eeden 2014). It is currently part of the greater Westonaria and its population forms part of the inhabitants of the Westonaria Local Municipality (WLM). The semi-urban township has an approximate population of 150 000 people and consists of a formal section and an unplanned informal settlement near the core of the formal township (Housing Development Agency (HDA) 2012: Online). The informal settlement started in the early 1980s and has since grown to a population of approximately 70 000 residents (Van Eeden 2014). The dire need for housing in the Bekkersdal area resulted in an expansion of informal settlements in a disorderly fashion. Housing development was also affected by the fact that the area is undermined for gold and the underlying bedrock is dolomite. Moreover, the population growth in the area has placed a heavy burden on the provision of water (Van Eeden 2011). Research also indicates that mining activities lead to environmental degradation and various types of pollution and subsequent health problems (e.g. respiratory difficulties) experienced by inhabitants who reside near such areas (Edmeston 2010; Radio Netherlands Worldwide 2012: Online).

Recent literature also speculates on the possible effects of acid mine drainage (AMD), water decanting upstream of Bekkersdal and adjacent areas, including the Donaldson Dam (Stuijt 2010: Online). The Donaldson Dam (a

surface water collection and storage facility in the Wonderfontein Spruit, which is a tributary to the Mooi River sub-catchment of the Vaal River system and bordering the north-western side of Bekkersdal informal settlement – Figure 1), is known for its high radioactive levels in the sediment. According to Kardas-Nelson (2010: Online), uranium is a reported by-product of mining activities and acid mine drainage. AMD is evidently the result of the flooding of mine basins, or the run-off from mine dumps, which can lead to uranium contamination (Kardas-Nelson 2010: Online). In 2009, it was reported that AMD, originating in the Western Basin of the Witwatersrand, led to the disposal of more than three tons of uranium in the Donaldson Dam from 1997 to 2008 (Winde 2009: Online). The Bekkersdal community uses this dam extensively for, amongst others, baptising purposes, recreation and fishing, fish that feed on the uranium-rich sediment. Informal vendors also sell food products close by, and the residents allow their domestic animals, such as cattle, to drink from the dam¹ (Figure 2 and 3).

Furthermore, Bekkersdal is characterised by people living close together, human traffic, informal and unsafe buildings, pollution, dust, and often, noise, in a dolomite-underlain area which is undermined by gold mines. In these informal squatter settlements, poverty, homelessness and a lack of essential services such as storm-water management, sanitation, refuse removal and the sustainable supply of safe potable water on each household stand, contribute to a poor quality of life². Therefore, the significance of green spaces in these settlements should be explored, not only as formal conservational possibilities, but also specifically for their value in contributing to human well-being. The significance of green space in the living environment of the residents of Bekkersdal should be specifically investigated to determine whether they value such areas. Moreover, one of the priorities in this human settlement is the maintenance and development of green space.

Green Spaces

Urban green spaces are considered as outdoor places with significant amounts

¹ Compare NNR Report – TR-RRD-07-0006 – ‘Radiological Impacts of the Mining Activities to the Public in the Wonderfonteinspruit Catchment Area’. 12 July 2007 as obtained in Federation for a Sustainable Environment, Hearings, 21-22 June 2011: Environmental reliability, pp. 7-8.

² Refer to http://www.botany.uwc.ac.za/envfacts/facts/urban_conserve.htm

of vegetation, existing as either managed areas or remnants of natural landscapes and vegetation (Beatley 2012). Breuste *et al.* (2013) define urban green space as a range of parks, street trees, urban agriculture, residential lawns, and roof gardens. The provision of urban green space has many ecological, psychological, social, and economic benefits (Uy & Nakagoshi 2008; Shackleton & Blair 2013). At the individual level urban green spaces offer opportunities for physical and psychological rejuvenation and well-being and a sense of place (Stigsdotter & Grahn 2003). At the family level they provide a place for interaction, learning and relaxation (Lo & Jim 2010) and at the community level they offer opportunities for social contact, a sense of place, contributing to community identity, solidarity and security (Peters, Elands & Buijs 2010; Erasmus & De Crom 2014). In developing countries green spaces may provide tangible products for urban populations, such as fuelwood, medicinal plants, shade and food (Shackleton 2012). This differs from the largely recreational uses of green spaces in developed countries (Hunter 2001). According to Schäffler and Swilling (2013) green spaces and infrastructure include trees, private and public gardens, parks, riparian zones along urban drainage lines, undeveloped ridges and a variety of urban agricultural spaces such as food- and community-based gardens.

For the purpose of this article, green space is regarded as any open piece of land that is undeveloped (has no buildings or other built structures) and is accessible to the inhabitants of Bekkersdal. Such existing green spaces in this area of study indicated in Figure 1, included the areas of natural vegetation (for example, an open field with grass, a patch of green trees, open piece of bare soil), parks (formally developed areas with trees), community gardens (mostly vegetable gardens), the cemetery, schoolyards, children playgrounds, sport fields and vacant lots. The Donaldson Dam adjacent to Bekkersdal (Figure 1) and any pond or small dam (usually the result of rain showers) was also regarded as green spaces. Backyard (private) gardens (flower beds, vegetable patches and small areas with crops) are found at certain homes in the area and were also regarded as green spaces.

Problem Statement

From the abovementioned information, it is clear that the Bekkersdal community faces many physical, natural, and social challenges. Some of these

challenges include the surrounding physical environment (e.g. acid mine drainage, undermined area, pollution, dolomite rock formations and a lack of green- or recreational space), unemployment, poverty, and the on-going protests for improved basic services (Simelane & Nicolson 2014: Online).

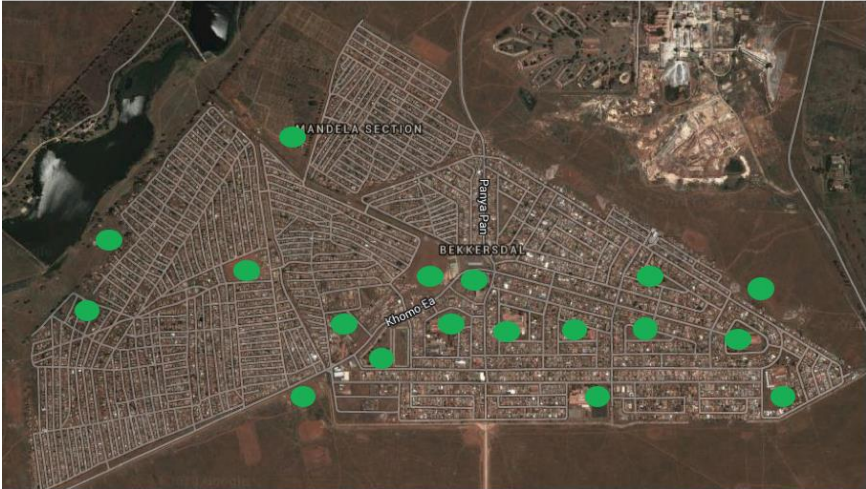


Figure 1: Layout of Bekkersdal with the Donaldson Dam in the north-western side of the settlement and some of the existing ‘green spaces’ (Researchers’ own work).

The literature indicates that limited green space in a living environment coincides with feelings of loneliness and a perceived lack of social support (Maas *et al.* 2009). According to Van Averbek (2007) it is also in informal settlements (like Bekkersdal) that problems of food insecurity and under-nutrition are most likely to occur. Provided that space and resources are available, production of vegetables for home consumption is one of the most obvious ways in which such poor households can address these problems (Burgess *et al.* 1998). The Health Council of the Netherlands (2004) suggested that green space might ‘have beneficial effects ... as [it] promotes social contact, for example through green meeting places in neighbourhoods, group-based nature activities (e.g. walking) and gardening (shared vegetable gardens and urban farming)’. It is apparent from the latter suggestions that research is

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needed to determine whether green spaces matter to the people in this specific socio-economic and ecological high-risk environment of Bekkersdal.



Figure 2: Residents of the Bekkersdal area use the polluted Donaldson Dam for various activities such as grazing and drinking area for animals and a source of water for washing clothes (Source: IOL: Online).

To determine the significance of green space for the residents, the following aspects were investigated: the residents' feelings towards and the perceived importance of certain aspects of the natural environment (trees, water and open

spaces); their awareness of the possible effect of environmental problems (risks), e.g. dust, noise, litter or polluted water on households, and finally, which and to what extent environmental problems are encountered. The rationale for determining whether the residents regard any significant meaning of the natural environment and their awareness of the effects of the risks they encounter, is to help the role-players and local authorities in public decision-making to either invest in the development of formalised and maintained green spaces, or in the awareness and environmental education programmes in the area.



Figure 3: Children use the polluted Donaldson Dam as recreation area (Photograph: Elise Tempelhoff)

Research Questions and Objectives

Based on the problem statement, the investigation addressed the following main question: ‘Do green spaces matter to the people in this specific socio-economic and ecological high-risk environment?’ The main objective was to determine the significance of green space in the living environment of the Bekkersdal residents. In order to address this objective, the following questions were explored:

- How do the residents feel about the existing green spaces in their immediate environment?

- What role do green spaces play in recreation and other community activities?
- What is the effect of environmental problems/risks on the households?

Method

This study was both exploratory and descriptive in nature (Bless, Higson-Smith & Kagee 2007). It was exploratory in the sense that the study aimed to gain insight into the significance of green space in the study area for the individual. The study was descriptive in the sense that the information gathered described the meaning of the environment in terms of the role and effect it has on the community.

A mixed-methods research design was adopted as the basis for this study. This type of research combines quantitative and qualitative strategies in one study (Teddle & Tashakkori 2009). In this case, both the numeric and text (word) data was collected concurrently by means of rating questions and open-ended questions. Fieldworkers from the Bekkersdal community, who share language and cultural similarities with the community, were trained to distribute and assist in administering the questionnaires.

Participants

A total of 520 participants residing in the Bekkersdal informal settlement took part in the study. The average age of the participants was 23 years. The ages ranged from 17 to 83. The characteristics of the participant group are set out in Table 1.

Data Collection

Data was gathered through a structured baseline questionnaire that was administered by trained fieldworkers. The first section of the questionnaire was aimed at gathering biographical data in relation to the participants' age, gender, language spoken, level of education and residential status. The remainder of the questionnaire dealt with satisfaction with the environment of residents of Bekkersdal. The questionnaire consisted of closed questions which required

the participants to select their choices from a list. In certain instances open-ended questions were included where the participants had to elaborate or clarify their responses. Only aspects directly applicable to the physical/natural environment were taken into consideration during the analysis and interpretation of the data.

Table 1 Characteristics of the participants (n = 520)

Item		Frequency	Percentage (%)
Gender	Female	286	55
	Male	234	45
Culture	Xhosa	245	47.1
	Sotho	138	26.5
	Tsonga	48	9.3
	Zulu	37	7.2
	Tswana	36	6.9
	Other	16	3.0
Educational level	None	104	20.0
	Primary	170	32.6
	school	231	44.5
	Secondary	15	2.9
	school		
Residential status	Other	401	77.0
		119	23.0
	SA citizen		
	Non-SA citizen		

Data Analysis

Data from the structured questionnaires were captured in the Statistical Program for the Social Sciences, version 21 (SPSS 21). Basic descriptive

statistics (mean and average) were computed for all scales and items contained in the questionnaire. Direct quotations from open-ended questions were used to qualify certain attitudes and views of individuals.

Ethical Considerations

Institutional ethical permission was received for the research under the umbrella Integrated Multidisciplinary community project. Ethical issues were considered in order to ensure that the rights of the participants were observed, namely: anonymity, respect for the dignity of persons, non-maleficence and confidentiality (Terre Blanche, Durrheim, & Painter 2006). Participation was voluntary and the participants were required to give informed and voluntary consent to participate in the research.

Results

Following the question ‘How do you feel about the existing green spaces in your immediate environment?’ the participants indicated their choices as presented in Table 2. The participants could choose 1 - Like it a lot, 2 - Like it a little, 3 - Do not care, and 4 - No response.

The results in Table 2 clearly reveal that the majority of the participants (Mean = 39%) feel positive about the existing green spaces in their immediate environment, indicating that they ‘like it a lot’. Vegetable gardens revealed the highest score (66.7%). In descending order the following features scored above 40% of the participants' choice of ‘like it a lot’, soccer field, park, patch of green trees and an open field with grass. The following quotes from participants are representative of these findings:

‘We like sitting under the trees to relax and to talk with each other’.

‘When the grass is green, we like it very much. Sometimes we go there for church ...’.

‘... the open place is good for us to gather to pray or just sit and talk ...’.

Table 2 Participants’ feelings regarding existing green spaces in their immediate environment

Item	1 Like it a lot	2 Like it a little	3 Do not care	4 No response	Mean	SD
Patch of green trees	46.2%	12.1%	6.0%	35.7%	2.31	1.36
Open field with grass	44.4%	11.9%	6.5%	37.2%	2.37	1.36
Large open piece of bare soil	32.9%	23.2%	10.6%	33.3%	2.44	1.25
Soccer field	48.9%	25.8%	6.0%	19.3%	1.96	1.15
Park	46.2%	15.6%	6.8%	31.4%	2.23	1.31
River or stream	22.8%	17.0%	16.2%	44.0%	2.82	1.22
Vegetable gardens	66.7%	7.2%	2.8%	23.3%	1.83	1.26
Flower beds	33.7%	16.5%	6.8%	43.0%	2.59	1.33
Dam filled with water throughout the year	26.4%	23.7%	17.5%	32.4%	2.56	1.19
Pond with water after rain	20.8%	20.8%	15.3%	43.1%	2.81	1.19
Mean	39%	18%	9%	34%	22.39	

With regards to vegetable gardens, the following quotes are representative of what the participants said:

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‘I like making a garden where I can plant pumpkins and sometimes mealies [corn]...it grows good when we have rain...’

‘We plant vegetables in our garden...it is for food. Sometimes I can sell the vegetables...’

‘I have a small yard where I plant mealies and other things...My children can get food from the garden. Sometimes we make a bigger place to grow vegetables, but that is not in my yard. We go to another place where there are open areas where we dig up the soil and plant...’

An average of only 9% of the participants indicated that they do not care about the natural features in their environment. The relatively large number of ‘no response’ (Mean = 34%) was the result of the aforementioned features not being visible in the participant’s immediate environment or they were unaware or ignorant of these items. Therefore, they selected the ‘no response’ option. Typical responses to these questions were:

‘I don’t know of such a place’; ‘This place is very far from my house...’; ‘I don’t go there...I don’t play [soccer]...’; and ‘I cannot see that [item mentioned]...’

On the question of participation in outdoor or community activities, an average of only 17.6% responded positively (Table 3). However, those who do participate in outdoor activities mentioned gardening (33.6%) (see quotes above) and playing soccer (29.5%) as the most popular (Table 3). Quotes with regards to playing soccer include:

‘We like the soccer field very much because we all play soccer. Even small children play with a ball...’

‘We cannot play in the yard or the street...sometimes dangerous...but we like the place where there are no houses, where we can kick ball and play soccer...’

Fishing apparently plays a minor role as an outdoor activity in the community and less than 5% of the participants indicated that they fish in the area. However, responses to open questions of what the participants preferred to do at

certain green spaces, a number responded that they ‘like to catch fish in the dam’.

Table 3 Outdoor recreational and community activities

Activity	Yes	No	Mean	SD
Playing soccer	29.5%	70.5%	1.70	0.457
Fishing	4.6%	95.4%	1.95	0.210
Cycling	8.9%	91.1%	1.91	0.286
Gardening	33.6%	66.4%	1.66	0.473
Traditional dancing	11.4%	88.6%	1.89	0.318
Mean	17.6%	82.4%		

Finally, the participants were asked how they perceived households affected by identified environmental risks. The participants could select between being affected, 1 - very bad, 2 - not so bad, and 3 - no problem. The responses are indicated in Table 4.

Table 4 Extent to which households are affected by environmental risks as perceived by participants

Risk	Very bad	Not so bad	No problem	Mean	SD
Dusty	90.8%	7.4%	1.8%	1.11	0.367
Dangerous fumes	49.8%	27.6%	22.6%	1.73	0.807
Underground mining	41.5%	34.3%	24.2%	1.83	0.792
Dolomite underlain area	38.0%	31.9%	30.1%	1.92	0.822
Sinkholes	41.2%	32.7%	26.1%	1.85	0.807
Acid underground water	21.5%	28.3%	50.2%	2.29	0.797
Donaldson dam	43.8%	20.8%	35.4%	1.92	0.887

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Litter polluting area	87.1%	9.4%	3.4%	1.16	0.453
Area is noisy	88.6%	10.6%	0.8%	1.12	0.351
Polluted soil	62.8%	27.4%	9.8%	1.47	0.668
Access to clean drinking water	25.5%	29.7%	44.9%	2.19	0.817
Open canal	35.9%	30.1%	33.9%	1.98	0.836
Lack of recreational facilities	63.7%	22.8%	13.6%	1.50	0.723
Visible sewerage overflow in streets	74.1%	13.8%	12.1%	1.38	0.692
Mean	59.0%	33.3%	18.3%		

It is evident from the above Table 4 that the majority of the participants are aware of the fact that the area is highly subjected to a variety of environmental risks. Dust (90.8%), noise (88.6%) and litter (87.1%) stood out as being the worst in affecting households, whilst visible sewerage overflow in the streets (74.1%), polluted soil (62.8%) and a lack of recreational facilities (63.7%) also play a major role in the running of households. The majority of the participants also identified dangerous fumes, underground mining, the dolomite-underlain area and sinkholes as having a negative effect on the households. Representative quotes qualifying these findings include the following:

‘It is very bad...and too much noise. The place is not clean and sometimes we get sick because of the sewerage in the street. Water is running, especially when it rains and toilets are full of waste’.

‘I know about the sinkholes...I am scared...one day one might wake up and see your house is in a hole...’

‘...we have pollution and we get sick...The problem is there is no dumping site and no services [to clean up] from municipality. Children play there [littered areas] and get sick. They fall into the [dirty] water’.

‘Many people die...sometimes people get sick because of the water pollution and air pollution...They need to use water and the problem is caused by all the rubbish...’

‘No electricity, no good infrastructure...no good services to clean up...visible sewerage and dust in the street...it affects us because we get sick’.

Almost 44% of the respondents considered the highly polluted Donaldson Dam as ‘very bad’. An aspect that should be looked into is that a mere 20% of the participants consider that acid underground water (from mining activities) affects the households. Another interesting result revealed in Table 4 is that more than 75% of participants feel that access to clean drinking water is either not a problem at all, or it does not affect them in a bad way. However, 25% of the inhabitants are affected by the lack of easy access to clean drinking water. The extremely littered open concrete canal running through the area was not perceived as a serious problem. However, evidence as illustrated in Figure 4, reveals the opposite.



Figure 4: The highly polluted open canal running through the study area. Photograph: Mike Hutchings/Reuters (Source: Guardian 2014: Online).

Discussion

The majority of literature on case studies of urban green spaces is from developed societies (Shackleton 2012; Wendell, Zarger & Mihelcic 2012). South Africa, however, is a developing society faced with backlogs in urban infrastructure and housing development and with more than 60% of its population living in urban areas, Southern Africa is the most urbanised sub-region in Africa (UNHabitat 2010). In addition, environmental concerns are largely absent from academic, policy and even civil-society activist discourse, being dwarfed by the seemingly more pressing matters of service delivery deficits, economic exclusion and poverty (Schäffler & Swilling 2013). Scientific papers underline the importance of maintaining and developing green spaces because of their multiple environmental and social benefits for residents in the area. However, a general understanding of the significance of contemporary human-environment interaction in poverty stricken urban areas is still incomplete.

The aim of this article was to investigate the possible significance of green space in the living environment of the Bekkersdal community members. A random sample of 520 residents in the area of study was targeted as the participant group.

The results revealed that the majority of the participants expressed a positive feeling towards the natural features in their immediate environment. An average of almost 60% indicated that they 'like' features such as a patch of green trees, open grass fields, parks, water sources and even large open areas of bare soil in their vicinity (Table 2).

What stood out in the results were the relatively high scores for vegetable gardens (66.6%) and places where people can play or participate in outdoor activities such as a soccer field (48.9%) and parks (46.2%). In addition, naturally green features also scored a relatively high 46.1% and 44.4% for a patch of green trees and an open grass field respectively. A possible reason why vegetable gardens are the most popular of the choices is that it is more than just 'a natural feature', but also serves as a food source in this underprivileged environment. From the qualitative data, it was clear that 'gardening' as a preferred outdoor activity involves planting vegetables or crops in either private backyards or in open communal areas, to provide food for the households, a practice referred to as 'urban agriculture' (Martin, Oudwater & Meadows 2000; Thornton 2008). According to Rogerson (1996)

and Thornton (2008), the majority of ‘urban farmers’ in South Africa produce food as part of their survival strategy. This was confirmed by Martin, Oudwater and Meadows (2000) who reported that urban agriculture in Pretoria and Cape Town tended to be associated with lack of formal sector employment and aimed primarily at the production of food for home consumption. However, they also pointed out that besides food, urban farming performed other important functions, including social, cultural, developmental, aesthetic and environmental (Van Averbeke, 2007).

Ogilvie (2012) has undertaken similar studies in a rural community in the northern part of the KwaZulu-Natal Province, South Africa. Her findings provide much insight of the value of green space for the livelihoods in deprived communities. For example, community vegetable gardens and ‘food’ gardens at schools provide meals to children and the elderly and refuse areas become recycle stations where community members collect items for re-use or manufacture usable items in the community. This initiative not only teaches children to respect their natural resources but the vegetables from these school gardens are the only nutritional benefit in their daily meal.

A study by Nell *et al.* (2015) in the same area, found that the natural environment enabled the community to make a living in a self-sustaining way (due to the presence of patches of rich soil where community members plant crops, women gather firewood and building materials to construct houses and groups of young boys watch over livestock in grazing areas). A second environment-related theme that emerged from this study was that the good climate of the area was also viewed as a factor that positively impacted residents’ well-being. It would appear that mild winters, abundant rain and warm temperatures increase the habitability of the region, and community members spend much of their time in the open or in the shade of trees surrounding the houses. By spending time together in these green spaces in activities either to make a living (such as wood gathering and planting crops) or conversing in the shade of a tree, enhance the social ties and well-being of the community (Nell *et al.* 2015).

Three closely related studies performed in an underprivileged area of Chicago provide an indication of a positive relation between the presence of green public facilities and social ties (Coley, Kuo & Sullivan 1997; Kuo, Sullivan & Wiley 1998; Kweon, Sullivan & Wiley 1998).

The natural environment, however, seems to be of less importance for the study participants who live in the Bekkersdal area (Table 2). These results

are comprehensible when one looks at the physical surroundings as well as the socio-economic situation and current municipal service delivery in the area. The people in this area struggle to survive and take on almost any job or activity to gain an income for food. Therefore, the extremely poor and destitute participants indicated that the physical green environment is very low on the hierarchy of basic needs. Quotes from participants illustrating this situation include the following:

‘We do not get jobs in the area...the mines are to blame...now the young ones start to gamble to get money. Sometimes they buy food...sometimes they do drugs...’

‘I walk to town every day to work...maybe I watch cars. I do anything’.

‘I have to feed my family. I need work. There is no job here. Sometimes we gamble’.

‘The people are poor and there is no work. Crime is very bad here because there is no work. There are prostitutes...’

However, in spite of the aforementioned conditions, many studies have suggested that green space may have beneficial effects as it promotes social contact. Examples hereof include green meeting places in neighbourhoods (i.e. to discuss service delivery challenges), group-based outdoor activities (e.g. playing soccer) and gardening (shared gardens for the elderly or unemployed individuals) (Kaplan & Kaplan 1989; Coley, Kuo & Sullivan 1997; Hartig *et al.* 2003). Coley, Kuo and Sullivan (1997) also found that trees and grass in common spaces, as opposed to barren common spaces, may attract residents outdoors, thereby leading to frequent contact among neighbours. This is confirmed by Ogilvie (2012) and Nell *et al.* (2015). Natural settings in common space are attractive because they can, for example, provide shade, privacy and sound buffering from surrounding environments and could have restorative effects (Hartig *et al.* 2003, Shackleton & Blair, 2013; Shackleton 2014; Honold *et al.* 2015).

Besides offering opportunities to meet, green spaces can also promote a general sense of community. According to Kim and Kaplan (2004) and

Erasmus and De Crom (2015), the sense of community of the residents is strengthened when they feel at home (community attachment), have a bond with others, feel a sense of connection with the place (community identity) and have access to local exploration (pedestrianism). Natural features and open spaces were the most important physical features that contribute to these four domains of sense of community (Maas *et al.* 2009; Erasmus & De Crom 2015). Natural features can promote a sense of community by increasing the feelings of emotional attachment to a neighbourhood and the people's identity with a place, which in turn could decrease the feelings of loneliness and increase social support (Prezza *et al.* 2001; De Crom 2005). The Bekkersdal community could use these domains of a sense of community in their fight against the current poor living conditions. Green spaces could also enhance their sense of pride in their living environment; for example, take care of small private gardens (Figure 5).



Figure 5: An example of a small flowerbed that may create a sense of pride in the living space of residents in informal settlements such as Bekkersdal (Source: CBB 2014: Online)

Furthermore, the findings also revealed that only a small percentage of the participants participate in any outdoor activity (Table 3). Lifestyles in an area such as the Bekkersdal community are increasingly characterised by sedentary behaviour, stress, mental ill health and disconnection from nature. However,

contact with nature has been shown to improve psychological health reducing stress, enhancing mood and replenishing mental fatigue. Both physical activity and exposure to nature are known individually to have a positive effect on physical and mental health (Barton & Pretty 2010; Thompson Coon *et al.* 2011). The respondents in this study who participate in a physical outdoor activity identified gardening (33.6%) and playing soccer (29.5%) as their preferred activities, with the majority of the community 'doing nothing'. For many gardening is propagating and growing one's own food supply and/or providing food for others. In the 1990s Lewis (1996) and Furnass (1996) provided evidence to suggest that gardening reduces stress, encourage nurturing characteristics, build social networks and enhance social capital. This is confirmed by Ogilvie (2012) with the communal gardens in Northern KwaZulu-Natal.

From the above it can be concluded that although the participants have a positive feeling towards natural features in their environment, many reasons exist why they abuse, do not use, or have access to these features. These reasons may be found, amongst others, in the perceived environmental risks the residents are faced with. As indicated in Table 4, almost 60% of the participants regard environmental risks as a serious influence on their livelihood. Various types of pollution were highlighted as the worst. In addition, the participants recognised the potential dangers and effects of risks such as dangerous fumes, underground mining, the dolomitic area on which their houses are built and the possibilities of cracks, ground surface subsidence and ultimately, sinkholes. According to the World Health Organization (2010), potential urban hazards with associated health risks include the typical conditions of a Bekkersdal situation - substandard housing, crowded living conditions, contaminated food, unclean water, inadequate sanitation, poor solid waste disposal services and air pollution. Furthermore, within these slum conditions there are often significant health inequities such as lower life expectancy than for those living in wealthy neighbourhoods (Kjellstrom *et al.* 2007). These health inequities can be traced back to differences in social- and living conditions of urban dwellers, and variable environmental qualities in cities.

Although the adjacent Donaldson Dam is recognised as a danger to the households, the residents still utilise it in many ways. Children often swim in the dam and fish is still caught as a food source.

Linked with environmental risks is service delivery. Aspects such as

sewerage overflow in the streets, litter, lack of recreational facilities, not so easy access to clean drinking water, and the polluted open concrete canals, amongst others, are all part of a lack of proper municipal service delivery. Maintenance of green spaces within urban areas is widely recognised as one of the primary strategies available to urban planners to contribute to urban ecology and regular human contact with nature for their physical and psychological wellbeing (Louv 2006).

Although the residents of Bekkersdal are impoverished and plagued with many adversities, they do have the potential to add value to their living conditions by exploring and cultivating the existing green spaces.

Conclusion and Recommendations

It can be concluded from this study that natural features can promote a better living environment for the Bekkersdal community by increasing feelings of emotional attachment to their neighbourhood, their identity with the place, which in turn could decrease feelings of loneliness and despair, and increase social support and hope in an otherwise demoralising socio-economic environment. This, however, will only be possible through engagement, political will, involvement and tenacity of both the residents and external role-players (e.g. municipalities and mines), to explore the options identified in this study to create employment (albeit informal) and ascertain a holistic healthier community.

The research venture suggests that Bekkersdal, although impoverished and plagued with many adversities, has the potential to add value to the living conditions of residents by exploring and cultivating the existing green spaces. This includes incentive-driven organised environmental activities and initiatives such as clean-up operations, recycling, communal food- and medicinal gardens, and training to establish and maintain such initiatives.

The findings of this study have several significant implications. Firstly, it suggests that green spaces can add value to the living conditions of the Bekkersdal community: the community has a positive attitude towards green spaces and the desire exists to utilise such areas if they are available.

However, basic municipal service delivery has left the community in the lurch as well as in identifying, developing, establishing and maintaining green spaces. Non-Governmental Organisations (NGOs), funders and volunteers should become actively involved in establishing, educating, encouraging, and

supporting green space initiatives.

To support and ensure local empowerment, the community needs to be empowered with, amongst others, infrastructural work opportunities in community-based organisations as a prerequisite for the community's well-being (Van Eeden, 2014). Green space development, -activities and maintenance may offer such opportunities.

Successes from comparable other studies in similar environments should be investigated and implemented in the Bekkersdal community. For example, the possibility of vegetable gardens at schools and backyards as well as community gardens and gardens for traditional medicine, should be investigated.

Research suggests that green spaces have beneficial effects on health in so far as they promote social contact through green meeting places in neighbourhoods leading to frequent contact amongst neighbours (Kim & Kaplan, 2004; Maas *et al.*, 2009). Renewed initiatives to establish such areas should be investigated i.e. community tree planting days at such national events, education on re-use and recycling of waste material (Ogilvie 2012) and stimulating a general sense of pride in their living environment (Erasmus & De Crom 2015), providing that the community members are encouraged to participate through tangible incentives such as job creation.

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Analysing University Students' Quality Perceptions and Identifying Strategies in Mapping a Way Forward to Closing the Quality Gaps

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Abstract

Every year universities vie for the same top students nationally and internationally. In order for a student to choose that university, the university needs to set itself apart from all the others. It can do this quiet strategically by providing top quality services. Thus service quality to a student can mean many things, namely, by the university being a world ranked tertiary institution of learning, by it having a well established faculty, by the institution having well recognised and highly skilled academics and efficient administration staff that have the students best interests at heart. All these are but a few distinguishing characteristics of high quality services that can set a university apart from others. This paper provides a review of service quality with specific reference to service quality at universities. The SERVQUAL instrument was used to measure students' perceptions on service quality at the university of KwaZulu-Natal in South Africa. The Gaps model also formed the foundation for this research study. The survey conducted on the students at the university indicated that students were dissatisfied with the services provided by the university. From the empirical results the researcher provided strategies to the university's management that could close these quality gaps and improve the service offerings made to students.

Keywords: service quality, SERVQUAL instrument, GAPS model

Introduction

Given the financial and resource constraints under which a university operates, it is essential that when they embark on their strategic initiatives to attract students they need to understand student perceptions. From a strategic perspective, universities all over the world are becoming more aware of the need for quality. According to studies conducted by Aldridge and Rowley, (2001) and Oldfield and Baron (2000), measuring service quality within higher education is happening at universities throughout the world and is seen as a common phenomenon. This paper is based on the research survey conducted on students at the University of KwaZulu-Natal, which is ranked as one of the leading universities in South Africa. In the literature review the researcher expands briefly on defining service quality, the debate surrounding service quality within tertiary institutions, and the SERVQUAL and the GAP's model is outlined as the study is based on these two models. The researcher then identifies and analyses student's perceptions and expectations of the service offerings made by the university. Thereafter quality gaps that occur are highlighted and strategies for the university management to close these gaps are suggested as a way forward.

Literature Review

Defining Service Quality

Service quality or 'quality' is an abstract concept that is often difficult to define and quantify because it is context specific and means different things to different people. Before embarking on the definition of service quality it is important to describe the difference between a product and a service. According to Hoffman (2006: 28-46), four of the unique characteristics that distinguish goods from services are services intangibility, inseparability, heterogeneity and perishability. Zeithmal *et al.*, (2009: 6) indicates that the broad definition of services implies that intangibility is a key determinant of whether an offering is a service. Services tend to be more intangible than manufactured products and manufactured products tend to be more tangible than services. Hoffman (2006: 28) argues that of the four unique characteristics that distinguish goods from services, intangibility is the primary source from which the other three characteristics emerge. Services are performances rather than objects. As a result of their intangibility, services cannot be seen, felt,

tasted, or touched in the same manner as physical goods. Hoffman (2006: 28) adds that inseparability of production and consumption refers to the fact that goods are first produced, sold and then consumed, whilst services are sold first and then produced and consumed simultaneously. Heterogeneity, another characteristic of a service refers to the potential for service performance to vary from one service transaction to the next. Services are produced by people; consequently variability is inherent in the production process. Finally, perishability means that services cannot be saved; unused capacity in services cannot be reserved, and services themselves cannot be inventoried.

According to (Mangold & Babakus, 1991: 60) the following are various definitions of service quality:

- ‘Quality is a consumer-generated comparative judgement, since individuals have no implicit sense of quality unless a standard of comparison is provided’ (Oliver 1997: 163).
- Service quality is ‘the extent in which the service, the service process and the service organization can satisfy the expectations of the user’ (Kasper, van Helsdingen & de Vries 1999: 188).
- ‘Perceived service quality is the result of the consumer’s comparison of expected service with perceived service’ (Bojanic 1991:29).
- Service quality is ‘the outcome of a process in which consumer’s expectations for the service are compared with their perceptions of the service actually delivered’.

The concept of service quality therefore has different meanings and this creates debate surrounding the area of service quality research. From a strategic perspective, these variations in meanings that stakeholders of universities have towards service quality often make it difficult for the universities management to incorporate quality in its strategy and corporate culture in a holistic and synergistic manner.

The Debate Surrounding Service Quality within Tertiary Institutions

Tertiary institutions are being forced to re-look at themselves and account for quality of education that they provide. They can do this by taking the needs of

the students into account and having proper systems and personnel in place to implement and deliver quality service. The researcher is in agreement with Souter (1996: 72) who states that there are a number of problems in developing performance indicators within tertiary education. A particular problem is that such performance indicators tend to become measures of activity rather than true measures of quality of students' educational services.

Harvey and Green (1993:3) indicate that: 'quality can be viewed as exceptional, as perfection (or consistency), as fitness for purpose, as value for money and as transformative.' The researcher is in agreement with the above perspective. In the case of the University of KwaZulu-Natal if students perceived its' service quality in terms of exceptional service offerings, embodying academic excellence, high standards within its academic programmes and research output, a well ranked academic institution with a reputable image, then the quality concept of the way students view the institution would be enhanced.

Parasuraman, Berry and Zeithmal (1986) were one of the pioneering researchers that conducted extensive studies on measuring customer satisfaction by measuring quality. According to Hoffman and Bateman (2006:28) service quality was primarily different from product quality due to its' intangibly nature. Parasuraman *et al.*, developed the SERVQUAL model to test quality dimensions in services. Since tertiary institutions are also provides of a service there is therefore substantial reasoning in evaluating the performance of tertiary institutions using the SERVQUAL model.

Naidoo (2011: 526) developed the following constructs that constitute quality within a tertiary institution. They are as follows:

- Quality in terms of well skilled academic staff;
- Quality of programme offering and its value and relevance to the labour market;
- Quality in terms of good facilities, equipment and lecture and recreational venues;
- Quality in terms of good administration staff who are efficient in admin and student affairs;
- Quality in terms of safety of the students at campus;
- Quality in terms of research output;
- Quality in terms of scholarships and funding facilities available to

- students within the campus;
- Ranking of the University within the country; and
- Global recognition of the University and the Universities commitment to international student enrolments.

Yeo (2008: 153) highlighted some ways that tertiary institutions fell short of improving service standards. He commented that not knowing what customers expect was one of the ways they failed to improve quality. Universities fail to be prepared for the shifting needs of their customers (students) in providing courses and programmes that are relevant in subject matter and teaching approaches. Often, learning processes are compromised and academic rigor is questioned. Yeo (2008: 153-154) also regarded inadequate service quality standards put in place by university management as a contributing factor to poor service quality. Institutions fail to grapple with the shortage of teaching staff when they constantly have to face the pressure of meeting increased environments to remain competitive. As such class sizes are large, thereby stretching the instructor – student ratio. The consequence is a negative effect on the level of individual attention given to each student inside and outside class.

Service performance inconsistencies are another area that has lead to service quality being lowered within universities. The institution fails to identify appropriate specifications that would meet customer expectations in terms of content, delivery, and application. Learning experience and orientation at large cannot entirely be evaluated by grades alone. Service performance should go beyond tangible forms, (Yeo 2008: 153).

Bennett *et al.* (2003: 141) indicates the following factors contributing to pre-purchase and post-purchase value when choosing a university course. Pre-purchase value variables that a student is likely to consider would include reputation of university; quality of staff; cost; location and distance from home; availability of desired degree (e.g. Masters of Electronic Commerce); length of course; where friends are going to study; social clubs; and social life. Post-purchase value variables that a student would consider before making the decision to study the course would be knowledge gained; quality of staff; cost; other students (motivation, friendships, quality of students); library, internet and computer access; length of course time; industry links; and social clubs; and social life. Shanker (2002: 571) argued that in a survey conducted on management students at Indian universities, the results revealed that students choosing between institutions were based on: reputation of university; number

of applicants keen to enrol in the course; past success rate for placement; faculty expertise; width of specialisation offered; infrastructural facilities; and fees.

Another important consideration when looking at quality within tertiary institutions is the importance of support staff services to students. Zemke and Schaff (2003: 7 - 8) argued that support services amplified the role of learning by distributing tasks and experiences in several possible ways: administration services through helping students manage their non-academic responsibilities; social services through helping them increase their network via student clubs and events; and psychological services through the provision of counselling and coaching support. Support services are an extension of student experiences and serves as a platform for personal growth and development. Yeo (2009: 62 - 76) stated that a similar study to the one he carried out at the Engineering Faculty in Singapore University was also carried out by Clark and Rasay (1990) where it was reported that high achieving university students were found to have made extensive use of support services.

The importance of service quality to an organization cannot be underestimated as it lies at the very core of an organizations marketing and management strategy. Students' satisfaction in their learning experience is crucial to the institutions popularity and competitive edge over other institutions. Students become the mouthpiece of institutions as they appear in promotional materials to increase experiential visibility and institutional solidarity. In this instance, they serve as customers endorsing product and service quality offered by the institutions they represent.

The SERVQUAL Instrument Used to Measure Quality

The SERVQUAL scale identifies and tests the five dimensions of quality, namely; Tangibles, Reliability, Responsiveness, Empathy and Assurance. Parasuram *et al.* (1985:41-45) illustrated the following:

- Tangibles are the physical facilities, equipment and appearance of staff
- Reliability refers to the firm's ability to deliver a promised service dependably and accurately
- Responsiveness refers to the service provider's willingness to help customers and provide prompt service

- Assurance refers to the knowledge and courtesy of employees and their ability to inspire trust and confidence
- Empathy is demonstrated by giving caring, individualised attention.

This study used the SERVQUAL instrument to measure students' quality perceptions of the university's service offerings.

The Gaps Model that Identifies Quality Gaps

The foundation of this study is also based on the GAPS model. Zeithmal, Berry and Parasuraman developed the GAPS model (1984-1986) that is used in conjunction with the SERVQUAL instrument. This model identified four potential gaps within the service organization. According to Metters (2006: 185) Parasuraman and colleagues (1985) conducted studies in several industry sectors to develop and refine SERVQUAL, a multi-item instrument to quantify customers' global (as opposed to transaction- specific) assessment of a company's service quality. Their model is commonly known as the GAPS model. Their scale involved expectations –perceptions gaps scores along five dimensions: reliability, responsiveness, assurance, empathy and tangibles. When Zeithmal, Parasuraman, and Berry asked more than 1,900 customers of five nationally known companies to allocate 100 points across the five service quality dimensions, they averaged as follows: reliability 32%, responsiveness 22%, assurance 19%, empathy 16%, and tangibles 11%. Though customers consistently reported that their most important quality dimension was reliability, this area seems to be where many service companies failed. The SERVQUAL model conceptualized service quality on the basis of the differences between customer's expectations with respect to the five dimensions and their perceptions of what was actually delivered.

When a difference exists, it is characterized as a 'gap'. The model was fashioned after remarkably consistent patterns emerged from the study's interviews. Though some perceptions about service quality were specific to the industries selected, commonalities among the industries prevailed. The commonalities suggested that a general model of service could be developed. The most important insight obtained from analysing the responses was that 'a set of key discrepancies or gaps' existed regarding perceptions of service quality and the tasks associated with service delivery to customers.

Study Methodology

A survey was conducted on students at the University of KwaZulu-Natal using a self-administered questionnaire. The survey was designed to collect information from students on their perceptions on service quality within the University of KwaZulu-Natal. The survey was conducted on students at all five campuses of the University of KwaZulu-Natal, namely, Westville, Nelson Mandela Medical School, Howard College, Pietermaritzburg and Edgewood College campuses.

Questionnaire design had important implications on the study and the researcher opted to use a five point LIKERT Scale for the questionnaire. Closed-ended questions were structured. The questionnaire used in the study was adapted to the quality dimensions peculiar to tertiary education environment and adapted to the SERVQUAL instrument developed by Parasuraman *et al.*, (1985). Hittman (1993:77-80) suggests further that the SERVQUAL model would seem rational to use as it not only evaluates the teaching component of a tertiary institution, but also includes aspects of the total service environment as experienced by the student.

Convenience sampling technique was employed by the researcher. The researcher visited some lecture halls after gaining the permission of the respective lecturer, and conducted the survey. The researcher also employed research assistants to issue the survey out to students who frequented the library, computer LANs, and the cafeteria and student residence within all five of the University of KwaZulu-Natal campuses.

Zikmund (2000: 351) also illustrates that researchers use convenience samples to administer a large number of completed questionnaires quickly and economically. The user of research that is based on a convenience sample should remember that projecting the results beyond the specific sample is inappropriate. For the study convenient sampling was used to administer a large number of completed questionnaires quickly and economically. Generalizations will not be made with other universities, as the results are only specific to the UKZN staff and students.

The population size for the study is 40000 students (UKZN's Strategy Plan 2007). In terms of sample size, the sample included 380 students from the Westville, Howard, Edgewood, the Medical School and Pietermaritzburg campuses. These figures were arrived at using Krejcie and Morgan (1970) tables on sample size for a given population. For this study, the researcher had

a 100% response rate.

The study adhered to the specific ethical guidelines by Cavana *et al.*, (2002: 165) that the information provided by the respondent be treated as strictly confidential. A primary ethical responsibility of the researcher was guarding the privacy of the respondent.

The research variables were drawn from the literature reviewed on service quality, with specific emphasis on tertiary institutions and their related services. The questionnaire was reviewed by peers from the University of KwaZulu-Natal who were experts in research methodology, senior academics, and a professional statistician. Based on their feedback, a few questions were re-phased. In this respect, the design of the questionnaire enjoyed high content validity, and a pilot study was conducted to ensure that the instrument measured what it intended to measure.

The Cronbach's Alpha for the overall students' perceptions was 0.974 representing a good significant level of internal reliability of the measuring instrument.

Research Findings

The research findings are based on the measure of central tendency and dispersions for the service quality dimensions for the student profile. The means, standard deviations, minimum and maximum scores for the service quality dimensions for the student respondents shown in Table 1 will be discussed. Thereafter a further discussion on Table 2, which indicates the Gap scores for student respondents in the study, will follow.

In terms of perceptions of the service quality dimensions, the mean scores were ranked from highest to lowest and reveal the following: assurance ($m=3.7802$) indicating that students perceived the university as offering assurance; followed by tangibles ($m=3.6000$) whereby students perceived the university as having a pleasant learning environment and excellent facilities; empathy (3.2479) indicating that students perceived the university as showing empathy; students perceived the university as being slightly responsive ($m=3.1289$); and lastly students perceived the university as having a low level of reliability ($m=3.1268$).

The ranking of the variations in responses from the highest to the lowest showed the following for perceptions: responsiveness ($SD=1.05590$);

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reliability (SD=0.98153); empathy (SD=0.96368); tangibles (SD=0.74739); and assurance (SD=.73658).

Table 1: Measure of central tendency and dispersions for the service quality dimensions for the student profile

Student respondents	N	Min.	Max.	Mean	Std. Dev.
Tangibles expectation	380	2.33	5.00	4.3881	.54348
Reliability expectation	380	1.40	5.00	4.2637	.77128
Responsiveness expect.	380	1.00	5.00	4.3783	.71901
Empathy expectation	380	1.60	5.00	4.2821	.73466
Assurance expectation	380	2.13	5.00	4.6300	.58950
Tangibles perception	380	1.00	5.00	3.6000	.74739
Reliability perception	380	1.00	5.00	3.1268	.98153
Responsiveness percept.	380	1.00	5.00	3.1289	1.05590
Empathy perception	380	1.00	5.00	3.2479	.96368
Assurance perception	380	1.47	5.00	3.7802	.73658

Whilst the highest variation was recorded for the responsiveness quality dimension, the minimum and maximum scores indicate that for all the dimensions some subjects strongly disagreed that these service quality dimensions were present; others strongly agreed (Max=5.00) for all quality dimension variables.

Regarding expectation, the mean scores ranked from highest to lowest indicated the following: students expected the university to offer more assurance (m=4.6300); they expected the university to offer a more attractive learning environment and better campus facilities (m=4.3881); they expected the university to be more responsive (m=4.3783); they expected the university to be more empathetic (m=4.2821); and lastly they expected the university to be more reliable (m=4.2637).

The ranking of the variations in responses from the highest to the lowest showed the following for expectations: reliability (SD=0.77128); empathy (SD=0.73466); responsiveness (SD=0.71901); assurance (SD=0.58950); and tangibles (SD=.54348).

Whilst the highest variation was recorded for the reliability dimension, the minimum and maximum scores indicated that for all the dimensions some

subjects strongly disagreed that these service quality dimensions were present; others strongly agreed (Max=5.00) that all quality dimensions were present.

Table 2: The Gap scores for students respondents

Student respondent	Gap Scores
Tangibles GAP score (P-E)	-0.7881
Reliability GAP score (P-E)	-1.1368
Responsiveness GAP score (P-E)	-1.2493
Empathy GAP score (P-E)	-1.0342
Assurance GAP score (P-E)	-0.8498
Overall GAP score (P-E)	-1.0117

The Gap scores for student respondents are indicative of the difference between their respective perceptions and expectations on UKZN's service quality in respect of tangibles, reliability, responsiveness, empathy and assurance.

Table 2 illustrates that the Gap scores for the student respondents are all negative. This indicates that the student respondents' expectations far exceeded their perceptions. Therefore student were very dissatisfied with the quality of services provided by the UKZN. The highest Gap scores rated by students was responsiveness (-1.2493); followed by reliability (-1.1368); empathy (-1.0342); assurance (-0.8498); and tangibles (-0.7881).

Strategies for Closing the Quality Gaps

Since students in general recorded dissatisfaction in the services provided at the university. The way forward to close the quality of a gap was to improve student perceptions in the five areas of service namely tangibles, reliability, responsiveness, empathy and assurance. The researcher recommended the following strategies to university management to improve the quality gaps for students in each of the quality variables. They are put forward and discussed below as follows:

Tangibles

- Improve the layout and physical facilities at all five campuses at the UKZN.

Student's Quality Perceptions and How to Close the Quality Gaps

- Better equipment can be provided to students in the laboratories and computer centres.
- The libraries should have better facilities and better computers provided. More update books and other literacy materials should also be in place.
- The furniture in venues should be cleaned and refurbished where possible or replaced.
- The lecture venues should be clean and well lit.
- The University brochures should be more colourful and trendy so that they appeal to the student population.
- The University should have the facilities in place to cater to the needs of the disabled.
- There should be recreational and social spaces created for students at the various campuses.
- Contact personnel must at all times be neat and presentable to the students.
- Adequate parking should be provided for students' at all five campuses.

Reliability

- The University management should develop systems and procedures that standardise service production to ensure that the core service is delivered as reliably and consistently as possible.
- Before management commit to any marketing communication made to students they should ensure that the promises made in these marketing communication brochures are realistic and achievable.
- The University management must understand students changing and varying needs and wants through having up to date market research being conducted on its students on a regular basis.
- There must always be well-managed customer expectations of the reliability aspect of the service encounters and offerings made to students.

Responsiveness

- Management should implementing standard procedures to maximise

responsiveness to service situations that may occur reasonably regularly.

- Management must insist that staff is trained well, so that they can respond when necessary.
- Management should develop procedure manuals to help staff respond to customer questions, complaints and requests.
- Contact staff must at all times ensure that students do not have to wait too long for assistance or to receive the service.
- Where possible management should individualise or customize the service as much as possible.
- Management must have knowledge of how the service process and outcomes are viewed by the students.

Assurance

- Management should create trust and confidence in the service encounter through the knowledge, skills and expertise of its' contact personnel.
- Creating continuity of service staff is important as it enhances student assurance levels.
- Management should create an organization-wide image that reflects the core values of the University- that being its commitment to quality teaching; research and community engagement.
- Management should build a strong corporate brand image that reflects the high quality of its service offering and the Universities commitment to research, teaching and learning.
- Management can also use cues such as employee dress, appearance of the interior and exterior of the campuses, employees' positive attitudes, visible qualifications and credentials of its staff, and pleasant campus surroundings to reassure the students and their respective parents.
- During strikes and other violent disruptions on campus, management at all times need to ensure the safety of its students.
- While students are at university management should have proper security in place to ensure that they are safe and their vehicles are safe as well.

Empathy

Contact staff should make students feel important by responding to their needs and understanding their concerns.

Contact staff should be trained to be more empathetic towards the needs of students, especially those who coming from disadvantaged backgrounds like rural students who have very little exposure to city life. Contact staff should also be more helpful and empathetic to the disabled students who have special needs.

- Tailoring service offerings to individual student as much as possible.
- Making students feel important by developing long-term relationships with them.
- Training staff to know students by name where possible and by their related service needs.

Concluding Remarks

The study undertaken by the researcher indicated that student perceptions are crucial in the designing of strategies to close quality gaps that affect students. Student satisfaction lies at the heart of any universities competitive strategy. Therefore it is crucial that the University strive to provide quality services both in the academic and support areas. However, it all starts in understanding what students' perceptions tell us of what they perceive as quality variables. Thereafter the quality gaps that students indicate can help university management develop strategies to close the gaps and make the total service offerings made to students of the highest quality encompassing service excellence. Like any other service institution, at the end of the day, what management at a university wants, is customer satisfaction. Only through quality surveys, valuable insights into students' perceptions can be gathered, analysed and interpreted to provide valuable feedback to improve customer satisfaction by the service provider entity.

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Including Pervasive Skills in an Accounting Curriculum at a Rural South African University

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Abstract

Accounting programs at South African universities strive to attain and maintain accreditation with the South African Institute of Chartered Accountants (SAICA), an important component of which is incorporating pervasive skills into the curriculum. This paper details how a methodology was identified and adopted in order to incorporate these requirements across the four years of a yet to be accredited professional undergraduate accounting degree. The process commenced by mapping program objectives to individual modules thus facilitating a mapping and scaffolding process of the program. Focus group interviews with discipline leaders resulted in a coherent and coordinated approach to curriculum review which included consideration of the specific needs of students attending a rurally based South African University. The concept of a capstone course was integrated into the final year of the program in order to compliment and complete concepts encountered earlier. Future studies subsequent to the adoption of this methodology may develop or evaluate its efficacy.

Keywords: Capstone course, SAICA, Mapping, scaffolding, pervasive skills, attributes

Introduction

Departments of Accounting at South African Universities strive to attain and maintain accreditation of their academic programs by the South African Institute of Chartered Accountants (SAICA). Van der Schyf (2008) pointed out that ‘the status of these departments is dependent upon their accreditation status’. An integral part of the accreditation process is compliance with the Competency Framework issued by SAICA. This framework originally issued in 2008 and revised as recently as 2014. SAICA (2014) identifies a group of pervasive competencies that must be integrated into the accounting program. The framework identifies three categories of pervasive skills, ethical behaviour and professionalism, personal attributes and professional skills which must all be integrated into the academic program which SAICA expect will improve students’ ability to master the technical requirements included in the document.

The aim of this study was to test the appropriateness of the whole-of-program methodology for the inclusion of pervasive skills in the accounting curriculum at Rural South African Universities.

The paper details the process followed by a rurally based South African university to integrate these skills into the four years of a yet to be accredited SAICA professional undergraduate accounting degree. The sections that follow will discuss how other institutions have revised their offerings to include pervasive skills, followed by the methodology adopted for the project and its findings. It will conclude with recommendations and ideas for future research.

Literature Review

What are Pervasive Skills?

Accounting educationalists from Zeff in 1979 through to Power 1990 recognized accounting syllabi were becoming swamped in theory at the expense of critical and reflective skills. These critical and reflective skills were the initial stages of the fifteen synonymous terms, (core, key, essential, non-technical, employability, soft, transferrable, capabilities, general, competencies, graduate attributes, enterprise, pervasive, outcomes and skills) identified by Bunney, Sharplin and Howitt in 2015 describing the qualities expected in an accounting graduate entering professional employment. Throughout the nineties and the early part of the second millennia much was written about

integrating these qualities or graduate attributes in individual modules (Ashbaugh, Johnstone & Warfield 2002; English, Bonanno, Ihnatko, Webb & Jones 1999; Boyce 2001) whilst very little was done with regard to integrating them throughout an entire curriculum (Willcoxson, Wynder & Laing 2010).

Despite pronouncements internationally that these attributes should be integrated rather than taught separately (International Accounting Education Board (3), 2004) by 2008 Willcoxson, Wynder and Laing could only find two articles, one in accounting and the other in education, which dealt the development of professional skills in across an entire university program.

Why there is a Need for Pervasive Skills in Accounting Graduates

Various stake holders have contributed to the advancement of the pervasive skills agenda across various disciplines and countries. The Bedford Committee on Future Accounting Education commissioned by the American Accounting Association in 1986 paved the way for the AICPA (American Institute of Certified Public Accountants) to release their Initial Core Competency Framework in 1999. The 2011 revision of this framework identified three categories: functional competencies, personal competencies and broad business perspective (AICPA 2011). Similar developments from governments in the United Kingdom (the Dearling Report – NCIHE 1997), Australia (the Mathews Report: Mathews, Jackson & Brown, 1990) and in South Africa, the professional society SAICA, released its initial competency framework in 2006 (SAICA 2006).

During 2012 the International Accounting Education Standards Board (IAESB) revised its International Education Standard 3 (IES 3) highlighting the relationship fostered between the accounting profession and providers of accounting education programmes. This standard aims to prescribe the mix of pervasive skills that aspiring professional accountants should have (IFAC, IES 3). These endeavours aim at reducing the gap between what accounting and business practitioners expect (Jackling & De Lange 2006), quality authorities legislate and universities attempt to provide and constitutes what is colloquially referred to generic, soft and pervasive skills in business circles and graduate attributes in academia.

In a survey of finance modules at universities throughout the UK 41 of the 197 skills identified in the course literature was soft skills (Lakshmi 2013)

and they conclude that finance education lags behind what is required in the real world. Australian researchers from Deakin and Victoria Universities recognize that although emphasis is being placed on developing Graduate Employability Indicators more work needs to be done from a curriculum perspective in order to integrate them more effectively (Naidoo, Jackling, Oliver & Prokofieva 2012). The next part of the paper will identify the processes adopted during the updating processes and will examine how best to address South African rural circumstances.

What are the Specific Needs of the Students Attending a Rural Tertiary Institution?

In answering what the specific needs of a student at a rural South African university are the Teaching and Learning Strategy of the University of Zululand provides the following guidance ‘...mastery of spoken English may, as at other universities, mask serious deficiencies in reading and writing’. It continues to emphasize:

The teaching and learning strategy must take the background of the students into consideration, and must allow for the needs of students who lack adequate preparation for university studies. The majority of students come from poor families and additional financial challenges, so it is imperative that any remedial action takes place within the context of a normal programme of study. The teaching and learning strategy must take the background of the students into consideration, and must allow for the needs of students who lack adequate preparation for university studies. The majority of students come from poor families and additional financial challenges, so it is imperative that any remedial action takes place within the context of a normal programme of study.

From a South African academic perspective it has been suggested that there should be a move away from ‘service courses’ for accounting to a form that integrates subject and language specialists in a team teaching environment (Koch & Kriel 2005). They identify that the problem may be an undeveloped discipline-based cognitive and conceptual framework and suggest that the problem may not be reading or English, but conceptualization concluding that these skills should be developed through mainstream teaching.

How Students' Needs can be Integrated into a Curriculum

In an apparent oversight the Willcoxson paper omitted reference to Robley Whittle and Murdoch-Eaton (2005; 2006) who proposed a mapping methodology used in a medical program at Leeds University in England. Rather than adopting a 'bolt on' solution (Dunne; 1995) they used project based course components to integrate the skills into approximately one third of the undergraduate medical curriculum. They chose this method, student selected components with an embedded approach (Chapple & Tolley; 2000 and Fallows & Steven, 2000), to impart the skills appropriate of a medical professional as there was a perception that alteration of a core module may develop these skills out of context.

In an effort to understand curriculum mapping they trace its origins from school level (English 1978) until its recent use by Harden in 2001 which aims at matching declared aims with what is taught and learned. By adding a fourth dimension, assessment, an alignment loop created which enabled them to map the four dimensions by:

Declared – from curriculum documentation

Taught – student feedback forms

Delivered – per supervisor project feedback

Assessed – per documents mapped to 1, 2 and learned.

From an American perspective Herring and Williams (2000) argue that curriculum change in accounting is hampered by the 'discipline specific orientation' of accounting faculty who has had very little training in teaching or educational research. They used 7 competencies identified by Deppe, Sonderegger, Stice, Clark and Streuling in 1991 to prepare a Curriculum objectives hierarchy which emphasizes assessment to obtain program goals. These program goals inform discipline objectives which are subsequently incorporated into individual course objectives. They argue that a syllabus which is structured on textbook or discipline principles should be transformed into one which is derived from objectives. This competency based format requires faculty to decide on its program based goals cascading downwards to curriculum and course objectives. They do however stress that:

- This plan must be formulated with the specific needs of their students in mind.

Including Pervasive Skills in an Accounting Curriculum

- All staff must buy into the objectives based curriculum methodology.
- Faculty must lead the other willing (students, external based constituents and administrators) to move on from a subject based approach to teaching.
- A 'curriculum and assessment committee' should drive the process by setting and reviewing program goals and curriculum objectives which are evaluated regularly with those findings reported on at regular intervals.

Staff at the University of the Sunshine Coast (Willcoxon, Wynder & Laing, 2008) presented a methodology for developing professional competencies and graduate attributes throughout a program, the whole-of-program approach, rather than relying on individual courses for pervasive skills development. They undertook a mapping process to ensure program and course objectives were linked to professional and institutional graduate attributes. Their process can be summarised as follows:

- Map the courses taught on the programme
- Develop a programme map (objectives, teaching and assessment)
- Analyse the depth to which pervasive skills are being taught
- Review the teaching of all academic staff on the programme
- Consider changes in course objectives, teaching activities and teaching methods

Bunney and Therry (Australia) conducted a longitudinal study, resulting in a series of three articles published in 2010, 2013 and 2015 which initially examined the extent to which the twelve core courses in a post graduate program incorporated 'employability skills' (Bunney & Therry 2010). The findings indicated that initially the program was unstructured, lacked coordination and needed the services of a learning advisor. The role of the learning advisor, recommended in the concluding remarks and overview would be to ensure regular meetings of the course coordinators during which time their professional attributes would be developed in areas of strategy, assessment and feedback whilst allowing staff to exchange ideas.

The first phase of the project involved four phases which included

- Identifying the employability skills

- Determining the extent to which they were being addressed (by examining unit plans, questionnaires and interviews with coordinators)
- Developing an 'Employability Skills Checklist'
- Developing a framework to embed (map and scaffold) the skills identified coherently and cohesively

The 2013 article emphasizes that a 'whole-of-program' strategy for embedding skills across the curriculum is critical if the reviewing process is to be effective. The role of the learning advisor was expanded to include a 2-year period during which the advisor was attached to 3 modules for each of the four semesters. Whilst the project was on-going and its effects yet to be evaluated it was envisaged that the advisor would deliver lectures and tutorials and assist the unit coordinators integrate non-technical skills into assessment activities. Although each coordinator is only allocated a six month crash course in implementing employability skills the supplementary workshops and support activities would help the initiative bear fruit.

The final part of the series published in 2015, proved, at least initially, that the program was allocated sufficient resources to absorb and mentor new staff members. This resource allocation must be sustained for the long term. The paper articulates the three phases (development, implementation and evaluation) concluding with the findings of a triangulated evaluation (students, staff and unit plans). It emphasizes that in addition to the approach being effective, small group sessions, particularly with international students (non-English first language speakers), increases the effectiveness of teaching employability skills.

What is Being Done in South Africa?

Recent research conducted in South Africa by Barac and du Plessis (2014) suggests that the heads of accounting disciplines at SAICA accredited universities '...perceive the acquisition of some pervasive skills to be best achieved in the real-world, practical workplace, rather than in the theoretical confines of the universities' lectures and tutorials'. This finding is significant as the SAICA-CF is clear that all competencies outlined are expected at entry into the workplace. Furthermore, Strauss-Keevy (2014), also a South African based researcher, agreed finding that accounting academics at these institutions

are also unaware of their responsibility with respect to imparting all the pervasive competencies during the education program.

The challenges issued in these recent South African papers are:

1. integrate ethics into the major courses (Barac & du Plessis 2014);
2. reduce reliance on the traditional approach of assignments, examinations and tests to skills and attributes could be developed and assessed through group work, group projects and simulations (Barac & du Plessis 2014);
3. introduce a research component thus improving graduate's ability to communicate effectively using academic, business or appropriate discourse (Barac & du Plessis 2014); and
4. 'accept(ing) that the responsibility rests with them and that they should develop innovative methods to develop these skills' (Strauss-Keevy 2014).

South Africa and Curricula Development

Accounting departments adapt the externally prepared SAICA-CF as the curriculum segregating teachers from curriculum developers in a situation not dissimilar to that which prevailed at the Technikons in South Africa. Bester and Schultz (2012) compared two approaches in an effort to determine the most appropriate way to curriculum review and redesign. They concluded that using a mapping process for this purpose was better than a template which focused on constructive alignment and cognitive complexity.

This template is similar to the assessment loop philosophy articulated by Robley Whittle and Murdoch (2013). Outcomes included in course materials were traced through teaching activities to assessment criteria and finally the assessment activities

Teaching-Learning activities are placed at the centre of Harden's (2001) mapping model which links outcomes, subject content and assessment tasks. The mapping process is a reliable process (Madiba 2011) which enables lecturers to reflect on processes encouraging participation from students through their success and professional development. Bester and Schultz (2012) go on to point out lecturer participation in the mapping process encourages

reflection on your own teaching and facilitates change in their perception of their role in the curriculum design process.

Capstone Courses and Pervasive Skills Development

Internationally capstone courses are used during the terminal phases of a program to bring together concepts previously taught in specific disciplines. The University of Cape Town's (Maughan 2013) developed a capstone course aimed at ensuring the requirements of the 'competency framework' were met. They followed a process involving mapping the course offerings to the framework in order to establish compliance levels. Once gaps had been identified they decided to incorporate a number of finance topics with pervasive skills in an effort to present a course aimed at preparing students to write the APC which emphasizes professional competency (research and analysing complex business scenarios skills) rather than technical ability. Student evaluations were positive and included a number of suggested improvements notwithstanding the concluding remarks that the literature would help in improving the offering.

The Importance of Assessment and Quality Assurance in the Review Process

Research Methodology

The data was assimilated through a questionnaire which was consolidated into a table which was circulated to academics responsible for individual modules within the core accounting component of the program. The evidence was then triangulated through e-mails, semi structured interviews, document scrutiny and focus groups. No additional efforts to increase validity or objectivity were undertaken which is in sharp contrast to Robley, Whittle and Murdoch-Eaton (2005) who used the services of a research assistant with no curricular development or teaching responsibility to collect and analyse the data.

Although a variety of different data collection methods were used the study is a qualitative interpretivist analysis that posits that the whole-of – program approach may be a suitable method of curriculum update for adoption by rural South African universities.

Questionnaires

A questionnaire requested each lecturer to detail how, if at all, each component of the twenty-eight competencies was addressed or assessed in the module(s) for which they were responsible. In all 26 modules (of 32 in the program) over four years are taught by the 14 academics in the department all of whom responded to the questionnaire. The remaining 6 modules are spread between Economics (2); Law (2); and Maths and Stats (2); the latter of which is housed in a separate faculty.

The consolidate program map was returned to all academics who were charged with ensuring accuracy of the final document. Those requesting changes to the matrix were included in selection for the semi structured interviews.

Only 8 academics were selected for Semi structured interviews as they specifically requested changes to the program mapping matrix. This represented 57% of the staff responsible for 54% of the modules (8 of 14 academics and 15 of 28 modules)

Course outlines were collected for each module in order to determine the extent to which pervasive skills objectives and assessment criteria were specifically included. Course outlines for the 2016 academic year were scrutinized as these incorporated the changes envisaged by the focus group discussions.

Focus groups were held in each of the four disciplines (financial accounting, auditing, taxation and finance and ethics) during which strategies relating to how each discipline would accommodate these skills in their scaffolding and mapping were discussed.

All correspondence, primary and secondary data was stored electronically, although hard copies were used for ease of manuscript preparation. The project commenced with the researcher preparing a matrix based on the objectives (called competencies in the SAICA conceptual framework) SAICA (2015) with blank areas for academics to complete whether the objective was assessed and further requested details of how the objectives were achieved. Upon receipt of the completed matrices a consolidated program matrix was circulated, by e-mail, to all staff responsible for the core accounting modules in the program. This correspondence requested comment on the final matrix and information regarding their attitude to and methods used to address improving these skills. These responses together with responses from semi-structured interviews conducted to establish

the rationale behind the modifications requested.

Focus groups based on the four subject disciplines allowed ensured that horizontal and vertical integration aspects were considered prior to the process of preparing course documentation in the form of formal course outlines for the 2016 academic year being prepared. Triangulation was the document scrutiny of module outlines ensuring evidence of the relationship between objectives, teaching methodology and assessment.

Data Analysis

Without exception all respondents felt that the pervasive skills were important to the extent that the most experienced academic in the department (incidentally also a previous staff partner in what was then one of the 'Big 5' audit firms) considers them more important than technical skills from a potential employers' perspective. The taxation lecturers felt that the open book assessment procedures further enhanced students' readiness for the work environment.

An unintended consequence of the project was a Departmental Graduate Attribute policy which married ideas from the institutional teaching and learning strategy and the graduate attribute policy of the Southern Cross University on the Gold Coast of Australia. The teaching and learning strategy sets the tone in the introduction of the new policy and is followed by definitions, a policy statement, procedures for embedding these skills across the programme and a fifth and concluding section being the program matrix. It has been submitted to the Senate through the faculty board and may influence institutional reforms in this area.

As the objective of this study is to adapt best international accounting curriculum design and revision practice to inform the development of pervasive skills in rural South African circumstances it will leave the evaluation of its efficacy to later longitudinal studies. Deficiencies noted in previous studies such as the recent synopsis of deficiencies and challenges facing professional accounting programs noted by Yap, Ryan and Yong (2014) can guide and inform the process.

The whole-of-program methodology for the inclusion of pervasive skills in an accounting curriculum envisages the steps outlined previously and the findings made at each stage are documented below.

Map the Courses Taught on the Programme

This step of the process was made much simpler, as the SAICA-CF predetermines these. A number of additional items were identified during the interviews and focus groups which related not only to time management and organizational skills but included note taking, reading and comprehension challenges being absent in the typical entry level student. Efforts to address these omissions have been included through departmental initiatives and in cooperation with the institution's writing centres (an academic development initiative) commencing in the current year.

A parallel process included mapping all the technical skills at the appropriate level and depth (i.e. a scaffolding process) which in common with other authors engendered a sense of departmental comradery. This process revealed not only gaps, which could be plugged with a capstone course, but duplications which freed time to focus on other activities. Academics were able to see a complete set of outcomes rather than a blinkered or silo view.

The alignment of program content, academic activities and assessments to support student success are not often considered by academics in higher education (Arafeh 2014). The mapping phase of the process ensures that skills or outcomes identified are specifically included in a process designed to obtain input and buy-in from those involved in program delivery are the foundation of best practice in curriculum assessment and development (Baht *et al.* 2004; Hill 2007; Arafeh 2015).

Develop a Programme Map (Objectives, Teaching and Assessment)

The preparation of an overall pervasive skills program map enabled an overview of whether particular skills are addressed and to some extent evaluates the depth to which they are covered. This map incorporated a number of changes, the efficacy of which will be evaluated in a future study.

There was little or no synchronization between when and what activities were performed. A good example was a group work project culminating in PowerPoint presentations being a second year requirement in two different modules presented in the first semester of the second year of the program. The solution was to amend one into a written group assignment focusing on word and excel skills with the final product being a business plan.

Lifelong learning skills previously encouraged through use of the library, selected readings and non-academic research projects will in the future incorporate projects (e.g. presentation of business plans and listed company valuation exercises) aimed at communicating current developments in diverse fields to students.

Staff did attempt to align the objectives with teaching and assessment activities (Stivers *et al.* 2000; Sumison & Goodfellow 2004) however course guides merely reveal how the final mark is calculated rather than detail (e.g. Rubrics for presentation and group work projects). The loop referred to by Robley, Whittle and Murdoch-Eaton (2000) is not articulate as envisaged and further encouragement is required.

In common with Stoner and Milner 2010 who tried to integrate employability skills within a first year accounting course it was similarly felt students struggle to manage their time and were unable to take responsibility for their learning. Lecturers felt that correspondingly to their peers in the Scottish study, students must be given time across the whole degree experience to develop these skills.

Cooperative learning which includes small group working together on projects will help in preparing students for the work environment and compliment tutorial groups which are larger and more formal (Cottell & Mills 1992).

The literature does indicate that that there is no such thing as a final map as the document must be continually reworked (Tariq *et al.* 2004; Knight 2001; Wolf 2007) through formal and informal evaluation efforts. Inputs from all stakeholders must be considered at regular intervals in a formal mapping update process.

Analyse the Depth to which Pervasive Skills are Being Taught

All lecturers, whilst recognising the importance of pervasive skills, were not prepared to sacrifice technical content. This was expected and is in common with national and international observations (Wood 2014). The compromise was to indicate a willingness to adapt teaching and assessing methodologies to satisfy as many of the requirements as possible. Each discipline however adopts a different approach which can be summarized as follows

Discipline	Methodology of incorporating pervasive skills
Financial accounting	Emphasize skills when opportunity arises and allocate presentation marks in assessments. They are driven by the technical requirements of the ITC (Initial Test of Competency)
Auditing	Include a specific professional skills assignment which is assessed. Their discipline also includes formal teaching of professional and ethical conduct which is assessed through the use of case studies.
Taxation	Lecturers perceive open book examinations and practical case studies provide sufficient evidence of outcomes assessment loop.
Finance and management accounting	This discipline adopted a similar approach to Maughn 2012, and has used a capstone course incorporating a shotgun type approach of including as many pervasive skills as possible in the final year module.

That the technical components of an accounting program should be narrow and deep rather than broadly based was refuted by Albert and Sack (2000) who in chapter 5 of their report state that too little attention is paid to globalization, technology and ethics. These areas together with the dearth of group work identified by Naidoo *et al.* (2011) have been addressed in the SAICA-CF and incorporated into the curriculum.

All course outlines mention pervasive skills by name, although some still retain the cross-fields outcomes terminology due to the current format of the university outline template. Communication skills based on established professional norms are also detailed. Support courses in Ethics, Business and Law include assessment criteria for group and assignment work with the remaining disciplines leaving out detail with regard to assessment including only how the final mark would be determined.

Consider Changes in Course Objectives, Teaching Activities and Teaching Methods

Course outlines for the new academic year followed the institutional template

that enforced uniformity previously absent from these documents. It was postulated during an interview that the accrediting authority (SAICA) may regard the rigid formats as limiting however the template is now seen by staff as minimum disclosure and additional information may be added to supplement the institutional requirements.

The requirement that academic staff should inform students explicitly about Graduate Attributes embedded in the modules at the commencement of a module was for the most part overlooked. Only eight of the 26 module guides referenced the pervasive skills to the SAICA-CF. In common with other studies emphasis is placed on the discipline rather than the non-technical specific skills with guidelines for mark plans being overlooked.

All staff interviewed and those present in the focus groups felt the exercise was worthwhile with specialist facilitation being beneficial rather than essential. There was overall consensus that feedback from stakeholders would inform the further review that would, of necessity, be undertaken.

Conclusion

The study concludes that the whole-of-program approach is an appropriate method for including pervasive skills in the accounting curriculum at rural South African Universities. In addition, the methodology encouraged staff to accept responsibility for inculcating pervasive skills, addressing the concerns of Barac and du Plessis (2014) and Strauss-Keevy (2014).

The lack of teacher training and development together with the preoccupation of preparing students for their professional examinations (emphasizing technical skills) will exert constraint on teaching efficiency (Wood & Maistry 2014) thus regular assessment and review is essential. Meetings to review the process and update the curriculum must be performed at least bi-annually.

This paper recognizes that there are researched methodologies for curriculum review that include feedback from students, employers and other stakeholders (SAICA and the sponsors of the program). The extent to which documented outcomes are perceived to have been learned from the program must be assessed and reported (Yap *et al.* 2014).

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Exploring the Effectiveness of Nonverbal Cues as a Means of Improving the Communication Skills of Law Students and Legal Practitioners

Desan Iyer

Abstract

Modern legal studies at tertiary institutions in South Africa exclude the study of nonverbal communication as a key component in the communicative process. Therefore, within the domain of the legal profession, there has been a degree of ignorance about the effectiveness of nonverbal cues and signs as a means of improving the legal and communicative skills of attorneys. Some investigations have been undertaken on the role and importance of nonverbal behaviour as a communicative tool, yet limited research had been undertaken on its impact and benefits to the legal profession. The participants in the study were all practicing attorneys with legal experience ranging from one to twenty years. From the study, it emerged that the current one-dimensional communicative legal system constituted a challenge to most young attorneys. The study found that an understanding of the different components of nonverbal communication and its sign structures was crucial for attorneys to gain insight into the subjective meanings that emerged during the consultation process. The findings suggest that the study of nonverbal communication amalgamated with traditional legal skills would help remove the deep-seated dichotomy that still exists between theory and practice in the LLB curricula.

Keywords: Body Language, Gestures, Consultation and Nonverbal Communication.

Introduction

Today's fast-paced world is becoming increasingly characterised by communication which is a fundamental component of effective lawyering. The true potential of a lawyer is often determined by the communicative skills that they possess (Amini & Rahimini 2014). Effective communication goes beyond the verbal component (Muhammad & Villarreal 2017:2). Nonverbal communication is an integral component of the communicative process and is used by people from all backgrounds to communicate consciously and unconsciously (Otu 2015:1). Despite the fact that academic research has explored the characteristics and dynamics of both verbal and nonverbal communication, very little research has been done on the relevance of nonverbal communication in law. Due to law school's preoccupation with legal rules and the verbal component, there appears to be a degree of ignorance about the effectiveness of nonverbal communication in the legal arena and it is often ignored as an effective tool in the communication process (Wilkins 2013:104). The purpose of this paper is to explore the need for the recognition of nonverbal communication in the legal arena. In exploring this gap in the law, the researcher adopted a qualitative methodology approach where in-depth interviews were conducted with ten participants who were all attorneys. In addition to analysing the literature available on the subject matter, it was important for the researcher to ascertain the views of the attorneys on the importance and relevance of nonverbal communication to them. The various components outlined in the article such as the literature review, problem statement, objectives, research methodology, data analysis and results as well as strengths and weaknesses of the study led to the eventual finding that supports the need to incorporate nonverbal training into the law curriculum. Crucially, the findings of the study point towards the need to improve the nonverbal communicative skills of the aspiring attorney which can go a long way towards enhancing the reputation of the legal profession in South Africa.

Brief Review of the Relevant Literature

What is the true meaning of law? How does one develop legal knowledge? How does an attorney acquire legal skills? Throughout the history of academic law, these questions have sparked healthy debate but sadly very legal scholars have been able to grasp and understand the true nature of law. The layperson

may wonder as to why legally trained students are unable to grasp the true nature of law. Catterell (1994:7) argues that the answer lies in the notion that law has two distinct faces. The obvious one is where law is viewed as a doctrine of ideas which are constantly analysed, interpreted and developed whilst the other, the 'hidden face' is where law regulates the various facets of social life (Catterall 1994:7).

The influence of a sociological movement in jurisprudence where social and economic factors were regarded as crucial determinants in legal decisions reinforced the realist view that merely applying abstract principles does not reflect the reality of a legal system. According to Tokarz *et al.* (2013:11), it is extremely difficult for the trained legal mind to see beyond the realms of the legal world. For centuries, the law teacher and student have seen law as traditional and ceremonial with the primitive function of maintaining peace and order (Dilloff 2013:427). The court and judges were seen as the sole instrument in giving effect to the function of law where judicial decisions were only guided by legal rules, which rules were clearly set out in legal texts and case precedents (Wilkins 2013:104). Law was seen as inert, objective and impervious to the social climate. It was against this traditional formalistic background that the emphasis on the verbal and the written emerged.

The notion of law as a set of technical instruments without imaginative consideration of community values and social issues contributed towards a delay in the movement away from the backdrop of a formal legal order (McDougal 1947: 56). In recent times, a growing awareness has emerged that sees law as an important aspect of society which cannot be isolated from social phenomena (Cotterell 2). According to Llewelyn (2008: 25), the need to encourage the law student to learn, 'how to think rather than just what to know' is crucial to improving the legal skills of the attorney. For the modern day law student, the ability to, combine astute legal analysis with an awareness of social conditions is the key to improving their legal minds (Menski 2011:155).

Tokarz *et al.* (2013:15) states that a lawyer's business involves knowing their subject matter and this can be achieved by obtaining specific information about the social structure, the organization and the practices of the community in which they live in. It is therefore necessary for the legal mind to be receptive to the progressive nature of the world that one is living in. According to Jackson (1968:372), law must be seen and applied as more than just a set of legal rules.

The study highlights the need for the modern day lawyer to be skilled

in the vast array of legal variables in order to deal with contemporary legal issues. The study focused to a large extent on the ‘real world’ of the lawyer and proceeds from the basis that lawyers must apply the law through the actions of ‘real people’ – their clients rather than as conceptual deductions from the pages of legal documents.

Sarat and Felstiner (1998:98) state that clients expect their lawyers to provide legal advice and discuss outcomes as compared to reciting formal rules. In addition to perusing the relevant legal materials, the attorney must comprehend the problem at hand and then create a credible legal argument. In order to understand the nature of the problem, the attorney must possess effective communicative skills to elicit relevant material from the client.

Communication is crucial to the concept of law-in-action and it is this often overlooked ‘real factor’ that determines the true potential of an attorney (Amini & Rahimini 2014). The experience of nonverbal communication is a field that has been largely ignored in the legal sector and nonverbal communication is one of those essential variables that impact strongly on the entire communicative process. According to Laswell and McDougal (1943:202), good legal representation involves extracting ‘every inch’ of relevant information from the client – even information that is not forthcoming verbally. The exploration and analysis of nonverbal cues during the consultation process is crucial to extracting relevant and vital information that is necessary for the building of a strong case.

The entire communicative process is guided by the meaning that is attached to signs that encompass both verbal and nonverbal communication. Frost (1993:5) notes that communication is an important component in the legal system and is a process whereby meaning is transferred from the sender to the receiver. The three main forms of communication are verbal, nonverbal and vocal communication (Frost 1993:5). According to Burgoon *et al.* (2011:241), communication generally takes place verbally and nonverbally.

Verbal communication involves words that one use to convey meaning, whilst nonverbal communication involves communication by means other than words (Knapp *et al.* 2013). The features of nonverbal communication are boundless and the channels of conveying messages can take place through, amongst others, touch, smell, facial expressions, body posturing, vocal conveyance and even silence (Cunningham *et al.* 2004:305). Nonverbal communication, an important cog in the communicative process has largely been neglected as part of the total legal complex. The reasons are

understandable. It is accepted that words and language are essential to a scholarly study of law but there are other important variables that have entered the fray, with non-verbal communication being one of them (Burgoon, Guerrero & Manunov 2011:242).

Meaning can be transferred via different means or channels and in order to communicate effectively, one needs to be able to exploit different communication channels. According to Morreale *et al.* (2015:27), this can be done by taking into consideration the message type, environment and the audience. By exploring the different channels and strategies, one becomes more versatile as a communicator in varying situations (Morreale *et al.* 2015:27).

Nonverbal communication can take place consciously, unconsciously, between persons, within the inner being of a person and sometimes even against the wishes of the sender of the message (Cunningham *et al.* 2004:314). An understanding of nonverbal behaviour is therefore important in perceiving own interpersonal dynamics as well as understanding the intra-psychic functioning of others (Carter 2013:26). Mehrabian (1972:52) highlighted the importance of nonverbal communication by attaching specific relative values for the components of the communicative process.

According to Mehrabian (1972:52), the impact of the nonverbal component on interpersonal communication can be as high as ninety-three percent and although other studies have reached slightly different figures, what is central to most studies done, is the finding that nonverbal communication plays a dominant role in the interpersonal communicative process. It is interesting to note that it is not easy to manipulate nonverbal communication as facial expressions, body language and gestures are usually controlled by feelings and emotions as compared to words and language (Milford 2001:33). In the legal arena meaning need not only be derived from texts or the verbal but by the nonverbal signs or signals that are emitted during the legal process. This modern dynamic approach to interpreting and analysing law in its symbolic form is crucial to adding richness and depth to the way in which law is practiced.

Laswell and McDougal (1943: 52) note that for the attorney to provide the best possible representation to the client, she must extract ‘every inch’ of relevant information from the client – even information that is not forthcoming verbally. Within the domain of the legal environment are numerous nonverbal signs that convey meaning but to identify these signs and interpret the meaning,

the attorney has to look beyond the written text (Goodrich 1953: 96). The exploration and analysis of the nonverbal signs that are emitted from the client during the consultation process will allow the attorney to gather and extract all the vital information and meaning that is necessary for the building of a strong case. According to Burgoon *et al.* (2011:249), a huge array of behaviour exists within the confines of nonverbal communication but it is a neglected area of communication.

Rostain *et al.* (2012) note that an attorney can determine how to conduct the interview and react to the client by merely observing and interpreting the basic body language of the client such as gestures, facial expressions and body movement. Even in a courtroom setting, nonverbal communication subtly impacts on the entire proceedings of a trial during which gestures and facial expressions are transmitted by every individual in the court (Iyer 2011). The judge silently communicates her attitudes and feelings about the case through her facial expressions and body language, whilst the witnesses on the stand may reveal more through fidgeting with their clothes and body movements than through their testimony (Iyer 20114).

Iyer further points out that the body language of attorneys is important in building a good affinity with witnesses and judges. The use of positive nonverbal cues such as smiling and calm vocal tones is an important tool in influencing these court officials whilst negative nonverbal cues such as hostile gestures and lack of eye contact can be devastating to the attorney's prospect of success in the case (Devine & Caughlin 2014: 111). The ability of an attorney to elicit favourable information out of a client or witness depends largely on nonverbal cues such as eye contact, facial expressions, body positioning, tone of voice and head nods (Devine & Caughlin 2014: 115). Research on nonverbal communication has created a thoughtful social behaviour and it is now accepted that it can be used in different social settings such as job interviews, psychiatric analysis, intercultural communiqué, and occupational exercise within the different professions. People can now be trained on developing nonverbal perceptive skills (Constanzo & Archer 1991:223).

It is also essential for an attorney to be able to interpret the nonverbal cues that accompany the spoken, especially when such cues are inconsistent with the verbal. These hostile cues, such as the lack of eye contact or sarcastic tones are signs that the witness is uncomfortable and possibly deceptive in their responses (Remland & Jones 1989:71). Remland and Jones further note that it is not easy for people to exercise conscious control over the non-verbal signals

but words can be easily rehearsed. A skilled attorney can use these nonverbal signs to ‘breakdown the witness or client’ which would have been extremely difficult if the attorney relied exclusively on the verbal testimony. Detecting deception on the part of a witness is vital to attacking the credibility of that witness and nonverbal signals of deception can be picked up by careful observation (Eadie 2009). For Eadie, some of the most reliable nonverbal indicators are: blinking, pupil dilation, speech errors, vocal pitch, and hesitations.

It is human nature to look to the nonverbal system when one is cautious about the authenticity of the verbal message (Eunson 2013:232). Eunson argues that it is important to first determine a disjoint between the spoken and the nonverbal signals and once this is ascertained, the next step would be to look for a change in the verbal indicators. Knapp *et al.* (2013) is of the view that people have conscious control over the meaning when they communicate verbally but lesser control over the psychological responses or gestures such as blushing, sighing etc. These communicative cues that one have limited conscious control over, provides the receiver with important information as to true intentions. Very often these cues are nonverbal and are referred to as leakage cues. The ability to read leakage cues provides the best protection against deceptive communication.

A skilful trial lawyer or litigator cannot be successful without mastering the ability to decode nonverbal behaviour (Nierenberg & Calero 1980:155). The first consultation process between the attorney and client is the most crucial in the legal process, as the client’s statement forms the basis of her case. According to Rostain *et al.* (2012) the consultation process is pivotal to obtaining pertinent information from client that will then be used by the attorney to provide the best possible representation for the client. It is important for the attorney to get some idea of the problem by creating a relaxed atmosphere that then induces feelings of trust and candidness from the client (Prim & Porterfield 1956:3).

According to Brayne (2002:283) it is cause for concern that many newly qualified attorneys spend little time developing their interaction skills. However, it is imperative for the attorney to break through the ‘veil of reluctance’ in order to elicit as much information from the client as possible. Communicational skills in the form of the verbal and nonverbal are crucial in fostering a greater degree of interaction during the consultation process (Burgoon *et al.* 2011: 251).

The legal environment can be very intimidating to the client due to the formal nature of proceedings, the legal jargon used by skilled individuals, formal dress and organisational hierarchies amongst other aspects (Peters 2006). However, through nonverbal communication in the form of highlighting shared features, building trust and fostering credibility, one can break down some of these barriers and thereby be able to communicate across cultures, languages and legal systems (Peters 2006). The attorney can use nonverbal communication to bring about positive emotions on the part of the client which in turn allows for easier verbalisation of the message that needs to come across (Sauter 2017). The fact that people can decode foreign verbal language by following nonverbal cues, illustrates the power and value of this form of communication to reinforce the verbal (Otu 2015). In the legal arena, nonverbal communication should not only be used negatively to establish dominance and authority but it should be used as a tool to make the legal system more convivial to those that find it intimidating and discouraging.

It must be noted that there is no single guideline book, which can accurately interpret nonverbal communication due to certain nonverbal cues having manifold meanings within different contexts. It is therefore imperative to ensure that nonverbal behaviour is interpreted within the correct context and not as an isolated display. Digital and video recording have drastically improved the precision and reliability of nonverbal measuring with some tests showing an accuracy of over ninety percent (Coan & Allen 2007:225). Studies have revealed the consistency of nonverbal behaviour in different channels, thereby improving the reliability of such a measures (Davitz 1964:21).

Problem Statement

Modern legal studies at most tertiary institutions in South Africa do not include the study of nonverbal communication as a key component in the communicative process. Therefore, within the domain of the legal profession, there is a degree of ignorance about the effectiveness of non-verbal cues and signs as a means of improving the legal and communicative skills of attorneys. The study attempted to answer the following questions:

- What is the significance of non-verbal communication to the attorney and the client in a dual legal relationship?

- Would the ability to read and decode non-verbal signs add value to the attorney and the legal profession in general?

Rationale of the Study

It is hoped that the results of the investigation will influence a review of the current LLB curriculum at tertiary institutions in South Africa so as to incorporate the study of non-verbal communication into the programme. A study of non-verbal communication should greatly improve the practical legal skills of the aspiring attorney, and enhance the reputation of the legal profession in South Africa. In addition to the above, the research should be of interest to academics, legal practitioners and law students who view communication and the science of interpreting meaning as the most important tool of their trade.

Research Plan and Methodology

The study adopted a qualitative methodology with a case study approach where in-depth interviews with ten participants. Their responses were then analysed and the findings discussed. From a qualitative perspective, it was hoped that a holistic overview of the experiences of the attorney in practice would set the tone for a journey of discovery into the realm of nonverbal communication in the legal sector. The experience of the attorney within the context of the consultation process was studied in accordance with the principles of phenomenology.

Phenomenology stems ‘from the existential-phenomenological approach in philosophy which is (and was) concerned about human existence and experience, rather than metaphysical reality, and the way in which phenomena are experienced by human beings’ (Terre Blanche *et al.* 2006). This method focuses on the ‘lived world of experience’ where the personal experiences of people are detailed within their physical environment by accessing their conscious mind. By understanding and comprehending the personal experiences of people, without the baggage of one’s own assumptions and expectations, it becomes easier to capture the essence of their feelings and thoughts in the world of the subject. There was no better way to understand the mind-set of the attorney than by interviewing them in their own work environment – that is within the confines of their office.

In order to successfully adopt the phenomenological method of research, it was imperative to see things from the point of view of the subject matter. There was also a deliberate attempt to remain as free as possible from any preconceptions prior to discussions with the subject matter. The phenomenological method was used to understand the lived experiences of the attorney in their natural setting and appreciate how they made sense of the social world within the confines of the legal world (Creswell 2013). The advantage of using the phenomenological method was that it allowed for information to emerge naturally, the data was less likely to be contaminated by the techniques used and a comprehensive data of human experience was derived. However, due to the limited literature available on nonverbal communication within the legal sector, it was decided to conduct in-depth interviews in order to understand the subjects' true feelings and daily experiences in respect of the subject matter.

Dowling and Brown (2010) indicate that interviews allow the researcher to probe, prompt and obtain vital information, explore complex issues, and gain the true perspectives of participants, including their feelings, experiences, ideas and life histories. They note that interviewing is the predominant mode of data collection in qualitative research. In-depth interviews allow the researcher '...to understand the world from the participant's point of view, to unfold the meaning of people's experiences, and to uncover their lived world prior to scientific explanations' (Kvale 1996). The interviews allowed me to gain insight into the subjective meanings that the attorneys attach to the communicative process within the context of the consultation process.

It also allowed for an extensive amount of verbal data to be collected from a modest number of participants. It was necessary to choose subjects who have had particular experience in the subject matter so that their input and experiences could be fully analysed through direct interaction with them. Selecting a random sample of participants who relay their experiences through questionnaires would have failed to achieve the desired result.

According to De Vos (2002), the phenomenological approach requires the researcher to make use of naturalistic methods of study, which involve conversations and interactions with the subjects. This strategy of interpretative enquiry requires, 'participant observation and long interviews (with up to ten people) as methods of data collection'. In order to learn from people and arrive at conclusions, one needs to study people. Part of the process of studying

people involves ‘sampling their experiences’. To extract rich information, participants were selected who are practicing attorneys with specific experience under the study and with the ability to contribute towards the subject matter effectively. This method of selection is referred to as ‘purposive sampling’ where the sampling is done with a specific purpose in mind that is to use participants that are typical of the population (Punch 1998). It forms part of non-probability sampling where the selection of samples is not randomly and statistically done.

The participants selected for this study comprised five males and five females from diverse backgrounds, all currently working as attorneys at the Empangeni Justice Centre in Kwazulu-Natal. They were conducted via the Justice Centre Executive and interviewed within the space of one week. In an effort to conform to ethical codes of practice with regard to informed consent, the participants were informed about the content and objectives of the study, the interview process, details of the researcher, the issue of anonymity and the manner in which the results were to be disseminated. All the participants gave their written consent for their involvement in the study. By inductively analysing the raw data, it was used to establish common themes without the restraints of making deductions in advance, which could create preconceptions that obscure the data. The researchers were mindful of the fact that the qualitative data consisted of interactions and observations rather than statistics and chose to search for common themes, words and patterns when analysing the data.

Data Analysis

The study explored the results of the investigation into the participants’ conscious experience of using nonverbal techniques within the domain of their legal environment. As part of the study, the transcribed data was coded and a search for common themes was made when organizing the data. The identified codes were looked at and the themes that recurred in the data were then highlighted. The common themes were then placed into categories, which were easily identifiable. Those codes that did not fit into categories were kept separately. The transcripts were re-read on numerous occasions to ensure that all vital information was captured and placed into the relevant categories. It was searched for any links or connections in the various categories. These direct links were highlighted by using network diagrams to simplify the

process. After analysing the data inductively, it became necessary to interpret the data. This important stage of the study viewed determined the relevance of the study in that one was now in a position to establish the findings and results that hopefully established new insights into the research area. From the summaries of the data, the following themes emerged:

- Challenging Aspects of the Legal Profession
- Non-verbal Communication
- Interaction
- Body Language
- Silence
- The Experience of Deception
- Culture
- Confusion
- Facial Expressions
- The LLB Curriculum

Results and Evaluation

The aims and objectives of the study were to assist in restoring the standard and quality of services offered by attorneys to their clients by:

- Understanding their experiences during the consultation process;
- learning of their difficulties during the communicative process with the client;
- Understanding the meaning and substance that they attribute to nonverbal communication;
- Understanding their nonverbal experiences during the consultation process; and
- Learning of their views on the role and future of nonverbal communication in the development of the communicative legal skills of the attorney.

From the available and relevant literature it was found that nonverbal communication like verbal communication is an essential cog in the communicative process. It is especially important during the consultation

process. Nonverbal communication is vital during the early stages of the consultation process as it impacts greatly on first impressions. First impressions provide the platform from which attorneys can make judgments and decisions. It is vital for the attorney to set the ‘stage’ for the consultation process and to motivate the client to participate freely and accurately. Nonverbal communication in the form of personal appearance, body language, vocal cues, facial expressions, personal space and posture play important roles in obtaining accurate information and deserves the attorney’s conscious attention. Establishing good rapport with the client through a handshake or smile can impact on the success of the consultation. Getting the client to talk is vital to the consultation process and this can only be done through establishing a trusting environment. An understanding of nonverbal communication is therefore vital to establishing good interactive skills. Analysing, interpreting and utilizing the nonverbal component during the communicative legal process have largely been ignored.

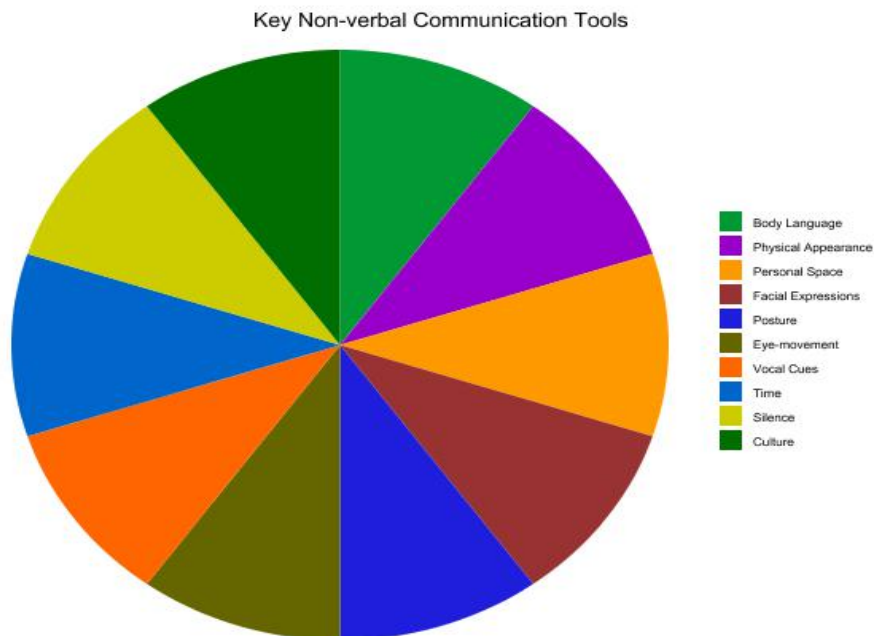


Figure 1. Non-verbal components that should be used

Nonverbal Cues as a Means of Improving Communication Skills

Figure 1 above shows the multitude of non-verbal components that should be used during the consultation process in order to facilitate interaction.

The intention during the interview stage was to gather information on nonverbal communication – its use, relevance and attitudes of the participants towards this underutilized component in the interactive legal process. Common themes emerged during the analysis of the participant's experiences of their interactions with clients. It was a point to record the distinctive features of each experience in its social context. However even though the distinctive nature of each experience was noted, due regard was given to them in relation to each other and not as independent entities. The table marked Table 1 below displays the themes extracted from the experiences of the participants. These themes were gleaned from the interviews with the participants. The themes divided by the total number of participants reflects the percentages arrived at in the summary below.

For the purposes of convenience, the letter P together with a numerical denomination reflects the participants.

Themes	P 1	P 2	P 3	P 4	P 5	P 6	P 7	P 8	P 9	P1 0	Tota 1
Difficult/Challenging	1	1	1	1	1	1	1	1	1	1	10
Interaction	1	1	1	1			1	1	1		7
Deceit	1	1		1	1				1		5
Non-verbal Communication	1			1	1	1	1	1	1	1	8
Body language	1	1			1	1	1	1	1	1	8
Facial Expressions				1		1	1		1	1	5
Culture							1			1	2
Caution	1	1							1	1	4
Silence	1										1
Confusion	1	1		1	1	1	1	1			7

Table 1: Themes extracted

All the participants in this study (100%) experienced working as an attorney extremely challenging. It appears that different components of their profession such as court work and consultations with clients caused the greatest difficulty for them. These areas of difficulty appeared to contribute to a general feeling of inadequacy and low morale amongst many of them. The younger attorneys found the job especially challenging. It appeared that this was due to a modest degree of training in respect of certain legal skills as well as the lack of experience in practice.

Moral dilemmas around representing guilty clients appeared to contribute significantly towards feelings of guilt and anguish. One of the participants indicated to the during a follow-up informal conversation that she did not want to reveal the internal conflict and stress that she goes through on a daily basis because she may be deemed a ‘weak attorney’ by her colleagues. It became apparent that some of the participants chose to detach themselves from their ‘work society’ for fear of complication and emotional attachment with their clients. A discussion with the supervisory attorney confirmed that some of the participants appeared cold and impassive during their interactions with their clients. The researcher was told that they failed to display any emotion during the consultation process.

The majority of participants (70%) indicated that interacting with clients during the consultation process posed the greatest challenge for them. Some of the participants found the experience of dealing with different personalities cumbersome. Levels of tension increased when there appeared to be a ‘breakdown in communication’ between the attorney and the client. The participants indicated that they experienced humiliating treatment at the hands of some clients who felt that they lacked the experience and skill to represent them. Communicating across different language barriers exacerbated the process of ‘getting through’ to client on a personal and professional level. Gaining the trust and confidence of the client posed a serious challenge to most participants.

Some of the participants (50%) found the experience of dealing with different personalities cumbersome, especially those who were hesitant to divulge the truth. Many of the participants felt that their clients were not being truthful during the initial consultation. The theme of deception remained prevalent during the interview process.

At least 40% of the participants indicated that they experienced humiliating treatment at the hands of some clients who called them ‘state

attorneys' and at times asked for them to be replaced by a more qualified attorney. The clients by and large failed to 'open up' during the consultation process. They remained cautious during the consultation process. The participants were asked for their input as to what caused their clients to refrain from 'opening up'. Many felt that the legal process is not 'user-friendly' for the client. It was mentioned that the clients were unwilling to divulge information because they are fearful of the attorney and the legal process. It is only once they gain your confidence and relax do they become more comfortable.

There was a general feeling by 70% of the participants that confusion and a lack of understanding of the communicative process hindered their ability to effectively interact with the client during the consultation process. Many of the challenges experienced by the participants during the consultation process can be attributed to a 'communicative ineptness' on their part. This appears to correspond with the views of Rostain *et al.* (2012) that looked at the concept of 'communicative ineptness' and suggested that it stems from the client's reaction to the attorney's failure to communicate effectively. Such attributions, they theorise, can be dealt with by lawyers communicating in such a way as to deal successfully with those clients who are not themselves good communicators and this will result in the feeling of failure becoming less frequent.

Awareness of the different components of the attorney-client communicative process and the improvement of communicative techniques are paramount in addressing some of the challenges facing attorneys who grapple with the interactive process (Rostain *et al.* 2012). As mentioned earlier, communication comprises of both a verbal and nonverbal component. The participants revealed a basic understanding of non-verbal communication. By their own admission, their use of the nonverbal component during the consultation process was limited. This was mainly due to a lack of training and understanding of nonverbal communication.

Fuller and Quesada (1973: 361) in their studies revealed that communication whether it is verbal or nonverbal, between lawyer and client is necessary in order to determine initial needs and expectations of both parties during the interaction process. They indicated that if the communication is lacking, then the hope of success and satisfaction is negatively affected. The 'communicative ineptness' on the part of a number of the participants may be attributed to their failure in recognizing and understanding the binary thought

patterns, sign systems and semiotic processes that are embedded in the attorney, client consultation process.

The majority of participants revealed a basic understanding of nonverbal communication. At least 50% of the participants mentioned that facial expressions were an integral part of their consultation technique. By their own admission, their use of the nonverbal component during the consultation process was limited. This was mainly due to a lack of training and understanding of nonverbal communication. They referred randomly to body language techniques and signs that they used during the consultation process. Some of participants indicated that they used nonverbal communication at times during the consultation process and to a lesser degree at trial. Of concern to the researcher was that none of the participants made any mention of other non-verbal components such as time, space or attire which is vital cogs in their communicative process.

It became clear that the participants definition of nonverbal communication merely 'scraped the surface' in terms of a true understanding of the intricacies of non-verbal communication. As mentioned earlier, there was a lack of mention of key primary nonverbal functions such as physical appearance, personal space, facial expressions, posture, eye contact and vocal cues. Only 20% of the participants mentioned culture as a factor that is crucial to the communicative process.

Only one of the participants (10%) regarded silence as important component of nonverbal communication. One other participant (10%) considered physical appearance as a non-verbal component that is crucial to the communicative process. This indicated a lack of awareness and understanding of essential cogs in the communicative process. However, Bittman and Thomas (2014:34) views silence as an important component of legal proceedings where some legal systems consider the silence of the accused as an expression of guilt whereas other systems do not consider silence as a key negative factor. It is therefore imperative for the attorney to interpret silence in the correct context and this may lead to more meaningful interactions between the attorney and client.

The findings of this study suggest that the majority of participants perceive their involvement in the consultation process as being controlled by the verbal component. This is corroborated by the researcher's observation of some of the participants. Two of the participants were not conscious of their appearance during the interview process. Their shirts were not tucked in and

their gowns were strewn across the table. They displayed very few 'warm' gestures such as forward leans, upright posture and decreased distance. The supervisory attorney told me that some of the participants always appeared cold and impassive during the consultation process.

Significantly, absent from the participants accounts of nonverbal communication was the issue of perception. Studies done by Hickson and Stacks (1993:11) revealed that perception is an important part of nonverbal communication. By being attentive and utilizing nonverbal behaviours that show propinquity one sends out positive signals. Other sign systems that impact on the communicative process include the physical environment, the intensity of the setting and the maturity of the individual.

All the participants felt that an understanding of nonverbal communication was vital to lawyers as it would broaden their communication skills. The participants made it quite clear that non-verbal communication did not form part of their legal studies at tertiary level. The researcher noted that the participants completed their LLB degrees at different institutions in Kwazulu-Natal. This indicates that nonverbal communication does not form an integral part of the LLB curriculum at most tertiary institutions across KwaZulu-Natal. This is startling considering that the 'art of communication' is an integral part of the legal process.

It was interesting to note that despite none of the participants having studied nonverbal communication during their LLB studies, all of them expressed the opinion that such training should be introduced at tertiary level. There was a general feeling amongst most of the participants that you could obtain more information from clients by using non-verbal communication. Those participants with legal experience were able to call on that experience when relying on nonverbal communication during the court and consultation process. The participants expressed genuine interest in getting to understand nonverbal communication and using that knowledge as a means of improving their communicative legal skills.

Evaluation of the Study – Strengths and Weaknesses

It is important for the researcher to provide an evaluation of the present study in terms of its relative strengths and weaknesses. The study commenced with a theoretical overview of the existing literature on nonverbal communication.

People know from the literature available on non-verbal communication that it plays an important role in the process of social influence, communication of emotion and interpersonal relationships. The study focused on a relatively 'untouched' area of legal communication. Even though there has been limited work done on nonverbal communication in the legal arena, one knows from the literature available on non-verbal communication across various other disciplines that it can play a vital role in improving the communicative legal skills of the attorney. A platform has been created for contributions towards theory-building practices in this field.

A qualitative phenomenological approach broadened the understanding of the participant's experiences and was allowed to be privy to their personal interpretations and perspectives on non-verbal communication in the legal arena. By recording and documenting their experiences participants gained valuable insight into their emotional and psychological responses as part of their legal practices. The analysis of their experiences yielded unique and distinct themes to emerge, which was then formulated into a theoretical experience.

The 'purposive sampling' approach was followed. This approach permitted the selection of a specific sample group (attorneys with varying degrees of experience) and this allowed for a greater understanding in respect of their outlook on the importance and relevance of non-verbal communication to the attorney and the legal profession in general. From experience as a practicing attorney combined with one of the researchers employment at the Justice Centre has provided the ideal background for him to understand his research question. The participants represented samples from different cultural and ethnic backgrounds. In being given the opportunity to understand their experiences in their legal setting, it was possible to achieve many of the aims and objectives of the study. The decision to adopt the interview design as compared to a questionnaire format allowed the immediate and true experiences of the participants to emerge.

It was therefore possible to establish the lawyers' perceptions of the implementation of nonverbal techniques during the consultation process. Many of the participants expressed difficulty in interacting with the client. By their own accord, most of them lacked any understanding of the different components of nonverbal communication and its sign structures. However, all the participants acknowledged the important role that nonverbal communication could play in the development of their communicative legal

skills. They were unanimous in their call for the introduction of nonverbal communication into the LLB curriculum at tertiary level.

It is important to focus on possible weaknesses of the study. Given the modest number of participants in this study, it would be iniquitous to generalize these findings to legal professionals from different sectors of the legal spectrum. The experiences of presiding officers for instance may vary from the experiences of attorneys and advocates in respect of their nonverbal communicative techniques. The experiences of the client in addition to the attorney would have provided a more holistic understanding of nonverbal communication during the consultation process.

Another issue with regard to the limitations of this study is the subjective influence of the researcher. One had been a practicing attorney in the past, and his presence and contributions during the interview and entire research process may have had an influence on the outcome of the findings. However, the phenomenologist views subjectivity as the ‘stepping stone’ to achieving true objectivity and it is impossible to eliminate the subjective influence of the researcher in its entirety. From a phenomenological perspective, true objectivity involves using every possible means to be as true to the phenomenon as possible. In this respect, different means was used such as coding, follow -up interviews, transcripts as well as independent assistants to verify the findings of the study and provide an even-handed viewpoint of the experiences of the participants.

Conclusion

The study indicates that there needs to be a paradigm shift towards the recognition of nonverbal communication in the legal arena. An understanding of nonverbal communication is crucial to the process as it cuts across methodological boundaries and illustrates how ‘thought, knowledge and behaviour’ interact to create meaning. In applying nonverbal legal communication, one concept that is central to the process is that of interpretation. For the attorney, the interpretation of nonverbal signs is crucial to the legal communicative process. The apparent lack of nonverbal communication in the legal process is due largely to a failure to recognize and interpret these nonverbal signs in the legal communicative process.

One can therefore fashion conjectures based on clues that are visible

throughout the consultation until a match is made and a conclusion reached. Law students need appropriate and professional training in respect of nonverbal skills. This can be done at tertiary level as well as professional legal training during articles of clerkship. Adequate support must be available to assist mainstream lecturers in developing their skills and competencies required to teach nonverbal communication. The legal profession needs to be positive in terms of their perceptions towards this form of communication, which has received very little attention in the past.

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Emotional Intelligence and Academic Performance

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Abstract

Few areas of psychology have attracted as much controversy as that of intelligence. Some experts argue that intelligence is the most important aspect of individual differences, whereas others doubt its value as a concept (Deary 2014). Emotional intelligence (EI) was defined by Salovey and Mayer (1990) and seen as a subset of social intelligence and similar as that of intrapersonal intelligence. The concept involves the individual's ability to appraise his own and other's feelings and emotions, discriminate among these emotions and use the emotion information to accomplish tasks to reach goals. The specific aim of the study was to determine the relationship between general cognitive ability, emotional intelligence and academic performance. The instruments utilized were the Learning Potential Computerised Adaptive Test (LPCAT) and Emotional Intelligence Test Body-Mind (Jerabek 1996). The sample comprised of 32 third year students studying Human Resources Management. The results indicated a positive relation between academic performance and emotional intelligence. Inferential statistics proved that males and females do not differ significantly on the three dependant variables.

Keywords: Emotional intelligence; academic performance, general cognitive ability

Intelligence is the capacity to understand the world, think rationally, and use resources effectively when faced with challenges (Robert S. Feldman 2011).

Introduction

Most people probably feel that they understand the meaning of intelligence; however, it is actually rather difficult to provide a good definition (Deary 2012) because of the complexity of the phenomena (De Boeck 2013; Hunt & Jaeggi 2013; Kirkegaard 2013; Sternberg 2014). Sternberg (1985) defines intelligence as: ‘Mental activity directed toward purposive adaptation to, and selection and shaping of, real-world environments relevant to one’s life’. Sternberg’s definition is very much in line with the opinions of most experts (Costalima *et al.* 2014; Eysenck 1998; Johnson 2012; Mackintosh 2011; Sternberg & Kaufman 2014). Sternberg (2014) defines intelligence as the ‘ability to adapt to, shape, and select environments’.

Biological approaches to human intelligence investigate the relationship between the brain and the nervous system as a basis for intelligence (Deary 2014). Cognitive approaches complement the biological approaches by viewing intelligence as an underlying ability to perform a certain task of given complexity (Helmbold, Troche & Rammsayer 2006).

The systems view on intelligence including the external world of the individual and theorists consider the interaction between biology, cognition and social systems as a basis for human intelligence. Multiple intelligences were formed out off another system approach, which incorporates various independent intelligences (Deary 2014; Hunt & Jaeggi 2013; van der Maas Kan & Borsboom 2014).

Hunt and Jaeggie (2013) conclude their discourse on intelligence as follows: ‘Any discussion of the big issues in the study of intelligence has to face the fact that the study of intelligence, like the study of psychology itself, is simultaneously a biological and a social science’.

Theoretical Framework

Traditional Approaches to Human Intelligence

Traditional approaches to human intelligence include biological, cognitive and more recent system approaches to intelligence (Deary 2012). Eysenck (1979)

described intelligence thus as an ability, which may be seen in practice, and at times it is not visible in practice. He further notes that intelligence should be deducted from observed behaviour and to accomplish this, it is necessary to use certain scientific rules of experimental procedures.

Biological Approach to Human Intelligence

According to Sternberg (1994) the biological approach to human intelligence aims to find an internal locus of abilities for every individual. This approach is concerned with how the anatomy and physiology of the brain and the central nervous system account for intelligent thought (Berkman & Falk 2013; De Boeck 2013; Deary 2014; Fahrenberg 2013; Hunt & Jaeggi 2013; Sternberg 2014).

Cognitive Approaches to Human Intelligence

Cognitive approaches to human intelligence do not contradict biological approaches, but rather complement them (Deary 2012; Hunt & Jaeggi 2013). According to Sternberg (1994; 2014) a continual interaction between the two levels of processing is inevitable. Cognitive approaches are primarily concerned with the relation of intelligence to the internal world of the individual thus information processing (Hunt & Jaeggi 2013; Matthews *et al.* 2014; Sternberg 2014; Webb *et al.* 2013). Cognition can be defined as the act or process of knowing in the broadest sense; specifically, an intellectual process by which knowledge is gained from perception or ideas to be applied and the ability to think or analyse information (Abzari, Shahin & Abasaltian 2014; Costalima *et al.* 2014; De Boeck 2013; Gerli *et al.* 2014). Cognition is central to development of psychology as a scientific principle (Berkman & Falk 2013; De Boeck 2013). The establishment of Wilhelm Wundt's laboratory in 1879 to study human thought processes is often used as the beginning of modern psychology (Fahrenberg 2013).

The following figure describes the domain of cognitive science psychology; for the purpose of this study it is important to know the origin of human intelligence. Figure 1 indicates the relationship between cognitive psychology and human intelligence.

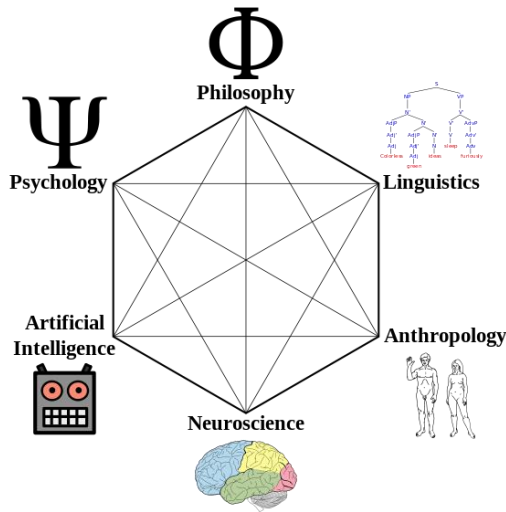


Figure 1: The Relationship between cognitive psychology and human intelligence (adapted from Miller 2003)

The Systems Approach to Human Intelligence

The systems approach to human intelligence developed with the aim of finding a more integrated and holistic view of intelligence. Researchers have realized the importance of the interaction between biology, cognition and social systems. Sternberg (1994) calls an approach that tries to look at the interaction of cognition and context as a system approach to intelligence. The systems approaches to intelligence attempts to integrate cognition, biology and context.

Sternberg (1994) points out, however, that whether abilities mentioned by Gardner (1983) can all be viewed as intelligences or whether they can be accepted as distinct, is a matter for debate.

Social Intelligence

Emotional intelligence forms a subset of social intelligence, specifically with regard to knowledge, appraisal and utilization of emotions in an intelligent manner (Abzari, Shahin & Abasaltian 2014; Goleman 1995; Cooper & Sawaf

1997). Marlowe (1986) claims that social intelligence consists of the following five domains: pro-social attitude interests, social and empathy skills, emotionality and social anxiety. According to Taylor (1990) each of the five factors was found to be independent of verbal and academic intelligence, although more representative samples and studies need to be performed before generalizations can be made with regard to his theory. Social intelligence is seen as a result of intellectual and social maturity, which evolves and develops throughout one's life, assist with adapting to other people and the ability to understand and manage others (Abzari, Shahin & Abasaltian 2014; Gerli *et al.* 2014).

Thorndike (1920), defined social intelligence as 'the ability to understand and manage men and women, boys and girls, to act wisely in human relations', and includes inter- and intrapersonal intelligences in his theory of multiple intelligences. These two intelligences comprise social intelligence. The importance of appropriate social behaviour and effective individual functioning within a context and environment, social interactions, interpersonal relationships, future planning, coping with daily life and attaining goals, cannot be underestimated.

Interpersonal and Intrapersonal Intelligences

Gardner (1983) included interpersonal and intrapersonal intelligences in his overall definition of personal intelligences. Gardner's theory of multiple intelligences, and more specifically, personal intelligences, has brought psychologists one-step closer to the concept of emotional intelligence. As such, emotional intelligence cannot be understood without the proper knowledge of Gardner's theory. According to Gardner (1983) the views held by Freud could be seen as supporting the idea of personal intelligence. Gardner (1983) describes these aspects of human nature by distinguishing between intrapersonal and interpersonal intelligences. In terms of intrapersonal intelligence, the 'core capacity at work here is access to one's own feeling life' (Gardner 1983). He views intrapersonal intelligence as one that is primarily concerned with the range of the individual's affects or emotions.

When dealing with interpersonal intelligence, the focus is outwardly, in other words, turned to other individuals. Thorndike (1920) points out that 'Interpersonal intelligence is the ability to understand other people: what

motivates them, how they work, how to work cooperatively with them'. Successful salespeople, politicians, teachers, clinicians and religious leaders are all likely to be individuals with high degrees of interpersonal intelligence. According to Jones and Day (1997), the non-academic intelligences, for example practical, social, emotional, interpersonal and intrapersonal intelligences are thought to be different from the types of intelligence needed to excel in solving academic problems. These non-academic intelligences will all, however, be of value in terms of a predictive value in education as well as determining outcomes of education.

Emotional Intelligence

Freud (in Eysenck 1998) and Seaman and Kenrick (1994) shared a conviction that psychology should be built around the concept of the person, his personality, his growth and his fate. Although scholars from different schools of thought with regard to psychology, both theorists deemed the capacity for self-growth to be important and such self-growth seemed to be crucial in the ability of the individual to cope with his/her surroundings.

The emergence of the concept of emotional intelligence (EI) has linked two seemingly contradictory concepts together namely, that of emotions and intelligence (Schutte & Malouff 2012; Webb *et al.* 2013). The debate whether these two psychological concepts can be linked at all to form a new theoretical concept is far from over. For decades, a lot of emphasis has been placed on certain aspects of intelligence such as logical reasoning, mathematical skills, understanding analogies, verbal skills, etc. Researchers were puzzled by the fact that, while IQ could predict to a significant degree the academic performance and to some degree, professional and personal success, there was something missing in the equation. Some of those with fabulous IQ scores were doing poorly in life; one could say that they were wasting their potential by thinking, behaving and communicating in a way that hindered their chances to succeed (Emotional Intelligence test 2000; Fernández-Berrocal & Ruiz 2008; Groves, McEnrue & Shen 2008; Farh, Seo & Tesluk 2012; Schutte & Malouff 2012).

One of the major missing parts in the success equation is EI, a concept made popular by the ground-breaking book by Daniel Goleman (1995), which is based on years of research by numerous scientists such as Peter Salovey, John Mayer, Howard Gardner, Robert Sternberg and Jack Block, to name but

a few. For various reasons and thanks to a wide range of abilities, people with high EI tend to be more successful in life than those with lower EI even if their classical IQ is average (Schutte & Malouff 2012).

Discussions of EI proliferate across the World from the cover of Time to a best-selling book by Daniel Goleman, to an episode of the Oprah Winfrey show. However, EI is not some easily dismissed ‘neopsycho-babble’. EI has its roots in the concept of ‘social intelligence’, first identified by E.L. Thorndike in 1920 (*TIME* Magazine 1995).

Some of the similarities of the non-academic intelligences include that individuals high in these abilities have extensive declarative and procedural knowledge that can be retrieved and applied in a flexible manner as the individual define and solve problems for which no one correct problem interpretation or solution may exist (Goleman, Boyatzis & McKee 2013). Salovey and Mayer (1990) define EI as: ‘The subset of social intelligence that involves the ability to monitor one’s own and others’ feelings and emotions, to discriminate among them and to use this information to guide one’s thinking actions. Cooper and Sawaf (1997) define emotional intelligence as: ‘Emotional intelligence is the ability to sense, understand and effectively apply the power and acumen of emotions as a source of human energy, information, connection and influence’.

Goleman (1998) offers the following descriptive definition: ‘Emotional intelligence is observed when a person demonstrates the competencies that constitute self-awareness, self-management, social awareness, and social skills at appropriate times and always in sufficient frequency to be effective in the situation’. Goleman (1995) has expanded Salovey and Mayer’s definition of emotional intelligence into five main domains: knowing one’s own emotions, managing emotions, motivating oneself, recognizing emotions in others and handling relationships. Gardner (1983) and Koman and Wolff (2008) claims that to have knowledge of one’s own emotions is only the starting point, the ability to monitor or guide one’s own emotions after discriminating effectively among them is the next step to EI.

Empathy too can be seen as a survival skill. Goleman (1995) as well as Mayer *et al.* (1990) regard empathy as a central characteristic of emotional intelligent behaviour. Rogers (1951) have described empathy as the ability to comprehend another’s feelings and to re-experience them oneself. Cooper and Sawaf (1997) agree with the concept of empathy as an important skill of emotional intelligent behaviour.

Social scientists are just beginning to uncover the relationship of emotional intelligence to other phenomena, e.g., leadership group performance individual performance, interpersonal/social exchange, managing change, and conducting performance evaluations (Ashforth & Humphrey 1995; Farh, Seo & Tesluk 2012; Gerli *et al.* 2014). According to Goleman (1995), ‘Emotional intelligence, the skills that help harmonize, should become increasingly valued as a workplace asset in the years to come’. The emergence of the concept of emotional intelligence has linked a concept made popular by the ground-breaking book by Daniel Goleman (1995), which is based on years of research by numerous scientists such as Peter Salovey, John Mayer, Howard Gardener, Robert Sternberg and Jack Block, to name but a few.

Emotional Intelligence and Neuropsychology

While children are still young, G Foleman (1995) argues, there is a ‘neurological window of opportunity’ since the brain's prefrontal circuitry, which regulates how we act on what we feel, probably does not mature until mid-adolescence. According to Goleman (1995) the work done by LeDoux (1993) indicates a neural pathway between the amygdala and the neocortex in the brain. The amygdala acts as a storehouse of emotional memory in the brain (Deary 2014; Eysenck 1998). Its purpose therefore, would be to play an important part in the linking of emotion, memory and the brain.

Academic Performance

Generally tertiary academic achievement is defined as the ability of a student to obtain her degree or diploma within the prescribed period as indicated by the institution according to Fourie (1992) and confirmed by Stoker *et al.*, (1985) as cited in Swanepoel (2002). Students with the ability to cope with stress and negative states of mind will improve their academic performance, (Fernández-Berrocal & Ruiz 2008; Pérez & Castejón 2007; Richardson, Abraham & Bond 2012; Swanepoel 2002).

If the method that a student uses in his/her studies could be based on a criterion scale, tertiary achievement could be tuned in more detail. This will result in canvassing the limitations of the pass versus fail dichotomy and a better usable norm will be established. Diverse study fields, differences in

evaluation measurements and promotion systems and especially different perceptions of tertiary achievement contribute to the difficulty to lay down a generally accepted norm according to which a student's tertiary achievement can be expressed in a qualitative manner. Different perceptions of what should be used as a point of reference when a norm for tertiary achievement is determined, inevitably result in different norm scales. Examination results obtained in different subjects are the traditional criterion according to which academic achievement is evaluated (Ferrando *et al.* 2010; Huws & Talcott 2009). Mavroveli and Sánchez-Ruiz, 2011). EI is closely related to personality and self-concept and it is therefore important to take note of these constructs in the analysis of academic success (Ferrando *et al.* 2010).

Method

Two tests were used namely the Learning Potential Computerized Adaptive Test (LPCAT) and the Emotional Intelligence Test. Quantitative descriptive literature review in conjunction with qualitative investigative approaches applied. Making use of literature searches in phase one of the research and reliable and valid measuring instruments will ensure internal reliability and validity and statistical procedures in phase two.

According to Jones and Day (1997), the non-academic intelligences, for example practical, social, emotional, interpersonal and intrapersonal intelligences are thought to be different from the types of intelligence needed to excel in solving academic problems. These non-academic intelligences will all, however, be of value in terms of a predictive value in education as well as determining outcomes of education. Some of the similarities of the non-academic intelligences include that individuals high in these abilities have extensive declarative and procedural knowledge that can be retrieved and applied in a flexible manner as the individual define and solve problems for which no one correct problem interpretation or solution may exist.

Process and Procedures

The LPCAT test was administered during normal lectures for Personnel Management in the computer laboratory where after the Emotional Intelligence test was done. Instructions were given and time was allowed for questions

before commencing with the tests. The students were encouraged to be honest and concentrate solely on completing the tests and remain seated until all participants have completed their tests. The purpose and aim of the test and process were explained to the participants and they were afforded the opportunity of questions.

LPCAT

The Learning Potential Computerized Adaptive Test (LPCAT) was used because it was developed in South Africa for multicultural South African context. Legislative requirements for psychological testing in South Africa (Employment Equity Act, 1998) were followed in the construction of the LPCAT. It is intended to serve as a screening instrument to assess learning potential in the nonverbal reasoning domain in such a way that inadvertent discrimination against previous disadvantage groups can be countered.

The adaptive process involves items being interactively selected from an item bank during testing to match the estimated level of performance of each individual participant. This ensures improved accuracy of measurement at various levels, while also improving individual motivation of participants.

Results

The number of respondents is unevenly distributed by age group. The majority of respondents are in general very young, the greatest number of respondents are in the age groups 21 and 22, only 3 respondents are 25 years of age and older. It is thus necessary, for further analysis, to do a recoding in regard to gender. It is evident that the two genders are of even number and due to these even numbers, recoding is not necessary.

Table 1: Descriptive statistics: emotional intelligence overall score

Mean	94,594	Maximum	114
Variance	129,539	Standard error of skewness	0,414
Skewness	-0,230	Standard deviation	11,382
Minimum	68,00	Standard error of kurtosis	0,809
Standard error	2,012	Range	46,00
Kurtosis	-0,394	Sum	3027

Table 1 indicates the mean as 94,594. The standard deviation is 11,382, which is an indication that there is not much variance on the overall score. As regards the behavioural score of the emotional intelligence test the descriptive statistics are presented in Table 2.

Table 2: Descriptive statistics: emotional intelligence knowledge scores

Mean	81.37	Maximum	7,00
Variance	153,145	Standard error skewness	12,000
Skewness	-0,233	Standard deviation	51,03
Minimum	2,00	Standard error kurtosis	0,809
Standard error	9,020	Range	53,00
Kurtosis	-1,981	Sum	2602,84

The emotional intelligence test (measuring knowledge) was too easy (mean = 81.37). The range of the distribution is 53, which indicate a low discrimination power. The distribution is negatively skewed and platykurtic which of course can be expected with an N=32.

Table 3 Descriptive statistics: LPCAT - Pre-test

Mean	52,531	Maximum	63
Variance	33.10	Standard error skewness	0,414
Skewness	-0,034	Standard deviation	5,8
Minimum	41	Standard error kurtosis	0,81
Standard error	1,017	Range	22,00
Kurtosis	-0,82	Sum	1681
Standard error	1,017	Range	22,00
Kurtosis	-0,82	Sum	1681

The results of the descriptive statistics in regard to the LPCAT Pre-test are presented in Table 3. The mean score of 52,531 on the LPCAT Pre-test indicate that the test is easy; however, a range of 22.00 points to low discrimination powers. The standard deviation of 5,8 suggests not much variance in the LPCAT Pre-test.

Table 4: Descriptive statistics: LPCAT - Post-test

Mean	52,906	Maximum	62
Variance	27,314	Standard error skewness	0,414
Skewness	-0,46	Standard deviation	5,226
Minimum	43	Standard error kurtosis	0,809
Standard error	0,924	Range	19,00
Kurtosis	-1,079	Sum	1693

Descriptive statistics recorded for LPCAT Post-test are depicted in Table 4. It shows that the respondents found the post-test easier than the pre-test (Mean = 52,906). The low width of 19 points indicates a low discrimination power. The standard deviation is 5,226. Comparing the standard deviation of the pre and post-test it appears that there is more variance in the pre-test.

Table 5: Descriptive statistics: LPCAT T-score

Mean	52,625	Maximum	63,00
Variance	31,855	Standard error skewness	0,414
Skewness	-0,017	Standard deviation	5,644
Minimum	41,00	Standard error kurtosis	0,809
Standard error	0,998	Range	22,00
Kurtosis	-0,753	Sum	1684,00

Table 5 reflects the descriptive statistics with regard to LPCAT T-Scores. The mean (52,625) is large. This large value indicates that the test is too easy. The small coefficient of the standard error of the mean is quite large; therefore the results cannot be generalized to the population. Table 6 illustrates a mean score of 56,281 is high which indicates that the respondents' academic performance is good.

Table 6: Descriptive statistics: academic performance

Mean	56,281	Maximum	79,00
Variance	152,402	Standard error	78,00

Skewness	-0,247	Standard deviation	12,345
Minimum	24,000	Standard error kurtosis	0,809
Standard error	2,182	Range	55,00
Kurtosis	0,751	Sum	1801,00

Inferential statistics were drawn to determine if the biographical variables, age and gender, have any effect on the LPCAT, Emotional Intelligence and academic performance (dependant variables). Kendall and Spearman's correlation were performed to determine the significant relationships (if any) between the dependant variables. These statistics were all non-parametric due to the small sample (N=32). A parametric multiple regression analysis was also done, the results of which have to be interpreted quite carefully.

Table 7: Mann-Witney U-test: gender

Variable	Group	Mean	U-Value	W-Value	Significance
LPCAT	Male (16)	17,53	111,50	247,50	0,439
	Female (16)	15,47			
Academic	Male (16)	15,22	107,50	243,50	0,4450
	Female (16)	17,78			
EQ	Male (16)	16,53	126,00	263,50	0,985
	Female (16)	16,47			

Note: Males and the females do not differ significantly ($p > .05$) on the three dependant variables.

The Mann-Whitney U-Test which is a non-parametric statistic, was performed to determine if gender has any effect whatsoever on the three dependant variables. Table 7 shows that the males and the females do not differ significantly ($p > 0,05$) on the three dependant variables. Multiple Regression was conducted with academic performance as dependant variable, but the results have to be interpreted very carefully, see Table 8.

Table 8: Multiple regression: academic performance

Analysis of Variance

Multiple regression	0,34554	Sum of Squares	Mean Square
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R Square	0,11940	564,0887	141,02218		
Adjusted R Square	-0,01106	4160,3802	154,08818		
Standard error	12,41322				
Regression	DF 4				
Residual	27	F = 0,91520	Sig F = 0,05		
Variables in equation					
Variable	B	SE Beta	Beta	T	Sig T
LPCAT	-0,5314	0,4099	-0,2412	-1,296	0,02058
Age	-1,179	1,7767	-0,1259	-0,664	0,5125
Gender	4,4216	4,4830	0,1819	0,986	0,333
EQ	-3,2546	5,5718	-0,010	-0,058	0,954
Constant	81,288	24,6516		3,297	0,003

The Kruskal-Wallis one-way analysis of variance was done to determine if age has any significant affect whatsoever on the three dependent variables and on the pre-test and post-test scores.

Conclusion

One of the limitations of this research is that the target population of 32 is too small to make generalizations although research by Ferrando *et al.* (2010) with a population of 290 confirms that emotional intelligence contributes to academic performance. This research can contribute significantly to the journey of fine-tuning the relation between emotional intelligence and academic performance.

Human potential gets wasted unnecessarily due to untapped abilities, lost opportunities, perceptions, race, gender and lack of knowledge of what human intelligence and potential really constitute. Effective educational and motivational interventions could address this problem. More research is needed to understand how our ability, capability and emotions affect our lives, especially in South Africa.

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Management Accounting Tools for Sustainability Information Decision-making and Financial Performance

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Abstract

Many organisations today are still not making use of Management Accounting Tools (MATs) to assist in providing sustainability information for decision-making and the way it influences the financial performance of an organisation. As a result it may negatively impact financial performance of organisations due to a number of errors which may include ancient cost drivers; erroneous business decisions, inaccurate information and human errors. Without applying MATs, managers of organisations may find it difficult to improve the day-to-day operations and take decisions to enhance the financial performance of the business. Information was collected using interviews to examine whether MATs can provide sustainability information for decision-making and how it influences the financial performance of an organisation. The research was carried out among listed organisations on the Johannesburg Stock Exchange (JSE). It was established that MATs provide strategies that influence decision-making and performance, although decision-making is the responsibility of executives or directors of the organisations. The study also established that financial managers who are focusing more on financial statements and reporting perform Management Accounting (MA) tasks. Hence future research should focus on the importance of segregating MA roles from those of financial accountants or managers to enable the organisation to focus on different reports for different outcomes.

Keywords: Management Accounting, Decision-Making, Financial Performance, Sustainability Information, Activity Based Costing (ABC), Balanced Scorecard (BSC), Benchmarking

Introduction

Software provider Oracle conducted a survey that sampled organisations and managers from all over the world. Results indicated that many organisations and managers are affected by the lack of clarity on the meaning of figures as a result of information given and presented in confusing ways. The results further indicated that obtaining accurate and reliable information on profit and financial performance is now a challenge that many organisations and managers are facing. As a result, the decision-makers of organisations experience difficulties as financial performance; success and sustainability of their organisations are affected by a lack of visibility in the accounts and profits (CIMA 2011). Consequently, it may be important for the management accountant to provide information in such a way that it guides decision-making towards sustainability.

In today's competitive environment many organisations may be fighting for survival and sustainability. Financial performance of many organisations may have been impacted adversely as a result of using outmoded drivers and information that is not accurate as well as wrong business decisions and errors caused by humans. MATs enable the establishing of a model for the logical categorisation of cost formation that may support the organisation in the handling of large amounts of data, inaccurate information and flawed decisions (Carenys & Sales 2008:9). Hence, MATs may provide accurate information and reduce human errors that could lead to improved business decision-making and financial performance of organisations.

Many organisations today operate in a very competitive environment and it requires both the manager and all the stakeholders to make informed decisions. Garrison, *et al.* (2010) argue that non-financial performance measures need to be integrated with financial performance measures within a well-designed balanced scorecard (BSC) to address the inadequacies of performance measurement. MATs may assist organisations to aid decision-making by using both financial and non-financial measures; and the BSC may improve performance of organisations (Khan *et al.* 2011). In this regard,

organisations that make use of the BSC may improve their strategies that could lead to improved economic and financial performance.

Nearly two-thirds of organisations are losing faith in financial accounting based performance measures and are seeking alternative ways to implement and manage their businesses (Caulkin 1997:9). Schultze and Weiler (2010) argue that the performance measurement system function provides information to managers for making economic decisions and increasing organisations' returns and financial performance. Performance measures may also convey information about activities within the organisation and should therefore be used together with knowledge management so that creating, capturing, transferring, and accessing information needed for decision-making can be efficient and readily available to drive business strategy (Rowe & Widener 2011). MA may therefore be viewed as an essential tool for measuring the financial performance of organisations.

In today's functioning of an organisation, it may no longer be adequate to measure performance without taking sustainability into consideration. Schaltegger (2008:7) argues that managing sustainability links with sustainability accounting and performance measurement. Sustainability can play an important role in creating a competitive advantage and it can benefit organisations through strategic implementation, productivity, and day-to-day operations of the organisations (Zilahy & Kovács 2008). Therefore, it is plausible that organisations can benefit from sustainability information and being sustainable can create a competitive advantage for an organisation that can impact financial performance positively.

Many organisations are facing high levels of uncertainty due to changes in technology, market deregulation, and also increased competition (Sharma & Gadenne 2002). As a result of new innovations such as activity-based costing (ABC) and continuous improvement methodologies, organisations may be able to respond to the changing nature of operations and competition (Yang *et al.* 2006). Botten and Sims (2005:441) argue that competitive advantage may be improved if managers can act and think like owners as they will: achieve targets; take more risks; and also improve financial performance of the organisation. Hence applying MATs may assist in providing sustainable information regarding risks and future forecasts so as to improve the efficiency of processes. Therefore, this research seeks to investigate the role of MATs in providing sustainability information for decision-making and how it influence financial performance.

The structure of the remainder of the article follows: In the next section the literature review is portrayed and the problem statement and objectives are discussed afterwards. This is followed by a discussion of the methodology employed in the research. The data analysis and findings are discussed next. The article concludes with a section where the findings are categorised and linked to the objectives and recommendations and future work are discussed.

Literature Review

This article is based on a MCom dissertation (Matambele 2015). The literature review provides the necessary background on MATs providing sustainability information for decision-making and its influence on financial performance.

Sustainability Information

Grober (2012:8) argues that sustainability relates to basic human needs in order to maintain and nurture the conditions on which life depends. He further stated that there couldn't be development without sustainability, which is why modern organisations, corporate managers and politicians perceive sustainability to be the antithesis of development, a threat to progress and wellbeing. Hence, sustainability information can be viewed in terms of a biological perspective in order to assist organisations to assess the impact of the economy and long-term survival which may directly influence the financial performance not only in a corporate perspective of creating stakeholder value (Morse 2010:133). The next section discusses decision-making.

Decision-making

Decision-making can be defined as the process whereby the decision-maker identifies and choose alternatives based on values and preferences (Harris 2012). MA provides an organisation with information upon which informed strategic decisions and operations can be assisted (Kidane 2012). From senior decision-makers, be it national and international, to the individual, the need for sustainability information arises at all levels according to the United Nations Environment Programme (UNEP 2014). Therefore, the information that MA provides may be applied to make good and reliable decisions for a sustainable future. The next section discusses financial performance.

Financial Performance

Raiborn and Kinney (2013:12) view financial performance as concerns of shareholders and other stakeholders about profitability and organisational growth. Financial performance may be expressed as a subjective measure based on how well an organisation utilises their assets from its primary business and generate revenues. Financial performance may also measure an organisation's overall financial health over a certain period, and employed to compare similar organisations across the same industry. Taylor and Haneberg (2011:20) state that profit, market share, economic value added, and earnings before interest, tax, depreciation and amortisation may be the focus of financial performance. Hence, for the purpose of this study financial performance may be seen as an integral part of an organisation's sustainability and existence. The next section discusses MA.

Management Accounting (MA)

Garrison, Noreen, and Brewer (2010:33) state that MA is concerned with providing information - to people who manage and govern its operations inside an organisation. They also state that MA emphasises decisions affecting the future, relevance, and timeliness. Vitez (2014) argues that financial information should be separated from Management Accounting Information (MAI) to make sure that only valid, timely and relevant information is contained in management reports. Therefore, the importance of MA may be in providing relevant information for planning, control and performance measurement.

Although management accountants have been seen traditionally as number crunchers, many organisations use management accountants to focus on analysing information and creating knowledge from it rather than collecting data, this resulted in management accountant's becoming decision-support specialists and facilitators of a management decision-making system (Jackson *et al.* 2009:33). MA may therefore be considered relevant to provide sustainability information for decision-making and which in turn influence financial performance. The next section discusses MAI.

Management Accounting Information (MAI)

MAI is focused on decision-makers and internal managers and its purposeful

use is to provide financial information applicable to a manager's operations in an attempt to create sound organisation's decisions and MAI occurs in the form of budget forecasts, financial ratios, cost accounting, and variance analysis (eHow 2014). Hence MAI may play a very useful role in decision-making and in improving financial performance of the organisation as a result of sustainability information that flows from financial ratios, budgets, and cost accounting. The next section discusses MATs.

Management Accounting Tools (MATs)

MATs may assist an organisation in creating shareholder value and also improve financial performance of an organisation. Modern tools such as ABC provide relevant information that may be useful in the decision-making processes. The BSC and performance measurement may also assist an organisation to improve financial performance and sustainability. Hence management accountants should choose the right tool for the specific context, a decision that should be based on their technical knowledge, professional experience and judgement for the organisation to achieve its goals and vision (Ross & Kovachev 2009:5). The tools discussed next form the basis for this research.

Activity-based Costing (ABC)

Weygandt, Kimmel, and Kieso (2010:2) view ABC as a beneficial tool since it results in more accurate product costing and in more careful scrutiny of all activities in the value chain which leads to better management decisions and control over overhead costs. Although there are limitations such as cost, some organisations may find ABC useful for accurate product costing.

Consequently ABC is best suited for organisations that have various outputs with differing levels of complexity and operational intensity and it is also well suited for those organisations that provide customers with varying levels of products or services. ABC permits such organisations to correctly ascertain the amount of total funds and resources dedicated to each particular project (Rothberg 2011:1). Hence for organisations that have various outputs with differing levels of complexity and operational intensity ABC may be the best option to apply compared to a traditional costing system and may result in better decision-making and financial performance.

Balanced Scorecard (BSC)

Kaplan and Norton (2005) developed the BSC. Hilton and Platt (2011:43) define the BSC as a model of business performance evaluation that balances measures of financial performance, learning, innovations, and internal operations. They state that the BSC comprises of four perspectives which are: financial; internal operations; customers; and learning and growth. The mentioned four perspectives may play an important role in increasing performance and sustainability of an organisation.

Benchmarking

Whitecotton, Libby, and Philips (2011:147) state that benchmarking can be used to pinpoint areas where a company is ahead and provide managers incentives to improve their own operations. There is an increase in the use of benchmarking in order to attain best standards or practice and therefore benchmarking establishes attainable standards by the examination of both external and internal information (CIMA 2008:117). A benchmark may provide a standard of excellence against which to measure and compare, which assist organisations in achieving good performance. Next the research problem and objectives are stated.

Problem Statement

Management Accounting is known to be useful in internal planning and control. This may have increased its relevance in improving the financial performance and decision-making processes of organisations (Drury 2008:19). Many organisations are still not making use of MATs to assist them in providing sustainability information for decision-making. This may impede the financial performance and success of organisations since erroneous decisions, inaccuracies in information, the use of antiquated cost drivers, large amounts of information and human errors may occur (CIMA 2011). Without applying MATs, managers of organisations may find it difficult to improve the day-to-day operations and take decisions that will enhance the financial performance of the business.

However, current innovative MATs such as ABC, the BSC and benchmarking may provide sustainability information for decision-making that can improve the sustainability, profit, and performance of organisations.

Aim and Objectives of the Research

The aim of this research is to examine whether MATs can provide sustainability information for decision-making and the influence of this information on the financial performance of an organisation. The practices to be assessed theoretically and empirically will include ABC, performance measurement, the balanced scorecard and benchmarking.

The objectives of this study are to:

- Assess the role of MATs such as the BSC, benchmarking and ABC to provide sustainability information which influences financial performance.
- Ascertain whether the sustainability information generated by tools such as the BSC, benchmarking and ABC improves the financial performance of organisations.
- Establish the extent to which sustainability information influences decision-making in the organisation.

The next section discusses the methodology employed in this study.

Methodology

In this section the research methods, the population, data collection, findings and analysis, trustworthiness and authentication are addressed.

Research Methods

Ryan, Scapens and Theobald (2002:7) define research as a process of intellectual discovery, which has the ability to change knowledge, understanding and perception of an organisation around us.

The role of MA in the provision of sustainability information for decision-making and its influence on financial performance of an organisation is based on facts, scholar's ideas, and the analysis of information and the examination of the different point of views.

The literature review for this study involved information that is publicly available such as library books, subject websites, scholarly journals, etc.,

which guided and provided more information for this study. The literature review examined the theory relevant to MATs in providing sustainability information for decision-making and its influence on financial performance of an organisation. The research population will be discussed in the next section.

Research Population

Heppner and Heppner (2004:110) define a population as organisations, students, employees, or objects of the study. The target population of this study is 400 South African organisations listed on the Johannesburg stock exchange (JSE 2013) and organisations were selected by numbering each organisation and drawing 25 numbers of which the first 15 were approached first.

Table 1: Organisations and Participants

Organisations	Participants
Mining	1 and 2
Pharmaceutical	3
Petrochemicals	4 and 5
Banking (Financial Institutions)	6 and 7

The data collection will be discussed in the next section.

Data Collection

In order to solve the research problem primary data sources were used. Heppner and Heppner (2004:376) argue that a number of problems can occur with data collections that can greatly influence the outcome of the study as a result of participants that may become fatigued and not respond as accurately or carefully over time. The study was conducted by means of semi-structured interviews and the interviews were conducted at public places and also participant's place of work. Interviews ranged from 14 to 35 minutes and they were recorded using a cell phone and the researcher took additional notes. The next section outlines interviews.

Interviews

For the purpose of this study, primary data were collected using semi-structured interviews. The interview questions were clear, concise and pleasing so as to invite participants to participate and the goal was to include all of the questions necessary for collecting the desired information without making the interview so lengthy that it becomes inconvenient to the participants as suggested by (Gideon 2012:300).

An interview plan was developed as a guide to the semi-structured interviews. The plan contained three key focus categories as indicated below and each category has sub-questions that were used to derive information from participants:

1. MATs
2. Improvement of financial performance of an organisation
3. Strategies which influence decision-making and performance

The interview plan was designed with the above-mentioned categories in mind and desired information was achieved. The data analysis and interpretation are discussed in the next section.

Data Analysis and Interpretation

Heppner and Heppner (2004:228) view data analysis as a demonstration of a high degree of analysing and interpreting the results. The study employed a qualitative analysis of the collected data.

For the purpose of achieving the objectives and to solve the problem for the role of MA in the provision of sustainable information for decision-making and its influence on financial performance of an organisation the data were:

- ☐ Organised for the analysis
- ☐ Described, and
- ☐ Interpreted.

The above enabled the analysis and interpretation of the data that were relevant, effective, and efficient for the study that may result in a strong impact and

sustainability of the outcome. The next section discusses trustworthiness and authenticity.

Trustworthiness and Authenticity

Shenton (2004:63) states that the concepts of validity and reliability cannot be addressed in the same way in naturalistic work and as a result, positivists generally often question trustworthiness of qualitative research. He further argues that there are four criteria used: credibility, transferability, dependability, and confirmability.

Therefore, for the purpose of this study, the above four stated criteria were employed to ensure trustworthiness. Lincoln and Guba (1985) confirmed that trustworthiness of a research study is important to evaluating its worth.

Mertens (2005) argues that authenticity has three criteria: fairness, ontological authenticity, and catalytic authenticity. For the purpose of this study, authenticity was employed to ensure that the results are of good quality and reliable. The next section discusses data analysis and findings.

Data Analysis and Findings

This section presents the data analysis and findings of the study. The data were collected using interviews. The researcher mainly depended on semi-structured interviews to collect primary data. Interviews were held at various offices where participants work and also conveniently located restaurants around South Africa and they lasted from 14 to 35 minutes.

However, getting participants to participate in interviews took lots of time as some were busy with half-year end and year-end deadlines. Some participants were no longer interested to participate in the study as a result of their personal commitments. Nevertheless information obtained from seven participants using semi-structured interviews was sufficient to reach data saturation. Baker and Edwards (2014:2) confirmed that there is no exact number to reach data saturation but it depends on the responses as they offer guidance and direction on the epistemological, methodological and practical issues to take into account when conducting research projects and this includes advice about assessing research aims and objectives, validity within epistemic communities and available time and resources.

All participant information was computed on percentage of 100 according to their contribution to the study and also based on the usage of the information they provided, its relevance, accuracy and correctness. Data saturation was reached during interview number three. 64% of information was already collected and only 36% of information was collected from interview number four to seven. Therefore the researcher is confident that based on this analysis the sample size is sufficient. Figure 1 illustrates participant's information computed on a 100% basis

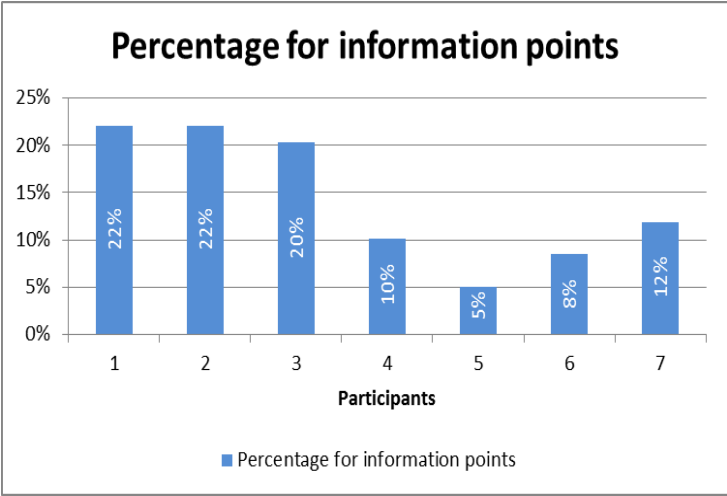


Figure 1: Participants information computed on a 100% basis Source: Created by researchers (2014)

The aim of this study was to assess to what extent MATs provide sustainability information for decision-making and its influence on the financial performance of an organisation. This research was expected to meet the objectives and ultimately state to what extent the MATs are applied by the organisations.

- The role of MATs such as the BSC, benchmarking and ABC in providing sustainability information which influence financial performance.

- Whether the sustainability information generated by tools such as the BSC, benchmarking and ABC improve the financial performance of organisations.
- The extent to which sustainability information influences decision-making in the organisation. The sections that follow discuss the findings.

MATs

MATs are used by all the listed organisations interviewed, although a sample was selected it gave guidelines that the use of MATs in any organisation today is very relevant and has a direct influence on the financial performance of the organisations. This is why many of the JSE listed organisations has MA departments looking only at MA duties, issues and relevance for future sustainability of the organisations. The following questions were used to derive the needed information.

To what extent does your organisation use the following tool of MA?

Activity-based Costing (ABC)

Although some organisations do not use ABC, they apply other MATs that best fit the purpose and scope of their organisation. In some petrochemical organisations, ABC is applied in other segments and others do not apply it as they focus more on labour costs. This is the result of the fact that MA is used for different purposes to generate different information that fit the segment that it's been used in. This was established as listed organisations that were interviewed were both large in terms of their operations and had different offices all over South Africa.

The participants indicated that organisations use an ABC mainly as a form of cost management.

Benchmarking

During the interview participants agreed that they use benchmarking. It was established that they look at their production cycle, unit costs and benchmark it with similar organisations in their line of business. Although participants said they do not use it on a monthly basis they said it is important to benchmark and

some organisations appoint external companies to do benchmarking on their behalf.

Participants indicated that organisations use benchmarking, although timelines differ depending on an organisation's requirements. The participants confirmed that benchmarking relies on competitive data that isn't readily available from outside organisations (Scarlett 2003/4). Nevertheless participants agree that they use benchmarking and that should they have sufficient information to benchmark against good results are achieved which are useful in the organisation.

The Balanced Scorecard (BSC)

The participants indicated that they have different scorecards and that they use some for business, markets, financial and others. Scorecards of interviewed listed organisations were determined based on the goals, plans, and targets they wanted to achieve. The participants also indicated that scorecards are very important and look at all spheres like quality, costs, delivery, safety, and morale. They also indicated that a scorecard drives the vision and mission of the organisation thereby increasing shareholder value, customer satisfaction and improving competitive strategy of the organisation.

How often does your organisation use information generated from the MATs mentioned above?

'We use management accounting information daily, weekly, and monthly' Participant [5]. From the above aspects and practices of MATs the researcher was able to derive sufficient information which indicates that MATs are relevant and its information is widely used by many JSE listed organisations.

How does your organisation generate sustainability information from the tools mentioned above to influence decision-making on the improvement of the financial performance of the organisation?

Based on the responses from participants MATs are being used where relevant within their organisations and they provide sustainability information that assist in decision-making and in improving financial performance of the

organisation. Although not all organisations use all MATs for sustainability information provision, reason is that some are applicable on their scope of business and some are not but the fundamental principle remain that MA is improving their decision-making and financial performance. Although most of participants indicated that they have different ways of generating sustainable information from MATs, the participants stated that information derived from the tools such as ABC, benchmarking and BSC has a direct impact on the financial performance of the organisation although it can be favourable or unfavourable.

Do MATs assist your organisation in the following areas?

Creating Stakeholder Value Customer Satisfaction Competitive Strategy

The participants stated that using MATs improves customer satisfaction, competitive strategy and creates stakeholder value. Hence based on participants' answers it is very clear that MATs directly influence the financial performance of any organisation as depicted through stakeholder's value, customer satisfaction, and competitive strategies.

Does ABC benefit your organisation by providing sustainability information for decision-making?

'Most people focus too much on the manufacturing side and that results on concentrating too much on labour and overheads, but forget about inputs like raw materials that come into the factory, and managing that alone is very critical for the organisations' Participant [3]. Therefore this may confirm that ABC does provide sustainability information for decision-making as costs may be counted during the procurement stage of acquiring raw materials other than from manufacturing stage on ward. Therefore ABC is very relevant for many organisations today and participants agreed to that.

Does the BSC assist your organisation in providing sustainability information for decision-making?

‘Based on the scorecards that we have, it assist us in decision-making regarding our game plan (strategy or goal) such as; customer, competitiveness as well as safety and production’ Participant [1]. This may symbolise that the BSC provide sustainable information which assist organisations to make sound and beneficial decisions, which could assist in improving their financial performance. Participants indicated that the BSC is useful within the organisation and based on the organisation a scorecard is then used to derive the information that will be used for decision-making.

Does benchmarking provide sustainability information for decision-making for your organisation and if so how?

Participants stated that they use benchmarking not on a regular basis and they emphasised however that it plays an important role in decision-making because of the information derived from benchmarking. Hence benchmarking does provide sustainability information for the decision-making of an organisation although the participants do not use it extensively.

How does your organisation’s goal or strategy support MATs in providing sustainability information in the decision-making process?

Participants stated that although there are so many MA reports which provides so much MAI, it still remains the responsibility of executive management to decide whether to utilise such information or not.

Improvement of the Financial Performance of an Organisation

Does your organisation benefit from sustainability information generated specifically from ABC to improve financial performance?

Participants agree that MA is very relevant for modern day operations of a business and does have a direct influence on the financial performance of an organisation. They agree that accurate allocation of costs from the start will impact directly on the financial performance of the organisation and as a result the decision-making process as to whether the product is yielding profit or not

will be visible. Therefore ABC does improve financial performance of the organisation if implemented and used correctly.

Does your organisation benefit from sustainability information generated specifically from the BSC to improve financial performance?

The participants stipulated that although the BSC may not impact directly on the financial performance it measures the problem areas that an organisation needs to focus on a lot. Therefore the BSC plays an important role in improving decision-making and financial performance of an organisation.

Does your organisation benefit from sustainability information generated specifically from benchmarking to improve financial performance?

Participant [4]: ‘Benchmarking does add value as we get better information which influences our financial gain within our organisation as we use that information to measure our productivity and costs. Most of participants stated that benchmarking plays an important role in improving the financial performance of the organisation, although information such as procurement, unit, and production costs to benchmark against is not readily available.

Strategies that Influence Decision-Making and Performance

Does your organisation employ research and development in its line of business for it to remain sustainable and continually improve financial performance?

The participants stated that their organisations have a department that focuses solely on research and development of new ideas that best fit the business that they are in which includes: new technology, new machinery and equipment. Some participants indicated that they have research facilities within the organisation, that focus on the development and testing of chemicals and new ways of improving or doing things differently at a lower cost and also taking safety and sustainability into account.

Does your organisation apply other MATs to improve financial performance?

Although participants indicated the importance of MATs, it is evident that in conjunction with the other strategies they use, desired financial performance can be achieved. Participants indicated that they have MA departments that deal with different sections of their units for specific purposes.

Do your organisation take measures to ensure that sustainability information generated from MATs sustain future financial performance, if so in what way?

Participants indicated that sustainability depends on decision-making of executives' and directors and also from quality information from the operational departments.

Conclusion

This section summarises the findings and makes recommendations. The objective of the study was to examine whether MATs can provide sustainability information for decision-making and its influence on the financial performance of an organisation.

The research was premised on the hypothesis that many organisations are still not using MATs to assist in the provision of sustainability information for decision-making and its influence on the financial performance of an organisation, and that MAI has been optional to many organisations in terms of driving their strategy, financial performance, decision-making, and day-to-day operations of the business. Hence MATs can provide sustainability information to managers and people within and outside the organisation to improve financial performance and sustainability of organisations.

The study had the following sub-objectives:

- ☐ To assess the role of MATs such as the BSC, benchmarking and ABC in providing sustainability information which influence financial performance.

- To ascertain whether the sustainability information generated by tools such as the BSC, benchmarking and ABC improve the financial performance of organisations.
- To establish the extent to which sustainability information influences decision-making in the organisation.

The study was conducted by means of semi-structured interviews and the interviews were conducted at public places and also participant's place of work. The research findings were analysed in three sections as per semi-structured interviews. The three sections were:

1. MATs
2. Improvement of the financial performance of an organisation
3. Strategies that influence decision-making and performance.

Summary of the Findings

MATs

The findings from the participants indicated that MA is very relevant and has a direct influence on the financial performance of the organisations, which is why many of the JSE listed organisations has MA departments looking only at MA duties, issues and relevance for future sustainability of the organisations. All participants agreed to the fact that MATs provide sustainability information for decision-making and that they influence financial performance of organisations.

Improvement of the Financial Performance of an Organisation

All participants agreed that MATs improve financial performance of the organisation although it may not be directly. This study found that MATs are important in providing sustainability information for decision-making and in influencing the financial performance of JSE listed organisations.

Strategies that Influence Decision-making and Performance

Participants stated that their organisations have strategies that influence decision-making and which improves financial performance as well as looking forward into the future and the sustainability of the organisation.

The recommendations are summarised as follows:

- The directors, shareholders, and managers are recommended to realise the role of MATs in their organisations so as to benefit them in terms of accurate measures of sustainability as well as financial performance, obtaining reliable information for decision-making and controlling and planning organisation's operations. The study indicated that MATs forms an integral part in improving financial performance of the organisation as well as decision-making.
- The decision-makers are recommended to make use of reports generated by management accountants so that they can make reliable and informed decisions that will benefit the organisation. The study indicated that decisions to utilise information from MATs lies with decision-makers of organisations.
- Organisations that do not have management accountants or MA divisions are recommended to implement or establish such department. The study indicated that MA is very useful for value creation, accurate decision-making, and driving organisation into successful, profitable future.

Suggestions for Future Work

This study identified the role of MATs in providing sustainability information for decision-making and its influence on financial performance of the organisation. This leads to the suggestion that future studies should focus on role of management in utilising MAI when making decisions.

The study also found that financial managers who are focusing more attention on financial statements and reporting also perform MA tasks. Future research should also focus on importance of segregating MA roles to those of financial accountants or managers so that organisations can focus on different reports for different outcomes.

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Appendix A – Interview Questions

Management Accounting Tools

1 To what extent does your organisation use the following tools of Management Accounting?

- ☐ Activity based costing (ABC)
- ☐ Benchmarking
- ☐ Balanced Scorecard (BSC)?

2 How often does your organisation use information generated from the Management Accounting tools mentioned above?

3 How does your organisation generate sustainability information from the tools mentioned above to influence decision-making on the improvement of the financial performance of the organisation?

4 Does ABC assist your organisation in the following?:

Creating stakeholder value		Customer satisfaction		Competitive strategy

5 Does ABC benefit your organisation by providing sustainability information for decision-making and if so, how?

6 7 Does the BSC assist your organisation in providing sustainability information for decision-making and if so, how?

8 Does benchmarking provide sustainability information for decision-making for your organisation and if so, how?

9 How do your organisation’s goals or strategy support Management Accounting tools in providing sustainability information in the decision-making process?

10 Improvement of financial performance of an organisation

11 Does your organisation benefit from sustainability information generated specifically from ABC to improve financial performance?

12 Does your organisation benefit from sustainability information generated specifically from the BSC to improve financial performance?

13 Does your organisation benefit from sustainability information generated specifically from benchmarking to improve financial performance?

Management Accounting Tools for Sustainability Information Decision-making

- 14 Strategies that influence decision-making and performance
- 15 Does your organisation employ research and development in its line of business for it to remain sustainable and continually improve financial performance?
- 16 Does your organisation apply other Management Accounting tools to improve financial performance and if so, which ones?
- 17 Does your organisation take measures to ensure that sustainability information generated from Management Accounting tools sustains future financial performance? If so, in what way?

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Impact of Change Commitment to Information Systems Change in the South African Construction Industry

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Abstract

Business competition and growth in the Information age is fuelled by rapid innovation of Information Systems. In turn, business leaders' demand rapid Information System (IS) adaption that would enable all stakeholders even in the small part of the organization to take advantage of innovation. Therefore, organizations upgrade in order to keep abreast with competitors in the global market. In addition, there is often a lack of commitment to IS change programmes from employees who may even go to the extent of resisting Information Systems change initiatives. In this article the author is investigating the associations and impact of IS change communication and understanding worth of IS change on commitment to IS change in the construction industry using a survey research design. Results indicate that both communicating IS change and understanding of worth of IS change are moderately related to commitment to IS change. Moreover, regression analysis results proved that understanding worth of IS change is a better predictor for commitment to IS change when compared to communicating IS change.

Keywords: Change management, commitment to IS change, resistance to IS change, Strategic planning

Introduction

In this information age business IS practices change rapidly in line with the fast-evolving technology that supports them in order to keep up with an ever-changing global marketplace (Misra, Kumar & Kumar 2006). Among other

objectives many organization strive to gain competitive edge over their competitors (Clarke & Varma 1999; Bhattacharjee & Chakrabarti 2015). Johnson (2009) notes that many organizations undergo information systems planning; initiate and implement projects; systems and applications for maximum benefit in their businesses; these projects encounter IS changes along the way either formal or informally. Such IS change initiatives are geared towards taking advantage of opportunities instead of creating havoc. According to Porter (1996), change could be a disaster where there is strategic inadequacy and lack of proper change management.

Lack of planning, communication, understating the worth of the IS change, strategic vision and poor or no change control system in place is a problem that needs to be looked at by organizations to ensure that change control procedures are followed accordingly (Schuh *et al.* 2017). The changes have to be managed, communicated, and controlled.

This article examines and evaluates the best predictor of getting commitment to change management (communication or understanding the worth of IS change) in the construction industry when change management principles have to be applied to support strategic information systems planning. That way the organizations can achieve success during project implementation. This article argues that by knowing the best predictor of commitment to IS change project success can be improved. To achieve this, an organization needs to understand its strategy, where change management fits in and how change management can contribute to the success of any project.

Problem Statement

Rapid technological innovations enable organizations to take advantage of the global marketplace and thereby improve organizational performance. According to Hiatt and Creasey (2002) most organizations are struggling to keep up with changing their business environment because they do not understand the importance of change management. In the same breath, change management is as good as degree of commitment to IS change from an organization's employees. Such IS change could result in knowledge gaps, where employees would have to gain new knowledge. Acquisition of new knowledge could be perceived as added responsibility to already heavy workload. In this article, the author will investigate factors affecting employees'

commitment to Information Systems change in the South African construction industry.

Johnson (2009) reports that leading factors to project failure are: lack of strategy and planning, change management and managing relationships (communication). The report also states that only 32% of projects were successful, 44% had challenges and 24% failed. An organization's Information Systems plan is meant to sustain the organization's competitive edge in line with overall organizational strategic objectives. All that said, change agents in the organization are faced by challenges to carrying out implementation plans that involve people who may not like IS change or even resist IS change.

Literature Review

Organizations in different industries are constantly on the lookout for better and improved business solutions. These business solutions are aimed at helping the organization gain a competitive edge. Organizations need to have a well-defined vision and strategy to give the rest of the organization clear direction for the future. Information systems' planning comes into play when the organization decides to support the organizational strategy with technology (Singla 2009; Kasemsap 2015).

Due to the possibility of serious business project impact that could be caused by inadequate strategic planning in relation to IS change in the organization, change agents should ensure that employees as stakeholders in the IS change initiative buy-in to the undertaking of the organization. As mentioned by Johnson (2009) a contributing factor to project failure is resistance to IS change attributed to lack of commitment to IS change and communication about IS change. In the following section the author discusses factors that could influence IS change initiative success or failure.

Knowledge Gap Attributed to IS Change

Lee and Bai (2003) in their proposed evolution of IS/IT planning approach introduced four evolutionary phases. One of the phases promotes change management in Information Systems planning as dynamic and contextual; in relation to the business environment and organizational need. IS change compels knowledge change, because current systems knowledge could be

obsolete in the new systems environment depending on the amount of IS change (Chataway & Wield; 2000; Alavi & Leidner 2001; Bloodgood & Salisbury 2001; Liao & Teo 2017). Most construction giants operate in the global business environment, doing business across countries faced with demand to upgrade their IS in order to sustain competitive edge. However, a business cannot gain competitive advantage associated with new IS, if users lack practical knowledge that would enable them to prosper in global marketplace. Failure of most IS plan and IS change project could be attributed to failure to recognize the importance of knowledge management and change management issues (Johnson 2009).

Information Systems change obviously impacts on employees/users of IS. The construction industry has seen growth to become one of dynamic industry especially after the property boom leading to the Soccer World Cup finals of 2010 in South Africa, and long after the Soccer World Cup final. Knowledge gap could be detrimental to the success of an IS change project where those affected by change do not understand the worth of the initiated IS change. It is important to communicate IS change in any available platform to users, so that they become part of the change initiative. That way, they feel ownership of the change programme; instead of feeling the imposition of the IS change.

Change Management Challenges

As competition is heating up across the world construction companies compete at the creativity and innovation level supported by latest technology (Misra, Kumar & Kumar 2006). To succeed, the organization of the future must serve customers better, create new advantages, and survive in bitterly contested markets. To stay competitive, companies must do away with work and processes that do not add value and consequent change is inevitable (Donovan, Tully & Wortman 1998; Cho 2017).

Organizations realize the need for project development or system development to maximize their worth in the different industries they operate in and to help them be competitive enough to survive in their robust fields (Jelinek & Adler 1988). With that in mind, skilled individuals have to be recruited, people who have the zest for what they do, who will be able to keep the pace the entire industry is moving at. New trends are forming and they ought to be

exploited with the correct expertise. With the development and undertaking of new trends or applications, organizations must understand that defects are likely. To minimize these defects, change control plays a big part where departments responsible for undertaking the mentioned changes have to be dazzling – understanding what the finished products are presumed to comprise.

According to Leavitt (1975) and Bordum (2010) Managers (good ones) (1) think up problems, (2) find solutions (or make decisions or whatever), and (3) try to get things done through people. This supports the notion of good change management practices

Resistance to IS Change

Open communication plays a critical part of change management (Proctor & Doukakis 2003). Resistance to IS change will be higher if the levels of involvement, information sharing and communication are low (Ford, Ford & D'Amelio 2008; Petty & Cacioppo 1986). Changing a way of working or thinking or culture is not an overnight job and it takes a certain amount of time and dedication. Different levels of resistance exist and can be classified as shown in Figure 1.

Failure to communicate IS change effectively will lead to resistance by those most affected by new IS changes, dooming the change project to eventual failure (Zafar *et al.* 2017). Employees can be resistant to IS changes for a variety of reasons. Some of the reasons are illustrated in the above figure where employees do not understand, do not agree with the IS change, or do not personally agree with the person initiating the IS change. The literature validates the use of effective communication in overcoming resistance to IS change, improving feedback, and the participation of all employees within an organization (Ford, Ford & D'Amelio 2008). Effective communication and involvement by the entire organization is the key to successful change management (Mendy & Proctor 2016).

Resistance is a natural reaction to IS change, and it can take many forms. The easiest form of detecting resistance to recognize is those who loudly indicate their dissatisfaction with the IS changes taking place in the organization. Soliciting feedback from these individuals lets you know where they stand, so that you can overcome their objections. Employees often resist

IS change through denial. These individuals refuse to acknowledge that a problem exists.



Figure 1: Levels of Resistance to Change

Figure 2 clearly illustrates individual resistance and organizational resistance. However, both of them can be managed effectively by:

- Anticipating the resistance to change and planning for it
- Taking time to understand the reasons for the resistance (positive and negative)
- Address the resistance and don't ignore it
- Keep the people informed at all times and be aware of the silent assassin' as their impact can create a catastrophically unmanageable situation
- Micro and Macro management- Provide a realistic and holistic view of the change and ensure that actionable steps are communicated on a day-to-day basis.

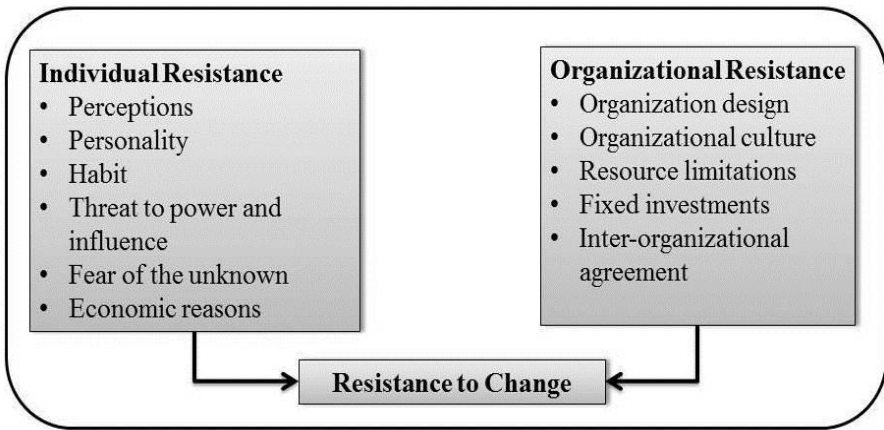


Figure 2: Sources of Resistance to Change

Basically, resistance to IS change can reduce a good initiative to a total disaster. Somehow, the resistance could be costly to the organization than the benefit of achieving the intended strategic objective. It is up to the change agent to ensure that all those who are affected by the IS change initiative understand the benefits associated with the change to a new Information System.

Defining the Worth of IS Change

Among other things, change management entails thoughtful planning, sensitive implementation, and above all, consultation with, and involvement of, the people affected by the IS changes. This is in an attempt to solicit consent from the employees affected by the IS change. However, consent is possible when IS change is realistic, achievable, and measurable (Herscovitch & Meyer 2002). In doing that the organization's change agents should be able address questions such as: What do we want to achieve with this IS change, why, and how will we know that the IS change has been achieved? Who is affected by this IS change, and how will they react to it? How much of the planned IS change can we achieve by ourselves; and what parts of the IS change do we need help with?

One of the challenges that come along with change control is how much IS change is worth to both the organization and the individuals affected

by IS change (Haveman 1992). Change agents should understand the whole concept of change control and its benefits; then ensure participating members or departments understand why the process of change control has to be formalized and undertaken. In most cases, IS change is attached to perceived performance improvement -- it could either be by improving operational efficiency or decision effectiveness. This should be coupled with immediate benefit for participating members (Armenakis, Harris & Field 2001).

An immediate benefit for participating could be their understanding of what the IS change is worth to their individual performance and in turn to their personal benefits. Meanwhile, the change agent and management could see strategic advantage for the organization. Strategic benefit has a long-term connotation, which could be interpreted as no benefit at all by employees affected by scheduled IS change. It is then the change agents' responsibility to outline the benefit of undertaking the scheduled IS change in the simplest terms (Hayes & Pierson 2005). According to Martin, Petty and Wallace (2009) an organization's change agents should have a clear sense of what are the benefits for changing. IS change is among other things that could present risks to an organization in a form of reputational risk where employees go to the extent of striking to demonstrate disapproval of IS change; or revenues loss risk where employees sabotage business functions that involve IS change.

Lack of Communication

Worth of IS change can be only understood if it is communicated to participating members that are affected by eminent IS change in the organization. Kulvisaechna (2001) suggests different modes of communicating IS change to affected parties such as face-to-face talks, presentations or meetings, e-mails, documents and other sorts of communication to disseminate information about worth of IS change to individuals, organization and even the industry at large (Dent & Goldberg 1999; Herscovitch & Meyer 2002). It is important to note that communication is a difficult task because it depends on two parties sending and receiving the same and correct information. This is another aspect of communication that should be taken into account when communicating IS change to affected employees. Meaning that the change agent may have to invest huge amounts of resources in workshops and other learning initiatives that can help in facilitating clear transfer of information and knowledge about IS change (Bordum 2010).

Elving (2005) asserts that communication is key to maintaining good business relationships especially in time for IS change. Lack of communication often results in a breakdown of business relationships that could further lead to mass resignations and fierce resistance. On the other hand, management needs to retain skilled employees in order to realize strategic objectives of the organization. Elving (2005) adds that communication about change should be forthright, easily understood, and not patronizing. Ideally, any change initiative should be communicated clearly, at a comfortable rate, with a practical vocabulary, and in an engaging manner. This would help ensure that the communicated message is the same message as the received message, so that the change agent can assess feedback to deduce whether employees would be likely to commit to change.

Lack of Commitment

Getting employees to commit to a change initiative could be a challenge, especially, if change has a negative effect on some employees. Parish, Cadwallader and Busch (2008) suggests that senior management should make an effort to promote commitment to the vision, mission, and objectives of the organization. This can be achieved if change is in line with organizational strategy (Powell & Dent-Micallef, 1997). Strategic alignment of a proposed change could be an opportunity that should be exploited by the organization. Therefore, change agents in the organization should try by all means possible to get commitment from all stakeholders in the organization.

A participatory approach could be useful in cultivating commitment to change project (Walker *et al.* 2002). Involving every employee affected by the change initiative from the beginning of the change initiative creates a sense of ownership of the change initiative. That way, change could be perceived as innovation not as an added burden to an already strenuous work environment. Commitment to change would see employees sticking through difficult phases of change without complaint, which could result in the organization achieving its objective; if the change is designed make strategic impact.

Research Aim and Hypothesis

The aim of this research is to identify the key variables that could help under-

stand commitment to Information Systems change and even indicate predictors for change commitment in the construction industry.

The hypotheses of this study are given below:

- Understanding worth of Information Systems change positively influences commitment to IS change by employees in the construction industry;
- Communicating change positively influences commitment to IS change by employees in the construction industry.
- Understanding worth of IS change is a better predictor of commitment than communicating change.

Research Methodology

The objective of the research methodology is to assist the researcher to gather relevant data from respondents in the construction industry; which has been experiencing expansion related to World Cup 2010 preparation. Along with expansion was a need to change and upgrade information systems that support expansion objectives in terms of efficiency and organizational performance improvement. In order to collect data, the author designed a questionnaire containing three dimensions. All dimensions are drawn from relevant literature on Commitment to IS change, change communication, and worth of IS change. Each dimension contains 6 – 7 items with 5-point Likert scales. Scores ranges from one equal to strongly disagree to five strongly agree. The questionnaire was designed with Adobe Lifecycle Designer that allows for distribution of pdf form to participants by e-mail.

The questionnaire was administered to Information Technology professionals working in the construction industry. Information Technology or computing is not the core function of the construction industry; therefore, the questionnaire was distributed to a snowball sample (Leedy & Ormrod 2005). With the help of a gatekeeper who works in construction industry also involved in new Information Systems roll-out, the researcher selected a convenience sample known to the gatekeeper then followed-up with snowball sample. Information Technology professional includes people involved in application development, end users and management of departments that are clients to Information Technology department.

Discussion of Results

Out of 200 questionnaires sent out, 105 questionnaires were completed and returned yielding a response rate of 52.5%. All questionnaires completed and returned to author were then edited and coded. In addition to that, a reliability test was performed to ensure that items and dimensions of the questionnaire could yield the same results if used by different researcher under the same circumstances. A reliability test was performed on both the dependent variable (commitment to change) and independent variable (change communication and worth of change). The resulting Cronbach Alpha is 0.810, which is an acceptable indication of reliability of the questionnaire and questions in the questionnaire (Gliem & Gliem 2003).

On the other hand, a validity test was performed to find out whether the questionnaire and the questions in it would yield the intended result when applied in the main research project (King & Bruner 2000). Due to the small size of the population, a small-scale pilot was conducted with eight respondents.

Level of Commitment to Change among IT Professionals in the Construction Industry

Literature suggests that top management and other change agents would be more like to commit to IS change than their junior counterparts would (Hiatt & Creasey 2002; Cerpa & Verner 2009; Bordum 2010; Johnson 2009; Misra, Kumar & Kumar 2006). Mostly top management are highly committed to change meanwhile most staff member's commitment level is low, which concurs with suggestions in literature (Donovan, Tully & Wortman 1998; Bordum 2010; Ford, Ford & D'Amelio 2008; Armenakis, Harris & Field 2001; Conner 1993). This could be explained by the fact that top management initiates the IS change in line with strategic objectives to the organisation, whereas, junior counterparts could perceive change as an imposition from management.

Middle management has its highest percentage of extremely high commitment level, as they are the custodians of change who plan and design the change procedure in order to achieve the strategic objective set out by top management. Meanwhile junior management has to ensure that change initiatives are carried out according to the plan and procedures. In order to

Change Commitment to Information Systems Change

supervise change they must have some level of commitment to change as they are highly committed to change as shown in Table 1. Change is appreciated more by the top-level personnel in the organisational hierarchy compared to junior members of staff. Change agents have to ensure that junior staff members are equally appreciative of IS change as their colleagues in management position. In the following section of this article, the author will determine associations between dependent variable and independent variable in relation to influential impact on each other.

			Job position				Total
			Staff	junior management	middle management	top management	
Commitment to Change Level	extremely low	Count % within Commitment to Change Level	6 54.5%	1 9.1%	3 27.3%	1 9.1%	11 100.0%
	low	Count % within Commitment to Change Level	11 55.0%	4 20.0%	5 25.0%	0 .0%	20 100.0%
	moderate	Count % within Commitment to Change Level	6 42.9%	2 14.3%	5 35.7%	1 7.1%	14 100.0%
	high	Count % within Commitment to Change Level	7 23.3%	7 23.3%	11 36.7%	5 16.7%	30 100.0%
	extremely high	Count % within Commitment to Change Level	6 37.5%	3 18.8%	6 37.5%	1 6.3%	16 100.0%
Total		Count % within Commitment to Change Level	36 39.6%	17 18.7%	30 33.0%	8 8.8%	91 100.0%

Table 1: Cross Tabulation of Commitment to Change and Job Position

Determining Association of Variables

An explanation of who is more committed to IS change than others in the construction industry alone does not really suggest any solution, but helps in

explaining parts of the problem and sheds light into the areas of the organisation where communication and explanation of worth of IS change should be focused. Table 2 shows a correlation matrix, which depicts the association between commitment to IS change, understanding worth of IS change and communicating IS change. Understanding worth of IS change is positively and somewhat strongly related/associated to commitment to IS change as indicated by its R-value = 0.679 and significant as indicated by p-value of 0.000. Meanwhile, commitment to IS change is somewhat strongly associated to communicating IS change with R-value = 0.637 and significant with p-value = 0.000.

		Commitment to IS change	Worth of IS change Understanding	Communicatin g IS change
Commitment to IS change	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	91		
Worth of IS change Understanding	Pearson Correlation	.679**	1	
	Sig. (2-tailed)	.000		
	N	91	91	
Communicating IS change	Pearson Correlation	.631**	.637**	1
	Sig. (2-tailed)	.000	.000	
	N	89	89	89

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

Table 2: Correlation Matrix

This could mean that change agents in the construction industry should focus their change management strategy on communicating IS change, thus, ensuring that employees affected by IS change understand how change adds value to their lives and to their organisation (Walker *et al.* 2002). However, determining associations is insufficient without modelling the influence communicating IS change and understanding worth of IS change exerts on commitment to IS change. A regression modelling was performed to determine the best predictor of commitment to IS change between communicating IS change and understanding worth of IS change.

Multiple Regressions

Despite the correlation indicated in Table 2 above it is important to determine the most influential predictor among the independent variables. It would be beneficial for change agents to know how much influence each of the independent variables has on dependent variable.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1.630	1.964		-.830	.409
	Worth of IS change Understanding	.834	.174	.462	4.789	.000
	Communicating IS change	.328	.094	.337	3.491	.001

a. Dependent Variable: Commitment to IS change

Table 3: Coefficient Table

Table 3 show unstandardized coefficients which indicate that understanding the worth of IS change has almost double the coefficient of IS change communication. However, B value for both variables is not the true reflection of the variables impact on dependent variable. On the other hand, Beta weight indicates a change on dependent variable with one standard deviation on independent variable. Understanding worth of IS change is definitely a better predictor of commitment to IS change as it shows that 0.462 standard deviation change in commitment to IS change if understanding of worth of IS change is moved by one standard deviation. This impact is significant as its p-value = 0.000, meanwhile, impact of change in communicating IS change is also significant with p-value = 0.001. Both variables, understanding worth of IS change and communicating IS change, have stronger association with commitment to IS change together with R-value = 0.724, than each individually. Change agents would be doing well to commit effort and energy on clear, direct, and un-patronizing communication about IS change with employees affected by change initiatives; as well as ensuring that employees understand worth of IS change.

Conclusion

IS change could either have a devastating or beneficial impact on business processes knowledge and in turn to strategic objective of organisation in the construction industry, depending on change management principles applied. Therefore, in this article, the author set out to understand the impact that understanding worth of IS change and communicating IS change, have on commitment to IS change. This would enable change agents in the construction industry to redirect their resources and plan accordingly in order to increase commitment to IS change in employees through appropriate knowledge management mechanisms. Successful IS change initiatives could mean improved productivity and improved individual performance in turn sustaining an organisation's competitive edge, especially where systems knowledge has been successfully transferred (Ford, Ford & D'Amelio 2008; Herscovitch & Meyer 2002). Such competitive edge could also determine survival of the organisation in the global marketplace.

Even though, the results have shown that understanding worth of IS change is a better predictor of commitment to IS change; both independent variables including communicating IS change have a stronger association with commitment to IS change together than each alone. This could mean that change agents in the construction industry would yield better commitment results if they communicate aspects of IS change as well as communicating worth of IS change to employees' personal lives and work efficiency (Elving 2005).

Worth of IS change to employees' personal lives could be a result of improvement in their performance brought about IS change. This could be achieved by imparting up-to-date systems knowledge that would enable employees to perform with confidence. Meanwhile, employees would not know unless benefits associated with IS change are communicated effectively. Otherwise, employees' will resist IS change, which could result in opportunity loss for both employees and the organization.

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Mobile Malware Implications for IT Management¹

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Abstract

Since the turn of the century malicious software, called malware, has been generated to infect not only computer systems but also ‘smart’ mobile phones. This malicious code is designed specifically to infect the mobile devices and disrupt the operation of the device or to send messages or make calls, resulting in financial loss to the user. The paper analyses trends in mobile malware from the listings of the malware descriptions. These trends show the increasing severity of the mobile malware problem, the introduction of new malware types, and the changing focus on the malware objectives; predictions of possible future trends are made. The implications of these trends for organisational management are discussed, and possible countermeasures to the risks are suggested.

Keywords: malicious software, mobile malware, infection tends, trend analysis, implications for management

1. Introduction

Traditionally malicious software, called malware, was based on infecting personal computers (PCs) and propagating via the networks. With the ubiquitous nature of mobile devices, it was only a matter of time before malware migrated to mobile phones. Once malware had been introduced to

¹ An earlier version of this paper was presented at the Business Management Conference 2011 at the University of KwaZulu-Natal.

mobile platforms, malware developers found many new communications technologies (and related vulnerabilities) to aid in the propagation and infection strategies for the malware.

The paper is organised as follows: Section 1.1 describes the various available mobile platforms that are relevant; Section 1.2 provides background to the basics of mobile malware, including the types and payloads, and the infection, propagation and distribution strategies. Section 2 discusses the past trends in mobile malware by analysing secondary data; Section 3 discusses emerging and possible future trends. Section 4 concludes the paper.

1.1 Mobile Platforms

As with traditional computer-based systems, mobile devices have operating systems (OS). Different device manufacturers utilise different operating systems; some have their own OS designed in-house. In addition, there are development platforms available to allow users and third parties to create applications for the mobile devices. This section describes popular platforms that are relevant to the paper.

There are two platforms for Windows Mobile: the earlier version was known as Windows CE or WinCE, and more recently the Microsoft Intermediate Language (MSIL); applications may be programmed in other languages, which are then compiled into MSIL to run on the device (Dwivedi, Clark & Thiel 2010). Siemens devices use a custom design called S/EGold (Gostev & Maslennikov 2009), and Nokia largely uses the Symbian series OS for their range of devices. Google Android is based on Linux and is programmed with the Java language (Dwivedi, Clark & Thiel 2010).

The iPhone, iPad and similar devices use the iOS developed in-house by Apple (iPhoneBlogr, 2010). The functionality of these devices is limited by the iOS; this can be circumvented by JailBreaking, which refers to escalating access privileges on the iOS versions. This gives the user better access and application control for the device, improving its functionality (iPhoneBlogr 2010). However, this may also open vulnerabilities.

Java 2 Mobile Edition (J2ME), also known as Java Mobile Edition (JME) is a popular development platform for mobile devices; however, it is not a full OS, but a set of standards, and may be run on many different devices and OS versions (Dwivedi, Clark & Thiel 2010). Python is a scripting language

which has variants for Windows Mobile and Symbian OS (Dwivedi, Clark & Thiel 2010). These development platforms allow users and third parties to create custom applications for mobile devices. The created applications are transferred onto the devices, then installed as is done with conventional PC software.

1.2 An Introduction to Mobile Malware

The developers of the malware need to release it into the open; this is known as distribution. The released malware then initially infects the targets and begins to replicate itself and propagate. Once the device is infected, the malware may activate a portion of the code that results in the infected device being affected; this is known as the payload.

Malware is categorised into different types, according to their replication, propagation, and payload characteristics. The definitions of mobile malware types are the same as that of traditional computer-based malware; namely (Dunham 2009):

- Virus – it infects files in order to spread.
- Trojan – it masquerades as something that appears legitimate; they usually do not spread (Dwivedi, Clark & Thiel 2010).
- Worm – it makes a copy of itself as it spreads. (Dwivedi, Clark & Thiel 2010).
- Spyware – these usually install themselves without user permission, and may result in pop-up messages or report user behaviour to a remote location.
- Garbage – the malware replaces files and applications with non-functional versions or garbage, leaving the applications useless, and in some case the device if important system files are replaced.

After the malware has been developed and distributed, some types attempt to replicate themselves and propagate through various means. Mobile malware has a number of communication technologies that may be used to propagate, which are described below (Morales 2009b; Dunham 2009):

- Short messaging service (SMS) – this could be a vector to entice users to download Trojans. The SMS services may also be used as an infec-

tion vector as the SMS contains a section which instructs mobile devices to perform certain actions, vulnerabilities in this may be exploited to install malicious code;

- Multimedia messaging service (MMS) – the MMS is used to carry the malware in order to propagate, and code in the MMS may exploit vulnerabilities on the device in order to install the malicious code. Some MMS malware requires users to install the infected file, which is a Trojan masquerading as a legitimate application such as a game;
- Email – as with traditional computer-based malware, emails can be a propagation method;
- Multimedia-card (MMC) – these cards form the removable storage media for many digital devices, most notably digital cameras and mobile devices, and therefore would make an ideal method for distributing and propagating malware;
- Bluetooth – malware can attempt to propagate using the Bluetooth services, and exploit vulnerabilities to infect devices. A disadvantage of this method is the relatively short range of Bluetooth, therefore this method is suited to heavily populated areas;
- Wireless networking – it may be possible to use the wireless network services on mobile devices to propagate or distribute malicious code, which may infect other devices and possibly wireless routers;
- Operating system (OS) vulnerabilities – traditional computer-based malware often exploits vulnerabilities in the OS, which appears also to be the case for mobile devices. These vulnerabilities allow the malware to infect the device;
- User installation – often the user is tricked into installing the malware;
- Device-to-PC synchronisation – the ability to synchronise data between a PC and a mobile device may allow malware to be propagated between the two.

Once the malware has infected the device, replicates itself and attempts to propagate, the payload is triggered. The payload is the portion of the mobile malware that consists of malicious code which may result in the device performing unauthorised or unexpected manner. Common payloads include (Morales 2009b):

- Sending SMS messages – the malware may attempt to propagate via

SMS, flood a specific phone or service provider by transmitting large quantities of messages, or send messages to premium-rated services which allow criminals to receive money. As this is often done without the user's knowledge, it may result in a large phone bill;

- Calls to premium-rate services – the malware makes calls to premium-rate services, which allows criminals to receive money, and may result in large phone bills for the user. The criminals receive their money as the calls are charged as if it is an international call, however the call is not routed all the way (called short-stopping), and the criminals get the difference in charges (Hyppönen 2010);
- Infect files – the malware infects files in order to replicate, and usually destroys the original contents of the file;
- Overwriting files – the malware replaces existing files with garbage, which may have additional consequences if they are system files for the device or applications;
- Deleting files – the malware deletes files, which may have additional consequences if they are system files for the device or applications.
- Stealing information – information about the device, such as the international mobile equipment identifier (IMEI) number, contacts or other information, such as location, may be retrieved from the phone, or the calls and messages may be monitored.

The next section discusses the trends in the characteristics of mobile malware.

2. Mobile Malware Trends

This section discusses trends of mobile malware since their first appearance, which is derived at from analysis of secondary data. Morales (2009b), Gostev (2006), and Gostev and Maslennikov (2009) list the descriptions of mobile malware families and variants for specific time periods; the trends of those descriptions are presented here. Trends in the following are discussed: the number of malware families and variants (Section 2.1); the popular platforms for mobile malware (Section 2.2); the common types of mobile malware (Section 2.3); the common payloads (Section 2.4); and the common propagation vectors (Section 2.5).

2.1 Mobile Malware Numbers

Table 1 shows the number of malware families that were detected in the period of two reports. Whilst the time periods are not exactly the same, by 'normalising' the time frames to one year it can be approximated that there was a 78% increase in the number of new malware families detected in the second period, and a 15% increase in new malware variants.

Table 1: Detected Malware Numbers per Report Release

	2004 - Aug 2006	Sept 2006 - Aug 2009
Families	31	75
Variants	170	302

Source (Gostev 2006; Gostev & Maslennikov 2009)

Figure 1 shows the newly detected malware families per year according to Morales (2009a), Gostev (2006), and Gostev and Maslennikov (2009). As these two sources are not perfectly consistent, the total family plot combines the two sets of figures by taking the larger of the two figures for each year to give an approximation.

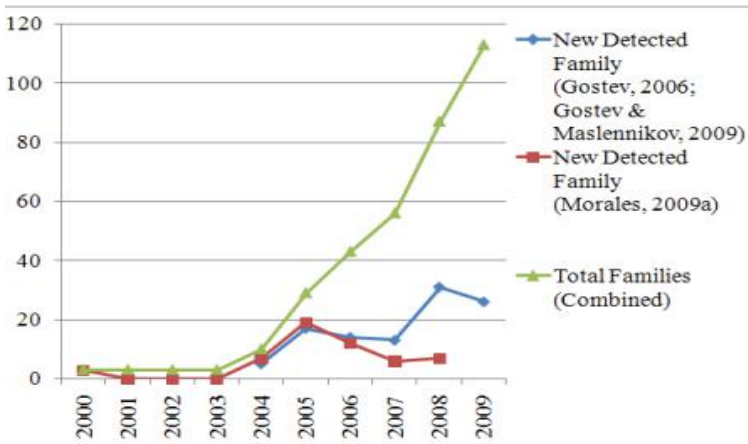


Figure 1: Trends in Mobile Malware Family Numbers Source (Morales 2009a; Gostev 2006; Gostev & Maslennikov 2009)

As can be seen both sources show similar trends. Gostev and Maslennikov (2009) show a more pronounced increase than Morales (2009a) as Morales' listing ends in July 2008, whereas there was a significant spike towards the end of 2008 which is accounted for by Gostev and Maslennikov. The two plots of new detected families show a general increase in the numbers of new malware families. The approximation of the total numbers of malware families is exhibiting an exponential growth rate; this is due to the ever-increasing new malware that is being developed each year.

Figure 2 shows the same trend for the newly detected variants of malware. There is a significant jump from the total numbers calculated from Morales (2009a) and McAfee (2011) in 2011.

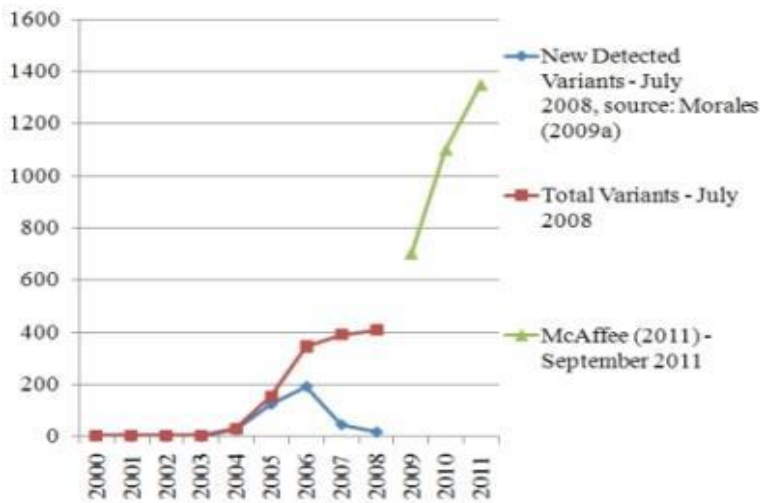


Figure 2: Trends in Mobile Malware Variant Numbers, 2000 - July 2008
Source (McAfee 2011; Morales 2009a)

As Morales' data is up to July 2008, the increase of new malware families detected in the latter part of 2008 mentioned above accounts for this to some degree. The plot for the total number of detected malware variants exhibits the same exponential growth as that of the total number of detected families in Figure 1. These growths in mobile malware numbers is to be expected due to the increasing 'intelligence' of the devices and their prevalence in society.

2.2 Mobile Malware Platforms

Malware are usually developed to target a specific OS. Usually, the most common or popular OS will exhibit much more malware activity. As such, mobile malware is developed on various platforms: Figures 3 and 4 show breakdowns of mobile malware by platform for the period 2004 to August 2009 for the detected families and variants, respectively. As can be seen, the Symbian platforms receive the majority of malware activity, probably due to the fact that Nokia phones are so widespread. The J2ME platforms also exhibit significantly more malware activity than the other platforms.

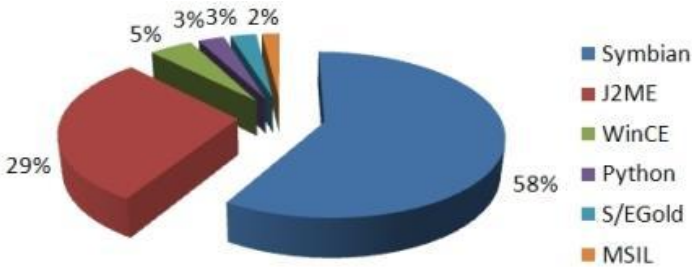


Figure 3: Mobile Malware Families by Platform Source: (Gostev & Maslennikov 2009)

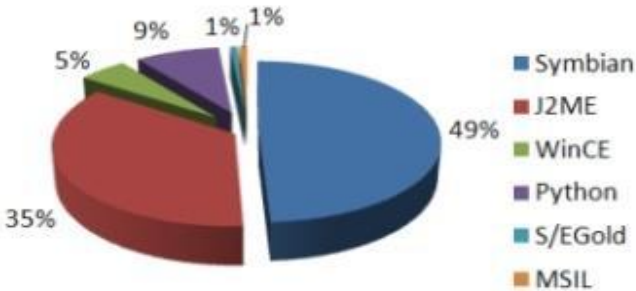


Figure 4: Mobile Malware Variants by Platform Source: (Gostev & Maslennikov 2009)

There is a recent shift towards malware for other popular systems not covered by the study by Gostev and Maslennikov (2009): Google’s Android and the iPhone and IPad are experiencing new malware activity, whereas the majority of Symbian malware is from 2004 to 2006 (Hyppönen 2010). The malware for the iPhone is still restricted to phones that have been jailbroken (Hyppönen & Sullivan, 2010). Seriot (2010) lists four malware variants for the iPhone. The McAfee (2011) threat report also shows rapidly increasing malware numbers for the Android platform.

2.3 Mobile Malware Types

Figure 5 shows a breakdown of the mobile malware variants detected from 2000 to July 2008 by type. As can be seen, the majority of variants are Trojans, which implies that most of the malware is distributed as another application which appears legitimate. Viruses are the second most common, which indicates those that are distributed and propagate by infecting files. Some malware families may have variants that are different types; for instance CommWarrior variants are primarily viruses, however variant B is a Trojan, and there are variants that are worms or are classed as garbage (Morales 2009a). Due to this, it is difficult to provide similar visual representation that is accurate for malware families.

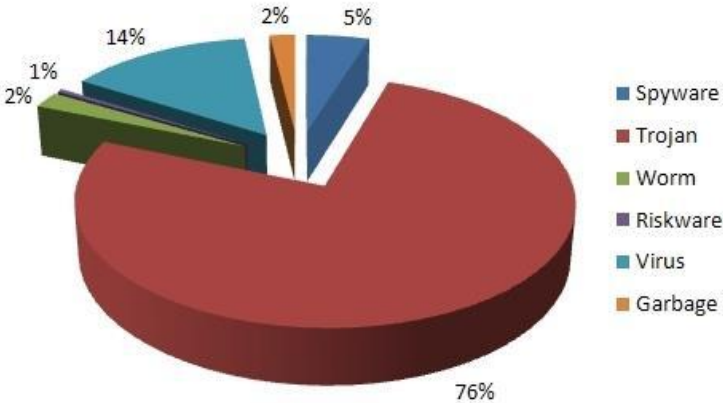


Figure 5: Mobile Malware Variants by Type Source (Morales 2009a)

As can be seen in Table 2, earlier forms of mobile malware variants were restricted to viruses and Trojans. In 2006-2007 new types were being introduced, in particular worms and spyware. As spyware attempts to compromise confidential information, it may be being used to attempt to compromise logon information for mobile banking accounts. Worms have also been detected for the iPhone and related devices (Seriot 2010).

Table 2: Annual Trends for the Number of Malware Variations by Type

Malware Type	2000	2004	2005	2006	2007	2008	Total
Virus	1	15	19	17	6	0	58
Trojan	2	11	105	160	23	10	311
Worm	0	0	0	0	2	7	9
Spyware	0	0	0	5	15	0	20
Garbage	0	0	0	8	0	0	8
Riskware	0	0	0	1	0	1	2
Total	3	26	124	191	46	18	408

Source: (Morales 2009a)

2.4 Mobile Malware Payloads

Table 3 lists the number of detected malware families and variants with a given payload for the period 2004 to August 2006. As can be seen, the most common payload is to send SMS and replace, delete, or infect files. Morales (2009b) confirms these trends, and also adds that an 'indirect' payload is that the infected mobile device's battery is drained due to the increased activity of the Bluetooth and SMS services as the malware attempts to propagate. The SMS are usually sent to premium numbers, as discussed in Section 1.2. The majority of malware payloads is to provide financial benefit to the criminals (Hyppönen & Sullivan, 2010), hence the relatively large percentage malware that sends SMS. Similar payloads have been seen where the device makes calls to premium rate numbers; experts believe that these types of attacks are likely to get worse (Hyppönen 2010). Of those that send SMS, only one family (with four variants) propagates by SMS, and two families (with one variant each) are

classified as SMS flooders. There is also the introduction of spyware, which can compromise information stored on the device; these may develop to target mobile banking applications. Of the four iPhone malware variants discussed by Seriot (2010), three stole data off the phone, and one behaved like a ‘botnet’ (Porras, Saidi, & Yegneswaran, 2009).

Table 3: The Effects of Mobile Malware Payloads

Action	Families (%)	Variants (%)
Infects files	4 (3.8)	11 (2.1)
Sends SMS	42 (39.6)	237 (46.1)
Replaces files, icons, fonts, system apps	15 (14.2)	172 (33.5)
Installs additional malware/corrupted apps	8 (7.5)	44 (8.6)
Interferes with anti-virus	5 (4.7)	36 (7)
Disables or blocks functions, storage	5 (4.7)	9 (1.8)
Steals data, monitors calls & SMS	9 (8.5)	87 (16.9)
Deletes files, fonts, folders, contacts, messages etc	8 (7.5)	8 (1.6)
Interferes with phone booting/restarting	3 (2.8)	7 (1.4)
Nuisance (changes settings etc, fake system messages, fake anti-virus etc)	7 (6.6)	15 (2.9)
Makes calls to paid services	2 (1.9)	3 (0.6)
Other/unknown	11 (10.4)	13 (2.5)

Source (Gostev 2006; Gostev & Maslennikov 2009)

2.5 Technology Used for Infection and Propagation

Table 4 shows the technology used for malware detected between 2004 and August 2006. As can be seen a very large proportion exploits OS vulnerabilities, file application programming interfaces (APIs), and Bluetooth.

Dunham (2009) shows that the majority of malware infections is due to the user allowing the malware to install, followed by Bluetooth, MMS and MMC, however it is also shown that users report a significantly higher rate of

Bluetooth and MMS infections, and a lower rate of user installation as a vector. A reason for this is that users do not want to accept responsibility for installing the malware, and therefore report the vector that was used to propagate it. Therefore the majority of malware reported from 2004 to August 2006 probably exploited the file APIs and OS vulnerabilities, but also relied on the gullibility or ignorance of many users to aid with the installation and infection. Files that have been infected may be shared amongst users, allowing viruses to propagate to additional devices. However, with the introduction of the mobile worms, there may be a shift to the malware spreading autonomously without user interaction.

Table 4: Technology Used 2004 – August 2006

	Families (%)	Variants (%)
Bluetooth	5 (16.1)	33 (19.4)
File API	8 (25.8)	24 (14.1)
Network API	2 (6.5)	3 (1.8)
SMS	2 (6.5)	3 (1.8)
OS Vulnerability	18 (58.1)	124 (72.9)
MMS	2 (6.5)	12 (7.1)
Java	1 (3.2)	2 (1.2)
Email	1 (3.2)	3 (1.8)
Other/Unknown	2 (6.5)	3 (1.8)

Source (Gostev 2006)

2.6 Summary

The numbers of mobile malware are increasing exponentially; this is to be expected due to their prevalence in modern society. The malware targets popular devices; therefore Nokia's Symbian OS was initially the primary target. There has been a shift towards targeting Google's Android and the Apple iPhone and related devices. The vast majority of malware types is the Trojan; however there was an increase in the number of worms and spyware towards the period of study. The payload of the malware is mainly to send SMS

messages to premium rate numbers to generate cash for criminal organisations, however there is a large number that are malicious and infect, delete, or destroy files on the device, which may leave it inoperable. The malware considered generally exploits vulnerabilities in the OS and file APIs, and the most commonly reported propagation vector is Bluetooth.

3. Emerging and Potential Future Trends

Recent malware attacks are beginning to closely follow PC-based malware; the Ikee.B iPhone worm formed a 'botnet', as is found in many PC-based malware (Porras, Saidi & Yegneswaran 2009). There is also a case where PC-based malware has migrated to mobile phones; the Zeus malware, which targeted internet banking, migrated to mobiles to target mobile banking (Kitten 2010). CNN hosted a war game called Cyber Shockwave to simulate how senior government in the United States would handle a major malware attack; the scenario was that malware was propagating through the mobile networks, disrupting service, and then migrated to the computer networks (Cable News Network 2010). This simulation was interesting in that a dual mobile/PC malware type could possibly be used in an information warfare attack, which will be very difficult to attribute to any single nation or organisation.

A case of mobile devices being used to distribute PC-based malware has already been seen in the United Kingdom; the malware installed itself on the PC when the device was connected, and stole the user's account passwords (Charette 2010). India has banned the import of Chinese-manufactured cell phone devices and infrastructure components over the concern of pre-installed malware (StrategyPage.com, 2010).

The application store for Android was found to have been used to distribute malware, where Trojans or other malware was uploaded in games and applications (Mitchell 2010). There is also an application store for the Apple iPhone and related devices, however Apple tests the applications prior to posting, whereas the Android application store posts the content, and withdraws it if there are any problems (Hyppönen & Sullivan 2010); this leaves Android platforms more vulnerable. A concern was raised where a new feature of the Android market allowed users to remotely install applications onto devices; this could potentially be put to malicious use (Maslennikov 2011). By August 2011, a number of malware variants had been discovered targeting

Android devices (Fisher 2001a; 2011b; 2011c; Roberts 2011; Westervelt, 2011). Nokia has also opened an application store, and there are a number of online stores for mobile content; these may provide a perfect method of distributing malware.

Another method of malware distribution which has not yet appeared is through the social networks. Many mobile devices have integrated applications for social networking; whilst PC-based malware has been developed for these websites, nothing has been seen for mobile devices. Due to the popularity of both the social networking websites and mobile devices, it may not be too long before the mobile malware uses social networks to propagate.

Security experts are concerned that an aggressive mobile worm will spread rapidly and disrupt cellular networks globally (Hyppönen 2010); a mobile equivalent of the SQL Slammer and Sasser worms that disrupted computer networks worldwide in 2003 and 2004, respectively. Even though there has been no major mobile-based pandemic, numerous nations, including South Africa, have had infections cases of notable malware, namely the Cabir and ComWar families (Gostev 2006b).

A recent development by Intel allows processors to be disabled remotely via SMS should the notebook or computer be stolen, known as a 'kill switch' (Roberts 2010). This may open an opportunity for a malicious attack where mobile malware intentionally attempts to trigger the kill switch by transmitting SMS; this may be used to launch an attack on computer infrastructure from mobile devices. The same 'kill switch' concept allows Google to remotely remove malicious applications off infected devices; this remote cleaning has been put into affect twice (Keizer 2011). Should any vulnerabilities in the technical implementation of the kill switch exist, future malware may be able to exploit this and maliciously wipe the contents of the phone. Research in Motion, who manufacture the Blackberry devices, provide a central enterprise server which has the ability to control and automatically update end-user devices; a vulnerability was discovered which may have resulted in the servers being 'commandeered when handset users received images containing booby-trapped images' (Goodin 2011). By taking control of the server, attackers could potentially 'push' malicious code to all end-user devices connected to the server.

Possible future evolution of smart mobile devices may see a common operating system between mobile, tablets, and PCs. Such an evolution could result in malware being developed which could easily migrate between and

attack the full range of systems as the common operating system will result in common vulnerabilities.

4. Implications for Management

The potential impact of mobile malware on an organisation is as follows:

- Malware that disrupts the mobile device communication modules or floods the network will result in contact with mobile workforce being lost;
- Payloads that generate calls or SMS to premium rate numbers will result in direct financial loss to an organisation;
- Malware that provides backdoor access or steals information from the device could result in a breach of sensitive organisational data;
- Compromised enterprise servers for the mobile devices could potentially result in all of the above, as malicious applications could be 'pushed' onto the phones, the communications could be blocked, and sensitive data retrieved;
- An infected mobile device that is connected to a computer inside the organisational network may result in the computers becoming infected (as discussed under the emerging trends).

As mobile devices are 'outside' of the traditional computer-based network, it is difficult to control the user's actions on the mobile devices, and difficult to ensure the relevant security measures are in place. Whilst the use of mobile devices may be restricted and controlled through the use of the enterprise servers (such as the Blackberry Enterprise Servers), this does not aid in controlling personal devices that may be introduced into an organisational environment. Lopez (2010) indicates that policies usually prohibit organisational data being accessed on personal devices; however employees may find many workarounds to these restrictions, such as forwarding company emails to their personal email addresses.

A possible method of ensuring personal mobile devices are prevented from accessing the corporate network is to employ IP address filtering; when users wish to gain access they are required to register their devices, and demonstrate basic security measures are in place, such as a mobile anti-virus

application, and a pin code or passwords to lock the device (van Niekerk 2011). For organisation-provided devices, access should be restricted to social media, application stores, and entertainment websites as these may be used to distribute mobile malware. These devices may be 'pre-loaded' with anti-malware and firewall applications and restrictions prior to them being distributed to the employees.

A number of legal concerns may arise from allowing personal mobile phones onto the corporate network. If malware results in a data breach of corporate information from a personal device, it may be difficult to determine responsibility and accountability; however the organisation may be held liable if there are insufficient policies or measures in place to prevent employees from accessing the information. Privacy legislation, such as the Protection of Personal Information Act (POPI 2009) in South Africa, require certain measures to be in place

The organisation may be prevented from checking personal devices due to privacy concerns, as many laws prohibit accessing or jamming of electronic communications, such as the Electronic Communications and Transactions Act (ECT 2002) and the Regulation of Interceptions of Communications Act (RICA 2002) of South Africa and the Electronic Communications Privacy Act (ECPA 1986) in the United States. Checking devices provided by the organisation may also be limited in that features may not be used that could compromise the employee's privacy. In 2010 a suit was filed against a school in the United States when they remotely activated the webcams on laptops they had provided to students and captured images of the students in their bedrooms (Staglin 2010). Similarly, remotely activating features on laptops or other mobile devices may infringe on the employee's privacy.

Awareness training directed towards informing employees about the malware and security risks of 'smart' mobile devices will empower them to secure both organisation-owned and their personal devices. Senior executives should not be exempt from this awareness training; they are most likely to be using 'smart' mobile devices, and they have greater access to sensitive organisational information. The training should aid employees in identifying malicious application or messages that may contain malware, and create awareness of the mobile anti-virus applications that are available. This can be encompassed in a general information security training session, were awareness of the risks of using the Internet, email, social networks, and mobiles

is explained. This will enable employer's to illustrate the legal ramifications to the employees; and in doing so this may reduce the organisation's liability regarding breaches, but increase the liability of the employee as an individual.

5. Conclusion

Due to the pervasiveness of mobile devices in society, malware developers began targeting these platforms. This paper presented trends in the listing of malware characteristics for the period of 2000 to August 2009, and describes possible future trends. During this period, the number of detected mobile families and variants was seen to increase exponentially. Popular platforms were targeted by malware developers, therefore the Symbian OS has seen the majority of malware activity; however, there is a shift towards Android and iPhone platforms. The most common malware type is the Trojan, with worms and spyware making an appearance from 2006.

The malware typically either is intended to be a source of profit for criminal organisations by sending SMS messages to premium rate numbers, or is malicious and interferes with files and applications on the mobile device. There is a rise in malware where information is stolen and messages and calls can be monitored. Bluetooth, file APIs, and OS vulnerabilities are the primary methods that malware employs to infect devices; however, there seems to be some reliance on user's to install the malware. With the introduction of mobile worms, there may be a rise in 'self-propagating' mobile malware.

The future may see an increase in malware distribution through online applications stores, and possibly a shift towards mobile malware on social networking websites and applications. Mobile devices may also be used to distribute PC-based malware, and there may be increased migration between PC-based and mobile malware. Security experts are concerned that a mobile worm could spread rapidly and disrupt cellular communications globally. Should such a pandemic occur, it is likely that South Africa will be affected, as two of the most notable mobile malware families have been found in the country. The advent of the remote 'kill switch' technology, which Google uses to remove infected applications from devices, may result in additional vulnerabilities which could be exploited to maliciously wipe legitimate functionality off the mobiles. Future evolutions of operating systems may result in coders producing malware with the capability of infecting the full range of computer and mobile systems.

In the management of information security, mobile malware is still a new and developing threat. This threat has a number of implications from the management of network access control to legal liabilities. Employers are required to ensure that private or sensitive information is not breached due to mobile devices, and the networks are now more vulnerable to malware infection from the inside. Awareness training, device registration, and filtering may be employed to restrict access and limit infections and subsequent data breaches.

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Non-Financial Disclosures in the South African Mining Industry

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Abstract

The purpose of this article is to analyse the nature and extent of non-financial disclosures in South African mining companies' annual reports both pre- and post-King III to explore the impact that King III may have had on such disclosures. The research methodology adopted was a content analysis of annual reports prior to the issue of King III and then, in order to provide a second benchmarking period, more recent studies of mining companies' annual reports after the issue of King III were accessed. These studies also used content analysis allowing for some degree of comparability. The study found that overall, the non-financial disclosures for all mining companies showed an increasing trend for the years leading up to the issue of King III. After the release of King III, the study found that although the extent of disclosures increased further, pointing to King III being the impetus for such an increase, there was still room for improvement in corporate governance disclosures especially with regards to forward looking disclosures and board of directors' disclosures.

Keywords: Non-financial disclosures, mining companies, South Africa, King Report, sustainability reporting.

Introduction

The annual report, which comprises both financial and non-financial information is the main communication channel through which companies disseminate

information to their stakeholders (Tilt 1998:1). There is a general consensus that there is a need for the disclosure of non-financial information (White 2005:8; Bollen 2004:8; Coram & Monroe 2004:21-23; Robb, Singleb & Zarzeski 2001:79-80; Palenberg, Reinicke & Witte 2006:34). Many researchers (Eccles, Herz, Keegan & Phillips 2001; Luft & Shields 2001; Yongvanich & Guthrie 2005:104) all emphasise the usefulness of non-financial disclosures. Disclosure of non-financial information addresses the information needs of stakeholders (Yongvanich & Guthrie 2005), builds stakeholder confidence, and provides forward-looking information that traditional financial statements cannot provide (Jackson 2004). The shift to integrated reporting and, in particular, sustainability reporting in which the social, economic and governance aspects of the firm are emphasised, underlines the importance of non-financial disclosures (KMPG 2016).

The mining sector represents a significant portion of the South African economy (Davies, de Bruin, Deyssel & Strydom 2002). This industry, due to its nature, has exceptionally high risk with regard to ethical, social and environmental issues (Frik 2002). Carels, Maroun and Padia (2013:950) argue that for mining companies in South Africa, 'sound socio-environmental disclosure becomes key for signalling how organisations are aligning their own business models with growing concerns about climate change, pollution, scarce natural resources and loss of biodiversity'. According to Jenkins and Yakovleva (2006:272), there is an increased demand for the disclosure of managerial, social and environmental information by individual mining companies as a means of legitimising their existence and documenting their performance. However, most South African companies fail to disclose adequate information on their opportunities, financial risks and material strategies related to the economic, social and environmental impacts defined by the triple bottom line principle (Gordon Institute of Business Science, 2006). Carels *et al.* (2013) argue that more needs to be done in the South African mining industry to demonstrate how social or environmental metrics are connected to the strategy, risk management and policies of the firm.

The Impetus for Non-Financial Disclosures in the Mining Industry

The need for non-financial information by stakeholders is growing in the mining industry more than in any other industry (Jenkins & Yakovleva

2006:271). Environmental reporting first began as a company's communication process to strengthen the connection between the company and its external stakeholders. It has now emerged as a managing tool for external pressure groups such as environmental groups (Perrini 2005:612). The demand for environmental disclosure has increased as stakeholders began to see companies' prospective performances through the factors that drive performance and risks (Repetto 2005:1-5).

The mining industry, due to its labour-intensive nature and closer links with society and the environment, by reporting on its social and environmental aspects may show its accountability towards the overall impact of its operations. Burritt (1997:3-6) argues that companies can get approval by stakeholders based on the amount of disclosure they provide on their environmental aspects. Accordingly, as a means of demonstrating stakeholder concern, companies provide more information on their positive environmental information while providing less information on their negative aspects. Solomon and Lewis (2002:166) suggest that possible reasons for low or non-disclosure of corporate environmental information could be a lack of desire to report on sensitive issues, lack of legal obligations and suspicion that competitors may benefit from the information released.

Companies, in deciding on what to disclose and what not to disclose, are very careful not to damage their social image in order to increase stakeholder value (Antonites & de Villiers 2003:4). On the other hand, stakeholders agree that there are advantages of corporate disclosure as providing information on some negative aspects may lead to trust being developed between companies and their stakeholders. Companies that report openly to the global capital markets are expected to attract potential investors in return for their transparency and honesty (Donnelly & Raff 2002:33).

The Global Reporting Initiative (GRI) has for some time driven the reporting of sustainability matters. Its most recent version, *Sustainability Reporting Guidelines*, G4, (GRI 2013a) and its mining and metals supplement (GRI 2013b) is compulsory for annual reports issued after 31 December 2015 which state that they are following the GRI guidelines. There are other mining sustainability frameworks (Fonseca, McAllister & Fitzpatrick 2014), but the GRI remains the most commonly used framework (KPMG 2016).

Warhurst (1998:3) argues that mining companies should develop their own frameworks on the disclosure of environmental, social and other aspects of accountability where there is a lack of or weak disclosure regulations.

Generally, there is consensus on the type of key performance indicators and information needs by various stakeholders in the mining industry (Donnelly & Raff 2002:33), such as their method of operation, internal control information, social surroundings, environmental aspects, risk involvements, employees, business ethical values, risk mitigation systems, ownership and management structure and also their forward-looking strategies. However, Fonseca *et al.* (2014) argue that mining sustainability frameworks avoid reporting on mineral scarcity and the effective legacy of mining operations. However,

In South Africa, impetus for non-financial disclosures has come not only from the G4, but also from the various King reports issued by the Institute of Directors (IOD). King II (IOD 2002) introduced the ‘triple-bottom-line’ (i.e. economic, social and governance or ESG reporting); this was subsequently updated by King III (IOD 2009). The trend towards integrated financial reporting by the International Integrated Reporting Council (IIRC) has also provided a stimulus for the disclosure of non-financial disclosures (IRCSA 2011).

South Africa is one of Africa’s and the world’s most important mining countries. It accounts for nearly all of Africa’s metals and minerals production aside from some minerals (Burger 2006:39). Environmental reporting in South Africa is voluntary (Mitchell & Quinn 2005:20). There are specific accounting policies (rehabilitation liabilities) that are particularly aimed at mining companies (Antonites & de Villiers 2003:7). These policies are required in terms of the International Financial Reporting Standards (IFRSs) and may guide companies on their environmental disclosure issues. While King II and III referred to ESG disclosures, some non-financial disclosures were only required on an apply or explain basis (IOD 2002; 2009), which since the advent of King IV has been changed to an apply and explain basis (IOD 2016).

Research Question

Companies listed on the Johannesburg Stock Exchange (JSE) are obliged to comply with the JSE’s listing requirements that require compliance with the King Report. Soon after the release of King II (IOD 2002), the JSE launched the Socially Responsible Investment (SRI) Index (JSE 2005) to motivate companies to improve their sustainability and governance performance. In 2009, the IOD released the King III report, which focused on the notion of an integrated report.

Despite this, disclosure of much non-financial information is voluntary. This study therefore answers the following research question: What is the nature and extent of non-financial disclosures in the South African mining industry before and after the release of King III (IOD 2009)?

Literature Review

International Studies

Burritt (1997:1, 6-15) studied environmental disclosures in the annual reports of Australian gold and copper mining companies with activities in Papua New Guinea and/or Indonesia. Burritt (1997) found that disclosure with regard to the environmental financial matters is greater in the mining companies than in other industries, but is far from being rated as excellent. He suggested that mining companies' public environmental disclosure may be improved through the observance of the industrial code for environmental management.

Yongvanich and Guthrie (2005:103, 105, 110-116) examined the extent of voluntary disclosures made on intellectual capital and non-economic performance of 17 Australian mining companies. They concluded that Australian mining companies disclose only a narrow group of elements and that companies place greater emphases on intellectual capital information than on non-economic performance information.

Jenkins and Yakovleva (2006:271, 276-283) investigated recent trends in social and environmental disclosures in the global mining industry to determine the nature, content and style of the mining companies' annual reports and whether the mining companies' annual reports are constantly developing. Jenkins and Yakovleva (2006:279) found that the general trend was an increasing sophistication in the mining companies' annual reports, but that there was great variability in the reporting among the sample companies. As a result, based on how complicated they perceived the companies' annual reports, they grouped the sample mining companies into mature, adolescent and infant reporters.

Mature reporters were those who have been providing social and environmental disclosures for a long time; adolescent reporters were those companies who have been reporting on their social and environmental aspects since 1999; and infant reporters were those who have not yet developed stand-alone social and environmental reports. These companies have neither adopted

the GRI's guidelines nor provide external verification of their social and environmental disclosures.

Jenkins and Yakovleva (2006:282) concluded that mining companies show variability in their reporting processes in terms of sophistication of reporting, policy development and the types of performance measurements used impairing comparability. They suggested that the top reporting companies, which have the resources and long-term expertise to develop reporting strategies, should support the infant and adolescent reporters into the maturity stage.

The KPMG Survey of Corporate Responsibility Reporting (2015) provides an overview of current global trends in corporate responsibility reporting. This report has been updated ten times since it was first published in 1993. KPMG's most recent report in 2015 found that the quality of corporate social responsibility reporting has improved since 2013, with the main driver of this improvement to be legislative. The sectors leading this improvement continue to be the heavy and traditional polluting industries, including mining and utilities. Of the 50 sectors surveyed globally, KPMG (2015) found the mining sector had the highest rate of corporate responsibility reporting. On a country-level, South Africa was identified to have one of the highest rates (99%) of corporate responsibility reporting in the annual reports examined, driven by King III and the listing requirements of the Johannesburg Stock Exchange. KPMG (2015) note that a global trend in corporate responsibility reporting is the independent assurance of such reports.

Global mining reporting surveys by KPMG (2016) cover the traditional mining bases of the United States, Australia, the United Kingdom, Canada and South Africa, and the emerging mining nations of Brazil, Russia, India, Chile and China. KPMG's (2016) latest survey on 25 companies, of which two had their main listing on the JSE, found high levels of disclosure with respect to one area of non-financial disclosures, namely risks. Various risks are being disclosed, with risks which affected performance being the ones most emphasised. Commodity price risk was disclosed by all 25 companies, environmental risk was disclosed by 22 companies, and health and safety risk was disclosed by 17 companies. The survey also found that 20 of the 25 companies utilised the GRI's standards as their main reporting framework, although 14 companies indicated that they followed other voluntary reporting initiatives in their corporate responsibility reporting (KPMG 2016:45).

Boiral and Henri (2017) examined the 2007 sustainability reports of 12 mining companies for comparability using the GRI guidelines. They found

comparability impeded by, amongst other reasons, the lack of rigorous compliance with the indicators. They suggest that future research could focus on the G4 to see if measurability and comparability improves.

South African Studies

De Villiers and Barnard (2000:17-23) examined environmental reporting in South Africa from 1994-1999 using a checklist structured on the eleven minimum requirements for corporate environmental reporting set by de Villiers (1996) to determine whether mining companies report more than large non-mining companies on their environmental issues. De Villiers and Barnard (2000:21) concluded that there were important differences in the environmental disclosures in South Africa. In general, a greater proportion of the mining companies disclosed each type of information in each annual report than do the Financial Mail Top 100 industrial companies, except for the impacts and risks, and policy. Therefore, they concluded that ‘listed mining companies in South Africa disclose more environmental information in their annual reports than other large listed companies’.

Antonites and de Villiers (2003:1, 4-9) examined the extent of environmental disclosure in South African listed mining companies and the Top 100 industrial companies, and how it has changed over time, using a similar checklist to that of de Villiers and Barnard (2000). They found that overall the disclosure of environmental information is greater in mining companies than in the top industrial companies, but that overall there was a decreasing trend possibly due to the lack of a legal requirement and the sensitivity of the information (2003:9). Antonites and de Villiers (2003:9) further concluded: ‘[t]his finding is consistent with legitimacy theory, which proposes that companies do not wish to disclose information that could be detrimental to the objective of legitimising their activities and increasing social support’.

More recent studies in the mining industry are those by de Villiers, Low and Samkin (2014) and Sturdy and Cronjé (2017). De Villiers *et al.* (2014) examined the sustainability disclosures of 18 South African mining companies in 2007. The focus of this study was on how institutional theory impacts disclosures as they found that larger companies disclosed more social and environmental information. This was attributed to larger companies having greater visibility. Sturdy and Cronjé (2017) focused on six platinum mining

companies and found varied and poor levels of disclosure relating to mine closure obligations

Studies which provide results relevant to this current study are the annual mining reports by PricewaterhouseCoopers (PWC) (2013 - 2017) which analyses various trends relating to South African mining companies; Ungerer (2013) who undertook a comparative analysis of mining companies' strategy disclosure reporting trends in 2010; Moloi (2014) who analysed fourteen mining companies' disclosures on risk management practices; Joubert (2014) who examined the integrated reporting practices of 43 mining companies with year ends 2012/2013; Carels *et al.* (2013) who explored the integrated annual reporting trends in mining companies from 2008 – 2012; Shuro (2014) who compared the top ten mining and manufacturing companies by market capitalization on the JSE using the JSE SRI index; Raemaekers, Maroun and Padia (2016) who examined the risk disclosures of selected South African companies (which were not only mining companies) post-King III and a study published by Integrated Reporting and Assurance Services (IRAS) which reviewed sustainability reporting in South Africa as per the GRI guidelines (IRAS 2012).

The results of the above studies are discussed more appropriately in the results section of this article. However, all these studies show that mining companies tend to disclose more information than companies in other industries and that there is still room for improvement in mining companies' reporting practices.

Research Methodology

For the first part of the study which examines the nature and extent of the disclosures of mining companies prior to the release of King III, a disclosure checklist was developed in two parts using the guidelines and requirements of the GRI (2002; 2005), Standard and Poor's Transparency and Disclosure Checklist (2002, 2004), the United Nations Global Compact (2006), Robb *et al.* (2001), de Villiers and Barnard (2000), Yaron (2005), the Securities Exchange Commission (SEC) (2003a; 2003b), Talisman Energy Inc. (2005), King II (IOD 2002) and the JSE SRI Index (JSE, 2005). Part A comprises the following five categories of disclosure: environmental, social, corporate governance, forward-looking and MD&A reporting. Since compliance with the King II code, which requires the use of GRI, is a listing requirement of the JSE,

Part B used the requirements of King II to measure corporate governance disclosures and both King II and the JSE SRI index to measure integrated sustainability disclosures.

Trends for the second part of the study which examines the nature and extent of disclosures post the issue of King III were accessed by examining recent literature on the relevant disclosures of mining companies in South Africa.

The disclosure checklist for the first part was used to conduct a temporal content analysis of the nature and extent of the non-financial disclosures in the annual reports of 22 South African mining companies listed on the JSE for a period before the release of King III for the first part of the study. The studies after the release of King III also used content analysis but different checklists.

The disclosure index of this study is shown in Table 1.

Table 1: Disclosure index for first part of study

PART A	
Categories of non-financial disclosure	Number of reporting elements
Environmental	22
Social	21
Corporate governance	18
Forward-looking information	19
MD&A	20
Total number of elements	100
PART B	
Checklist developed from the King II and JSE SRI Index	
Corporate governance (King II)	
Board of directors	20
Risk management	6
Internal control	5
Total number of elements	31
Integrated sustainability reporting (King II and JSE SRI Index)	
Total number of elements	29

All 22 South African mining companies listed on the JSE in 2006 are included in this part of the study. The 2004, 2005 and 2006 annual reports of the South African mining companies listed on the JSE were downloaded from the websites of these companies and thereafter were analysed. The results of the content analysis were then tabulated in spreadsheet format using Excel. The extent of disclosure, trend analysis and compliance level of the companies' non-financial disclosures were captured in tables for analysis. Only the overall results are shown in the section that follows. To determine any trends after the release of King III, the results of more recent studies (Shuro 2014; Moloi 2014; PWC 2013-2017; Joubert 2014; Ungerer 2013) are included in Table 2.

Results

To explore the nature and extent of the companies' non-financial disclosures in the years 2004, 2005 and 2006, the results from the first part of the study were segregated into the five categories shown in Table 2 as pre-King III. Subsequent studies (Shuro 2014; Moloi 2014; PWC 2013-2017; Joubert 2014; Ungerer 2013) are shown in Table 2 as post-King III.

Table 2: Overall results for Part A and Part B of the checklist

Non-financial disclosure categories	Pre-King III		Post-King III	
	Average elements reported			
Part A	2004 ¹	2005 ¹	2006 ¹	Post 2009
Environmental	36%	41%	50%	99% ²
Social	33%	40%	43%	99% ²
Corporate governance	65%	72%	78%	54% ⁵
Forward-looking information	42%	51%	58%	44% ⁵
Management Discussion and Analysis (MD&A)	75%	80%	85%	- ⁷
Part B				
Corporate governance				
- Board of directors	80%	90%	93%	92-100% ⁴
- Risk management	80%	88%	94%	High levels ³
- Internal control	54%	56%	58%	- ⁷

Integrated sustainability reporting (King II/III and JSE SRI)	55%	59%	66%	83% ⁶
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Notes:

1. This study
2. Shuro (2014)
3. Moloi (2014)
4. PWC (2013-2017)
5. Joubert (2014) – score includes disclosures ‘clear and concise’ and ‘room for improvement’
6. Ungerer (2013)
7. No studies could be found which focused on MD&A and/or internal control and mining companies

Environmental Disclosure

The extent of environmental disclosure in most companies increased from 2004 to 2006. The percentage of elements reported was approximately 36%, 41% and 50% of the total number of reporting elements (22) in 2004, 2005 and 2006, respectively, i.e. an improvement over 2004 to 2006.

The highest and lowest numbers of elements reported suggest that great variation exists between the companies’ environmental disclosures. The most commonly reported environmental disclosure element in all the three years were: accounting policies for the recording of liabilities, provisions, contingent liabilities and catastrophe reserves. This element was disclosed by 17 (77%) companies.

A study by Carels *et al.* (2013) found a general increase in environmental disclosures over the same years. As this study focused on the change in disclosure, absolute percentages were not provided. Shuro (2014) also found that over the period 2008 to 2012, mining companies’ environmental indicators increased from 91.8% to 98.9%. This is a substantial improvement when compared to 2004 to 2006.

Social Disclosure

There was a fluctuation in the extent of social disclosure by companies over the three years prior to King III. For some companies, there was an increase in the elements disclosed every year from 2004 to 2006 while for others it

decreased every year from 2004 to 2006. However, overall, the average percentage of elements reported was 33%, 40% and 43% of the total number of reporting elements (21) for 2004, 2005 and 2006, respectively, i.e. an improvement from 2004 to 2006.

The most commonly reported social disclosure elements in all three years were: number of injuries, occupational diseases, lost days, number of work related fatalities, description of policies or programs on HIV/AIDS, training of employee and community economic development planning processes. These elements were disclosed by 17 (77%) of the companies.

Carels *et al.* (2013) found a pronounced increase in social disclosures over the years 2008 to 2012. Shuro (2014) also indicates that over the period 2008 to 2012, disclosures of social indicators by mining companies increased from 96.8% to 99%. This reflects a substantial improvement on the results which were found prior to the release of King III.

Corporate Governance Disclosure

Corporate governance disclosures in 14 (63%) companies increased from 2004 to 2006. The average percentage of elements reported was approximately 65%, 72% and 78% of the total number of reporting elements (18) for 2004, 2005 and 2006, respectively, i.e. an improvement from 2004 to 2006.

The most commonly reported corporate governance disclosure elements in all three years were: governance structure of the company; directors who are independent, non-executive directors; detail about directors; details about the role of the board of directors; list of board committees; list of board meetings; number of shares in the company held by directors; and decision-making process of directors' pay and specifics of directors' salary. These elements were disclosed by 17 (77%) companies.

Joubert (2014) examine 'governance' which was not identical to the 'corporate governance' used in this current study. Joubert's (2014:79) study shows that 22% of the companies in his sample disclosed clear and effective disclosures and 32% of the companies' disclosures had room for improvement. Thus, a total of 54% of the companies made some disclosures regarding governance. Forty-six percent of the companies made none of the disclosures. Although the checklists used in the studies are not identical, both this study and the Joubert (2014) study show that there is still room for improvement regarding these disclosures.

Forward-Looking Disclosure

Sixteen (73%) mining companies showed an increase in their extent of forward-looking disclosures from 2004 to 2006. The average percentage of elements reported was approximately 42%, 51% and 58% of the total number of reporting elements (19) for 2004, 2005 and 2006, respectively, i.e. an improvement from 2004 to 2006.

The most commonly reported forward-looking disclosure elements found in the annual reports of the companies in all the three years include: mission, broad objectives and strategy to achieve broad objectives; information concerning possible or assumed future results of operations, including descriptions of business strategy; projected major goals and factors that are critical to successfully implementing strategies; anticipated changes in financial position and why; and forecast information about the economy, company's industry and the company itself. These elements are disclosed by 17 (77%) companies in the three years studied.

Joubert (2014) examines the quality of disclosure that addressed future outlooks, any future uncertainties and their impact on the company. He found 11% of the companies provided clear and effective information, while for 33% of the companies there was room for improvement. Fifty-six percent of the companies made no disclosures. Joubert's (2014:96) results (44%) are slightly down on this study's results, which may reflect the uncertainties facing the mining sector generally in South Africa and possibly a reluctance to disclose such information.

Management Discussion and Analysis (MD&A) Disclosure

Disclosure on MD&A increased in 17 (77%) companies from 2004 to 2006. The average percentage of elements reported was 75%, 80% and 85% for 2004, 2005 and 2006, respectively (out of 20).

The number of elements reported in the MD&A disclosure by the different companies shows a variation in the non-financial disclosures within the South African mining companies. The most commonly reported MD&A disclosure elements found in the annual reports of the companies, that is elements disclosed by 17 (77%) companies in all the three years include, amongst others, the core businesses of the company; its long-term vision and the company's strategy for growth and shareholder value creation; the

resources, financial and non-financial, that are required to execute strategy and achieve desired results; present performance and the underlying reasons for it; opportunities and challenges for the short long and term; the principal business risks and how the company identifies and manages them.

No current studies could be found on MD&A Disclosures and mining companies. This is an area for further research.

Board of Directors' Disclosure

The average percentage of elements reported was approximately 80%, 90% and 93% of the total number of reporting elements (20) for 2004, 2005 and 2006, respectively.

The companies differed considerably in their levels of disclosure. The number of companies with 90% or more compliance in the board of directors' disclosures were 10, 14 and 17 companies in 2004, 2005 and 2006, respectively, showing substantial improvement from 2004 to 2006.

The PWC (2013-2016) reports analysed whether or not mining companies were disclosing the composition of their boards. In 2013, out of the 37 mining companies surveyed, 34 mining companies (i.e. 92%) disclosed board composition. Their previous report (PWC 2012) showed that 33 out of 39 mining companies (85%) disclosed board composition. Subsequent reports (PWC 2014 - 2016) showed 100% compliance with disclosure of board composition, except in 2017 (PWC 2017) where this analysis was not provided. This disclosure may have been driven by the Mining Charter's requirement that 40% of board members must be historically disadvantaged South Africans by 31 December 2014.

Disclosure in this section has thus remained high for the years reviewed, although some improvement is possible in other areas relating to board of directors' disclosures.

Risk Management Disclosure

The average percentage of elements reported was approximately 80%, 88% and 94% of the total number of reporting elements (6) for 2004, 2005 and 2006, respectively. Based on six disclosure elements, 18, 20 and 21 companies scored 90% and above levels of compliance for the years 2004, 2005 and 2006.

Although the lowest compliance level in this section is 0%, this section is also where the highest number of companies scored 100% compliance in their risk management reporting (17 companies in 2006).

Moloi (2014) does not attempt to get one quantitative score to represent the companies' compliance with risk management disclosures. However, out of 26 disclosure items, fifteen items were fully disclosed, and only two items were not disclosed at all by 13 companies. Other items of disclosure are abstrusely disclosed (Moloi 2014:686,687). Moloi (2014:687) concludes 'mining companies in South Africa are widely adhering to sound risk management practices as recommended by King III'. Raemaekers *et al.* (2016) noted an increase in risk disclosures in a sample of companies listed on the JSE from 2010 – 2012 pointing to King III as being the impetus for such an increase. Although mining companies were included in their sample, the specific results relating to only mining companies were not disclosed. PWC (2017) noted that they had not seen a significant difference in the types of risks being identified by mining companies.

Internal Control Disclosure

The average percentage of elements reported was 54%, 56% and 58% of the total number of reporting elements (5) for 2004, 2005 and 2006, respectively. There was no company that fully complied in the internal control disclosure section of corporate governance. More than half of the companies scored a 60% compliance level for the three years.

No recent studies were found which examined internal control disclosures in mining companies. This is an area for further research.

Integrated Sustainability Reporting Disclosure

The disclosure index on integrated sustainability reporting had 29 disclosure elements. Because King II/III (now King IV) are listing requirements, high levels of compliance with the disclosure index for integrated sustainability reporting was expected.

In general, there was an increase in the level of integrated sustainability reporting disclosure every year from 2004 to 2006. However, the extent of reporting varied greatly among the companies. The average

percentage of elements reported was approximately 55%, 59% and 66% in 2004, 2005 and 2006, respectively. Although the mining companies improved their level of disclosures over the three-year period studied, a number of companies need to make improvements in this area especially with the current focus on integrated reporting.

The most commonly reported integrated sustainability reporting elements found in the annual reports of the companies, that is, reported by 17 (77%) companies over the three years include: nature and extent of social, transformation, ethical, safety, health and environmental management policies and practices; implementation of corporate social responsibility strategies which are aligned to the companies' overall business strategy and which reflect on-going commitment from the company; documented targets, initiatives or programs relating to corporate social investment, capacity building, local procurement programs and job creation opportunities; development of human capital, employee upliftment; achievement of targets relating to black economic empowerment, employment equity, procurement and skills development; demonstrated commitment to set objectives relating to equal opportunities, non-discrimination and empowerment; the HIV/AIDS strategy plans and policies; charitable donations, active community relations; ethical standards and practices in the company; efforts made to reduce work place accidents, fatalities and occupational health, and their safety incidents; and the integration of safety, health and environment issues into their sustainability policies and procedures. Carels *et al* (2013:958) also found increases in social, environmental and ethics-related disclosures from 2008 to 2012 and attributed this to both King III and the integrated reporting project.

In summary, in Part A of the index, the highest levels of disclosure were found in the MD&A section, followed by corporate governance. The low disclosure level for environmental and social items indicates that improvement is required in those two areas. With regards to Part B, board of directors and risk management disclosures had the highest levels of compliance. Disclosures with regards to internal control and integrated sustainability reporting, although over the 50% level, are in need of improvement.

Other Results - Adoption of the GRI

Whether the South African mining companies in this study were reporting according to the GRI was also assessed from their annual reports. Of the 22

mining companies studied, 10 (45%), 10 (45%) and 12 (55%) companies referred to the GRI as a framework for their non-financial reporting in 2004, 2005 and 2006, respectively. The number of companies reported according to the GRI increased by 20% in 2006 as compared to 2004 or 2005. Some of the companies provided the GRI disclosure index for their non-financial reporting which made it easy to follow their extent of non-financial disclosures. IRAS (2012) notes that 24 out of 56 (43%) annual reports in the metals and mining industry indicated they had adopted the GRI with an average compliance score of 69.7% (IRAS 2012:15), an increase from 64.4% in 2011 and 63.4% in 2010 (IRAS 2012:21). KPMG (2016) found that 23 out of 25 (92%) mining companies worldwide utilised the GRI as the main reporting framework.

Summary - Overall Compliance with King II/III and the SRI Index

Companies listed on the JSE are required to report according to King II/III (now King IV) and can use the JSE SRI index as a guideline to improve their sustainability and governance performance.

In general, there was an improvement by the companies in the amount of their corporate governance disclosures over the three years. The average percentages of compliance by the 22 mining companies with King II were 75%, 79% and 87% in 2004, 2005 and 2006, respectively.

Shuro (2014) found that mining companies' compliance with the SRI increased from 96.8% in 2008 to 99% in 2012. Thus by 2012 there is almost 100% compliance with the SRI which indicates that the JSE's objective in introducing the SRI has been almost totally successful. Although these results are not perfectly comparable, there is some overlap between the different measures indicating that the trend that compliance is improving has some validity.

Conclusions, Limitations and Further Research

Overall, disclosures post-2009 showed increases in almost all categories which provides some evidence that King III provided an impetus for the increase in non-financial disclosures.

Although there was a general increase in the extent of non-financial

disclosures, these disclosures varied greatly among the individual companies. In Part A of the index, the highest levels of disclosures were found in the MD&A information (pre-King III only), followed by corporate governance. Environmental disclosures showed the highest increasing trend among the non-financial disclosure categories. The other increasing trend was in the forward-looking disclosure category as the demand for future oriented information grows by investors. Forward-looking disclosures by the South African mining companies mostly emphasized foreseeable business opportunities and not threats or risks.

With regards to compliance with King II and King III, (the first section of Part B of the disclosure index), not one company scored 100% compliance with the reporting requirements of the JSE on corporate governance. Among the different sections of corporate governance disclosure, maximum compliance was in the risk management disclosure. The reason for this might be the recognition that risk management may identify opportunities which could be a competitive advantage for a company. No mining company fully complied with the integrated sustainability reporting requirements of the JSE SRI and King II/III.

Most companies did not provide information with regard to their non-compliance issues. This situation may validate legitimacy theory in that companies hide sensitive information that could be damaging to their broad objectives (Antonites & De Villiers 2003:4). However, KPMG (2015) noted that an increasing trend was for the independent assurance of corporate responsibility reporting and King IV (2016) requires companies to apply and explain their compliance with its requirements. This may indicate that more information may be disclosed in the future.

The reason for the increase in the number of companies adopting the GRI as a non-financial reporting guideline is therefore most likely a result of the various King Reports and the requirement by the JSE for companies to apply and explain the requirements of the King Reports. Nevertheless, not all mining companies have indicated their adoption and implementation of the GRI as their non-financial reporting framework.

The results of this study indicate that more non-financial reporting is necessary and that this would improve the usefulness of mining companies' annual reports. Non-financial disclosures by the South African mining companies could be increased through mandatory specific regulations or by persuading companies to compare themselves with other companies within the

same sector for benchmarking reasons. By designating one company as a good example of non-financial reporting, a movement towards a good non-financial reporting system may be created. On the other hand, companies should also be allowed to experiment and be creative in order to ensure that innovative practices that may prove to be better in the future are not stifled.

The limitations of the study are that only the annual reports of South African mining companies listed on the JSE were examined. Therefore, there might be other important reports that were not examined. Furthermore, the limitations inherent in content analysis were not supplemented by other research methods, such as interviews or questionnaires. Finally, the analysis and results reported here are based on observations for mining companies only. Hence, the results may not be representative of other industries. The comparison to other studies' results post-King III, although mainly focused on mining companies, may not be totally accurate as all studies used different sample sizes. However, in general, all studies, except for IRAS (2012) used the top companies to determine their samples which may be a mitigating factor.

Future studies could focus on the remaining gaps shown in Table 2 and endeavour to close those gaps. The non-financial index could also be used to extend the research to compare the findings to other industries, time periods and countries and this would provide a more comprehensive analysis of the non-financial disclosure levels of companies.

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