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Rembrandt

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Alternation

Interdisciplinary Journal for the Study of the Arts and Humanities in Southern Africa

> Management, Informatics, and Governance

> > Guest Editor Rembrandt Klopper

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Editorial: Management, Informatics and Governance

Rembrandt Klopper

As we live through the digital revolution and, for that matter, have entered the much acclaimed fourth industrial revolution, we need to also take a glance back, to look at where this has all began. There are many academic scenarios - and some not so academic - but in principle, it appears that, like many other scientific endeavours, it was started by and for the military. With regard to Alternation's own trajectory, Smit and Chetty (2018a; and 2018b) provide a few brief insights.

But be that as it may. Tim Berners-Lee was the first to connect the dots, and provide a vision for the future, in 1989, with the sketch on the cover of this issue of Alternation. And, after the 30 years, since, we want to dedicate this issue to him.

In this issue, in their '23/25 Years of Alternation, and the African Digital Humanities: Capacity, Communication, and Knowledge-Power', Johannes A. Smit and Denzil Chetty, condense the presentation by Prof J.A. Smit, as the international Open Access keynote lecture, of 23 October 2017, at Westville Campus, UKZN. It forms the first of a double-barrel article that seeks to open up some research possibilities with regard to the subject and knowledgepower (cf. Smit & Chetty in this issue, p. 360). Drawing on Foucault, they firstly provide a theoretical framework that may assist in assessing the significance of Alternation, followed by a positioning of the questions Foucault raised through his nearly twenty years of research, on this matter, within the framework of the digital, or electronic age, specifically with regard to the African Digital Humanities. They then briefly reflect on a sample of the historical events in the history of Alternation (since 1994/1996), followed, by positioning it in the international dynamics of the digital age, and the move from Humanities Computing in Alternation, to the Digital Humanities.

Joshua Chukwuere, Sam Lubbe, Jan Meyer, and Rembrandt

Rembrandt Klopper

Klopper focused their research on the issues related to rigour and relevance in Information Systems research in South Africa. Given that the there are many reasons for the division between rigour and relevance, the gap between the two has promoted debate and argument that has lasted for years. Many believed that IS research is effective and others oppose the argument. Some scholars within or outside the discipline are considering whether IS research output is affecting and impacting decision making in the industry, and visa versa There is also an on-going criticism that IS research lacks rigour, relevance, effective communication and acceptance in the field as noted in the literature. The debates seem to be conflicting, which also means that the debate continues, and the gap still persists, in spite of efforts by researchers. Their efforts and hard-work seems ineffective. The study determined whether the needs of practitioners through focuses on rigour and relevance of IS/academic research are being met, and also sought to determine whether this lingering debate over the decades has worth from an academic viewpoint.

This is followed by the article by Prudence Khumalo, titled, 'Governance and Local Economic Development In Three Southern African Countries: Namibia, South Africa And Zimbabwe'. Khumalo points out that the Local Economic Development (LED) terrain in Southern Africa is punctuated by a high attrition rate of initiatives, which triggers both development practitioners and scholars to search for solutions to this challenge. This work engages this matter, and explores the centrality of Governance in the process of LED implementation. The thrust of the work is to explore governance issues that may help improve economic development performance of localities in Southern Africa. The article unpacks both concepts with a goal of uncovering essential linkages so as to determine what entails good governance for LED. Despite its popularity as one of the vehicles to attaining the Millennium Development goals, LED has had a number of setbacks in its implementation. This work endeavours to critically examine the aspect of governance as a key factor in the success of LED. Using lenses of the bottom-up approach to development, the governance challenges are discussed as some of the key setbacks to the success of LED in the region. Consequently, the article discusses the possible ways of strengthening governance for the success of Local Economic Development.

The article by **Eric Mang'unyi** and **Krishna Govender**, titled, 'Perceived Service Quality and Customer Satisfaction – Employees' Perspectives of Kenyan Private Universities' reports on an empirical study conducted among a sample 133 employees of private higher education institution in Ken-

ya, to examine the relationship between perceived service quality (SQ) and customer satisfaction (CS), using the HEdPERF instrument. Although service quality was measured using six dimensions namely: academic, non-academic, reputation, access, programmes and understanding, by using structural equation modelling (SEM), the six SQ dimensions needed to be collapsed into four. Main reasons is that these four were the most significant for the employees of private universities. The employee is viewed as a 'customer' of the private higher education institution, thus service quality refers to the employee-customers' perceptions. The results partially support the proposed conceptual model that non-academic, access, academic and reputation dimensions have a positive and significant influence on the employees' SQ perceptions, and in turn influence their satisfaction. It can be inferred from the findings that university quality should not only be looked at in terms of academic activities alone, as non-academic aspects also need to be considered since they are deemed important to the employees. Since universities are in both national and international competition, they (management) should aim at ensure that all services related to organizational life like physical services, and implicit and explicit services, are delivered to acceptable standards to realize increased satisfaction.

Focusing on public healthcare in their 'Managing and Valuing Diversity in the South African Public Healthcare System', **Rubeshan Perumal** and **Sadhasivan Perumal** starts their article by pointing out that human capital remains a critical component of healthcare, particularly in low and middle-income countries where there is a dire shortage of professionals. They argue that recruiting and retaining health professionals has become a key strategic focus in South Africa. Innovative recruitment strategies coupled with increasing access to higher education and training has resulted in an increasingly diverse workforce. Identifying, appreciating, and managing this diversity across all diversity dimensions is important for both social and economic reasons. These efforts are likely to provide an opportunity for optimizing productivity while building a cohesive workforce. This paper explores the impetus and possible methods for effective diversity management in the South African public healthcare environment.

To be successful in the current highly competitive market a South African alcoholic beverage supplying company (SAABSC) must guarantee customer service and service quality. So argue, **Jacques Beukes**, **J.J. Prinsloo**, and **Theuns G. Pelser** in their 'Customer Service Expectations from South African Alcoholic Beverage Suppliers'. As a means of differentiation, companies have

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to focus their efforts on quality customer service. The purpose of the study was to measure the service delivery expectations and realisations of customers that receive delivery from SAABSC based on their geographical location. It requireed the implementation of a descriptive research method. The target population comprised customers of SAABSC situated in the Gauteng, Western Cape and North West Provinces of South Africa. The results from the study indicate that customers expect the SAABSC to deliver on all five service quality dimensions but fail to do so to their satisfaction. Recommendations on how to im-prove on these dimensions are given in the form of CRM strategies that SAABSC can implement. Ensuring that these recommendations are implemented will ensure a higher level of service quality and customer satisfaction. This should lead to increased customer retention, sales and profit growth, increased loyalty, the addition of new customers and overall better customer relationship.

e-Government (e-Gov) projects are continuing to fail in countries across the world, including South Africa. Therefore, although e-Gov presents a means to transform government service delivery to citizens, the intended benefits are not achieved. In addition, the failure of e-Gov leads to significant wasteful expenditure. So argue I. Abdulla and B.W. McArthur, in their 'Government-to-Government e-Government: A Case Study of Challenges Facing User Adoption in KwaZulu-Natal'. Their article focuses on a specific category of e-Gov, Government-to-Government (G2G), concerned with the use of Information and Communications Technology to automate and stream-line business processes within a government department and across departments. Challenges facing user adoption of G2G in a South African context are analysed using the KwaZulu-Natal Department of Transport as a case study. As the first step in this research, cases of G2G user adoption challenges in South African government were identified. This helped to inform the focus of the literature review and the research instrument used. A qualitative research methodology was used to understand the G2G user adop-tion challenges. This research has shown that user adoption is a central challenge facing G2G. User adoption is influenced by six main themes: Addressing User Requirements, Business Process Management, Change Management, User Involvement, Organisational Culture and Priority. The six main themes in turn are influenced by sub-themes: strategy, usability, complexity, HR skills, resistance, systems development methodology, management support and data quality. Technology infrastructure was identified as an important yet peripheral issue affecting G2G. This research has provided a deeper understanding of the challenges

facing G2G user adoption, by focusing on these emerging themes and subthemes and describing how they impact on G2G. The findings are summarised in a G2G User Adoption Challenges model.

In the paper, by Grant R. Howard, Sam Lubbe, Magda Huisman and Rembrandt Klopper, the first objective of is to demonstrate the quantitative corroboration of the Green Information Systems (Green IS) management framework, which comprises the enabling capabilities of Green IS, the moderating concepts, and their relationships to environmental sustainability. The second objective is to demonstrate the framework's verification using the focus group method and member checking. The achievement of these objectives establishes that the framework successfully captured the essential Green IS concepts and interrelationships to be relevant for environmental sustainability, that it was credible, relevant, and an original contribution to the academic body of knowledge. The research was empirical, confirmatory, quantitative, and qualitative. The study provides research design insights by detailing research design choices and rationale. The framework presents verified and salient management focal points for environmental sustainability in the South African banking sector.

'Problems around Accessing Information in South African Rural Communities' is the title of the article by Malcolm Seretse, Joshua Chukwuere, Sam Lubbe and Rembrandt Klopper. Poverty is known to be a rural phenomenon regardless of developments taking place. Rural communities of underdeveloped countries are regarded to be living in those parts of the country that lack almost all general services and especially those services focused on basic needs. The information society should be further developed because information has a significant impact in ensuring development in communities. But this is not the case in rural areas because of information poverty caused by a lack of means to access it. Consequently, the study addresses the problems to access information in rural communities. The research explores the problems to access information through ICTs such as computer and Internet access in rural communities, and proposes guidelines on how to ensure proper access to information for rural residents. Rural communities and government will benefit from the findings of the research. Government is responsible to ensure that every citizen has the means to access information in order to bridge the gap of information poverty and the digital divide.

In their article, 'Gesture-based Technology and Organisational Strategy: a Study of a Quick Service Restaurant Franchisor' Nishal Ragoo-

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beer, Rembrandt Klopper and **Sam Lubbe**, develop a theoretical framework that is hinged on critical success factors, enablers and inhibitors, for the Alignment of Gesture-Based Technology and Organisational Strategy for the quick serving restaurant sector. The critical success factors, enablers and inhibitors that were used to formulate the framework were extrapolated from the literature. The sample design of this research study is a Non-Random, Purposive Sample. The key analysis of the research was to test whether critical success factors, enablers and inhibitors indeed can be used to derive a theoretical framework using a questionnaire. It was concluded that critical success factors, enablers and inhibitors were indeed core to the formulation of a theoretical framework. All of the critical success factors, enablers and inhibitors presented in the sample were accepted.

'Students' Use of Smartphones at a Historically Disadvantaged University' is the title of the study by Sello Mokoena, Rembrandt Klopper and Sam Lubbe. As technology becomes cheaper, the potential for learning is greater, and the preparing and disseminating of learning materials through smartphones are likely to become quite popular. It was not clear whether students from the most disadvantaged backgrounds, have the right equipment (smartphones) to support learning at a historically disadvantaged university. This study assesses smartphone ownership as a potential tool for enhancing students' learning at a relatively resource-poor higher education (HE) environment in rural KwaZulu-Natal. Correspondence universities, such as 'Unisa' and examples worldwide in HE, use students' smartphones for educational purposes. Primary data were collected from postgraduates and undergraduate students using a self-administered structured questionnaire for all faculties. The unified theory of acceptance and use of technology (UTAUT) was employed to account for students' perceived ease of use (EOU) and perceived usefulness (PU). The results revealed smartphone ownership and use was greater than the ownership and use of regular cellular phones. Regular cellular phone users commented on smartphone capabilities as enhancing learning.

Njabulo Simelane's, 'Hands-on Postgraduate Research Proposal Design', with **Rembrandt Klopper and Sam Lubbe**, aimed at providing an account of empirical research among postgraduate first-time researchers regarding what skills are required to develop sound quality research proposals. The authors identify challenges that novice researchers encounter when designing their research proposals. The first of these challenges is to design a problem statement. The second challenge is how the researcher identifies an

appropriate theoretical framework that is compatible with the problem set under investigation. This contribution also explains how the matrix method of literature review could be used to ensure a review only references sources that relate to the problems under investigation.

Governments and institutions in Africa are increasingly turning to ICTbased solutions in order to improve the education performance of their students. Specifically, the promise of eLearning to improve and to better facilitate learning has spurred innovation towards provision of eLearning resources on mobile devices such as tablets. Tablets hold enormous potential in delivery of eLearning due to their portability and provision for multiple uses. In their 'Report On The 2016 KwaZulu-Natal Pearson eLearning Pilot Project', Rembrandt Klopper, Chao Charity Mbogo and Yigal Rosen aimed at understanding the efficacy of tablet-based digital content on teachers and learners and consequently, to offer recommendations for sustainable, scalable eLearning models. Their report presents key findings from an eLearning research pilot conducted in 12 schools at KwaZulu-Natal province in South Africa. The results indicate that an eLearning intervention could have an impact on the learners' subject-specific skills, that teachers and learners gained digital literacy in their use of the eLearning intervention, that learners gained confidence in using the eLearning intervention and integrated various digital resources in their learning over time, that learners were sharing content more over time, that the majority of the teachers felt comfortable integrating the digital content in their teaching over time. The findings in this report would help educational leaders, content developers, technological providers and the Department of Education to make sound decisions in relation to developing and implementing eLearning interventions, especially in South African schools. Based on the findings of the eLearning research pilot, this report also presents recommendations based on pedagogy, eLearning, training, support and facilitation, implementation, hardware, partnerships and provides possible considerations for tablets in educational rollouts.

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23/25 Years of *Alternation*, and the African Digital Humanities: Capacity, Communication, and Knowledge-Power¹

Johannes A. Smit **Denzil Chetty**

Abstract

This article condenses the presentation by Prof J.A. Smit, as the International Open Access keynote lecture, of 23 October 2017. It forms the first of a doublebarrel article that seeks to open up some research possibilities with regard to the subject and knowledge-power². Drawing on Foucault, it firstly provides a theoretical framework that may assist in assessing the significance of Alternation, followed by a positioning of the questions Foucault raised through his nearly twenty years of research on this matter, in the digital, or electronic age, specifically with regard to the African Digital Humanities. It then briefly reflects on some of the founding ideas and provides a sample of the historical events in the history of Alternation (1994 – 1996), followed, by positioning it in the international dynamics of the digital age, and the move from Humanities Computing in Alternation, to the Digital Humanities. The fifth focus, and as part of the Conclusion, briefly reflects on Berners-Lee's pioneering vision, as well as the most basic definition of the Digital Humanities, which provides a broad framework of both the past and future research of Alternation.

Keywords: Alternation, subject of knowledge-power, aptitude/ capacity/ capabilities, communication, knowledge-power, e-subject, e-communication, e-network, African Digital Humanities (ADH), e-Humanities, e-Human

¹ Open Access Lecture, 23 October 2017.

² The second article is titled, 'The African Digital Humanities and Alternation on the UKZN OJS Platform (2018 -): Innovation, Pan-African Collaboration, and Trans-Continental Integration'.

Introduction

This article condenses the presentation by Prof. J.A. Smit, as the International Open Access keynote lecture, of 23 October 2017. It is published now, since it has transpired, that it was not a one-off event, and followed by the 2018 Open Access lecture, which is also published this year (cf. Smit & Chetty 2018).

The current article captures two main focuses of the original title, and presentation. Originally, it included a section on 'How to move peer-reviewed journals edited by scholars at UKZN, to the Online Journal Editing System (OJS) onto the UKZN Platform'. Since, locally, this event of founding the Open Access Platform at the University of KwaZulu-Natal, is very significant on its own terms, and in terms of its own historical trajectory – which was addressed in the 2018 lecture – the moving and management of the journals on the UKZN Open Access Platform will not only be a continuing process, but is a historical event too, in its own right. Since this system will doubtlessly continue to grow into the future, we have therefore decided, that because of the length of the article to present it as two individual articles, each standing on its own, and, together, capture aspects of the original presentation.

In this first article, and drawing on Michel Foucault, we *first* address the theoretical framework in which we should not only understand the significance of *Alter*nation – at least partly –, but also the African Digital Humanities (cf. Smit & Chetty 2014). As we continue to address and expand our inter- multi- and trans-disciplinary range, we need to do this in the face of the challenges that the rapidly increasing and expanding populations of the continent pose. In the academic domain, these articulate with the challenges to chart new paradigms, especially in terms of meeting the challenge of developing knowledge formations that may help us address the actual conceptual needs and challenges that our complex realities represent. As such, it raises the question of the developing of knowledge challenge-maps, both urban and rural focused, that may start to chart knowledge ways and means that may assist not only research, but more specifically teaching and learning on the continent. In this regard the road we have travelled may provide some pointers as to the kinds of opportunities that should be engaged.

Second, and closely related to the first point, is the question of our digital age. How is the question of the subject posed within the digital age, and, drawing on Foucault, what are the challenges in this framework? Granted that this is an extremely complex issue, we only provide some indicators as pointers

to the perspectives we suggest might be engaged. In both these sections, the question of the how, or the way in which the question of the subject has been and continues to be posed within the knowledge-power complex, is addressed.

Thirdly, we briefly reflect on a very small sample of the historical events in the history of *Alter*nation, followed, *fourthly*, by positioning it in the international dynamics of the digital age, and the move from Humanities Computing in *Alter*nation, to the Digital Humanities. The *fifth* focus is on a sample of the opportunities that the Digital Humanities have opened up for the Humanities, or more specifically the possibilities and potential that we see in what we may also call the e-Humanities, or the future of the e-Human in Africa.

1 Theoretical Framework: The Subject of Knowledge-Power

Reflecting on his academic interests and engagements of the last twenty years, in 1982, Michel Foucault (1982) explains that his general theme of study has not been power, as many were being made to believe³. Rather, his researches of the primary discursive formations that gave birth to modern knowledge systems via both his archaeological⁴ and genealogical⁵ method-logical

⁵ Following Nietzsche's suggestive approach in his *Genealogy of Morals*, Foucault developed his own genealogical 'method in thought' in his *Discipline* and Punish, and History of Sexuality 1, followed by his History of Sexuality 2 and History of Sexuality 3. The genealogical method, mainly references Foucault's tracings of the lines of intellectual descent, present in a very small sample, though quite representative and enlightening, number of scholarly productions, in terms of what he has also called the historical 'systems of thought' in the Human Sciences.

³ Where appropriate, references to this text by Foucault, is only referred to by page numbers.

⁴ On Foucault's *archaeological* method, where he has addressed the discursive trajectories of 'Language, Labour, and Life', or, as they are also known in English, as the 3 Ls from his study of the eighteenth century 'systems of thought' in his *The Order of Things* (OT) (Foucault 1970), cf. Smit, forthcoming. As is well-known, *The Archaeology of Knowledge* (1971) is Foucault's theoretical text, in which he expounded the methodological procedures he has followed in OT, but also in his other earlier, related books. It could well be regarded as his exposition of his 'method in thought' (cf. Smit [1998]).

pursuits, was the *subject* (p. 327). On the one hand, this focus is different from the Frankfurt School's focus, of divining the kind of rationalism that could be said to be characteristic of modern culture (p. 328). On the other hand, it is also different from the more boring kind of 'universal philosophy' or 'a metaphysics, or an ontology', that traps scholars in the binary of reason and unreason (p. 335; 337; 328). Rather, it links up with Immanuel Kant's questioning, and asking 'what are we' in a very precise moment of history – a question to ask for an analysis of both ourselves, as well as our present, within the broader context of 'the task of philosophy as a critical analysis of our world' (p. 335f).

To ask the question of who we are, or who we are as subjects, in a particular moment in time, like Kant, Foucault avers, is not devoid of the power question, though (p. 336 - 339). On the contrary, with regard to the relationship between the subject, communication and knowledge, it is quite pervasive, but also very complex⁶. To get some intellectual grip on it through research, it helps, he says, to research it as to its how, what and why ... not only as individualised, critical, analytical perspectives, but also as to the ways in which the how, what and why of knowledge-power relations are intricately interwoven, or 'united' (p. 336). From the perspective of the how, this is the question of the complex problem of how knowledge-power 'circulates and functions'; as well as, how this complex relates to the subject, and subjectivity. More pointedly, it is a question of 'What happens when individuals exert ... power over [self] and others?' How is knowledge-power exerted over 'things'? (p. 337.) To answer this question of the how, of the 'what happens when ...?', Foucault (1982:786f) proposes that we thematise three main issues, i.e. the 'thematics of power', and that we do that relationally, viz. that of,

- *aptitudes, or capacity,* 'directly, inherent in the body, or relayed by [and through] external instruments' – subjective, bodily capabilities, and laws, structures, ideologies, and institutions⁷;

⁶ Amongst many others, cf. Mulgan (1991; 2018); and Castells (2009).

⁷ Foucault's integrated perspective on institutional capacity and what that entails, in this diagrammatic understanding of the subject, and e-subject, is addressed in the follow-up article, 'The African Digital Humanities and *Alter*-nation on OJS (2018 -): Innovation, Pan-African Collaboration, and Trans-Continental Integration'. Here the focus is not on the thematics of *subjective*

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- *communication*, 'that transmit information by means of a language, a system of signs, or any other symbolic medium'; and
- *knowledge-power* itself, not with regard to whether one has knowledge, or power or not, but with regard to how knowledge circulates in the social body, how it is exerted, and the kinds of effects it has on, or, how it 'conducts', bodies, institutions, and structures.

From the perspective of the subject, and especially as these three focuses are interwoven, integrated, 'united', and thought together, as a thematics of subjective knowledge-power, and not excluding the institutional, it is important to note that these thematics are in play in 'relations between individuals (or groups)' or between 'partners', as well as between individuals in and between institutions. We may think the relational nature of the thematics, further, expand it, and represent their systems of relations, or relational nature, as follows, i.e. within our paradigm of the challenges of the production of knowledge.



Figure 1: The subject's united, interactive, and integrative relations between capacity, communication, and knowledge-power.

knowledge-power, but a thematics of *institutional* knowledge-power, and the e-production of knowledge-power, through e-communication networks, including the thinking together of institution and subject and visa versa.

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It needs to be noted that, if we represent these relations as an integrated whole, as above, we do in fact not only raise questions about the focuses in themselves, and their relations, but also questions about the relations, of the relations of these focuses, as well as the complexities these relationalities imply.



Figure 2: The relations of the relations of the subject's united, interactive, and integrative relations between capacity, communication, and knowledge-power

In Foucault's own explanation, he again thinks from the perspective of the subject, from the perspective of subjective capacity – and, if we include his mention of the body, above, we may call this, *subjective, embodied capacity*, both personally and institutionally⁸, as these relate via mind, body, and emotions, with both the systems as well as actual embodied communication, and through the relations constituted by knowledge-power. Of these triadic, yet integrated systems of interactive (and inter-subjective) relationships, he says:

It is a question of *three types of relationships*⁹ that in fact always overlap one another, support one another reciprocally, and use each other mutually as means to an end. The application of *objective capacities* in their most elementary forms implies relationships of

⁸ Cf. also footnote 4 above.

⁹ Please note that the italics in this quotation have been added.

communication, (whether in the form of previously acquired information, or of shared work); it is tied also to [knowledge-]power relations (whether they consist of obligatory tasks, of gestures imposed by tradition or apprenticeship, of sub-divisions or the more or less obligatory distribution of labor). *Relationships of communication* imply goal-directed activities (even if only the correct putting into operation of directed elements of meaning), and by modifying the fields of information, between partners, produce effects of power. [*Knowledge-]Power relations* are exercised, to an exceedingly important extent, through the production and exchange of signs; and they are scarcely separable from goal-directed activities that permit the exercise of a power (such as training techniques, processes of domination, the means by which obedience is obtained), or that, to enable them to operate, call on relations of power (the division of labour and the hierarchy of tasks)¹⁰ (Foucault 1982:787).

Foucault understood the multiply relations and interactions of these processes very well – that of subjective, embodied, capacity, communication and knowledge-power, in terms of how power is exerted over self and other – over 'things'. He continues:

Of course, the coordination between these three types of relationships is neither uniform nor constant. In a given society, there is no general type of equilibrium between goal-directed activities, systems of communication, and power relations; rather, there are diverse forms, diverse places, diverse circumstances or occasions, in which these interrelationships establish themselves according to a specific model (Foucault 1982:787).

¹⁰ From Foucault's examples, we note that there is obviously knowledge involved in these power relations, as he explicate in other writings, i.e. the knowledge that forms part of obligatory relationships, the training of an apprentice, the knowledge that is inherently part and parcel of tradition, knowledge inside the myriad of sub-divisions of labour, the knowledge in and of training techniques, for the whole gamut of professions, the knowledge inherent in processes that exert different forms of domination, and the wide variety of forms of knowledge, that are used for the obtaining, and exertion of obedience.

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Yet, thinking specifically from within and for his own time and context in 1982 – which was, in France, the time of the establishing of forms of socialism vis-à-vis forms of (neo-)liberalism¹¹ – he identified the coagulation of the dynamics of these 'diverse forms' of inter-subjective interaction, in 'diverse places, [and] diverse circumstances or [on diverse] occasions', within a specific regime, as constituting knowledge-power *blocks*. Whereas the subject relations in terms of personal and social capacities, are always moving and developing, and impact actual forms of subjective embodied interaction, and communication via, within and between systems and institutions in diverse spaces, it is possible to have them become regulated, coordinated and routinized in knowledge-power relations blocks – as 'ensembles of actions'. Foucault's example, is that of an educational institution, where,

the disposal of its space, the meticulous regulations that govern its internal life, the different activities that are organised there, the diverse persons who live there, or meet one another, each with its own function, his (her) well-defined character – all these things constitute a block of capacity-communication-[knowledge]power (Foucault 1982:787).

Interactive subjectively-driven knowledge-power systems of relations in which the subject finds itself, in the knowledge-power exerted over self, but also the other, and their relations of relations, and despite being very much in flux, they may find themselves regulated within and by a knowledge-power*block*. Moreover, in addition to the expected learning processes with regard to capacity and communication, as we find in education institutions for example, from knowledge-power perspective, we also have processes of 'enclosure, surveillance, reward and punishment, the pyramidal hierarchy'¹² (p. 787).

¹¹ François Mitterrand, of the centre-left social-democratic political party, *Parti socialiste*, became President of France in 1981.

¹² We do not address this matter in this article, and also not, how Foucault's 'thematics of power', or better, 'thematics of knowledge-power' could be used as heuristic device to read his researches from his archaeological, through his genealogical periods, and, how to do that historically. This obviously includes his focus in his genealogical questioning, with regard to the matter of the tracing of lines of intellectual descent (the 'archive') as the 'history of the present', and more specifically, in terms of this article, that of the subjective present.

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2 The Subject within the Digital Knowledge-Power Framework

The historicised theoretical framework explicated above, very briefly sums up one of the aspects of Foucault's perspectives in 1982, on his work stretching over a period of more than twenty years. Focusing on relations in which the subject finds itself, and in which it operates and functions, this concerns the explication of the how, of knowledge-power, or, more specifically, the how of the subjective embodied aptitude-communication-knowledge-power complex, or the capacity-communication-knowledge-power complex.

If we fast forward ten years, we find much changed in the world system: the fall of the Berlin Wall in 1989; the dissolution of the Soviet Union on 26 December 1991 – and, with it the nearly seventy years of socialist hegemonies, as well as their totalising threats to the aristocratic Western-liberal capitalist elite –, the fall of the repressive, tyrannical, and degenerate apartheid system, as well as the dawn and rise of the information age, inaugurated by the personal computer, or PC in the late 1980s and early 1990s in South Africa.

Retrospectively, it is certainly the latter, more than any other event or force, that has impacted the world system most decisively, and with that, the knowledge-power complexes of the world. Linked to the then rapid development and installation of intra-institutional and inter-institutional information technology hardware, the PC became the gateway to the global information and knowledge highways of the world. Not only has the PC provided access to international knowledge, it also opened up the digital sharing of knowledge, together with new teaching and learning possibilities. By putting knowledge production at the subject's fingertips, it has simultaneously radically democratised knowledge production. For the first time in modern history, knowledge production was not the prerogative of a soviet-style, or for that matter, an entitled and privileged controlling, and manipulating dominant racist (apartheid) elite. Whereas previously, free thought, free association, free movement, and free speech was only possible under circumstances of severe forms of enclosure, surveillance, reward and punishment - the pyramidal hierarchy, both East and West -, the information highway did away with that. It opened up access to electronic resources, for the advancement of learning in a multiplication of spaces, globally, but also possibilities for the critical, and constructive engagement of local, national and international conundrums that face the world. Information technology freed the thinking (and typing) subject, to constructive knowledge production, for consumption, praxis and usage, while simultaneously refracting hegemonic knowledge-blocks of the world. It

created the possibilities for a thinking-with on the big, global questions.

Looking back, these dynamics from the late 1980s and throughout the 1990s, opened new freedoms to the populations of the world, and with it, a plethora of opportunities and possibilities, but also a myriad of new challenges, and numerous often intersecting conundrums. We shall not attempt to engage these, or try to provide some kind of challenge-map, for knowledge production in this article at this point. Suffice to say that, from the perspective of the dawn of the information age, and the quantum leaps of the cross-cutting impacts of knowledge production in trans-disciplinary ways since, the question of the subject remains, and that not only with regard to knowledge production as such, but, in terms of Foucault's explications, the intersecting, and interwoven relations in the embodied aptitude-communication-knowledge-power complex, or the embodied capacity-communication-knowledge-power complex. In fact, to pose the question of the embodied subject, today, especially in South Africa with our racist history, may be even more important than in Foucault's own time, on which we shall not much expand in this forum.

Posing Foucault's questions within the electronic, or digital age, raises the question of what we may term the e-Subject, in its multiply networks of relations in e-communication and variable and diverse e-knowledge-power interactions. In terms of the electronic, or digital framework dynamics of the digital age, we may just briefly represent it schematically as in figure 3 below.

More importantly, than posing the questions with regard to the e-Subject, as such, is to pose them, not only in terms of the e-Subject's embodied freedoms, and its related aptitudes, or capacities and enhancement and advancements too of capabilities, but especially in terms of its many bodily constrictions, ranging from the continuing legacy of the material inequalities of the modern world, through the multiply forms of surveillance to the holding jobs of remnants of twentieth century systems of race, privilege, and favour. And, as such, to ask these questions today, is to position Foucault's complex of questions in the framework of the electronic age, the digital age, or, speaking in terms of the disciplines, more closer to home, the Digital Arts and Humanities, and more specifically, the African Digital Arts and Humanities, or African Digital Humanities for short. Within this latter context, we believe that academia has not as yet appreciated the rapidly expanding capabilities of the African e-Subject, with regard to the Digital Humanities, and the steadily growing of radically democratic knowledge production sensibilities of the African e-Subject.



Figure 3: The embodied e-Subject, in its multiply networks of relations in an e-communication and e-knowledge-power framework

In this context, and against the background of the widely recognised increasingly technological future of modern culture, the enhancement and advancement of the e-Subject's aptitudes, capacities, and capabilities should not be understood in mere technical terms. As present in Foucault's career-long research project, it has become evident that the human subject may yet be re-cognised in the modern world system. And, this should centrally accommodate, and integrate into the rational research, and teaching and learning paradigms, but as re-cognised features of human life and culture, of *homo sapiens* as such, *viz.* mind/ the mental; the body/ the physical; and emotion/ feeling in terms of the electronic. Since its inception, this is one of the primary assumptions of *Alter*nation, and has become evident in quite a number of research projects and publications over the years – to move to a more comprehensive and more integrated understanding of the human. As such, and as this trajectory gains traction internationally, also in other spaces, it may yet pose an alternative to the dystopic futures that some historico-

scientific and evolutionary-biological crystal-ball gazing have charted for world humanity. As meaning making animal, and looking back, *homo sapiens* has proven itself not only in its story-producing abilities, not least, in his critical self- and national narratives, but also in its abilities and expertise in future scenario constructionisms, where the hard-earned knowledge of the past has been factored in. In this endeavour, the question of the how, how the human and humane e-subject is positioned and interacts within the e-communication and e-knowledge-power networks of both today and the future, not only as participant-consumer, but as knowledge-producer, may yet prove vital for the future of humanity¹³ on Planet A.

3 23/25 Years of Alternation

In its first ten years, 1994 - 2003, *Alter*nation focused its interdisciplinary approach on the then contextually-relevant problematisations arising from within the scholarly engagements of the Languages and Literatures of Southern Africa¹⁴. For the next fifteen years, from 2004, to 2018, it opened up its interdisciplinary approaches to include knowledge production from within the programmes and disciplines across the Arts and Humanities, as well as

¹⁴ For this purpose, it was housed within the Centre for the Study of Southern African Literature and Languages (CSSALL) founded, likewise in 1994.

¹³ This question of the how, is addressed in both this present article, and the second, related one, 'The African Digital Humanities and *Alternation* on the UKZN OJS Platform (2018 -): Innovation, Pan-African Collaboration, and Trans-Continental Integration' (cf. footnote 2 above). The question of the what, was addressed in the 2018 presentation, 'Designing Equitable Foundations for Open Knowledge: Freedom, e/Quality & Access' and will be published in *Alternation* Special Edition 23 (2018). The ultimately challenge, especially in our current decolonising-of-knowledge-context, concerns the answer to the question: '*How* are subjects the producers of knowledge? *What* do they produce? *Why* do they produce this knowledge (and no other)? And, how do these together, form integrated processes, with specified outcomes, also impacting institutions of Higher Learning, in the integrated, yet diverse dynamics of knowledge-power productions. This can obviously be asked as historical questions – as Foucault indicated – but also as future-oriented questions, as the decolonising paradigm is challenging us.

Management, Information Technology (IT) and Information Science (IS), and Governance in Southern Africa¹⁵¹⁶.

3.1 Alternation: Some of the Founding Ideas

In setting the parameters for *Alter*nation, in the midst of a plethora of theoretical and methodological approaches in the Arts and Humanities (cf. Smit 1995), we identified seven clusters of guiding perspectives, at that historical juncture.

Together with CSSALL, Alternation decided that discursively, all will be equal -i.e. that all will have equal access, and will be equally trained in the requisite discourse needed for the critically-constructive, and contextually-relevant production, and transformation of knowledge, through evidence-based contextually-relevant research-lead Teaching and Learning (cf. Smit & Chetty 2018:360ff). Most importantly, the legacy of texts banned under the apartheid government, was rectified by studying all equally (even though some remained banned at the time). Examples were, e.g. The Communist Manifesto, and David McLennan's Karl Marx: Selected Readings, and, in literature, for instance, Peter Abrahams's Tell Freedom, and André P. Brink's Afrikaans version of his Kennis van die Aand. We sought to 'normalize' South Africa society. Furthermore, the actual conceptualized production, deployment and use, of the then still banned language - knowledge complexes in method and theory, was shared radically equally. The previously academically dominated, censored and repressed, were released, set free, into equal inter-subjective interaction, and recognition, e.g., students were lead to read, research and critically engage the corpus of excluded and repressed liberation knowledges, not least the indigenous knowledge formations of the peoples of South and Southern Africa.

¹⁵ 2004 is the official date of the founding of the new university, the University of KwaZulu-Natal, with its five campuses, including the Pietermaritzburg, Edgewood (Pinetown), Westville, Howard College (Durban) and the Medical School (Durban) campuses. It was the result of the merger of the former Universities of Durban-Westville and Natal. This is also the date at which *Alter*nation's focus was also opened up from a focus on Literature and Languages in Southern Africa, to the Arts and Humanities in Southern Africa. ¹⁶ The title of this article, '23/ 25 Years of *Alter*nation ...', is used to indicate that *Alter*nation was founded in 1994, and that it was approved as international interdisciplinary journal for Southern Africa, by the South African Department of Higher Education in 1996.

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Through these processes, we also opened up a space that recognized the debt that the Humanities of resistance at that time had to both the psychoanalytic and deconstructive paradigms. Ranging from the work of Sigmund Freud, in the early twentieth century, its critical development and deployment in Feminist discursive formations, through the critical works of Michel Foucault, and Jacques Derrrida, to Edward Said, and Homi Bhabha, the view (and practice) was that the de-constructive paradigm (including post-colonial discourse) has become a centrally accepted part of the Human Sciences' approaches to scholarship and the disciplines internationally, and that this should be the case too, in South Africa, as we set out to equalize society and constructively engage its inequalities. It also played a distinctive part in the toppling of apartheid's patriarchal, and racist 'Arts' edifice, which fit the Marxian critique of the Superstructure very well. As such, and amongst others, psychoanalytical and deconstructive approaches would continue to play a role in the continued de-construction of existing apartheid-inherited knowledges and the impacts they have had, and continued to institutionally have in the human sciences. Constructively, and positively, they would provide basic tools of thought for the construction of new knowledge, especially with regard to the fostering of inter-cultural, and inter-racial, equal intra-institutional and interinstitutional scholarly interactions and engagements, not least in research and publication. Needless to say, these processes aimed at simultaneously breaking down the repressive and dominating racial apartheid knowledge barriers and boundaries that separated, excluded and marginalized, often most visibly present in marginalized literatures, languages and knowledges¹⁷.

We also recognized the world-historical rise in the acknowledgment of *cultural difference*, in so far as existing forms of cultural difference have been humanly created, as very often forms of domination, exploitation, and exclusion, and the global recognition of culture as always in flux, and being characterized by its *hybridity*. The main focus of the approach of *Alter*nation, as an *interdisciplinary approach* – which included what is today called transdisciplinary – must be understood in this framework, and then, to develop interdisciplinary approaches as discursive practices. By focusing on Southern

¹⁷ Cf. for instance the *Alternation* issue edited by Mahonga, Van Wyk & Smit in 1998, *Marginal Literatures, Marginal Figures and Marginal Genres in South African Literatures*; as well as Smit, Van Wyk & Wade's *Rethinking South African Literary History*, 1996.

African Literature and Languages, the challenge was to produce knowledge with regard to the explicit recognition of the hybridity, and diversity in, and between cultures, and to use psychoanalytic and deconstructive approaches to not only critically study the then existing, knowledge-power blocks (as explicated earlier in this article) but to also produce knowledge outside them, with, and in, and for community, or, the then emerging New South Africa.

In the *fourth* place, the articulation of CSSALL and *Alter*nation, with the continued untransformed knowledge block(s) that we have inherited from the outdated liberal and apartheid paradigms, posed a problem. As is evident from the current decolonising of knowledge drive not only in Southern Africa, this continues to be a major obstacle in the way of freedom and development, and the challenge for the production of the requisite knowledge(s) to feed in and even lead these multiform processes. In order to capture this decisively critical perspective at the time, we clearly stated that it was different, in so far as it could not be seen as integrative, nor as accommodatory of these knowledge blocks, as is evident in Smit (1995).

Fifth, and closely related to this point was to position *Alter*nation in the non-racial space that has been developing since especially the late 1940s. This was done by linking up with the critical analysis and arguments put forward by David Goldberg's *Racist Culture* (1993), which is proven to remain an important work given South Africa's racist past, not least in academia.

Sixth, and integrating all of these perspectives and their related sentiments, was the question of the nation, and the nation-state. As can be expected, in the 1990s, there was quite a substantial number of publications that have appeared in print media, both internationally and nationally, addressing and questioning the notion of the nation, not least the nation-state (cf. Bhabha 1990 in Smit 1995; and Makgoba 1998, for instance). And, in order to address this mega-challenge, the question of nationhood, as the New South Africa was emerging from its apartheid past, was centrally addressed in CSSALL's main project, the South African Literary History Project (cf. Smit 1999a; Smit 1999b; as well as Smit and Van Wyk 1998/ 1999; Wade 1994; and Alant & Van Wyk 1994)¹⁸.

Ultimately, Alternation's significance, is that it opened up a discursive

¹⁸ This project and the numerous Masters and PhD students CSSALL produced over the ten year period of its existence, will be CSSALL's lasting legacy, and is still in need of research. But cf. below.

space with its related discursive praxes – integrated with CSSALL – different from the then yet untransformed humanities disciplines and subjects inherited from the outdated liberal and apartheid eras¹⁹. As such, it was intended as a clean break, a different paradigm, and the entering into a new episteme. This project is still continuing, and expanding (cf. Smit & Chetty 2018).

3.2 Alternation: A Brief Timeline (2004 -)

With the founding of the University of KwaZulu-Natal, The University of Durban-Westville, together with the Centre for the Study of Southern African Literature and Languages, and *Alter*nation were integrated into the new institution. The *Alter*nation Editorial Committee decided to continue publishing *Alter*nation as international interdisciplinary journal, as approved by DoHET in 1996. It also decided to expand the journal's focus and objective, *viz.* to develop and foster *Alter*nation's interdisciplinary post-apartheid paradigm for the Arts and Humanities in Southern Africa. This was done, and, in 2018/ 2019, *Alter*nation is celebrating its 25th year of existence. It is also publishing a number of issues, celebrating, and critically reflecting on our still young democracy, with a view to present and future challegnes. In this section, we just briefly point to some events in *Alter*nation's trajectory, since 2004.

• Starting in the late 1990s, and continuing into the 2000s, *Alter*nation has decided to establish thematically-focused research groups, with dedicated research project leaders, in the interests of knowledge production via peer-reviewed thematic journal issues. A number of the first issues were dedicated to the first main topic, viz. the Southern African Literature project. For an overview of all the issues dating from 1994, cf.: http://alternation.ukzn.ac.za/archive.aspx

• In 2008, *Alter*nation was contacted by SABINET, with the request to scan and upload all the *Alter*nation back-issues. We understood that government provided funding for the scanning and digitizing of all the DoHET journals, since their inception, up to and including 2008. It formed part of the *Carnegie African Journal Archive Project*. And was done under the direction of Ms Erika Janse van Rensburg. The *Alter*nation back issues,

¹⁹ As is generally recognized, both the liberal and apartheid ideologies, were characterized by their self-serving exclusionary and repressive practices, of primarily a racist elite, that suppressed the episteme of inclusivity and equality.

of 1994 - 2009 are available at: https://journals.co.za/content/journal/alt

• In 2011, the *Alternation* Editorial Committee decided to have our own dedicated *Alternation* website created, and to have all our back issues uploaded on it. This was done, and in January 2012 we opened our *Alternation* UKZN Joomla website, with the assistance of Mr. Niall McNulty. Quite significantly, and since this website had a counter attached to it, *Alternation* received more than 100 000 hits and downloads of articles in 2012, and more than 50 000 in 2013. This number included back-issues.

• We were then requested by the College of Humanities, at UKZN, to move our website to the current platform. This was done under the direction of Mr. Sibongiseni Msomi. And, *Alter*nation has been published as part of our College site, since January 2014. The homepage is available at:

http://alternation.ukzn.ac.za/Homepage.aspx

• With the opening of the *Alter*nation home page and archive on the College website, it was decided to terminate the Joomla site, since the College site has taken over all the functions of the Joomla site.

• In early 2017, Ms. Faith Bhengu, Principal Librarian at UKZN and Prof. Carol Bertram of the School of Education, UKZN, approached the Academy of Science of South Africa (ASSAf), to provide training in creation of a dedicated Online Journal Management Systems (OJS) site at UKZN, and also to provide editors and editorial teams of national and international journals, with the requisite training to run their journal on the site. ASSAf's Ms. Susan Veldsman and Ms. Ina Smith did the training, and it was done over a two day period, Wednesday 24 - Thursday 25 May 2017, on West-ville campus, with around 30 attendees. Subsequent to this meeting, an initial site was created, and journal editors and editorial teams invited to move their journals to the new UKZN OJS digital platform. For an image of the first Alternation masthead on the UKZN OJS platform, cf. figure 4 below.

3.3 Alternation: Funding

The main start-up funders of *Alter*nation and initial *Alter*nation projects were: The Centre of Science Development (CSD – the forerunner of the National Research Foundation, NRF); the NRF; Gencor; Anglo-American, Chairman's Fund; the University of KwaZulu-Natal, and the South African Department of Higher Education (DoHET). In addition, many companies and international funders have funded individual *Alter*nation projects over the years. With this issue of *Alter*nation we wish to heartily thank our past and future funders for contributing to the founding of an indigenous African, sustainable project, that has benefitted scholarship, and especially the Digital Humanities, immensely, and will definitely continue to do so in future.



Figure 4: *Alter*nation masthead from 2017.

The updated *Alter*nation site on the UKZN OJS platform, as at December 2018, is available at: <u>http://journals.ukzn.ac.za/index.php/soa</u>.

4 From Humanities Computing to the Digital Humanities

As is well-known, and also celebrated in this issue of *Alter*nation, is Tim Berners-Lee's 1989 Proposal for an Information Management System, or, his internet design diagram, or, of a global, interconnected hypertext. At the time, he was a member of CERN, the world's largest particle physics laboratory.

In the early 1990s, the S.A. universities constituted a national, interuniversity committee to research the requirements and viability of both intraand inter-institutional systems for a Southern African Digital Information Technology (IT) network for the planned digital revolution that was in the offing. This was done via the creation of an Educational Information Managing System (EIMS) for South African Higher Educational Institutions (DoE 2001; Mayatula 2007). From the beginning, in 1991, and before the actual founding of *Alter*nation, we were part of this process. And with its founding in 1994, together with CSSALL, the aim was to have its main initial project digitised and published online. Graham Stewart (formerly Dean of Arts, DUT), was the IT and IS specialist on the project at the time, and, created the digital online software for the *Southern African Literature and Languages Encyclopaedia* in the form of a Wiki, with over 35 000 entries²⁰. Stewart not only did his PhD on the project, with Johan van Wyk as project leader and supervisor, but also edited an *Alternation* issue on it, titled, *Humanities Computing* (cf. 9,2 2002).

In IT and more broadly speaking, IS, Rembrandt Klopper joined the *Alter*nation Editorial Committee in the early 2000s, and took *Alter*nation into the collaborative inter-college research domain, with his inter-university focus research group on Management, IT/ IS and Governance, which had its own dynamics and trajectory. The first two issues were published with the title, *Informatics in South African Higher Education I & II* (2005)²¹.

5 Conclusion

Following on Berners-Lee's pioneering vision of how to develop what would become the then future digital, or e-Revolution of the late 1990s and early 2000s, the founders of the notion of 'Digital Humanities' (DH) in the early 1990s in the USA collectively constructed the following definition of DH (cf. Digital Humanities n.d.; Kirschenbaum 2010; cf. also Burdick *et al.* 2012; Drucker 2013; and Terras 2011):

The digital humanities, also known as humanities computing, is a field of study, research, teaching, and invention concerned with the *intersection* of computing and the disciplines of the humanities. It is *methodological by nature* and *interdisciplinary in scope*. It involves investigation, analysis, synthesis and presentation of information in electronic form. It studies *how* these media affect the disciplines in which they are used, and what these disciplines have to contribute to our knowledge [of computing].

In this brief article, we have attempted to trace some of the processes, or, the how, or the 'what happened' with regard to the still brief history of the

²⁰ It later became the *Encyclopaedia of South African Arts, Culture and Heritage (ESAACH).*

²¹ In Digital Humanities scholarship, it is widely recognised today that Humanities scholars cannot take place other than including digital expertise. For a very brief overview of the history of the Digital Humanities, see, Vanhoutte's 'The Gates of Hell ...' (2013) for instance.

beginnings of *Alter*nation. We have also pointed in a quite preliminary and very rudimentary way to some of the developments in *Alter*nation with regard to its positioning within the very broad framework of the Digital Humanities. These have been our small contribution to the Digital Humanities, and, more specifically, with regard to the rationales and positioning of *Alter*nation, within the episteme of the African Digital Humanities, since 1994.

Following the pointers of Immanuel Kant, we have also started this article by very briefly reflecting on Michel Foucault's (1982: 777ff) theorizing of the 'how', the 'what happens', within the broader 'task of philosophy as a critical analysis of our world'. It is especially with regard to the challenges that the decolonising of knowledge on the African continent pose, that the project needs to be inter-, multi-, and trans-disciplinary in nature, be positioned within the electronic framework and technological framework of the digital, and that it should focus on the Humanities, in the form of an African Digital Humanities. In this, the digital-, or e-subject should play a leading role, with regard to capacity development, communication networking, and the production of knowledge. It is only via an 'ensemble of actions', in diverse spaces, in Southern Africa, in Pan-African ways, and also trans-continentally that we shall succeed in producing that yearned-for knowledge(s), we envision through our combined decolonising knowledge projects.

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Rigour versus Relevance in Information Systems Research in South Africa

Joshua Chukwuere Sam Lubbe Jan Meyer Rembrandt Klopper

Abstract

Rigour and relevance division is as a result of many reasons. The gap between the two has promoted debate and argument that has lasted for years. Many believed that IS research is effective and others opposed the argument. Others within or outside the discipline are considering whether IS research output is affecting and impacting decision making in the industry. Meanwhile, the debate on rigour and relevance has lasted for decades but in reality, the debate and the gap still persist, in spite of efforts by researchers. Their efforts and hard-work seems ineffective. The study determined whether the needs of practitioners through rigour and relevance of IS/academic research and also to determine whether this lingering debate over these decades has worth from an academic viewpoint. There is also an on-going criticism that IS research lacks rigour, relevance, effective communication and acceptance in the field as noted in the literature.

Keywords: Rigour, Relevance, Debate, Information Systems (IS), Academia, Collaboration, Research, Academic, Researchers, Practitioners, Applied discipline, Research method and Academic researchers.

Introduction

Rigour and relevance in Information Systems (IS) research is a means for quality in research, rather than an end (Martensson & Martensson 2007). Rigorous
research is research that aims to be credible by being consistent and transparent. Relevant research is presenting meaningful findings to practitioners (Martensson & Martensson 2007). Rigour and relevance have contributory aspects that are working together to achieve research quality (Chukuwere 2013).

The rigour versus relevance debate on IS has been on-going over decades but it has not yet been solved (Glass 2009; Martensson & Martensson 2007; Gulati 2007; Worrall, Lubbe & Klopper 2007). The debate is whether IS researchers and practitioners asking themselves if IS research move from rigour and relevance to reverberating and responsible research that impacts on practitioners' activities and on general society (Desouza, Sawy, Galliers, Loebbecke & Watson 2006).

Problem Statement

It is important to look at whether knowledge produced by IS researchers is applied by IS practitioners on a daily basis and understanding whether the problems and challenges faced by practitioners are addressed by IS research and whether the report is available to IS practitioners (Recker, Young, Darroch, Marshall & McKay 2009; Kraaijenbrink 2010).

The central aim of IS researchers is to conduct research that is rigorous and relevant and applicable by practitioners (Mentzer 2008). For a research study to be relevant researchers and practitioners have to collaborate, the findings must be used by others, it must solve real-world problems and create and add knowledge to both the academic and practitioner body (Kieser & Leiner 2007).

The problem to be investigated can therefore be stated to be: It is presently unknown how rigorous and relevant Information Systems research in South Africa is to meet Information Systems practitioners' expectations.

Research Question

The research questions that are derived from this problem statement can be formulated in one primary and 3 secondary research questions.

The primary research question is postulated as: What is a rigorous and relevant research that meets Information Systems practitioners' expectations?

The three secondary research questions stemming from the primary question are:

- 1. Is IS research output addressing the concern of IS practitioners?
- 2. Is rigour versus relevance debate necessary in IS research?
- 3. What can be done to improve the understanding of rigour and relevance in IS research?

Overview of the Literature

The gap between IS academics and practitioners is worrying (Fitzgerald 2003). Lately, there has also been a debate on how to increase and improve research relevance (Nicolai & Seidl 2010). At this point, rigour has a role to play (Vermeulen 2007) and it is important for relevance to be initiated in research (Huisman & Conradie 2010). Academic editors have also debated among themselves on the amount of rigour needed in research for it to contribute to the field of academia (Pasmore, Stymne, Mohrman & Adler 2007). Researchers and practitioners have also been criticised for conducting research on limited and unproved evidence (Pfeffer & Sutton 2006; Pasmore *et al.* 2007).

The range of innovation today has placed researchers and practitioners in a position where they are seeking help from academic research to cope with ever-increasing changes. At this point, solutions provided by both are in doubt regarding whether the challenges faced by them are really addressed through solutions provided and the research findings accessible by all (Recker *et al.* 2009; Kraaijenbrink 2010). The rigour and relevance debate has been of concern in the academic field for decades now, with little or no solutions to resolve the issue (Straub & Ang 2011; Glass 2009; Rosemann & Vessey 2008).

The Decline of Academic IS Research over the Years

According to Cummings (2007), researchers hardly believe that practitioners pay attention to academic research and if they do, they do not use it in practice. Gill and Bhattacherjee (2009) argued that researchers and the way they inform stakeholders, have decreased in the past and this contributes to the decrease in practitioners as well. They advised that researchers should be committed to publish in practitioners' outlets. In the 1950's and 60s, the argument that academic management research was becoming relevant was raised for the first time (Gulati 2007).

The slogan of publish or perish indicates that researchers are promoted or rewarded based on the number of publications and journals published. This

has led to an increased number of conferences, journals and publications in the discipline with little impact in practice (Moody 2000).

Academic research in research on cross-boundary topics has continued over the decades and its relevancy remains under scrutiny (Chukuwere 2013). Having debated over the decades on rigour and relevance in academic research, it state in particular that practitioners are not using academic research findings in practice (Worrall et al. 2007)In the past 50 years, academics have been asking questions on how to impact management practice more positively through research (Bartunek 2007). The debate has been tested that the theory lavout of the IS field has been interrogated and found to be soft (Bakshi & Krishna 2007). Presently, many practitioners have little interest in academically published research and see no reason to use this research (Mckelvey 2006). These practitioners are worried as IS researchers are allowed to research in any kind of institution, be it in government organisations, informal groups, online groups and many more (Lanamäki et al. 2011). The changes and quick innovation in technology have forced new knowledge emerging over the years from data processing research to Information Systems (IS) and also to Information and Communication Technology (ICT) (Bakshi & Krishna 2007).

The Absence of Theory in Academic IS Research

From inception, the link between IS researchers and practitioners has been under heavy scrutiny. Until today, the relevance of academic research to practice is still debatable (Lanamäki *et al.* 2011; Rosemann & Vessey 2008). Many considered conducting research that is both rigorous and relevant as a conflict of interest (Rosemann & Vessey 2008). There is a level of conflict and distress regarding the irrelevance of academic or organisational studies and many publications have been published to end the debate (Palmer, Dick & Freiburger 2009).

Academic researchers are growing irrelevant, which affects the identity of the discipline (Tushman, O'Reilly, Fenollosa, Kleinbaum & McGrath 2007). Some have argued that academic research is having basic problems (McKelvey 2006). To revive IS theory and the advancement of relevance, the proposal is to change in business schools, in leadership settings and in other areas in an option (Kraaijenbrink 2010). Encouraging editorial board members to be more practical and relevant minded will be an effort in

the right direction (Bartunek 2007; Rynes 2007; Tushman *et al.* 2007). All these suggestions and arguments show a lack of discipline and theory in the discipline (Kraaijenbrink 2010). IS discipline is at the risk of rigour preference over relevance (Recker *et al.* 2009). As Markides (2011) puts it, the link between research and practice is really separated. To date IS research literatures has appeared irrelevant (Cranefield & Young 2007). The reason for the cause of irrelevance is still being questioned (cf. Cranefield & Young 2007).

The Lack of Discipline in Academic IS Research

Recker *et al.* (2009) believe that the IS discipline will lose it legitimacy if it fails to conduct relevant research that informs practitioners. The debate also relates to the IS status as an academic discipline, its operation and its future. Some concern has been expressed on the methodology used in IS research, and a comparison between positive and interpretive approaches, quantitative against qualitative methods and many more has led to debate in the discipline. The fact remains that all the research methods can be suitable in any situation depending on the prospective research question at hand and whether the questions asked will be addressed by the method (Moody 2000).

This means the discipline should focus on reference to its own research, not only borrowing from other disciplines (Bakshi & Krishna 2007). The level of doubt in the on-going debate and argument on IS research may force it to lose organisational understanding and usability in future and being unable to generate problem statements and answer questions from academic practitioners (Vermeulen 2007).

Rigour and Relevance

IS research is mandated to achieve this mission through its rigorous (figure 1) and relevant research (figure 2) and thereby sustaining its legitimacy and identity as discipline (Raghupathi & Friedman 2009). A paradigm shift has been realised from the mandated mission, when a call was made to refocus from just the rigour and relevance debate (concept) to what Desouza *et al.* (2006) called responsibility and reverberation research. This called for more focus on societal pressing needs and challenges (Raghupathi & Friedman 2009).

IS research should be more on challenges confronting practitioners, as this will help to promote IS identity (Huisman & Conradie 2010). IS research relevance has three dimensions; importance, accessibility and suitability (applicability) (Rosemann & Vessey 2008; and Klein, Jiang & Saunders 2006). By definition, importance research is research that is manageable and able to solve or address real-world problem Rosemann and Vessey (2008).

Secondly, accessibility of a research is based on whether the research can be readable, understandable and usable by the targeted audience. Lastly, applicability of research to practitioners is a question of whether a research is directive and providing informative recommendations as needed (Rosemann & Vessey 2008). Relevant research is not published in academic journals but in practitioners' journals (Lanamäki *et al.* 2011).



Figure 1: Components of rigorous research in Martensson & Martensson (2007)

According to Vermeulen (2007) rigour is an avenue whereby a theory can be consistent and reliable. Rigorous research can be described as a scientific research study that passes through the reviewer process and makes a contribution to practitioners. To facilitate rigour, applicability checks ensure

that academia and practitioners collaborate well on acceptable research (Huisman & Conradie 2010).

Straub and Ang (2008) argues that the rejection and acceptance of a paper is through readability, because if not readable, it makes no sense in practice. The lack of readability in a research renders it valueless. Some believe that acceptance and rejection of any research should be based on rigour and relevance and others argue that rejection of a research paper based on rigour will be killing and hindering the discipline from new innovations and ideas but both should also be regarded in a research. Rigorous research without relevance is unimportant. Whitworth (2007) advised that IS researchers should not kill the discipline in the name of rigour. The advancement of IS research in the future depends on the compounding of rigour and relevance. Rigour may be important to show practical reality and researchers and practitioners should try to agree on a rigorous standard and working towards relevance (Vermeulen 2007).



Figure 1: Components of relevant research in Martensson and Martensson (2007)

Relevance in research ensures that research is reliable, actionable and applicable in solving real-world challenges but irrelevant studies cause a research finding to lose its identity (Raghupathi & Friedman 2009). So far, practitioners regard academic research to be out-of-date, over-rigour and increasingly immaterial (Whitworth 2007). Researching rigorous and practical relevance remains difficult and challenging and many studies support the argument that academic research is not based on practitioners' expectations (Markides 2007; Tushman & O'Reilly 2007; Vermeulen 2007).

According to Moody (2000) the IS discipline cannot establish legitimacy through rigorous or theoretical methods but through practical relevance and usefulness. Another area of concern is that academic research is divided into applied and basic research.

Applied research needs an immediate application in practice and basic research is aimed at a long-term application basis (Fitzgerald 2003). Benbasat and Zmud (2003) state that IS research has tried to copy the research rigour of other disciplines and losing sight of relevance in the process.

Major Challenges Facing Academic IS Research

The contract between academics and practitioners is not properly formed to produce important or relevant research. Only limited academic research presents practitioners' concerns and only a few practitioners read academic articles, therefore this is a major challenge (Desouza *et al.* 2006. Shapiro, Kirkman and Courtney (2007) attribute the growing gap between academics and practitioners on the lost in or before translation problem. Markides (2007) defined the existing gap problem as a result of academics having concluded that the gap exists, without defining what practitioners expect.

However, attaining the twofold mandate of IS research and making contributions is challenging. Academics and practitioners have different areas of interest, aspirations, missions and objectives and balancing all these can be challenging and problematic (Dooley & Kirk 2007). This could lead to a conflict of interest among the parties. From editorial comments it was realised that collaborative research also yields different aims among the parties (Pasmore *et al.* 2007). Moreover, academics are judged on promotion and practitioners are judge on impact (Steinbach & Knight 2006). To this point, a professional survey conducted in IS shows the gap between both is rooted, so much so that practitioners often have no idea of IS research findings, maintaining that IS research is out-of-date, difficult to read and insignificant (Serenko & Turel 2010).

Some continue to debate on whether rigour and relevance should be combined in one research (*Tushman et al.* 2007). Disciplines, such as engineering and medicine place less importance on the rigour and relevance gap (Kieser & Leiner 2007). Furthermore, the challenge is that practitioners take time to understand academic research and researchers take time to interpret its findings in a meaningful way to the audience (Kieser & Leiner 2007). Because of the language barrier, academic educators find it challenging to transfer knowledge and difficult to analyse practitioners' problems and concerns.

The changing technological world also poses a challenge to IS research relevance, meaning, the pace at which technologies are changing is far faster than the speed at which academic research is being delivered. Before research problems and questions are formulated and research conducted the business environment has changed and this disables relevant research being delivered (Raghupathi & Friedman 2009). The challenge why the gap persists is that researchers keep talking about it but not much has been done to close it (Markides 2011).

Based on the argument of Kieser and Leiner (2009), one can be forced to believe that closing the gap is impossible. Narrowing the gap is huge to many, because the way rigour and relevance are measured is actually bad (Markides 2011).

The task of being an academic and practitioner researcher can be laborious, due to the fact that academics must publish (Moody 2000). There is little engagement between the two because each has his/her own conferences and journals and practitioners cannot publish in academic journals because of the high rigour requirement and procedures to attend conferences together and vice versa. The way forward is for academics to publish academic and nonacademic papers (Moody 2000).

Problems of Information Systems

The present reflection in the IS discipline shows it is facing the challenges of identity establishment. The IS research rigour standard is in doubt, IS researchers are busy researching rigorous against relevance research (Bakshi & Krishna 2007). However, the social system is characterised as self-referential, so that researchers cannot communicate their findings to practitioners (Kieser & Leiner 2007). They can only irritate when interacting

(Kieser & Leiner 2007). They are autonomous with a limited communication link, distribution of knowledge and problems and academic make decisions excluding practitioners (Cranefield & Young 2007).

IS researchers are not really working hard to make their research findings relevant to students or practitioners and to other audiences (Fitzgerald 2003). Academics and practitioners are all worried about practitioners' challenges but their research suggests the opposite and they are operating in a parallel-line. There is no proper engagement between academia and practitioners to close the gap (McNatt, Glassman & Glassman 2010). Each party has its own knowledge, questions, different approaches in answering questions and producing answers with different expectations (McNatt *et al.* 2010).

Bartunek and Rynes (2007) discovered that 42% of research papers from academics do not present significant results. Practitioners may understand current challenges in the industry and researchers know theories that can be applied (McNatt et al. 2010). However, research findings are considered irrelevant and less used in practice and the publication-time-cycle is problematic, because practitioners need immediate solutions to solve immediate problems (McKelvey 2006).

The Engaging Practice between Researchers and Practitioners

Government and other organisational institutions have increased dependency on knowledge produced by academic researchers for them to make policies and to advance productivity (Worrall *et al.* 2007). The term partnership is being used in the study for it encourages balance commitment in research projects among practitioners and researchers (Naudé, Nowak, Thomas & Rowe 2009). In the camp of researchers and practitioners they use different terminology to explain the association between them (Naudé *et al.* 2009).

The level of collaboration and engagement among researchers and practitioners is what brings about the rigour and relevance debate (Kraaijenbrink 2010). Currently, many debate on the rigorous standard and others on relevance in solving confronting challenges facing practitioners (Kraaijenbrink 2010). Basically, mutual research promotes partnership between academics and practitioners, but it is not the only way both can learn from each other, it is also important to strengthen this relationship and any form of challenge will help to smooth the path (Bartunek 2007).

Collaborative research can also be seen as research that impacts on practice, engaging with each other and consulting each other to produce vital knowledge that can add value to practice (Mohrman & Lawler III 2010). Collaborative research always faces connection difficulties (problems); practitioners do not see themselves as co-researchers (Kieser & Leiner 2011). Collaborative research projects have not really generated results that are simultaneously rigorous and relevant and their output reflects the trade-off between rigour and relevance (Kieser & Leiner 2011). Mckelvey (2006) proposed engaged scholarship within the academic body of fields and departments whereas Lanamäki *et al.* (2011) propose that academic research should be presented in understandable language.

Importantly, knowledge are driven through interaction among parties, many advised for an improvement of relevance, they states that for a continuous closely collaboration between the parties. Delivering relevant research, researchers have to see themselves as belonging in the camp of practitioners (Mohrman & Lawler III 2010).

Scholarly research produces ideas that restructures and modifies a discipline with impacting knowledge (Tushman *et al.* 2007; Tushman & O'Reilly 2007). The benefit of collaborative research is still numerous in providing informing knowledge to both researchers and practitioners, more benefits of collaborative research is that practitioners will know research better vice versa and researchers will understand opportunities that lie in the discipline (Hodgkinson & Rousseau 2009).

Rynes (2007) and Kraaijenbrink (2010) propose that the way forward, is the restructuring, enhancement, formulation of new kind of journal publication and distribution, conferences, network of interaction and new incentive which will empower relevance. Generated knowledge from collaborative research should be actionable and implementable in action and influence operation and claim relevance in practice. This, according to Pasmore *et al.* (2007).

Research Methodology

This section presents the two main types of research but with emphasis on quantitative research type and methodology used in the study. It will also address the nature of data that will be collected to answer the research questions as well as the ethical considerations.

Quantitative research is a predetermined scenario which is standardised (Durrheim & Blanche 1999). This study deployed quantitative research methodology because the study investigates whether the expectations and needs of practitioners are met through rigorous and relevant research and also to understand whether academic research output addressing practitioner's issues and concerns.

Questionnaires will be used to collect data. The questionnaire essentially covers the four research questions in four sections or parts with the added aspect of demographics as the initial part or section.

This study's population is set on academic lecturers attending the South African Institute for Computer Scientists and Information Technologists (SAICSIT 2012) conference and the North-West University (Mafikeng Campus) academics. The population size is 90 lecturers/academics. According to Krejcie and Morgan's theory, 73 questionnaires would be sufficient (Krejcie & Morgan 1970).

Analysis of Variables

The age ranges 18-30 and 31-40 represent the majority of the respondents (55 or 76%). This indicates that the majority of the respondents are young researchers with potential. The study also found that the majority of the participants where male (60%).



Figure 3: Number of years in academia

Figure 3 depicts the academic maturity of the respondents. This was aimed to determine how long (years) each participant has been in the academic

field. The bar chart above shows that 32 (44%) of the participants have only been in academic arena between 0 to 5 years. This illustrates that most of the respondents are young academics. Fifty five (75%) of the respondents have published. This indicates that many of the participants are publishers. Drawing inference from the results shows that 47 (65%) of the participants have published their research paper at conferences. Their publication status and experience will have some impact on the findings because many that published have an understanding of the survey.

There are three main categories of journals (academic journal, practitioner or professional journals and academic-practitioner journals) (Straub & Aug 2008; Lanamäki *et al.* 2011). Only 35 (49%) of the participants have published between 1 to 5 journal papers aimed at academia.



Figure 4: Total number of practitioners' papers published

According to Lanamäki *et al.* (2011) relevant research is not published in academic journals but in practitioner's journals. Of the three categories of journal papers, one of the categories aims on practitioners specifically. Figure 4 indicates that 53 (74%) of the respondents have not published any journal paper that focused specifically at practitioners. Only 11 (15%) of the participants have published between 1 to 5 journal papers.

This indicates that practitioner's journals have been ignored in the discipline. This makes building practitioner interest and drawing practitioner

attentions in reading academic research difficult. This finding thus supports the statement made by Lanamäki *et al.* (2011).

Rigorous research has been defined differently by different researchers. For the sake of this study, the above summarised definition of rigorous research was listed for participants to select their suitable choice. The question helps in the study to decide respondent understanding of the research topic. Forty (56%) of the respondents chose rigorous research as a scientific research in nature. The response shows that practitioners highly value scientific piece of research for it promotes good research standard (Huisman & Conradie 2010).



Figure 5: The definition of relevant research

Recker *et al.* (2009) define relevant research as a research that educate and assist practitioners solve their problems and challenges. According to Hodgkinson and Rousseau (2009) deep collaborative research efforts from the researcher produces relevant research. Relevant can be defined as practical and applicable research (Lanamäki *et al.* 2011). Thirty one respondents (43%) understood relevant research to be an applicable piece of work in practice and 30 (42%) understood relevant research to be educating and research on an assisting nature

The findings as reflected in figure 5 confirms the argument of Vermeulen (2007) and Huisman and Conradie (2010) that relevant research

should be research that users and practitioners can apply in practice in decision making at any given time.

The response to the question reflected in figure 6, aims to understand participants' view on the rigour and relevance debate. Ideally, the rigour and relevance debate ought to encourage more research output that will meet (internal and external) needs and expectations of the practitioners. The opposite is the case. 33 (46%) of the respondents still believes that the on-going debate will help in producing rigorous and relevant research that practitioners at all levels will be of benefit. But the benefits of rigour and relevance in a research is yet to be seen (Sambamurthy 2010).



Figure 6: Solving challenges facing practitioners

Practitioners argued that academic research is not informative in a real world setting and to their needs but researchers are mandated to research on informative knowledge that has practical relevance (Recker *et al.* 2009). The response from figure 6 expressed 33 (46%) of the participants believed that practitioners are getting assistance and a further 9 (12%) strongly support this notion. This indicates that IS research outputs have a significant impact in the industry.

According to Shapiro *et al.* (2007) the gap on the IS rigour and relevance debate is rooted in translation and communications and lost before translation. Van de Ven (2007) states that the root cause (gap) is as a result of

the knowledge distribution problem. According to Lee and Mohajeri (2012) researchers in the academic discipline, including IS, have two basic problems, one lack of practical relevance and the gap between academics and practices. Rigorous research in IS lays on theoretical relevance and methodologies but differ in practical relevance. Furthermore, IS research topics are selected based on academic ideas and not on practitioner's ideas (Lee & Mohajeri 2012).



Figure 7: The root cause of rigour and relevance debate

The question as reflected in Figure 7 tries to understand the participants' view on the cause of the rigour vs. relevance debate. Figure 7 suggested that only 22 (31%) of the response believed that lack of understanding between researchers and practitioners have caused the debate to linger all these years. This is possible because both parties view their environment dependently from each other and both are working parallel from each in contrast to other discipline like medical discipline.

According to Worrall et al. (2007) IS research lack relevance. This can be traced because of a lack of incentive and motivation from top academia to conduct relevant research (Rosemann & Vessey 2008). The question seeks to determine how respondents categorised IS/academic research. Lee and Hubona (2009) argued that researchers are encouraged to be relevant in their research output.

Looking at the results (figure 8), relevant and important represent 53 (74%) of the respondents who still believe that IS/academic is relevant and

important to the practitioners and industry. This suggests that the debate has not stopped the practitioners from using the academics' research work. The response contradict some researchers' view on irrelevance of IS research output.



Figure 8: The classification of IS/academic research



Figure 9: The consequences of publish or perish slogan on IS/academic

Researchers like Moody (2000) and Young, Darroch and Toleman (2006) see the slogan '*publish or perish*' as a hindrance toward publishing

impacting academic research. The indication from the above chart states that merely 31 (43%) believed that researchers across the discipline publish to gain promotion for their self-reward and benefits.

According to Kieser and Leiner (2009) the rigour-relevance gap cannot close. The parties are researching on different interests (Hodgkinson & Rousseau 2009). They strongly believe that no matter any kind of effort, approach or method deplored, rigour and relevance cannot coexist. This suggest that researchers will continue to research for their self-interest in future as is depicted in figure 9.

Researchers have said a lot regarding the impact of IS/academic research. To investigate this, the question seeks to understand the informative standard of IS research on the stakeholders. The results found that 43 (60%) of the respondents agreed/strongly agreed that IS research output is informing and impacting enough for different stakeholders. Informative research makes different for stakeholders. Respondent views read together with the findings reflected in Figure 8, support the notion that academic researchers be active in conducting informative research that benefits different stakeholders (Mathiassen & Nielsen 2008).



Figure 10: Practitioners benefits on IS/academic

Because there are different kinds of journal papers, each audience has a specific place where they access their research. The benefit of research can only be seen when targeted audiences access it. In contrast to multiple arguments on irrelevance of IS research, the results (as depicted in figure 10) show that 32 (46%) of the respondents strongly believed that IS/academic research are benefiting practitioners. This shows that research findings and outputs are really used in practice by practitioners.

Some results regard the on-going debate as a waste of time. The rigour and relevance debate means something to people in a discipline, to understand the stand point of view of the participants in this study. At present only 36 (51%) of the respondents believe that the on-going debate is necessary. This implies that the debate can help the balancing of rigour and relevance in IS research and achieving a research that meet a practitioner's expectation and needs applicable. The worth of rigour and relevance debate indicates the continuity of debate. The summary makes rigour and relevance worth debating but the implementation of ideas from the debate is vital. The results suggest that 43 (61%) of the respondents would like to see the debate going on because it's worth it. The present debate can aid researchers and practitioners to close the rigour and relevance separation (Hodgkinson & Rousseau 2009).



Figure 11: The contribution of the debate to other disciplines

Based on Benbasat and Zmud's (2003) opinions and views, discipline is balanced when other disciplines use its research in their respective fields. This can help to bridge the gap in bringing out the best from IS research that can benefit others outside the discipline. The results (as depicted in figure 11) show the 45 (64%) of the respondents believed that on-going debate in the discipline can help other external disciplines seek a contribution from IS research.

The continued debate on whether rigour and relevance should be combined in one research has heated up (Tushman *et al.* 2007). The results support the argument of these researchers that both should be combined in any piece of research. Thirty two (46%) of the respondents agreed on the combination of rigour and relevance. This will help in producing impacting research on real world setting.

Thirty six (51%) of the respondents agreed on co-existence of rigour and relevance in research because of the benefits. According to Kieser and Leiner (2009) the academic management rigour-relevance gap cannot close because parties are researching different interests (Hodgkinson & Rousseau 2009). They believe that no approach of rigour and relevance can coexist. The response is that the view is in contrast with Kieser and Leiner and Hodgkinson and Rousseau.

The lack of readability in research renders it valueless. Some believe that acceptance and rejection of any research should be based on rigour and relevance. The results show that 52 (74%) respondents indicated that rejection or acceptance of a research paper by editorial reviewing committee for publication should be based on the presence of both rigour and relevance.





To suggest a solution in bridging the gap between the researchers and practitioners, some researchers in academia believe that IS discipline should copy the footprint of medical discipline that encourages academia to work partly in industry and academy (Moody 2000). To gain insight on that argument, the question aimed to determine the viewpoint of respondents in the study depicted in figure 12 (above) which shows that 23 (32%) of the respondents have not as practiced in industry. Only 12 (17%) of the respondents have engaged in industry practice. This indicates that researchers have seen the need to be involved in the industry.

According to Deadrick and Gibson (2007) and Pasmore *et al.* (2007) researchers and practitioners should co-operate and work at the same field in following the footstep of medical discipline where people are allowed to work partly on both (Moody 2000). The research found that 31 (43%) of the respondents have engaged on both industry and practice simultaneously (mirroring the medical profession). The collaboration and engagement among the both is missing.



Figure 13: Partnering with practitioners

Depicted in Figure 13 is the question on whether the researchers consult with practitioners when engaging in research. From the listed options, however, only 20 (28%) of the respondents consult with the practitioners at the level of research question formulation and 31 (43%) of the respondents have

not consulted with the practitioners in any form when carrying out research in the industry. This shows that both are independent thinkers and doing things differently.



Figure 14: Communicating with practitioners

According to Kieser and Leiner (2007) self-referential as characterised to social research, means that researchers cannot communicate their findings to practitioners effectively. Research papers have to be communicated to targeted audiences through the right channel and available to them. The literature review study shows that it's difficult for researchers and practitioners to publish journal papers in the same publication. The question as reflected in Figure 14 seeks to augment the argument. The bar chat shows that 39 (54%) of respondents have communicated their research output through research paper publication. These publications are available on the internet. Conference publications are the second highest method of communication (21 respondents (28%). In contrast to the findings of Kieser and Leiner (2007), researchers have managed to communicate their research findings to stakeholders using different channels as seen in the chart.

Researchers and practitioners collaborating well will produce acceptable research in practice (Huisman & Conradie 2010). However, researchers and practitioners in IS discipline are living apart (Markides 2011) resulting in little knowledge transfer between them (Moody 2000). To confirm the independence of both parties, 35 (49%) of the respondents have not collaborated with practitioners when conducting research. The survey confirms that researchers are not mindful in working with practitioners in any way.



Figure 15: The principle that guides academic discipline

According to Rosemann and Vessey (2008); Klein *et al.* (2006) and Huisman and Conradie (2010) IS research relevance has three dimensions; importance, accessibility and (suitability) applicability. Applicability in IS research that is directive and informative in recommendation is reflected in question depicted in Figure 15. This figure shows that only 25 (35%) of the respondents believe that IS researchers are focusing on journal importance while publishing research papers. The second and third sets, 19 (26%) and 18 (25%) of respondents are also a concern for researchers. The respondents confirm that the researchers are working toward rigour and relevance.

Van de Ven (2007) argued that collaborative research is conducted with audiences to learn a particular problem. Collaborative research can also be seen as a research that impacts on practice, engaging with each and consulting each other to produce knowledge that can add value to practice (Mohrman & Lawler III 2010).

Furthermore, bridging the gap, practitioners can be trained to become researchers and undertaking collaborative research (Moody 2000). The research found that 42 (58%) of the respondents agreed that the collaborative approach will be the platform to be used to achieve research that is both rigour and relevance, because researchers and practitioners will work with one aim

and objective in collaborative research.

According to Bartunek (2007) the establishment of equal researchers needed to establish equal an association with audiences (practitioners) and practitioners that remain appreciative of academic research knowledge and practitioners and other outside the discipline are the source of academic idea and aspirations in the world. To ascertain the level of confidence other disciplines have on IS research, the question was designed to determine the level. Only 32 (44%) of the respondents accept that practitioners and other discipline are using IS research. They response as depicted agree with Bartunek who believes that practitioners and other discipline still believe in IS research.

Statistical Analysis: Chi-Square

Table 1 was used to test the degrees of freedom between published papers and the number of year's academics has been in the academic field.

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8.795 ^a	4	.066
Likelihood Ratio	10.668	4	.031
Linear-by-Linear Association	6.069	1	.014
N of Valid Cases	72		

Table 1: Published and number of years in academia

H₀: Academia must publish.

H₁: Academia do not have to publish.

The Chi-square statistic is $(x^2 = 8.785)$, predetermined alpha level of significance of (0.025) and the degrees of freedom (df = 4). Arriving at the Chi-square distribution table with 4 degree of freedom and reading along the row at the value of x^2 to be 8.785. The alpha level of significance is 0.025 at the proposed probability levels. That means that the p-value is above 0.025 (0.066). Since the p-value of 0.066 is greater than the accepted significance level of 0.025 (i.e. p > 0.025) fails to reject the null hypothesis. There is no statistically significance that academics should publish research papers.

Table 2 tested the degrees of freedom between publish or perish slogan on IS/academic research and the total number of academic papers published.

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square Likelihood Ratio	33.495 ^a 31.851	25 25	.119 .162
Linear-by-Linear Association	.000	1	.987
N of Valid Cases	72		

Table 2: Consequences of publish or perish slogan

H₀: Publish or perish slogan is not an issue for academia.

H₁: Publish or perish slogan is an issue for academic.

The Chi-square statistic is $(x^2 = 33.495)$, a predetermined alpha level of significance of (0.025), and the degrees of freedom (df = 25). Arriving at the Chi-square distribution table with 25 degree of freedom along the row with the value of x^2 at 33.495 value. The probability is 0.025 at the acceptable probability levels. That means that the p-value is above 0.025 (0.199). Since the p-value of 0.199 is greater than the accepted significance level of 0.025 (i.e. p > 0.025) the study fails to reject the null hypothesis. In other words, there is no statistically significant difference in the proposition of publish or perish slogan.

 Table 3: The consequences of publish or perish and the worth of the debate

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square Likelihood Ratio	21.449 ^a 23.107	20 20	.371 .284
Linear-by-Linear Association N of Valid Cases	2.521 72	1	.112

H₀: There is a need for rigour and relevance debate.

H₁: No need for the rigour and relevance debate.

Table 4 depicts the Chi-square statistic is $(x^2 = 21.449)$, and the predetermined alpha level of significance of 0.025, and the degrees of freedom (df = 20). Arriving at the Chi-square distribution table with 20 degree of freedom and reading along the row at the value of x^2 to be 21.499. The alpha level of significance is 0.025 probability levels. That means that the p-value is above 0.025 (0.371). Since the p-value of 0.371 is greater than the accepted significance level of 0.025 (i.e. p > 0.025) the study fail to reject the null hypothesis. In other words, there is no statistically significance of the need on rigour and relevance debate.

The tested the degrees of freedom between total number of academic papers published and its contributions to other discipline.

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	22.070 ^a	20	.337
Likelihood Ratio	20.299	20	.439
Linear-by-Linear Association	.001	1	.972
N of Valid Cases	72		

 Table 4: Number of academic papers published and the contribution of the debate to other disciplines

H₀: IS/academic research papers are contributing to other disciplines. H₁: IS/academic research papers are not contributing to other disciplines.

The Chi-square statistic is $x^2 = 22.070$ which in the predetermined alpha level of significance of 0.025, and the degrees of freedom (df = 25). Arriving at the Chi-square distribution table with 25 degree of freedom and reading along the row the value of x^2 to be 33.495. The probability is 0.025 which in the probability levels. That means that the p-value is above 0.025 (0.337). Since the p-value of 0.337 is greater than the usually accepted significance level of 0.025 (ie p > 0.025) the study fails to reject the null hypothesis. In other words, there is no statistically significance that academic research papers are contributing to other disciplines.

Table 5 tested the degrees of freedom and relationship between published papers and the number of practitioners' papers published by practitioners.

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square Likelihood Ratio	7.418 ^a 11.431	7 7	.387 .121
Linear-by-Linear Association	5.257	1	.022
N of Valid Cases	72		

Table 5: Published and number of practitioners' papers published

H₀: Academia's must publish practitioner's papers.

H₁: Academia's are not publishing practitioner papers.

The Chi-square statistic is $x^2 = 7.418$ on the predetermined alpha level of significance of 0.025 and the degrees of freedom (df = 7). Entering at the Chi-square distribution table with 7 degree of freedom and reading along the row of x^2 at the 7.418 level. The alpha level of significance is 0.025 probability levels. That means that the p-value is above 0.025 (0.387). Since the p-value of 0.387 is greater than the conventionally accepted significance level of 0.025 (i.e. p > 0.025) the study fails to reject the null hypothesis. In other words, there is no statistically significance that academic should publish practitioner papers.

0 0 01			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square Likelihood Ratio Linear-by-Linear	21.617 ^a 16.116	12 12 1	.042 .186 .706
Association N of Valid Cases	72		

Table 6: The number of practitioners' papers published andsolving challenges facing practitioners

H₀: Practitioner papers are solving practitioners' challenges.

H₁: Practitioner papers are not solving the challenges of practitioners.

Table 6 showed the degrees of freedom and relationship between the number of practitioner's paper published and practitioners' addressing their challenges through the use of academic research papers.

The Chi-square statistic is $x^2 = 21.617$ on the predetermined alpha level of significance of 0.025, and the degrees of freedom (df = 12). Arriving at the Chi-square distribution table with 12 degree of freedom and reading along the row at value of x^2 to be 21.617. The probability is at the 0.025 probability level. That means that the p-value is above 0.025 (0.042). Since the p-value of 0.042 is greater than the conventionally accepted significance level of 0.025 (ie p > 0.025) the study fail to reject the null hypothesis. In other words, there is no statistically significance that practitioner papers are solving practitioner's problem.

Table 7 depicts the degrees of freedom and relationship between the coexistence of rigour and relevance and the separation of rigour and relevance in a research.

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square Likelihood Ratio Linear-by-Linear Association	44.347 ^a 48.408 6.534	12 12 1	.000 .000 .011
N of Valid Cases	72		

 Table 7: The coexistence of rigour and relevance and the separation of rigour and relevance in a research

H₀: Rigour and relevance are separated in IS research.

H₁: Rigour and relevance are not separated in IS research.

The Chi-square statistic is $x^2 = 44.347$ at the predetermined alpha level of significance of 0.025, and the degrees of freedom (df = 12). Arriving at the Chi-square distribution table with 12 degree of freedom and reading along the row at value of x^2 to be 44.347. The p-value is below 0.025 (actually at 0.000). Since the p-value of 0.000 is less than the conservatively accepted significance level of 0.025 (i.e. p > 0.025) supports the null hypothesis. This shows there is a statistically significant difference in the proposition of separation of rigour and relevance.

Answer to the Research Questions

The research questions postulated at the onset of this paper was a primary and 3 secondary question. The primary research question was postulated as: What is a rigorous and relevant research that meets practitioners' expectations?

Secondary research questions stemming from the primary question are:

- 1. Is IS research output addressing the concern of IS practitioners?
- 2. Is rigour versus relevance debate necessary in IS research?
- 3. What can be done to improve the understanding of rigour and relevance in IS research?

With regards to the primary question, this question needed to understand that rigour and relevance in research meets the needs, support and expectations of practitioners. According to the information gathered, respondents indicated that IS/academic research that meets practitioners' needs should be scientific research in nature so that it can be applicable in real-world setting (Chukuwere 2013).

In accordance to multiple opinions from other researchers like Huisman and Conradie (2010), Dipboye (2007) and Vermeulen (2007) on the way to move IS research forward, whom also recommend that researchers should be scientific on any chosen research topic. Researchers should base their research on what practitioners need to know and use. Researchers should also partner with practitioners on every step in conducting research.

With regards the first secondary research question, this research question aimed to understand whether IS research is relevant and impact practice. Although the response was positive many of the respondents had varied viewpoints. Most of the respondents agreed that academics on addressing the needs and expectations of practitioners, in contrast to some opinion of others in the study, it shows that practitioners are benefiting from research outputs. Challenges are that many believed that 'publish or perish' slogan hindering the success of academic research. Many agreed that researchers engage in research to gain academic promotions and self-rewards for research and attending conferences. Furthermore, the slogan of 'publish or perish' might be hindering the rigour and relevance of academic research in general. IS and academic researchers should produce research papers that deals with practitioner needs and expectations and the publications should balance between rigour and relevance (Chukuwere 2013).

The second secondary research question was to determine if IS research debate on rigour and relevance has value. Many have argued that IS should be rigorous, some stated relevance and others stood on balancing both in research. This has been issue of concern all these years in academia.

Respondents argued that the debate should continue and was worth debating. They believed that rigour and relevance should coexist in research and not be separated as it helps in identifying some gap in the discipline. Their response demonstrates that the debate is generally to the advantage of the discipline and that the lack of rigour and relevance should be a base on accepting or rejecting academic research during review for publication.

Considering the final secondary research question, the findings was for the IS/academic research to move forward pushing for progression of the discipline. The overall feedback from participant is that communicating of research to practitioners should be through a channel acceptable to practitioners. Collaborative research between researchers and practitioners is recommended as this improves the final outcome in terms of usability and applicability.

It can be suggested that researchers and practitioners should collaborate in formulating research problem statement and research questions. This might lead to the correct research problems being addressed.

Managerial Guidelines

Following Chukuwere (2013), it is recommended that:

- Researchers publish research papers directed specifically to practitioners. Academic researchers are not publishing practitioner's research papers.
- Researchers and practitioners should engage in debate at conferences.
- Researchers should engage practitioners when drafting research problem statement and questionnaires.
- Both parties should regard themselves as co-authors and researchers.
- IS academics should be allowed to combine part-time work in teaching and practicing in the industry as well.
- The combination of rigour and relevance in research is essential.
- Researchers should be able to inform and communicate to practitioners whenever research papers are published.

- A website should be created where practitioners can post their problems and challenges in the industry and researchers should have access to these.
- Both parties should advocate one goal, vision and objectives when conducting research so as to benefit both parties.
- There should be a dedicated research journal for practitioner and one for researchers and a combined journal for common interests.

Final Conclusion

The four research questions were answered and analysed. The result shows that four of them were answered in the questionnaires distributed. The overall result findings indicate from the participant that IS research is making impact in the industry in contrast to multiple views of others in literature review, to determine on whether academic research are making impact in the industry, the similar should conducted around practitioners in the industry.

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Governance and Local Economic Development in Three Southern African Countries: Namibia, South Africa and Zimbabwe

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Abstract

The Local Economic Development (LED) terrain in Southern Africa is punctuated by a high attrition rate of initiatives, which triggers both development practitioners and scholars to search for solutions to this challenge. This work explores the centrality of Governance in the process of LED implementation. The thrust of the work is to explore governance issues that may help improve economic development performance of localities in Southern Africa. The article unpacks both concepts with a goal of uncovering essential linkages so as to determine what entails good governance for LED. Despite its popularity as one of the vehicles to attaining Millennium Development goals, LED has had a number of setbacks in its implementation. This work endeavours to critically examine the aspect of governance as a key factor in the success of LED. Using lenses of bottom-up approach to development, the governance challenges are discussed as some of the main setbacks to the success of LED in the region. Subsequently, the article discusses the possible ways of strengthening governance for the success of Local Economic Development.

Keywords: Governance, Local Economic Development, Southern Africa, partnership, public responsiveness, implementation.

Introduction

There has been a lot of work done to attain freedom and independence in Africa

and in other parts of the world. Politically a number of formally colonised states are enjoying self rule, however, this has not simultaneously brought economic development as anticipated. Nyong'o (2001:4) writes that the number of the poor in Africa has been increasing since independence. This is partly due to the fact that local economies are affected unprecedentedly by policies and processes formed at an international level such as market liberalisation, expanding global trade and the dynamics of international trade (ILO 2006.2). As observed by Rogerson and Rogerson (2010.1) policy debates on Local Economic Development (LED) mainly focus on the role of lower levels of government, however, national governments have an essential set of functions to support LED. It could be drawn from the words of the former United Nations secretary; Kofi Annan that governance is probably a highranking aspect in the pursuit of economic development (Abdellatif 2003:3). The purpose of this article is to evaluate those functions related to governance. Governance has been part of the top of the policy agenda in Sub-Saharan Africa due to crises the region has experienced (Sebudubudu 2010:251).

The work focuses on three countries, Namibia, South Africa and Zimbabwe. The three countries make about a fifth of the total number of Southern African Development Community (SADC) countries and were randomly selected to give an appreciation of the LED and governance issues obtaining in the region. South Africa was of interest to the study because of its position as the last of the group to become independent. The interest on Zimbabwe was its gaining independence in the same year the group was formed, by then called the Southern African Development Coordination Conference (SADCC). Namibia got its independence two years before the regional block changed from SADCC to SADC so it marks the transition period. Given the fact that LED became popular in Africa in the recent years, particularly the 1990's (Patterson 2008.3, Rogerson and Rogerson, 2010.3), the three countries being some of the last to get their independence were expected to have a more defined framework for LED, building on the experience of their neighbours.

Attainment of majority rule in the region brought high hopes to the citizens who were long subjected to socio-economic marginalisation. While strides have been made politically and socially, many people in Southern Africa are engulfed in abject poverty. The failure of Structural Adjustments and other macro-economic policies to improve the lives of the majority in this region has seen governments adopt LED as a possible move towards economic

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empowerment. The article argues for strengthening the role of the state as a way of improving the outcomes of LED endeavours. In doing so, LED and governance are discussed and the relationship between the two is established. Subsequently, LED implementation and governance in each of the three countries is briefly analysed and evaluated in order to bolster the thesis that governance has a bearing on LED. Consequently, the possible ways of reinforcing governance are discussed drawing from the synthesis of the cases of three countries.

Local Economic Development

LED can be viewed as a process in which local governments or communitybased organisations engage to stimulate or maintain business activity and employment opportunities in sectors that improve the community, using existing human, natural and institutional resources (Moyo 2007:221). Nel and Rogerson (2005:1) assert that LED can be viewed as a locality-based response to globalisation challenges, devolution and local level opportunities and crises. LED offers a means to counteract or take advantage of the forces of globalisation by maximising local potential (ILO 2006:2). The features of globalisation like market liberalisation are seen as key drivers in the manner local development is planned (Rogerson & Rogerson 2010:2).Whether poor or rich, local entities in a global economy have the challenge and the opportunity to shape their economic future (Blakley & Leigh 2010:1).

The few definitions highlighted can be summed up in the International Labour Organiation's key features of LED which include participation and social dialogue, focus on territory, 'mobilisation of local resources and competitive advantages, and the imperative for high levels of ownership and management' (ILO 2006:2). LED in this article is therefore summed up as a process of improving the locality as a place of doing business which involves collective action from government, the private sector, non-governmental organisations and the community. The main aim being the improvement of people's standard of living. Rogerson and Rogerson (2011:3) point out that,

although the activity of LED embodies clear economic focus, it is not all about economic growth but should be targeted at a sustainable development pattern which accommodates and reconciles economic, social and ecological issues and objectives.

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LED is to be pursued with a clear appreciation of the territorial features because its implementation largely depends on the local factors. This feature of LED makes it unwise to import strategies from one place to another without carefully reconciling them with the prevailing environment. The acceptability of LED as an approach to deal with issues of poverty is its promise of wide participation where the development process is democratised within a defined context. As noted by Mutekede and Sigauke (2007:17) the focus of LED practiced in the global South differs from the one in the North in that the former emphasises the fight against poverty as one of the key policy features. This is understandable firstly, considering the high levels of inequality and abject poverty haunting the South. Secondly by its nature LED planning approaches are distinguished from the traditional development approaches in their focus on a defined territory (Nel & Rogeson 2005:1). The differences in the socioeconomic environments of the global North and the global South impacts on the forms of governance and LED strategies employed.

It is noted here that given the territorial emphasis highlighted in a number of definitions LED has tended to be viewed as a sub-national units' responsibility, yet the central state has a oftentimes interpreted in a limited way as special activities undertaken by government or non-governmental entities, to catalyse economic development but in essence all government activity has a bearing on LED.

Governance

The concept of Governance in a generic sense relates to the task of running a government (Nsibambi 1998). It describes the

exercise of economic, political and administrative authority to manage a country's affairs at all levels. It comprises processes and institutions through which groups articulate their interests, exercise their legal rights, meet their obligations and mediate their differences (Abdellatif 2003:4).

The focus of this article however, is to establish what constitute good governance for local economic development. Good governance is therefore associated with,

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prevalence of legitimacy of authority, public responsiveness, public accountability, partnerships between government and civil society organisations, information openness and public management effective-ness (Matovu 2002:123).

Stoker (1998:22) opines that,

governing from the governance perspective is always an interactive process because no single actor, public or private, has the knowledge and resource capacity to tackle problems unilaterally.

On a similar conceptualisation Stame (2004:8) points out that,

governance has also come to mean cooperative form of government by networks of public and private actors who participate in a negotiated decision and implementation as opposed to the traditional hierarchical model of government which is seen as unable to overcome its innate inefficiency and lack of transparency.

Scholars on governance research provide various explanations about good governance (Liou 2007:4), however, for the purpose of this work a conceptual understanding of the subject is derived from Stoker's 5 propositions. The propositions are quite handy in bringing out some key elements of governance which will assist in exploring a better appreciation of the term.

Stoker (1998:19) notes that governance is an intricate set of establishments and players from within and outside government. This proposition realises the multiplicity of centres of power and diverse links between many agencies of government at local, regional, national and supranational levels as opposed to a traditional view of one centre of power. Secondly, the concept could be viewed in terms of its focus, and Stoker writes that governance recognises the not so clear boundaries and responsibilities for addressing social and economic issues. In this case governance is linked to the concerns about social capital and the social elements necessary for effective economic and political performance (Stoker 1998:21).

Stoker's third proposition is that 'governance identifies the power dependence involved in the relationships between institutions involved in collective action'. This denotes the bringing in of multiple players each contributing to the realisation of a common goal. In a governance relationship no one organisation take control of a particular process of exchange (Stoker 1998:22). The essence is that different players have strength on different areas which makes collective action the way to go and interdependence inevitable. In order to meet its obligations, the local municipality has to partner with the higher spheres or levels of government and also work together with the business and not-for profit organisations. This proposition acknowledges the different forms of partnerships obtaining in governance.

The fourth proposition raises the issue of autonomy. Governance is looked at as 'autonomous self-governing networks of actors'. Stoker explains that 'under governance the ultimate partnership activity is the formation of self-governing networks'. The networks have 'a significant degree of autonomy, yet government, while not occupying a sovereign position, can indirectly' and imperfectly steer networks (Stoker 1998.24).

The fifth interpretation states that governance recognises the capacity to get things done which does not rest on the power of government to command or use its authority. It sees government as able to use new tools and techniques to steer and guide. Stoker's five elements of governance are comparable to Peters and Pierre (1998:225)'s four, namely, importance of networks, shift from control to influence, building public and private resources and the use of multiple Instruments. Stoker's first two elements are synonymous to Peters and Pierre's importance of networks and the rest are interpreted almost the same way.

Approaches to Good Governance

Two main approaches to the understanding of good governance can be drawn from scholarly work; the market and the state. The difference between the two approaches is on the role of the state. Market driven or neo-classical approaches 'emphasise the role of foreign trade and investment and the importance of a free market in stimulating competition during the development process' (Liou 2007:32). This approach views development challenges as resulting from extensive government intervention. The statist approach underline that the success of newly industrialised countries is related not to the free market but also an active state role in directing public and private resources for development (ibid:32). Kliksberg (1999:15) argues that neither extreme is beneficial instead a balanced approach that can fully exploit their complementarities is desirable. Furthermore, Kliksberg argues that countries that have managed to combine the two approaches are among the most advanced in the world.

The concept of good governance has been treated with contention in the African context where there is suspicion on the intents of its proponents. The extreme end of market approach that sought to curtail the role of the state influenced the concept of good governance presented to the developing countries (Nyerere 1998). The idea of good governance has been popularised in the continent by the donor community. The Inter-Monetary Fund and the World Bank have brought up the concept to denote the necessary reforms that the less developed countries should meet in order to realise their developmental needs and qualify for the assistance these institutions offer. The mistrust on the whole concept in the region could be summed up in Julius Nyerere's words, when he said,

> It was this aid-related discussion of good governance, a matter between aid givers and aid seekers, and the arrogant and patronising manner in which it was raised by the aid givers that discredited the whole subject in the eyes of many of us in Africa and other parts of the South. For used in this manner, good governance sounded like a tool for neocolonialism. We have therefore tended to despise the concept even as, out of necessity, we try to qualify under it (Nyerere 1998).

It is essential to note that though there is a contention on the definition of the concept, the African leader underlined the fact that it cannot be disputed that a lot of African problems arise from bad governance.

I believe that we need to improve governance everywhere in Africa in order to enable our people to build real freedom and real development for themselves and their countries (Nyerere 1998).

The kind of governance that the Pan African leader advocated is not the weakening of the already weak state but rather the mechanisms that will enable the state to serve its people better. The description concurs with the fifth proposal of governance by Stoker, which allows the government to use new tools to steer, guide development and be able to intervene on behalf of the weak.

As pointed by Klisberg (1999: 20) good governance approach is wider than the 'State-versus-market' dichotomy instead it involves cooperation among the main social actors and active integration of the powerful latent forces of civil society which both extremes tended to marginalise.

Governance and Local Economic Development

Having defined the concepts there is a need to spell out the linkages between them, how the two are related and the implications thereof. Scholarly work on governance and LED such as the one presented in the following lines suggests a strong relationship between economic development and governance. Timjstra and Rodquez-pose (2005:6) identify 4 pillars in facilitation of LED. These include territory, sustainability, governance and integration. Werlin (2001:1) 'argues that the difference between poor countries and rich countries has to do with governance challenges rather than resource issues'. It is clear that the new governance approach to economic development has changed the traditional role of government intervention and operation by introducing innovative concepts and strategies to the public management system which if applied appropriately will make significant impact to economic development policies (Liou 2007:9). The growing need to involve the people in development planning and implementation brings Local Economic Development and good governance into one basket.

The increased realisation of the need for active participation has necessitated a kind of governance that makes it possible to have a bottom-up development (Mutekede & Sigauke 2007:2). Most countries in Africa following attainment of independence have embarked on measures to promote good governance. The early reforms focussed on restructuring the state so as to create room for more citizen participation on issues of governance. Post independent governments,

in the region have been advocating decentralisation not only as a means for the expansion of democratic space and the active involvement of the citizens in the development endeavour, but also for good governance and the economic development of localities (Matovu 2003:121).

There has been a general belief that decentralisation of power between

the central state and its sub units will lead to good governance. Liou (2007:10) observes that the first major change in the good governance approach is the importance of decentralisation policies emphasised in many developed and developing countries. Decentralisation has grown to be seen as a critical element of good governance (Liou 2007:9). It involves the transfer of responsibility for planning, management, and the raising and allocation of resources from the central government and its agencies to field units of government agencies; subordinate units or levels of government; semi-autonomous public authorities; or nongovernmental private or voluntary organisations (Liou 2007:10). Through decentralisation the local spheres or levels of government have become important as facilitators of local economic development. Chikulo (2010:1) points out that,

... since the 1990s, a critical objective of governance reform has been the strengthening of local government by the decentralisation of powers, resources and responsibilities to local authorities and other locally administered bodies.

This type of governing is seen to be better able to cope with the current predicaments of demographic revolution, economic decline and globalisation that make centralised decisions difficult and demand a better understanding of an intricate world (Stame 2004:8).

The creation of a comprehensive governance atmosphere creates the starting point or foundation for LED activities (Rogerson & Rogerson, 2005:230). Understanding of good governance recognises the necessity of partnership in attainment of goals which factor is crucial for local economic development. The growing realisation that the central state does not have the adequate resources to meet its socio-economic development obligation makes the idea of partnerships very important. It is this same concept of partnership that most LED initiatives thrive on. The working together of different players, spheres of government, the private sector, NGOs and community organisations brings about strength that a single player cannot have.

The aspect of participation in development is a central issue in good governance and is a key factor in Local Economic Development. The effectiveness of LED strategies lies to a great extent, on the availability of appropriate local and regional institutional systems and on the availability of the important frameworks and skills level at all government spheres (Rodriguez-Pose & Tijmstra 2005:8). The relationship between LED and good governance is therefore that the latter is critical for the success of the former.

Local Economic Development and Governance In Namibia

Local Economic Development in Namibia is still in its infancy (Geseb 2008:4), with very few policy guidelines directly dealing with the subject. Since independence the policy and regulatory environment for LED has not been much debated and it has not been made a core mandate of municipalities (Heideman 2011:7). The earlier LED efforts were restricted to provision of service, land for business and Industrial premises for development purposes (Geseb 2008:4).

Policy and Legal Framework

Policies like the Decentralisation and Enablement Act have in a way opened room for the furtherance of LED endeavours. The Act provides for the decentralisation of the central government functions to the sub-national units and gives guidelines for the establishment of consultative structures at the regional and local levels like the Rural Development Coordinating Committee (RDCC) (Geseb 2008:5). Like some of its neighbours Namibia's LED is affected by the spatial legacies of the colonial era as much of its current land use has conformed to that of its neighbours (Hiedman 2011:7).

LED in Namibia is currently guided by the National Development planning, the Regional Development act, Local and Regional Councils Acts, Decentralisation and Enablement Act (Geseb 2008:5). Recently the Country saw the tabling of a Local and Regional Development White paper in Parliament. The White paper is seen as huge progress towards an enabling policy environment for LED in the country. The Minister of Regional and Local Government, Housing and Rural Development, Jerry Ekando articulated the philosophy behind the policy stating that,

the White paper is firmly based on the understanding that while national efforts are geared towards the enhancement of greater global competitiveness, it is at the local and regional levels that opportunities are identified and harnessed (*The Nambian* 2011).

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Crucial to LED promotion in Namibia is the National Policy on Public-Private partnerships which serve as a tool for regional and local governments for the facilitation of public-private partnerships. The public-private partnerships can be on any mandated responsibility of the local government while pro-poor partnerships aimed at improving access to the poor or which will engage them in the rendering of services, thereby providing employment are prioritised (Geseb 2008:6).

The Ministry of Trade and Industry and the ministry of Regional and Local Government, Housing and Rural Development are working on policies that have a direct bearing on LED (Geseb 2008:6). The International Development agencies particularly the GTZ (German Technical Corporation) has supported LED policy development and strategies (Hiedman 2011:7).

Governance and Related Challenges

One of the main challenges facing LED in Namibia is the lack of adequate policing around the whole subject. One hopes that the White paper on LRED leads to meaningful and strategic LED implementation. As identified by the Namibian government (*The Namibian* 2011), there has to be a move from the current top down approach to development to a more participative bottom up approach that the White Paper seeks to provide for.

Governance and Local Economic Development in South Africa

Since the democratic elections in 1994 the South African government embarked on many transformations so as to enhance governance and people driven development drawing from the constitution to the Acts and White papers. While some scholars have recorded the huge failures of the initiatives aimed at boosting LED in South Africa, the policy framework is quite advanced than in most of the African states. One of the strengths in terms of policy is that the issue of LED is a core function of local government and there is a continuous debate among policy makers, practitioners and scholars on how best the local sphere can succeed in carrying out this mandate. This is evidenced by a number of policies and guidelines that have been enacted and tried in the search for a working formula for LED.

In terms of governance the functioning of local government as a separate sphere of government places opportunities for a people led and owned development. This is critical as argued by Lutz and Linder (2004:4) 'that successful decentralisation is not just about building good political institutions' but also improving overall governance, which creates a democratic space for participation. It is within a framework of participation of the local population that issues of transparency, accountability and responsiveness, which are essential for meaningful effective policy implementation, are achieved. The constitutional positioning of local government is critical for LED. In 1996 the South African constitution obliged local government to ensure that they promote LED. The later policies and legal documents further interpreted the constitutional articulations with the White paper on Local Government of 1998 providing for a developmental local government which places LED as a key function of municipalities. Furthermore, the LED function became a key priority area which forms an important part of municipal plans as provided for in the Municipal Systems Act 32 of 2000. While the local government is positioned to be the facilitator of LED the other two spheres have a role to play. The move to make LED work has continued in South Arica and this has seen the drawing of the LED framework in 2006 whose purpose is to guide implementation of LED. A number of state departments fund and support LED and besides these, there are non-governmental and international organisations like GTZ that support LED.

Despite a fertile policy and legal environment for LED the country has a number of obstacles to overcome in order for significant economic progress to be realised. One of the hindrances faced is the weak LED units in the local government (Khumalo 2010:180). This has made it difficult to mobilise and co-ordinate the different stakeholders into meaningful partnership for LED, resulting in disjointed initiatives, which are often unsustainable. Despite the presence of a number of partners in LED, failure to turn policies into workable strategies has stifled LED impact. Khumalo (2010:182) observes that lack of leadership will and capacity issues still stifle LED success in South Africa.

Generally it could be argued that in most African states decentralisation has not brought about the sought after development at the local level. Matovu (2003:121) submits that decentralisation efforts have in the majority opf cases kept substantial power at the hands of the central government elite and their local allies. This has in a way seen no realisation of LED in most African states despite the myriad decentralisation schemes (ibid: 121).

Governance and Local Economic Development in Zimbabwe

Following attainment of Independence in 1980, a number of reforms took place to set up a people owned development and government in Zimbabwe. Mutekede and Siagauke (2007:25) observe that in terms of Policy the coming in of the Urban Councils Act (1980), which repealed a previous Urban Councils Act, brought in some significant changes to local governance. This saw former African Townships included into the mainstream municipal system, which gave lodgers freedom to participate in elections (Mutekede & Sigauke 2007:24). The repeal of the African Councils Act by the District Councils Act (1988) brought together 240 incapacitated African Councils into 55 lager and more viable District Councils in rural spaces (Mutekede & Sigauke 2007:25). This development gave the districts a wide range of powers and they were brought under the Ministry of Local Government.

A significant opening of the democratic space took place in 1984 with the Prime Minister's Directive, which set out development structures from village level to provincial strata. This brought about the formation of Village Development Committees (VIDCOs) and 1000 Ward Development Committees (WADCOs) whose members were voted into positions (Mutekede & Sigauke 2007:24). While the ward structures exist in Urban Councils they are not contained in any law. The transfer of responsibilities and power from national government was attempted through the establishment of Rural District Councils provided for in the Rural District Councils Act of 1998, however, this move was critiqued as a process of counterfeit decentralisation producing RDCs lacking in power and resources with unfunded mandates (Ashely *et al.* 2008:4). Furthermore, this move was discredited as central government's instrument of having control of the rural majority and 'has been characterised as an exercise geared more towards attracting money from donors' (Ibid:4).

One plausible outcome of decentralisation in as far as LED is concerned is in the area of natural resource management, where local communities have room to participate and benefit from local resources like wild life. Through the Communal Areas Management Programme for Indigenous Resources (CAMPFIRE) local populace have been able to participate in management of local resources and the funds from this programme has had a significant impact on development planning and management at both district and local levels (Conyers 2003:2). In terms of LED funding, the following became some key sources at the district level:

- District Development Grant (DDGs) meant for rural local authorities through the Ministry of Local Government, Public Construction and National Housing (MLG) as part of a donor-funded capacity building programme;
- Rural Development Fund (RDF) sourced by the Ministry of Rural Resources and Water Development to support local infrastructure projects;
- Community Action Plan (CAP) established under the auspices of World Bank as part of the country's social dimensions of adjustment programme set to provide funding for small, community-based projects in the poorest districts; and
- Urban Development Programme (Urban II) funded by the World Bank and administered by MLG, provided funding to urban local authorities for infrastructure projects (Conveyer 2003:2).

All this funding was put on hold due to Zimbabwe's economic and political challenges (Conyers 2003:2). Given the limited powers of local governments to generate their own revenue the macro-economic and political environment prevailing in the country has stifled LED. LED is not specifically stated in Government policy in Zimbabwe though the few decentralisation policies discussed provide for structures like the District Development Committees (DDCs) and the VIDCOs whose purpose is to spearhead local development.

Mutekede and Sigauke (2007:25) observe that party politics has had a huge bearing on local governance in Zimbabwe and that the dominance by party politics is one of the hindrances to citizen participation in local governance. As a result, voter apathy is rampant in council elections as citizens cite unfulfilled promises, lack of meaningful choices, lack of economic democracy and despair at the widespread abuse of power Mutekede and Sigauke (2007:25). On a similar assessment Conyers (2003:1) writes that despite the structural reforms and decentralisation since 1980 little effective power has been decentralised. Other factors hindering successful LED in

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Zimbabwe include unclear roles of institutions operating at the local level. A policy vacuum exist in terms of clarifying the role of the District Development Committee, lack of formal decentralisation of functions to the sub-district levels (Mutekede & Sigauke 2007: 26). Furthermore, citizens' inadequate knowledge of their rights and responsibilities worsens the situation.

Summary of Findings

The aspects of governance and LED in the three countries are summarised in a tabular form below using Peters and Pierre (1998:225-7)'s elements of Governance.

	Elements of	Namibia	South Africa	Zimbabwe
	Governance			
1	The integral	The policy on	Multiple	Public policy
	role of	Public-Private	players	has grown to
	networks (i.e.	partnerships	contribute to	be dominated
	the use of	encourages	public policy	by political
	networks to	networking	through	parties,
	dominate	between	debates and	stifling wider
	public policy)	government	lobbying.	networks with
		and the	Through	other entities.
		private sector.	structures like	
			Intergovernm	
			ental	
			Relations	
			(IGR) LED	
			implementatio	
			n is	
			coordinated.	
			However,	
			these	
			structures	
			have not lived	
			up to their	
			expectations.	

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2	Shift from control to influence (i.e. government's influence through a continual process of bargaining and persuasion)	The pro-poor partnerships aimed at engaging the disadvantaged and giving them access are an indication of the move from control to influence. However, ineffective structures provided by the decentralisati on policy affect stakeholder involvement.	LED is facilitated by the Local sphere of Government and the other spheres and private entities are active through mechanisms like the Integrated development planning.	Local Economic Development is sector- driven and controlled.
3	The blending of public and private resources(the importance of network framework)	National Policy on Public-Private partnerships provides an important tool for the facilitation of partnership between public and private organization in local and	Public and Private organizations participate in LED.	The move through the Ministry of Youth and Development to introduce community ownership schemes is bent at blending public and private resources;

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		regional		however this
		development		move faces
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		that expend		
		the needed		
		resources to		
		participate in		
		LED planning		
		or capacity		
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Lessons from the Three Countries

The way that decentralisation structures are organised and how the decentralisation policies are affected determines the resources available at the local level and the roles of local governments (Lutz & Linder 2004:2). Decentralisation for the purpose of qualifying for donor funding like in the case of Zimbabwe has not meaningfully empowered local government in facilitating LED. In terms of structural positioning, the South African status of local government as a sphere not a layer of government is more ideal for LED. Sound participation of all important actors at the local level is key to successful local development as this allows the influential structures to work together. A

policy framework that specifies the role of different spheres of Government is essential for a collective and well co-ordinated LED implementation. Given capacity limitations of most governments, conducive governance is essential for ensuring fruitful partnerships with other stakeholders. This concurs with Kliksberg (1999:30)'s idea of 'smart government' which can 'work in harmony with forces of private enterprise to achieve optimum results for the country and promote and facilitate the development of an increasingly close-knit, strong and active civil society'.

Conclusion

The article has discussed LED and governance, bringing out that the later is essential for the successful implementation of the former. The state of LED in Namibia, South Africa and Zimbabwe has been briefly discussed to identify some governance challenges hindering successful LED in Southern Africa. These include among others, inadequate policy on LED, poor resource allocation to sub-national units, capacity issues, weak sub-national units and in some cases top-down approach to LED implementation. The article has underlined the need for adequate policy around LED, a democratised approach to development that will capacitate local government to facilitate LED and an enabling form of governance that allows various stakeholders to actively participate in LED.

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Perceived Service Quality and Customer Satisfaction – Employees' Perspectives of Kenyan Private Universities

Eric Mang'unvi Krishna Govender

Abstract

This paper reports on an empirical study conducted among a sample 133 employees of private higher education institution in Kenya, to examine the relationship between perceived service quality (SQ) and customer satisfaction (CS), using the HEdPERF instrument. Although service quality was measured using six dimensions namely: academic, non-academic, reputation, access, programmes and understanding, by using structural equation modelling (SEM), the six SO dimensions needed to be collapsed into four, since these were significant to the employees of private universities. The employee is viewed as a 'customer' of the private higher education institution, thus service quality refers to the employee-customers' perceptions. The results partially support the proposed conceptual model that non-academic, access, academic and reputation dimensions have a positive and significant influence on the employees' SQ perceptions, and in turn influences their satisfaction. It can be inferred from the findings that university quality should not only be looked at in terms of academic activities alone, as non-academic aspects also need to be considered since they are deemed important to the employees. Since universities are in both national and international competition, they (management) should aim at ensuring that all services related to organizational life like physical, implicit and explicit are delivered to acceptable standards to realize increased satisfaction.

Keywords: Private higher education; service quality; employee satisfaction, HEdPERF

Introduction

In most service organizations, every effort is made to increase service quality and satisfy customers and therefore increase the overall organizational performance. The literature on the marketing of services illustrates that service quality is a precursor to customer satisfaction (Hensley & Sulek 2007; Herrington & Weaven 2007; Hishamuddin & Azleen 2008; Siddiqi 2011), builds loyalty (Chitty & Soutar 2004; Govender & Ramroop 2012; Jones & Sasser 1995) and enhances retention (Martensen *et al.* 2000).

Private universities have been acknowledged to attract 'employeecustomers' due to strategies such as retention of skilled human capital (Materu 2007) and unique experience, which has led to a reduction in professional emigration or what is referred to as the brain drain (Odhiambo 2011). Another factor that attracts 'employee-customers' is that private universities are often associated with quality (Materu 2007), which most individuals want to align with. In spite of the aforementioned, with increased global competition, quality of the service may play a bigger role in dictating employee commitment and satisfaction.

Although the literature on service quality and customer satisfaction issues in the context of the higher education sector is ever-increasing (Alaba & Olanrewaju 2012; Calvo-PorallLevy-Mangin & Novo-Corti 2013; De Jager & Gbadamosi 2010; Govender & Ramroop 2012; Hasan & Ilias 2008; Hishamuddin & Azleen 2008; Khodayari & Khodayari 2011; Trivellas & Dargenidou 2009; Yunus, Ismail, Ishak & Juga 2009), little research pertains to the employees (as customers) of private HEIs, with respect to their service quality perceptions and satisfaction with the service. In order to address the aforementioned, this paper presents results of an exploratory empirical study to determine the relationship between service quality (SQ) and satisfaction (CS) among academic and administrative staff in Kenyan private universities.

Brief Literature Review

Zeithaml and Bitner (1996) define service quality as the delivery of exceptional service relative to customer expectations, whereas Gronroos (2000) regards service quality as a process consisting of a series of intangible activities that normally happen during interactions between the customer and service employees. Fogli (2006) views service quality as a positive or negative global attitude relating to a particular service. In higher education institutions (HEIs)

however, some researchers (Rasli, Danjuma, Yew & Igbal 2011) associate experience and the level of satisfaction gained by university customers with their service encounters as an indicator of service quality. Quinn, Lemay, Larson and Johnson (2009) define service quality in higher education in terms of educational, administration and supporting services. Although some researchers, inter-alia, (Gronroos 2000) view services as an integral part of services marketing others (Wisniewski 2001), argue that the complexity of both defining and measuring service quality, is one reason that has raised a lot of interest on the subject. In this paper, the researchers define perceived service quality as the ability of a particular service to gratify the anticipated needs of a customer.

The HE Employee as a Customer

Mudie and Pirrie (2006) argue that the characteristics exhibited by higher education (HE) services, namely, intangibility, inseparability, heterogeneity and perishability, are no different from those associated with other services. However, while HE possesses the traditional characteristics of a service offering, the unique characteristics are notable which differentiate it from any other retail service. One such characteristic is the conflicting views on the customer, since various stakeholders *inter alia*, employees, students, parents, sponsors, and the government utilize the services of HE (Quinn *et al.* 2009). Each of the aforesaid customers has access to a HE offering. Students are possibly as the first and most obvious customers because they pay for the education service, as well as need to prove their eligibility to enjoy the service. Sometimes, the cost of education is met by their parents or guardians and these individuals act as a point of contact for some service interactions with the higher education institution (HEI).

Similarly, employees (academic & administrative), exercise control in the design of some of the services, and therefore also make use of a number of the HEI's services (Quinn *et al.* 2009:141). Singh (2000) stresses the significance of the service employee in service acts and service quality. There are also other stakeholders in HE who function as customers although for the different interests they have in the higher education process.

Whereas residence halls exclusively serve student-customers' accommodation needs, administrative areas in a university have explicit internal and external customers. For example, a research function or office

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serves internal staff and graduate students as well as government agencies and research sponsors (Quinn *et al.* 2009). The involvement of different stakeholders within the HE environment makes the measurement of HE services complicated compared to retail services, including how each stakeholder perceives the indicators of service which may also be conflicting (Becket & Brookes 2006; Quinn *et al.* 2009). In view of the above mentioned, this research examines employees' as internal customers of HE with the objective of exploring their perception of service quality, and service satisfaction. The perceived experiences of the employees are important since, it may provide more objective and practical information for assessing making service quality and customer satisfaction in the HE context.

Service Quality and Employee Satisfaction

Some researchers (Parasuraman, Ziethaml & Berry 1988) have postulated that a relationship exists between service quality and satisfaction. Furthermore, Hamand and Hayduk (2003) established that the SERVQUAL dimensions (Reliability, Responsiveness, Empathy, Assurance and Tangibility) had a positive relationship with satisfaction, and Reliability had the strongest relationship. Having investigated the importance of CS, SQ and service performance in a Taiwan library, Wang and Shieh (2006) also was found that some (Tangibles, Reliability, Assurance and Empathy) of the SERVQUAL dimensions also had a significant positive effect on the overall satisfaction of customer. Hasan and Ilias (2008) also assert that Empathy and Assurance were critical factors that contributed most to satisfaction. Parasuraman *et al.* (1988) argue that Reliability and Assurance have a direct relationship with the competence of an employee. Marx and Erasmus (2006) are of the view that processes and personnel are also crucial to service quality and enhance loyalty.

Petzer and Meyer (2011) found clear relationships between SQ, service satisfaction and behavioural intent, implying that customers' intention towards a service is dependent on previous experiences with the service delivery process. This eventually results in increased customer satisfaction (Basher, Machal & Mwinyi 2012). In higher learning environments, employee expectations of a university depend on their experiences and individual preferences (De Jager and Gbadamosi 2010), and this therefore determines employees' decision-making process for example, for maximum commitment.

In many cases, employees working in higher education institutions are

normally found in two environments, namely, academic where staff is concerned mainly with the teaching and research components of academic activities, and administrative, which is generally characterized by support activities offered by administrative staff to the academic functions. Employees in service organizations have been widely acknowledged for organizational efficiency, considering their responsiveness and understanding (Parasuraman *et al.* 1988), allegiance (Farber & Wycoff 1991), satisfaction (Voss *et al.* 2005), contact (Soteriou & Chase 1998), motivation (Hays & Hill 2001) and competence (Parasuraman *et al.* 1988).

In light of the above, the objective of this research was to determine the employees' (in Kenyan private universities) perceptions of service quality using the HEdPERF instrument, as well as to ascertain the relationship between their service equality and satisfaction.

HEdPERF and Service Quality Measurement

Although in the services literature, service quality has been widely researched, albeit primarily in a business context, the education sector has not been completely left, because education itself falls within the aegis of service industry. By citing Hill (1995), De Jager and Gbadamosi (2010: 253) assert that service provision and customer satisfaction in the education sector rely on individual employee and student interfaces (encounters), which lead to a highly diverse service quality experience due to the extensive nature of the service work. A great deal of debate on service quality and performance measurement has been biased towards 'gap' analysis (Cronin & Taylor 1994), and that much of the enduring debate on the subject has been in favour of application of the 'gap' measures.

However, in recent years, performance-based measures have also increased in popularity (cf. Babakus & Mangold 1992, as cited by Cronin & Taylor 1994: 126).

Some researches (Sunanto, Taufiquarrahman & Pangemanan 2007; Rajasekhar, Muninarayanappa & Reddy 2009; Shekarchizadeh, Rasli & Hon-Tat, 2011) have shown extended use of the SERVQUAL instrument. However, despite its application in higher education, it has not gone without criticism (Alridge & Rowley 1998), for example that the instrument merely captures a snapshot of perceptions at one point in time, and the repeatability of some questions. However, with minimum alterations, the SERVQUAL instrument can still be successfully applied in higher education (Hair 2006: 11).

Recognizing the difficulties associated with using the SERVQUAL instrument to measure service quality in the higher education environment, Firdaus (2005) presented six sub-dimensions of service quality, and conceptualized the HEdPERF model, which has increased in use in the last decade as measure for service quality in the context of HE. Firdaus (2006) modified the HEdPERF instrument to a six-factor structure with 41 items, since it was argued that HE has clear and distinct dimensions, namely; academic aspects, reputation, non-academic aspects, access, program issues and understanding. Although some researchers, inter-alia, Kimani (2011) have demonstrated its validity and reliability in a Kenyan population, there is still room for improving the HEdPERF instrument.

Several studies based on SQ and customer satisfaction (Firdaus 2006; Kimani 2011; Khodayari & Khodayari 2011; Govender & Ramroop 2012; Calvo-Porall *et al.* 2013) employed different instruments, and virtually few have applied the HEdPERF dimensions in higher education environments. Firdaus's (2005; 2006) factor analysis approach identified SQ dimensions and existing associations between quality and satisfaction, and among the quality constructs. Kimani's (2011) correlation method with six HEdPERF SQ construct measurements resulted in the realization that a positive perception of service quality by the students in Kenyan universities impacts their overall satisfaction.

In the current study, six sub-dimensions of HEdPERF were used as determinants of SQ, and each dimension was hypothesized to have a positive relationship with service quality. In other words, these sub-dimensions were hypothesized to have greater levels of association and influence on customer satisfaction.

The literature, for example Parasuraman *et al.* (1988) has shown that in service organizations, employees' perceived SQ among other related factors, are important determinants of excellence of the service organizations. This paper strives to bring to the fore an understanding of the service institutions' dynamics, by investigating the inter-relationships among the HEdPERF perceived SQ dimensions (academic, non-academic, programme, reputation, access, and understanding), and customer satisfaction via employee perspectives as illustrated in the following conceptual research framework (Figure 1). The development of the relevant hypotheses will be explained in the next section.



Figure 1: The Conceptual Framework

The value of the academic characteristics has been identified in most service quality studies conducted in higher education (De Jager & Gbadamosi 2010; Kimani 2011; Govender & Ramroop 2011). Access was considered most important in higher education by Kimani (2011). The importance of understanding the needs was highlighted by several researcher, namely, Watsch (2003); Chitty and Soutar, 2004; Deshields *et al.* 2005; Adela, 2009. Reputation has also been identified as another valuable aspect in the higher education sector to enhance retention (Martensen *et al.* 2000), and to build loyalty (Chitty & Soutar 2004). The 'non-academic' aspects of the HE industry have also been recognised to influence employee obligation. For example, De Jager and Gbadamosi (2010) and Kimani (2011) outlined that it is important to make available facilities vis-à-vis trust and support from administration. Furthermore, academic programmes which are the 'products' offered by a higher education institution have been considered an important dimension

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(Firdaus 2006; Kimani 2011). Based on the aforementioned arguments, the literature provides a foundation to hypothesize that relationships exist between HEdPERF SQ and the aforementioned dimensions in private higher education in Kenya. Thus, we hypothesize as follows:

H1: The HEdPERF service equality constructs (academic aspects, non-academic aspects, programme aspects, reputation, access and understanding) influence the private higher education institutions employees' perception of the overall service quality.

Flowing from H1, the following sub-hypotheses are formulated with respect to private higher education employees:

- *H1a*: There is a positive relationship between academic activities and service quality.
- *H1b:* There is a positive relationship between non-academic activities and service quality.
- *H1c:* There is a positive relationship between academic programmes and service quality.
- *H1d:* There is a positive relationship between reputation and service quality.
- *H1e:* There is a positive relationship between access and service quality.
- *H1f:* There is a positive relationship between understanding and service quality.

Several studies (Hensley & Sulek 2007; Herrington & Weaven 2007; Hishamuddin & Azleen 2008) in the higher education sector that have examined the association between service quality and satisfaction, have shown that service quality is a precursor of customer satisfaction. Positive word-of-mouth communication by satisfied customers may attract new customers, who may in turn spread the positive word to other people by word-of-mouth (Athiyaman 2007; Prugsamatz *et al.* 2006). High levels of service quality are related to increased customer satisfaction and thus lead to loyalty (Jones & Sasser 1995), and retention (DeShields *et al.* 2005). Furthermore, there will be continuous patronage as long as quality remains an integral tool for service delivery at university (Rasli *et al.* 2011). Since the perceived SQ has a strong influence on CS, it is therefore proposed (H2) that there is a positive

association between the private university employees' perceived service quality and their satisfaction.

Method

The study's target population was all academic and administrative employees of select private universities in Kenya. Through a cross-sectional survey, the sample target for the study was determined as 250 academic and administrative employees from four different private universities. The four universities were selected based on geographical location and ownership thus faith-based and 'commercial' categories and were included using a stratified purposeful random sampling technique. A pre-defined sample size calculator proposed by Krejcie and Morgan (1970), in (Sekaran 2006: 293) was used to obtain the sample size. Within each stratum, simple random sampling was implemented to select participants in the survey from the academic and administrative strata. To participate in the study, the employees had to be full-time members of either academic or administrative category in their respective institutions. Thereafter, samples were selected considering respective divisions and or sections they worked in.

A 7- point Likert scale, where 1 = strongly disagree and 7 = strongly agree, was used to measure the SQ dimensions, general SQ, and satisfaction. The scales used were developed around:

- 'Non-academic aspects' which looked at the functions performed by administrative staff which are essential to enable students to fulfill their study obligations;
- 'Academic aspects' represented factors related to the responsibilities of academics and or teaching faculty;
- 'Reputation' referred to the ability of higher learning institutions to project a professional image;
- 'Access' referred to issues *inter- alia*, approachability, ease of contact, availability and convenience;
- 'Programme issues' looked at the importance of offering wide ranging and reputable academic courses and or specializations, with flexible structure and syllabi;

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- 'Understanding' measured issues relating to knowing students' specific needs in terms of counselling and health services;
- 'General quality' determined opinions about the general service quality; and
- 'General satisfaction' aimed to understand the satisfaction the ememployee derived from their service responsibilities and duties, their colleagues and their institutions.

The researchers explained the intention of the study and the research procedure to the employees of the sampled institutions. Two hundred and fifty questionnaires were distributed to both academic and administrative employees of the four universities, in equal proportion per university in late September 2013 to January 2014. Furthermore participants voluntarily completed the questionnaire at their places of employment, at their own time and these were collected or dropped off at designated areas as agreed with the researcher. A standard protocol for administering the questionnaire was used – either by the researcher or a trained research assistant. Absolute confidentiality of the responses was guaranteed and upheld.

The researchers used SPSS AMOS 21 to conduct exploratory factor analysis (EFA), structural equation modelling (SEM) test the hypotheses, since Schumacker and Lomax (2004) asserted that SEM is clear and testable, and competing models can be analysed, synthesized and understood and, their effect whether direct, indirect or both can be investigated.

Research Results

Of the 250 questionnaires administered, 133 were usable, which represents are response rate, which exceeds 50%. Table 1 shows that the majority (59.4%) of the employees (respondents) were in administrative positions, and academics comprised 40.6% of the sample, and of these, 54.9% were male and female comprised the rest. With regard to age of the respondents, the majority (47.4%), were middle aged (30 to 39 years) or younger, 31.6% were aged between 40 to 49 years, and 19.5% were below 30 years. The vast majority (78.9%) had been employed for up to 10 years in their respective institutions, and 27.8% of academic staff (respondents) had PhDs. In terms of positions, 42.1% were middle managers, 9.8% technical posts, and 6.8% senior managers.

Variable	Value label	Frequency	Valid Percent
	Diploma	18	13.5
	Bachelor's Degree	39	29.3
Education	Masters Degree	38	28.6
Qualification	PhD (on-going)	23	17.3
	PhD	15	11.3
	N 1	72	54.0
Conder		73	54.9
Genuer	Female	59	44.4
Occupational	Academic	54	40.6
Groups	Administrative	79	59.4
	< 30 years	26	19.5
	30 – 39	63	47.4
Age Group	40 - 49	42	31.6
	>50	1	.8
	0-4 years	54	40.6
University Service	5-10 years	51	38.3
Fynerience	11 – 15 years	19	14.3
Experience	16 + years	8	6.0
	Senior	9	6.8
M	management	56	42.1
Management	Middle	13	9.8
Level of Non-	management	55	41.4
teaching stall	Technical staff		
	No Response		

Employees' Perspectives of Kenyan Private Universities

Table 1: Socio-Demographic Characteristics of Employee Sample

The Cronbach coefficient alphas were calculated using Stepwise Reliability Analysis, and Cronbach alpha values greater than 0.7 were accepted as reliable measures of internal consistency (Sekaran & Bougie 2010: 325). Table 2 below, which summarizes the outcome of stepwise reliability analysis, shows that the scales are fairly reliable since all the Cronbach alphas exceeded 0.7.

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Instrument	Final Number of items	Final Cronbach Alpha coefficients
Non-Academic	18	0.758
Aspects		
Academic Aspects	13	0.763
Reputation	10	0.870
Access	11	0.853
Programmes	4	0.817
Understanding	3	0.807
Overall satisfaction	7	0.819

Table 2: Instrument Reliability

Construct and discriminant validity were determined through Exploratory Factor Analysis (EFA) using the Principal Component Analysis with oblique rotation (Browne 2001). The results of the validity measures are as illustrated in Table 3.

	Satisfaction Factor (1)	Quality of Programmes Factor (2)	Academic Quality Factor (3)	Health Quality Factor (4)	Credibility Factor (5)
NOACD1	.607	.040	.124	073	.002
NOACD2	.387	.345	.154	.503	134
NOACD3	.727	.015	.113	.192	123
NOACD4	.844*	.103	.234	.163	031
ACD1	.131	.171	.786	.026	.134
ACD2	.206	.061	.652	091	.243
ACD3	095	135	.739	.175	222
ACD4	.269	.045	.823*	.042	013
REP1	.758	.235	.191	.192	.121
REP2	.662	.468	.172	.050	.060
ACC1	.794	.119	081	.264	.065

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	Satisfaction Factor (1)	Quality of Programmes Factor (2)	Academic Quality Factor (3)	Health Quality Factor (4)	Credibility Factor (5)
ACC2	.678	.157	.229	.388	016
ACC3	.668	.372	.065	.238	.151
SAT1	.544	.422	014	.158	.066
SAT2	.755	.210	.017	.155	.292
PROG1	.364	.714	.050	.166	151
PROG2	.414	.657	015	.138	.162
PROG3	.047	.831*	.006	.182	.008
PROG4	.055	.769	.095	.230	.021
QUALGEN	.080	010	.097	.172	.873*
UND1	.169	.371	.014	.813*	.091
UND2	.230	.280	042	.778	.131
UND3	.474	.056	.180	.567	.230

 Table 3: Rotated Factor Loadings for Employee Measurements

 *Highest factor loadings

Note: NOACD = non-academic, ACD = academic, REP = reputation, ACC = access, PRG = programme, UND = understanding, SAT = Satisfaction, OvrQual = overall quality, QUALGEN = quality general.

From Table 3 above, it is evident that the data loaded onto five factors with factor loadings exceeding 0.4, which were appropriately labeled as follows: Factor 1 - *Satisfaction*, Factor 2 - *Quality of Academic Programmes*, Factor 3 - *Academic Quality*, Factor 4 - *Health Quality*, and Factor 5 - *Credibility*. Since the factors loadings exceeding 0.4 it is apparent that the items in the research instrument are ideal measures of validity (Hair *et al.* 2006).

The conceptual research model illustrated in Figure 1 was tested using AMOS 21 to explore the hypothesized relationships. The model was found to be adequate and this was confirmed by the chi-square value (85.448, degrees of freedom = 82), and its corresponding p-value (0.375). Comparing the p-

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value with level of significance of 0.05, the p-value was greater than 0.05 hence, the model was declared adequate since values of p-value, exceeding 0.05 (Hair et al. 2006). Furthermore, the structural equation modelling was conducted and evaluated on the basis of goodness of fit indices which are reflected in Table 4, inter alia, the comparative fit index (CFI), root mean square error of approximation (RMSEA) and the ratio of Chi-square value to the degrees of freedom (CMIN/DF) ratio (Browne & Cudeck, 1993). The CFI value exceeded 0.95, which showed the model fitted the data well. Furthermore, the small RMSEA values, particularly less than 0.04, also indicate that the model fitted the data well (Hair et al. 2006), and the CMIN/DF values, which are less than 3 show a better model fit (Schumacker & Lomax 2004). With regard to incremental fit measures, namely, the normed fit index (NFI), relative fit index (RFI), incremental fit index (IFI) and Tucker-Lewis index (TLI), where all values exceeded 0.90, further confirming that the model fitted the data well (Hair et al. 2006; Hu and Bentler, 1999). In conclusion, the CFI = 0.997, CMIN/DF = 1.042 and RMSEA = 0.018, as shown in the Table 4 below, indicate that the model fitted the data well, thus, the suitability of the proposed employee service quality model

Fit Index	Acronym	Value	Desired range				
Absolute Fit Measures							
Chi-square test (CMIN)	X^2	85.448	P>.05 (non-				
		(p=.375)	significant)				
Degrees of freedom	Df	82	≥ 0				
Ratio of Chi-square/degrees	X^2/df	1.042	2 to 3				
of freedom	(CMIN/DF)						
Root mean square error of	RMSEA	.018	<.04				
approximation							
Incremental/Relative Fit Measures							
Normed Fit Index	NFI	.924	>.90				
Relative Fit Index	RFI	.903	>.90				
Incremental Fit Index	IFI	.997	>.90				
Tucker-Lewis Index	TLI	.996	>.90 to >.95				
Comparative Fit Index	CFI	.997	>.90				

Table 4: Goodness-of-fit Indices for the Employee Structural ModelSource: Hair et al. 2006; Hu & Bentler, 1999; Schumacker & Lomax, 2004.



Minimum was achieved Chi-square = 85.448 Degrees of freedom = 82 *P*-value = 0.375

Figure 2: Employee-Customer – Service Quality Hypothesized Model and the Standardized Loadings
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To test the research hypotheses and investigate the relationship between perceived university SQ and employee satisfaction, we conducted covariance analysis. Figure 2, above, shows the structural model between university service quality and employee perceived quality with the resulting maximum likelihood standardized estimators. The model illustrates that some HEdPERF SQ dimensions (non-academic, reputation, academic, access) impact employee perceived SQ, and consequently influence employee satisfaction. Figure 2 represents an exhaustive reporting of results of various hypotheses postulated by way of a (snapshot) path diagram. The decisions on the various hypotheses are explained in the next section.

Causal path properties and standardized coefficients are illustrated in Figures 2/3, while the significance of the standardized coefficients and the critical ratios (CR) for the hypotheses are shown in Table 4. The acceptable p-value limit is 0.0001.



Figure 3: Path Coefficients of the Structural Equation

According to Figure 3, not all of the HEdPERF SQ variables were associated with the employees' perception of the private universities' service quality. Thus, the main hypothesis (H1) is partially supported through the academic, non-academic, reputation and access dimensions. With regard to the secondary hypotheses, only H1a, H1b, H1d and H1e are also supported, which imply that academic activities, non-academic activities, reputation and access, respectively would be positively related to the perceived service quality. Thus it was observed that similar to previous empirical studies (Firdaus 2006; Owlia & Aspinwall 1996; Parasuraman et al. 1985), issues like access (inter alia ease of contact, availability of both academic and administrative staff and convenience) contributes to higher perceived SQ from the employees' standpoint. The ability to project a professional image (reputation) was found to be important (De Jager & Gbadamosi 2010; Gronroos 1984) in HE industry and it creates loyalty (Chitty & Soutar 2004). Furthermore, the aforementioned results are positively related to Firdaus' (2006) determinants of SQ, where the academic and non-academic characteristics were found to be important quality indicators, and thus confirming the views of earlier researchers (Leblanc & Nguyen, 1997; Soutar & McNeil, 1996).

Relationshi	р		Hypo- thesis	Std. Para- meter	S.E.	<i>t-</i> Value
Academic	Ļ	Employee quality	H1a (+)	.727	.183	3.969***
Non- academic	Ţ	Employee quality	H1b (+)	1.000	Fixed	Fixed
Access	¢	Employee quality	H1e (+)	.740	.128	5.790***
Reputation	¢	Employee quality	<i>H1d</i> (+)	.690	.122	5.668***
Employee Satisfaction	\leftarrow	Employee quality	H2 (+)	.626	.124	5.070***

Note: *** means < 0.0001

Table 4: Model Parameter Estimation & Levels of Statistical Significance

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The statistical results also confirm H2, in that the employees' perceived service quality is related to their satisfaction, since the path coefficient is 0.626 (t=5.070; p<0.0001). Furthermore, the findings imply that when quality increases by one unit employee satisfaction increases by 0.626. These findings, which supported hypothesis, are consistent with earlier studies (Zeithaml & Bitner 1996; Ojo, 2010; Rasli, Danjuma, Yew & Igbal 2011) supporting the proposition of a strong relationship between service quality and employee satisfaction. It became apparent that the rest of the HEdPERF quality items (programme and understanding) did not load onto the model, and were therefore dropped. Thus hypotheses *H1b and H1d* could not be confirmed through this study.

Conclusions

The empirical evidence implies that the SQ dimensions indirectly and or directly impact on customer satisfaction. The findings also reveal that with regard to the conceptual framework proposed by Firdaus (2006) and some other researchers, tested among a sample of employees of Kenyan private universities, only four HEdPERF variables namely, non-academic, access, reputation, and academic influenced the SQ and satisfaction. Notably, this study has provided a basis for further explorations to probe the nature and value of academic, non-academic, reputation and access dimensions as criteria that employees consider in evaluating their satisfaction with university services in a developing country context. Additionally, for more rigorous findings, it is recommended that future research using the HEdPERF tool focus on satisfaction level in SQ among different stakeholders for both public and private universities and across other cultural contexts.

The results of this study on 'employee-customer' satisfaction provide a rationale for the study, since it can help the university to improve service quality. Universities could also improve their SQ by increasing employee satisfaction through 'manipulation' of the abovementioned dimensions of the service provider since it has been acknowledged universally that SQ is an antecedent of satisfaction. Emphasizing these critical dimensions of SQ implies that the university will be making headway towards a better assessment of its quality and satisfaction. Furthermore, the findings will also help the university to better understand what dimensions have a greater influence on SQ, and in turn influences employee satisfaction. This can be achieved through

creating an enabling environment for the employees as service providers which will increase their satisfaction levels. By so doing, the employees will endeavour to delight and satisfy their internal customers (other employees) and external customers, which include students.

The findings have to be tempered by the fact this study was only conducted among respondents from four private universities. Future research may focus on a comparative study with government sponsored public universities to investigate whether there are significant differences in perceived service quality and employee satisfaction among private and public university staff.

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Managing and Valuing Diversity in the South African Public Healthcare System

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Abstract

Human capital remains a critical component of healthcare, particularly in low and middle-income countries where there is a dire shortage of professionals. Recruiting and retaining health professionals has become a key strategic focus in South Africa. Innovative recruitment strategies coupled with increasing access to higher education and training has resulted in an increasingly diverse workforce. Identifying, appreciating, and managing this diversity across all diversity dimensions is important for both social and economic reasons. These efforts are likely to provide an opportunity for optimizing productivity while building a cohesive workforce. This paper explores the impetus and possible methods for effective diversity management in the South African public healthcare environment.

Keywords: Diversity, healthcare management, diversity management, transformation, human resources

Introduction

The South African healthcare system currently faces substantial systematic, operational and environmental challenges as it evolves under current resource constraints. Effectively managing the public healthcare sector, in particular, will require the application of sound principles of public administration and management, with serious considerations for strategic functions outside of the core business of clinical care. The most pervasive of such functions is arguably the strategic management of the critical human capital upon which the system

relies, and without which failure at all levels would be inevitable. Healthcare, by its service nature, is a labour intensive operation (Siddiqui & Kleiner 1998). The interface between healthcare workers and healthcare users serves as the point of exchange for the health commodity, and demonstrates the centrality of the healthcare workforce in ensuring the delivery of acceptable, efficient and valuable services. The intensive use of labour therefore, warrants focus on human resource practices and management. Perhaps the most radical change in the South African healthcare landscape over the past decade has been the diversification of the workforce, and the intermingling of these diverse human elements in microcosms of the new South Africa. The entry of previously non-dominant, marginalized and disadvantaged groups adds depth to the challenge of diversity in the South African healthcare system(Human 2005). Acknowledging and responding to the challenge of diversity brings consequent gains, and conversely failing to do so will almost certainly carry economic, moral and legislative penalties (Cavaleros *et al.* 2002).

The Concept of Diversity

Diversity is rapidly becoming one of the most defining themes of our time. In its broadest sense diversity refers to differences in a multitude of attributes between individuals or groups. Uys (2003) describes three categories of diversity, namely functional diversity which refers to differences based on organizational functions and tasks, business diversity which refers to products and services offered and workforce diversity which implies different types of employees with different types of attributes. Conventional notions have included elements such as race, culture, gender and age, with the scope of diversity now having been widened to include spirituality, language, disability, physique, sexuality, educational level, skills, expertise, management styles, parental status, marital status, family background, vocational interests, career aspirations, geographic differences, social status, physical and mental conditions, communication styles, as well as personality attributes and working styles(Cavaleros et al. 2002; Greybe & Uys 2001; Human 2005; Uys 2003; Narsee 2005). Political outlook and affiliation has become a significant force on the South African diversity landscape, affecting the composition and power distribution in many organizations (Nel et al. 2004).

Diversity can also be described as those human qualities which distinguish one individual or group from another. These qualities may further

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be categorized as being either unchangeable or changeable. Unchangeable or primary dimensions of diversity refer to differences that are inherent and fixed (Walt & Du Toit 1997). These form the individual's self-image and his or her filters through which the world is seen and experienced. The assumption is that the greater the number of primary differences between people, the more difficult it is to establish trust and mutual respect. This leads to 'culture clashes' which could have devastating effects on human relations in the organization(Cilliers 2007). Changeable or secondary dimensions of diversity refer to differences which are modifiable or variable(Walt & Du Toit 1997). These dimensions normally add complexity to the individual's self-image. The interaction between the primary and secondary dimensions shapes the individual's values, priorities and perceptions. The assumption is that effective human relations among diverse employees in the organization are possible only when the differences are accepted and valued (Cilliers 2007).

The Imperatives for Understanding and Managing Diversity

Diversity, as an organizational issue, has its provenance in the United States of America and Western Europe when the inclusion and equity of women and minority groups in the workforce was beginning to be addressed (Inyang 2007). With the increasing heterogeneity of the workforce, effectively managing diversity has become an imperative to achieving organizational competitiveness and ultimately success (Inyang 2007; Maxwell & Rijamampianina 2002). Applying biological principles, failure to adapt to the changing composition of the workforce will result in a weaker organization which must ultimately succumb to the law of natural selection, where only the fittest, most competitive and responsive organizations survive.

In South Africa globalization, democratization, and Africanization have been significant forces which have shaped both the workforce and the customers it serves (Anca & Vazquez 2007; Cilliers 2007). These three forces have not acted in isolation, but rather in concert. Democratization, post 1994, brought with it the challenges of globalization and increased interaction within the continent (Cilliers 2007). The re-arrangement of the South African health system post-apartheid has also meant that access to healthcare has been improved for the majority of South African who may not ordinarily have accessed organized healthcare institutions, thus changing the 'customer profile'.

Managing and Valuing Diversity in the SA Public Healthcare System

The imperatives for managing and valuing diversity come from both the external business case as well as the social-moral case. Gordon (1995) as cited in Cavaleros (2002) revealed that diversity contributes to an organization's competitive advantage, and improves its financial performance. However, unlike the private sector, the public sector cannot be limited by the pursuit of profitability, but should also reflect the state's commitment to equity, social justice and the protection of human rights (Uys 2003). A diverse workforce contains a vast amount of creativity and potential for innovation which may arise from the multitude of skills, abilities, thinking styles, and aptitudes of the employees. A diverse organization is able to capture new markets, maintain a broader social perspective, and exploit its multiculturalism by tapping into all market groups (Cavaleros *et al.* 2002). The ability of the organization to connect with its 'customers' is also enhanced by its multiculturalism and diversity.

Allopathic care has its roots firmly in the western paradigm of medicine, in which science if often viewed and practiced outside of the local social context. In societies such as South Africa, where traditional medicine remains a critical, underestimated and perhaps undervalued modality, there has been a growing recognition that maintaining an exclusive allopathic system fails the majority of healthcare users and insults the context in which the services are delivered. Any future endeavour to integrate indigenous traditional health practices into the existing system is certain to fail unless diversity is energetically addressed.

The National Health Act of 2003 declares the establishment of a district health system (RSA 2003). The organizational implications of this system include a flatter structure with a focus on decentralization which has been shown to increase reliance on participative group processes compared with hierarchical, highly centralized structures (Uys 2003). The centrality of the group in identifying and resolving organizational problems is not without its own set of disadvantages, which include intra-group conflict and coordination. Effectively managing the functional, cultural, ethnic, racial and gender differences within groups is essential to the success of the entire district health system.

One of the main reasons for addressing diversity arises from the belief that service users are better served by a diverse organization. Moreover, a socio-politically responsive organization is strategically positioned for understanding and delivering to its broad customer base, as well as attracting the support of customers who value the responsiveness of the organization (Human 2005). In South Africa, the political imperatives for actively pursing diversity in the workforce are intimately related to the proactive role that the government has taken in improving diversity in organizations (Human 2005). The health system, under the governance of the state, is expected to comply and further the agenda of the various pieces of legislation geared toward this aim. Notwithstanding the reorganization of the health system and recent focus on the decentralization of power, even the most geographically distant health services remain firmly within reach of the overarching policies and influence of the central authorities. Apart from binding legislation, the National Human Resource Plan for Health inherently acknowledges the challenge and opportunities of diversity in its strategic objectives (DOH 2006). Specifically, establishing shared values, balancing worker categories, aligning competencies, creating a culture of valuing all workers, optimization of relations with foreign professionals, and a national commitment to human resource planning are key objectives which demonstrate the government's responsiveness to workforce diversity (DOH 2006; Gill 1996; Greybe & Uys 2001). Beyond the demand for organizations to be contextually relevant and socio-politically correct, at the strategic and operational level productivity remains a crucial goal. Maximizing the productivity of the workforce is central to the success of the organization and can only be achieved if employees are motivated, confident and satisfied. A diverse workforce is likely to enjoy the benefits of a non-prejudicial, multi-cultural work environment and may translate the experience into improved outputs. The valuing and fostering of diversity in the public healthcare sector may have significant implications for maintaining harmony in the workplace and improving the challenging retention rates within the service. Growing emphasis on the role of multidisciplinary teams in healthcare provide further justification for the role of diversity management in enhancing clinical care. Stereotypes within an organization, on the other hand, can prevent managers from seeing and valuing the potential in his or her subordinates. Unduly fixed beliefs about competencies and inherent abilities do not allow the potential of a diverse workforce to be fully exploited, but rather result in the underutilization and underestimation the organization's human resources.

The public health workforce is undeniably becoming increasingly demographically diverse. The de-racializing of health professions and the implementation of equity quotas, together with the broader social changes presents novel challenges to public service managers. The current spurt of male nurses, for example, necessitates the reconsideration of the previous genderexclusive professional nomenclature. The movement of historically geographically contained ethnic groups beyond the boundaries of the past creates complexities even within the construct of race. Lessons learnt from the more liberal west, socio-political interest groups, and the direction of national legislation tell us that the workforce of the future is likely to include people with more diverse sexual orientations, religious beliefs, spiritual perspectives, physical abilities and mental abilities (Uys 2003). Health institutions in the public service are expected to lead the way in non-discrimination on the basis of health status, sexual orientation, physical abilities and mental abilities. This must be achieved by diversifying the health workforce itself (internal commitment) as well as promoting the rights and interests of non-dominant groups in a broader social discourse (external commitment). In no other sector of the public service is the influx of foreign professionals more relevant. International and continental agreements to cope with severe skills shortages have become a striking feature of the rural health service. The National Health Act of 2003 acknowledges this by containing the principles underpinning the recruitment of foreign professionals, as well as provisioning the inclusion of foreign professionals into the national skills mix. The current efforts to revitalize the health professions and compensate for the severe skills shortages faced by the system have led to a large contingent of young employees. In addition, pressures to transform the workforce have also meant that younger workers of designated groups, for example, may come to lead a team of individuals who may be older than them. The impact of this age dynamic within the organization must be anticipated.

Careful evaluation of international and local failed attempts to dull the impact of diversity in organizations by propagating the view that professional or workplace similarities between individuals and groups outweigh private differences between them, demonstrates that the 'melting-pot' approach is severely deficient (Uys 2003). While a pervasive and inclusive organizational culture aids in creating bonds between employees, it does not detract from the quintessential realities of diversity. It may be argued that celebrating and sharing differences is a human need that must be satisfied in order for all parties to be maximally productive.

A critical analysis of diversity in the workforce is incomplete without a realization that diversity has disadvantages too. The pursuit of unity in diverse organizations can sometimes lead to convergence, where employees are encouraged to embrace their similarities and to act and think in similar ways (Schwella et al. 1996). Communication and integration of actions become more difficult in situations of diversity. In the context of service delivery in the health system, clinical care can be significantly compromised by diversification of the workforce, when the 'customer profile' of the public health system has lagged behind in the process of diversification. While representation in the workforce is aimed at mirroring and creating a microcosm of society at large, the socio-economic history of the country dictates that representation of public health service users does not accurately reflect the demographics of the South African population. Over-representation of the poor and historically marginalized is an overt manifestation. Language, cultural and ethnic barriers between the service provider (doctor) and the service user (patient) introduce challenges to the clinical assessment and management of the service user, and may lead to frustration of the competent but sociallydisconnected service provider.

Managing and Valuing Diversity

Diversity Management is the acceptance of the diverse nature of individuals and groups within society, and indeed within our organizations. It recognizes the visible and non-visible differences which need to be harnessed in order to create a work environment that is conducive to maximizing productivity and exploiting the full potential of each individual without placing any one person or group at an advantage or disadvantage (Inyang 2007). In retrospect, diversity management originally sought to address demographic inequalities at the organizational level with much attention having been paid to the establishing of equitable race and gender quotas. This discrimination and inequity paradigm directed diversity management activities toward the goal of 'representation' (Greybe & Uys 2001). This superficial view of diversity was deficient in approach to understanding and levering the complexities of differences. Greybe and Uys (2001) describe a shift in the paradigm in the 1990's to one of admission and legitimacy, which followed the realization that the needs of a diverse customer base are best served by a diverse organization that values its own diversity. The strong management focus on augmenting the service or product and customer satisfaction eclipsed the goal of grappling with the social issues of diversity, and the intricacies of workforce diversity. More

recently diversity has been seen as an opportunity to incorporate the diverse perspectives of employees on strategic markets, products, services, practices and cultures (Greybe & Uys 2001). Together with this new paradigm of learning and effectiveness, comes the insight into the true value that critical engagement with the challenge of diversity can bring to an organization. Quite clearly, the imperatives for managing diversity has stemmed from the propagation of the 'business case' and the promise of economic gains. Valuing diversity, on the other hand, have evolved around moral and ethical imperatives to recognize and appreciate culturally diverse people (Uys 2003). Programmes designed to 'value diversity' have made great strides in addressing diversity at the individual and inter-personal levels, but usually do not ascend to the organizational level. Consequently, organizational issues and organizational systems are excluded from the process of redress (Uys 2003). While valuing diversity aims to recognize and tolerate, managing diversity seeks to harness and capitalize on sensitivity to salient differences to create a more dynamic and competitive organizational culture (Uys 2003).

Managing Diversity and Affirmative Action

A further distinction that is important to make is that between managing diversity and affirmative action. Affirmative action falls under the broad umbrella of equal opportunity, which is legislated through the Employment Equity Act of 1998. The key principle underlying employment equity includes the equal treatment of all individuals regardless of the race, gender or ethnic origin. Perumal (1994) suggests that Affirmative Action is an adjunct to employment equity aimed at the elimination of discrimination against those persons previously treated unfairly by the employment practices and policies of a given institution, and rightly recognizes its role a tool for social justice in so far as it entails a systemic programme for bringing social opportunities and material benefits to a target group who would otherwise be deprived. While Affirmative Actions seeks to eliminate the barriers, racism and prejudice faced by designated groups in obtaining employment, managing diversity takes the more holistic approach of recognizing the unique dimensions of each individual and endeavors to harness the full productive and personal potential of the employee (Invang 2007; Perumal 1994; Uys 2003). Interesting, affirmative action has contributed to the growing diversity of the public service and serves as the legislative impetus for pursing diversity programmes. In the

main, however, affirmative action remains an institutional obligation under political, social and legal compulsion while the impetus for managing diversity is primarily an economic driver supported by the business case. Affirmative action programmes are directed at changes at the group level and are strategically managed by the human resource manager, while diversity management has its influence on the individual level and is controlled through the process of continuous feedback by the individuals themselves, with the involvement of all managers. The pluralistic, proactive, inclusive, and longterm nature of diversity management contrasts with the group-based, reactive, socially exclusive, relatively short term nature of Affirmative Action (Human 2005; Hunt 2007; Uys 2003). Pursuing affirmative action alone, in the hope that the representation it brings about will contribute to the management of diversity in the organization is an ill-founded assumption that threatens to be more crippling to the organization than enabling. Optimizing the potential of the workforce is essentially a managerial task, best achieved through managing its inherent diversity.

Currently affirmative action measures are being implemented in the selection, training and hiring of healthcare workers. Medical schools, in particular, have actively pursued racial quotas in their enrolment strategies as a means to effecting change in the medical profession. Notwithstanding this, the severe skills shortages in the health sector have prevented the maximal implementation of affirmative action policies, as suitable affirmable candidates are not readily available, and existing job, resource, and time-frame constraints prevent the selection and development of candidates who show 'potential' to perform. Diversity management, too, faces considerable challenges in the public service. The absence of benchmarks in the public service is a major limitation to managing diversity. In addition, the severe capacity and resource constraints in the health sector places diversity management low on the priority list of many managers who do not recognize it as a strategic and urgent need. Hospitals are large bureaucratic organizations, and change will, predictably, come slowly (Gay & Bamford 2007). The current political climate of the country suggests that a turn toward elements a developmental state with increased involvement of the state in sectors such as health and education, potentially increasing existing bureaucracies. The lack of accountability for diversity management within the public service enables the perpetuation of the status quo. Arguably the greatest challenge facing long term, sustainable diversity management is the inequalities in education and training of future

healthcare professionals. Current disparities in opportunities for education translate into differential access to employment (Inyang 2007). The healthcare sector is directly affected by the failure of the South African education schooling system to produce students who are adequately skilled in mathematics and science, and who are eligible for entry into institutions of higher learning. The inherent gender and racial disparities in primary and secondary education cannot be meaningfully corrected at the tertiary education level, and will inevitably manifest in the workforce. Preparedness of public health service managers and employees is lacking and will need to be addressed through awareness programmes and training. Diversity management would certainly not have been included in the conventional management skills set of many present managers in the system. In addition, many managers in the public health service, particularly hospital managers, have little or no general management education, let alone formal training in diversity management. Closing the gap between overt, on the ground needs of the health services and softer elements such as diversity management will be crucial to the efficient functioning of the system. Penceliah (2003) describes the recent interest in the role of emotional intelligence in public service managers. The ability to perceive and be aware of emotions, and to use this knowledge to discern the feelings underlying interpersonal communication is critical when dealing with the sensitivities of diversity management (Mullins 2005; Penceliah 2003).

Strategies for Managing Diversity

The multi-faceted, complex nature of diversity makes crafting and executing effective strategies for diversity management a challenging task. Understandably, there have been several models and strategies put forward by a multitude of stakeholders. Greybe and Uys (2001) suggest the following consolidated, comprehensive and pragmatic approach, which has been adapted for application in the South African public healthcare sector:

Create Diverse Organizations

Diverse organizations are more likely to recognize the need for diversity management and provide the heterogeneity that is required to critically engage with the challenge of diversity, while identifying the opportunities that arise from effective management. An organizational culture that values the diverse perspectives and contributions of all its employees is crucial to the successful management of workforce diversity.

Create a Mission and Organizational Vision

A shared organizational mission is essential to consolidate the diverse interests and perspectives of the heterogeneous workforce. It serves as both a bonding and a directive strategy within the organization. The mission and vision must be realized through strategic and operational plans that set targets and provide for monitoring of the diversity management activities.

Introduce Creative Leadership

Dynamic and visionary leadership is necessary as the driving force for diversity management in the organization. A radical approach is not necessary, whereas stability and balance amongst the diverse employees is crucial. A participatory leadership with 360-degree feedback is useful, but comes with the responsibility of having to provide the personnel with sufficient knowledge and information on the process. The fostering of an emotionally intelligent leadership will have positive outcomes on the management of diversity within the organization.

Involve Senior Management Actively

Senior management should be actively involved in pursuing diversity management within and outside of the organization. Attendance at cultural festivals and other cultural settings promotes the image of the organization and reflects its commitment to diversity management. Forming alliances with prominent cultural organizations in the community may also be a meaningful exercise for senior management, and sets the example for becoming knowledgeable about the different cultures and ethnicities in the community. A culture conscious management team is open to consultation and is able to establish and communicate diversity priorities to all stakeholders. Significantly, the commitment of senior management is essential in order for diversity management programmes to receive the kind of resource support that is necessary for its effectiveness. The potential conflict between short-term concentration on targets and the long term management of diversity must be prevented.

Ensure Effective Interpersonal and Inter-Group Communication

The success or failure of an organization's diversity management strategies will depend largely on effective, clear and unambiguous communication. Constant updates and feedback must be encouraged through the use of newsletters, diversity training, workshops, staff attitude surveys and regular evaluation. Communication, in itself, has the potential to act as a tool for change and exchange. Ideas, knowledge and culture can all be expressed through interpersonal and inter-group communication. Diverse organizations, by the multi-cultural nature, however face inherent risks of miscommunication and difficulties in maintaining effective communication. Meanings and connotations are subliminally added to all communication as it is filtered through our social and cultural experience. Dialogue and repeated transmission of important information may help in reducing miscommunication. With 11 official languages, the South African public health service will have to take account of the multi-lingual, multi-ethnic nature of both its workforce and service users. Notices, health education, and official documents may require translation into the locally relevant language.

Create Opportunities for Positive Diverse Interaction

Historical racial segregation has been the hallmark of the past South African social and political landscape. The remnants of this divisive history remain with us and fuels misunderstandings. Positive social interaction in the form of sport, cultural festivals, workplaces and inter-religious gatherings can be used to market diverse communities.

Develop Partnerships

The public health service operates in a dynamic environment with numerous stakeholders and potential partners. Linkages with the private sector, pharmaceuticals, business, communities, religious organizations, professional associations, non-governmental organizations and inter-sectorial partners can be used market the diversity of the public health service, as well as to extend the internal vigor of the organization which originates from its diversity to the external environment.

Conclusion

In the past decade, there has been an exponential growth in the realization that diversity management is an essential component of public management, with implications for the efficiency, competitive advantage and systematic success of the entire public service. The unique social and political history of South Africa, together with its rich cultural and ethnic diversity amplifies the challenges of managing diversity in our context. The public health service, in particular, contains a diverse corps of professions who differ on a multitude of dimensions. In addition, the intimate interface with the general population adds depth to the complexities of diversity in the public health system. The economic impetus for managing diversity is well established, but there has been a growing recognition of its potential to drive broader social change and augment the contributions of legislated programmes such as affirmative action. The challenges facing ill-prepared public managers in South Africa must be urgently addressed if we are to mount a serious and engaging response to the increasing diversity of the workforce. Sound principles of management, coupled with a commitment to diversity management at all levels are a prerequisite to any effort designed to harness the full potential of a diverse, multi-cultural human resource corps.

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Customer Service Expectations from South African Alcoholic Beverage Suppliers

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Abstract

To be successful in the current highly competitive market a South African alcoholic beverage supplying company (SAABSC) must guarantee customer service and service quality. As a means of differentiation companies have to focus their efforts on quality customer service. The purpose of the study is to measure the service delivery expectations and realisations of customers that receive delivery from SAABSC based on their geographical location. It required the implementation of a descriptive research method. The target population comprised customers of SAABSC situated in the Gauteng, Western Cape and North West Provinces of South Africa. The results from the study indicate that customers expect the SAABSC to deliver on all five service quality dimensions but fail to do so to their satisfaction. Recommendations on how to improve on these dimensions are given in the form of CRM strategies that SAABSC can implement. Ensuring that these recommendations are implemented will ensure a higher level of service quality and customer satisfaction. This should lead to increased customer retention, sales and profit growth, increased loyalty, the addition of new customers and overall better customer relationship.

Keywords: alcoholic beverage supplying companies, customer satisfaction, customer relationship management, relationship marketing, service quality, SERVQUAL.

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Introduction

To survive in today's competitive business market businesses should offer quality service and must form part of their overall strategy (Beukes, Prinsloo & Pelser 2014; Parasuraman, Zeithalm & Berry 1985).

In any company (be it a service delivery company or a manufacturing or merchandising business) a commitment to quality must start from the top and progressively move down to the bottom of any organisation. Service quality is generally considered in literature in terms of its importance for larger organisations with more administrative structures, the latter which often lead to a lack of response to customer needs and poor customer communication (Zeithaml *et al.* 1988).

Good customer relationships should be maintained through formal customer care policies that are introduced in order to address customers' service quality differences and to ensure quality of service. The goal for every business is to ensure that there is an understanding of the expectations of the customers and to fulfil those expectations (Gummesson 1988: 21).

Many original service quality researchers (Gronroos 1984; Parasuraman *et al.* 1985; 1988; Cronin & Taylor 1992; 1994) pay considerable attention to the development and testing of models for the measurement of service quality in retail banks, long distance telephone companies and credit card companies. In terms of service quality in South Africa there has been studies done by Rootman (2006; 2011), Du Plessis, Rousseau, Boshoff, Engelbrecht, Joubert & Sanders (2007), Mackay (2012), Roberts-Lombard, Van Tonder, Pelser & Prinsloo (2014) and Beukes (2015).

Gaps have become apparent that flowed from these studies; for example, the gap between service specifications versus service delivery. There is an indication of differences between customer expectations and their perceptions of the service delivered, and also between customer expectations and employees' perceptions.

Customer loyalty and retention is dependent on quality of service which in turn creates a competitive advantage and serves as a marketing tool for many companies. The purpose of the study is to measure the service delivery expectations and realisations of customers that receive delivery from SAABSC based on their geographical location (Beukes 2015). For the purpose of this study customers are defined as any retailer that receives physical delivery from an SAABSC. Also in this study the geographical focus is on rural and urban areas throughout South Africa (in the SAABSI – South African Alcoholic Beverage Supplying Industry – there is no semi-urban or semi-rural areas, only urban or rural). Finally, urban customers have been categorised according to their being situated in the main cities (developed areas) while rural customers are situated on the outskirts (underdeveloped areas) of the main cities within the selected provinces.

Problem Statement

In a global world economy, where alcoholic beverage supplying companies (ABSC) are competitive and consumers very demanding, it is also increasingly difficult to hide inefficiencies in a company's service delivery execution and process. If service companies are unable to provide for the needs and wants of their customers they risk losing them to the competition

Over the last 5 financial years (2010-2014) the SAABSI has seen year on year volume growth. Even though there is year on year volume growth it is slowly but surely diminishing. This is a cause of concern to the SAABSC in the industry, possible reasons therefore can be established by investigating service delivery.

Also in conjunction with the aforementioned problem, there is among employees in the SAABSI a general perception that rural customers are not of the same importance as their urban counterparts. This perceived lack of investment importance is based on return on investment, sales volume, market share and expected profit growth of a SAABSC. The perceived tendency automatically creates different levels of service among rural and urban customers.

Diminishing product growth in any company is an indication of commercial deterioration in general, which might lead to possible retrenchments, restructuring or even closure. The problem statement in this study is based on the mentioned negative tendency and read as follows:

The current negative volume growth experienced by the SAABSI pose a possible medium and long term survival threat for the industry.

This study focusses on service delivery, in all its dimensions, as a potential resolution. The primary objective of the study was to investigate the relationship and to determine if differences exist between customer expectations and customer realisations of SAABSC service delivery to their customers, based on their geographical location (rural vs. urban).

Literature Review

Current companies return to existing marketing strategies or relationship marketing to change the perceptions customers have of their service delivery (Egan 2011: 290). According to Egan (2011: 291) marketing was traditionally seen as the management process specifically responsible for the identifying, anticipating and satisfying of the customer's needs. However, Burrow (2006: 8) warns that the marketing concept is changing due to different perceptions and viewpoints on marketing, making its definition and activities more complex.

Mullens and Walker (2010: 14) provide a very comprehensive definition of marketing when declaring that it is:

the process of analysing, planning, implementing, coordinating, and controlling programs involving the conception, pricing, promotion and distribution of products, services, and ideas designed to create and maintain beneficial exchanges with target markets for the purpose of achieving organizational objectives.

It is therefore clear that the traditional approach to defining marketing is no longer acceptable and that it should be seen as a diverse discipline at the heart of any business (doesn't matter what type). Marketing further influence all core business activities, including profitability, and the emphasis should constantly be on the understanding and satisfaction of customer needs in a mutually-beneficial manner by providing appropriate products and/ or services.

Relationship Marketing

Gummesson (2008: 3) considers relationship marketing to be an extension of marketing based on interaction within networks of relationships. Baran, Galka & Strunk (2008: 83) and Beukes, Prinsloo & Pelser (2013: 1) state that relationship marketing focuses on the relationships between an organisation and its customers which is based on ongoing cooperation and collaboration. The eventual profitability of the company is based on these activities that can improve the relationship. These activities and how they apply to SAABSC and service quality delivery to their customers (urban and rural) are investigated.

Service quality focuses on the standard of service delivery and the

interaction between the customer and the service provider in order to ensure that the customer's expectations are met (Roberts-Lombard *et al.* 2014). Literature (Beukes 2015) on service quality is dedicated to establishing ways to measure service quality and to identify any shortfalls or gaps.

SERVQUAL

Parasuraman *et al.* (1988) developed SERVQUAL, a concise multiple item scale model that can be used to better understand service expectations and consumer realisations. Etzel *et al.* (2007: 290) mention that the SERVQUAL model is based on the following five principal dimensions that customers use to judge a company's service:

- Tangibles
- Reliability
- Responsiveness
- Assurance
- Empathy

For the purposes of the study the SERVQUAL model plays an important role in the measurement of the service quality at a service firm due to the five service quality dimensions as identified by Parasuraman *et al.* (1988: 23). Parasuraman *et al.* (1988: 23) state that the dimensions are related to the differences between customers' realisations and their expectations of service delivery.

Perceived service quality by customers originates from a comparison of what customers feel the service business should have offered and how this matches their perceptions of the performance of the businesses providing the service. Previous empirical research on service quality has focused primarily on the measurement of service quality in hotels (Erto & Vanacore, 2002: 165), on the service quality provided by domestic airlines (Chang & Yeh 2002: 166), and on tourists' judgments of service quality (Weiermair & Fuchs 1999: 1004).

It is evident from the mentioned studies that previous empirical research focused on service quality in other industries (Beukes 2015). No evidence could be found that attention has been given to investigating the customer service expectations and realisations of SAABSC customers in rural and urban areas. Empirical research using the SERVQUAL model in a South African context is limited especially in the SAABSI (Beukes 2015). Van der Wal, Pampallis and Bond (2002), Berndt (2006), De Jager and Du Plooy (2006) as well as Kgaile and Morrison (2006) have used the SERVQUAL method for research in different industries such as cellular telephones, the motor industry, public health as well as education. However, not much has been done to explore a comparison between SAABSC customers' expectations and the realisation of service delivered to them based on the five service quality dimensions (Beukes 2015).

SERVQUAL GAPS

Some of these unexplored service dimensions or gaps in the SERVQUAL model appear to be important and worthy of investigation in the context of SAABSC. These include the gap between service specifications and service delivery and the discrepancy between customer expectations and their realisations of the service delivered in rural vs. urban areas, the possible difference between rural and urban-based customer service expectations and realisations. In the context of the proposed study investigation of the gaps could lead to or create a better relationship between customers and SAABSC in the context of service delivery (Beukes 2015).

Service delivery and customer service plays a determining role in overall customer satisfaction and overall business performance. In today's highly competitive fast moving consumer goods (FMCG) market there is huge emphasis on these two aspects. Since the 1980s service quality has been associated with increased profitability and it is seen as creating a competitive edge by generating repeat sales and important positive word-of-mouth feedback, customer loyalty and competitive product differentiation (Pelser 2014a; Parasuraman *et al.* 1988).

According to Parasuraman *et al.* (1985; 1988) and Beukes *et al.* (2014) satisfaction results are a result of the comparison of consumers' expectations of service with their perceptions of actual service performance. Service quality is thus a critically important for any marketing strategy; it is determined by the interaction of all those factors that affect the process of making products and services available to the customer. If there is any noticeable weakness in making services available to the customer (wrong delivery, wrong time, wrong place), then a service gap exists, which needs quick resolution in order to ensure customer loyalty and to develop a successful business (Beukes 2015).



Figure 1: Industry framework

Within a dedicated FMCG market as shown in Figure 1 two main areas emerge, namely food and beverages. For the purpose of this study emphasis is on the beverage sector of the industry (Beukes 2015). The beverage industry is divided into two sub-sectors, namely alcoholic beverages and non-alcoholic beverages. In the current study the focus is on alcoholic beverages. The alcoholic beverage industry is categorised according to the different categories of alcohol it produces: beer, ciders, wine and spirits (Beukes 2015).

In this market segment in South Africa there are four main entities (SAB, Brandhouse, Distell and Edward & Snell) as illustrated in Figure 1. All of these companies compete within the market to deliver their products to their respective customers with the best possible customer service and service delivery (Beukes 2015).

Research Methodology

Quantitative research, using the SERVQUAL model as basis, was used for the empirical study. The target population comprises customers of SAABSC situated in Gauteng, Western Cape and North-West provinces of South Africa.



Figure 2: Alcoholic beverage industry COT breakdown

Only licensed customers were used in the study; licensed outlets renew their liquor license every year and sell alcohol legally. Shebeens do not have liquor licenses and have therefore been excluded from the study. SAABSC customers are categorised according to their trade; this is referred to as their class of trade (COT) and is depicted in Figure 2.

These three provinces were used in the study because the majority of the total alcoholic beverage industries customers are situated in these provinces and represent both urban and rural customers. The industry consists of \pm 30 000 customers in total. A total of 39.3% of these customers are based in the rural areas and 60.7% in urban areas of South Africa. The three provinces feature 29.59% of the total customer population. The database of customers was obtained from an existing SAABSC customer database of the mentioned companies.

A non-probability judgment (purposive) sampling method was implemented. A confidence level of 90% and margin of error of 0.025 were used, resulting in a sample size for the study of 965 customers from the SAABSC. The primary alcoholic beverage focus areas used in the study comprised urban and rural areas within Gauteng, the Western Cape and the North-West Province. This was divided based on the percentage representation within each province.

The survey method was used to collect the primary data. Data was collected by means of 965 structured questionnaires that were distributed to respondents. Due to certain questionnaires not being completed correctly or in full the total usable questionnaires that were obtained were 926, thus culminating in a realisation rate of 96%.

Items in the questionnaire were based on the SERVQUAL model adapted to fit this specific study. Section A comprised of the demographic details of the respondents. Section B consists of a five point Likert scale, based on the 22 items in the SERVQUAL questionnaire. Responses on this scale range from 1 = strongly agree to 5 = strongly disagree.

Data Discussion

In this study the questionnaires were checked manually for completeness, consistency, accuracy and correct numbering (coding). All the returned data was captured on an excel spreadsheet. SPSS Version 22.0 for Windows was used to perform and evaluate the data analysis.

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The Cronbach's alpha values were used to determine the reliability of the measurement instrument (the questionnaire). The Cronbach's alpha values obtained for the questionnaire of this study ranged between 0.680 and 0.887. This indicated sufficient reliability.

For the purpose of this study both face and construct validity were used. As for face validity, the questionnaire was pretested among a sample of 20 respondents from the target population so that they could assess whether the requisite statements had been included in the questionnaire. In terms of construct validity, a confirmatory factor analysis was conducted for each of the SERVQUAL dimensions measured in the questionnaire.

For the purpose of this study expectations refers to that which the customers (respondents) of alcoholic beverage supply companies expect certain items of service delivery to be, or what satisfaction levels they would want to get out of specific service delivery items. Realisations refers to what the reality of customers (respondents) of alcoholic beverage supply companies are, this is to say what the real-life situation for the customers on the same service delivery items are.

One questionnaire was developed and was distributed among urban and rural customers of alcoholic beverage supply companies. These questionnaires measured the expectations and realisations of both customer groups separately. With the exception of urban and rural customers, the content of the questionnaire was identical. The following sections present detailed data analysis and interpretation of the results.

Confirmatory Factor Analysis on Expectations

Both questionnaires were designed into different factors based on the five dimensions of service quality, namely tangibility, reliability, responsiveness, assurance and empathy. Tangibility consisted of 4 items, reliability of 5 items, responsiveness of 4 items, assurance of 5 items and empathy of 4 items.

The Kaiser-Meier-Olkin (KMO) measure measures sampling adequacy. The returned result on expectations of respondents was 0.724. This indicates that the sample sizes were acceptable. A Bartlett's test was also conducted; Field (2010: 25) states that it measures whether the correlations between the items are high enough; the p-value returned must be lower than 0.05 to reflect adequate correlation. This section returned a p-value of < 0.05. This shows a high enough correlation between the section items.



Figure 3: Confirmatory factor analysis model: Expectations

The confirmatory factor analysis model for expectations is indicated in Figure 3. Dimensions were grouped based on collected empirical data and are as follows:

• Tangibility (E1 - E4),

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- Reliability (E5 E9),
- Responsiveness (E10 E13),
- Assurance (E14 E18) and
- Empathy (E19 E22).

Table 1 shows the goodness of fit statistics for expectations. The p-value returned on the expectations fit statistics was <0.001. This indicates statistical significance and that the model does fit. The CMIN/DF result returned was 4.77, which is acceptable. According to Bagozzi and Yi (2012: 29) the CFI is one of the most popularly reported fit indices due to the fact that it is one of the measures least affected by sample size. The CFI returned a value of 0.886, which indicates an acceptable overall fit. RMSEA is regarded as 'one of the most informative fit indices' based on its sensitivity to the number of estimate parameters (Diamantopoulos & Siguaw, 2000:85). The RMSEA (displayed in Table 6.21) fit indices indicate a good overall fit of the model (default) to the data (RMSEA = 0.064 [0.060 - 0.068]).

Goodness of fit st	atistics - Expectations
Chi square p value	< 0.001
CMIN/DF	4.77
CFI	0.886
RMSEA	0.064
RMSEA HI 90	0.068
RMSEA L0 90	0.060

Table 1: Goodness of fit statistics: Expectations

The confirmatory factor analysis supports the finding that the five factors identified through the theoretical exploration of the study are valid and correspond with the SERVQUAL instrument that measures service quality for expectations.

Descriptive Results of Factor Scores

In Table 2 it is depicted that six respondents completed all the items within each service quality dimension. Within the expectations dimensions the values

ranged from a minimum of 1 (Strongly agree) to 3 (Neutral). In the realisations dimension the minimum value was 2 (Agree) and the maximum was 5 (Strongly disagree). The highest mean value returned on the expectations section is on the reliability dimension (1.77) and 4.14 (reliability) on the realisations section. The lowest mean value returned on the expectations section is on the assurance dimension (1.56) and 3.62 on the tangibility realisation dimension.

All expectations dimensions returned a value close to the Agree value; this indicates that the respondents expect the SAABSC to deliver on the service dimensions. In comparison to this they indicated on all the realisations dimensions that they do not get the service they expect to their satisfaction.

	De	scriptive Statist	ics		
	z	Minimum	Maximum	Mean	Std. Deviation
Expectations tangibility	926	1.00	3.00	1.76	.49737
Expectations reliability	926	1.00	2.60	17.1	.45336
Expectations responsiveness	926	1.00	2.50	1.63	.39443
Expectations assurance	926	1.00	2.40	1.56	.38409
Expectations empathy	926	1.00	2.50	1.57	.38013
Realisations tangibility	926	2.25	4.75	3.62	.45999
Realisations reliability	926	3.00	5.00	414	.58769
Realisations responsiveness	926	2.25	4.50	4.10	.56702
Realisations assurance	926	2.00	4.60	3.80	.52512
Realisations empathy	926	2.50	4.50	3.84	.54771

Table 2: Descriptive results of factor scores
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Independent T-test Results

Figure 4 portrays the urban area respondents' expectations versus the rural area respondents' expectations mean values.



Figure 4: Urban versus rural areas service dimensions expectations

Figure 4 displays the urban area and rural area respondents' results as per their expectations of the service quality dimensions of service they receive

from SAABSC. Again the results are based on the Likert scale used (1 = Strongly agree, 2 = Agree, 3 = Neutral, 4 = Disagree and 4 = Strongly disagree). Respondents in both the urban and rural areas indicated that they expected good service delivery from the SAABSC on all five dimensions of service quality.

Table 3 displays the effect size and p-values of the T-test done between the urban and rural area respondents on each individual dimension. An 0.2 on the effect size indicates a small practically significant difference, 0.5 indicates a medium practically significant difference and 0.8 a large practically significant difference.

Dimension	Urban/Rural	Mean	Std. Deviation	p-value	Effect size
Ernortationa Tanaibility	Urban	1.78	.49116		
Expectations rangionity	Rural	1.74	.50644	0.293	0.07
Eventations Dollahility	Urban	1.77	.44022		
	Rural	1.77	.47294	0.984	0.00
Evroteino Domonitore	Urban	1.66	.39862		
Experiations responsiveliess	Rural	1.59	.38537	0.014	0.16
Eurododino A normono	Urban	1.58	.37441		
Lypeviaiuns Assurance	Rural	1.52	.39612	0.026	0.15
Evonatoriana Emanthu	Urban	1.57	.37268		
Experiencies Eripaniy	Rural	1.58	.39141	0.655	0.03

Table 3: Urban and rural areas expectations

There were two dimensions with p-values lower than 0.05, which indicates statistically significant differences. On these two dimensions the effect sizes

were 0.16 (expectations responsiveness) and 0.15 (expectations assurance) respectively. These indicate that there is no practically significant difference. There is thus no practically or statistically significant difference between the urban and rural area respondents expectations of service quality based on the five service quality dimensions as received by SAABSC.

In Figure 5 the results of the urban area and rural area respondents' results as per their realisations of the service quality dimensions of service they receive from SAABSC are displayed. Respondents in both the urban and rural areas indicated that they do not receive service delivery from the SAABSC on all five dimensions of service quality to their satisfaction.



Figure 5: Urban versus rural areas service dimensions realisations

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When comparing the rural area respondents' realisations results based on the five service quality dimensions as received from SAABSC the trend seems similar to the urban respondents' results. All five dimensions' results returned a mean value near to the Disagree option. This indicates that most of the respondents in the rural areas do not receive customer service delivery to their satisfaction within the five dimensions of service quality from SAABSC.

Dimension	Urban/Rural	Mean	Std. Deviation	p-value	Effect size
Doolhootiono Tonochility	Urban	3.61	.44859		
nealballurs laiguilly	Rural	3.64	.47678	0.448	0.05
Doolcotions Dolobility	Urban	4.14	.58275		
INTERING INTERNITY	Rural	4.13	.59580	0.949	0:00
Doolinatione Docementionnee	Urban	4.08	.58720		
	Rural	4.13	.53464	0.157	0.09
Donlinations Accuration	Urban	3.79	.53397		
NealbailUI & Assul al lue	Rural	3.81	.51219	0.667	0.03
Doolinational Ermothu	Urban	3.84	.54280		
NealbailUIS Eilpailiy	Rural	3.84	.55571	0.957	0.00

Table 4: Urban and rural areas realisations

The paired effect size and returned p-values displayed in Table 4 are now discussed for urban and rural area respondents' realisations. As previously mentioned, the p-value, which indicates whether there is a statistically signifycant difference between the means, must be below 0.05 to show that there is in fact a statistically significant difference between the means. All the dimensions returned a p-value higher than 0.05. This indicates that there is no statistical significant difference. Neither is there a practically significant difference.

In summary, no practically or statistically significant difference between the urban and rural area respondents' realisations of service quality basedon the five service quality dimensions as received by SAABSC, could be found.

Dependent T-test Results

In this section the dependent T-test results for the urban and rural area respondents are displayed and discussed.

			Std.	Std. Error		
Dimension	Mean	N	Deviation	Mean	P-value	Effect size
Expectations tangibility	1.7611	926	.49737	.01634		
Realisations tangibility	3.6239	926	.45999	.01512	<0.001	3.75
Expectations reliability	1.7691	926	.45336	.01490		
Realisations reliability	4.1363	926	.58769	.01931	<0.001	4.03
Expectations responsiveness	1.6331	926	.39443	.01296		
Realisations responsiveness	4.1031	926	.56702	.01863	<0.001	4.36
Expectations assurance	1.5587	926	.38409	.01262		
Realisations assurance	3.7972	926	.52512	.01726	<0.001	4.26
Expectations empathy	1.5699	926	.38013	.01249		
Realisations empathy	3.8404	926	.54771	.01800	<0.001	4.15

 Table 5: Dependent T-test results

The dependent T-test compares the means of two related groups to detect whether there are any statistically significant differences between these means (Pallant 2010: 236).

Table 5 illustrates the difference in the respondents' expectations versus their realisations on all five service quality dimensions. Most of the respondents of SAABSC felt that the companies must deliver on all five service quality dimensions, but in their expectations indicated the SAABSC did not deliver to the full satisfaction of the respondents.

It is also evident in Table 5 that there is a practically significant difference between the means on all the service delivery dimensions when considering the respondents' responses. All effect sizes were above 3.74, this indicates a large practical significance. The p-values that were returned on all the dimensions were smaller than 0.05 which indicates a statistically significant difference between the respondents' expectations and realisations of service delivery form SAABSC.

In summary, there are a practically and statistically significant difference between the respondents' expectations and realisations of service quality based on the five service quality dimensions as received by SAABSC.

Findings and Recommendations

The following section indicates all the main findings of the study results. The implications and recommendations are discussed in relation to the main findings.

Finding 1

Respondents indicated that they expect the SAABSC to deliver on the five service quality dimensions but that these companies fail to do so to their satisfaction.

The fact that customers of SAABSC indicated that they do not receive the expected service delivery to their satisfaction can have numerous implications for the SAABSC; these include the following:

- Loss in customer retention.
- Bad company image and reputation.
- Loss in sales, volume and overall profit.

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- Reduction in loyal customers.
- Increase in cost to retain customers and to re-establish the image and reputation.

The following recommendations are made per service quality dimension:

Tangibility Dimension

- Companies can improve the look of their fleet (trucks and trailers) overall; this can be budgeted for on a yearly basis.
- They can implement a truck/trailer washing and scrubbing plan to improve the appearance of the trucks.
- Yearly fleet audits to ensure that the appearance of trucks/trailers is maintained can be introduced
- SAABSC can upgrade their delivery equipment on a continuous cycle (devices that print invoices/statements when delivering to customers); this will ensure the neatness, correctness and overall modern look of the companies' equipment.
- Companies can ensure the upkeep of the equipment to ensure invoicing can take place correctly.
- SAABSC must also ensure that their crewmen/drivers/sales force and any employee of the company that interacts with customers are neat in their appearance on a daily basis; this includes wearing neat working outfits so that they look presentable when dealing with customers.

Reliability Dimension

- Companies need to execute their promises to their customers timeously.
- Employees of SAABSC should not make promises to customers that they cannot honour.
- SAABSC should resolve customers' problems and complaints timeously and accurately.
- They should ensure that the service is delivered correctly the first time.
- When a time is promised to the customer (being it delivery or resolu-

tion time of a complaint or problem) then the employee or company representative needs to ensure he/she adheres to the time promised.

• SAABSC must ensure that the equipment they have in place is not faulty, and if found faulty that there is a backup procedure in place to ensure error-free invoicing.

Responsiveness Dimension

- Companies need to offer their customers prompt service delivery.
- Employees need to be truthful about when a service will be performed.
- Companies must ensure that all employees that interact with customers have completed a customer service training course.
- They should ensure that employees are always willing to assist customers to resolve queries and complaints and pay attention to questions and requests.
- SAABSC can also ensure that their call centre agents do not let people wait for a call to be answered; this can be done by ensuring that when a line is engaged the call is diverted to an open line.

Assurance Dimension

- SAABSC need to ensure their employees that interact with their customers have the necessary skills and knowledge to answer customers' questions, queries and complaints.
- They must ensure employees treat customers courteously at all times.
- Employees need to ensure that they give customers individual attention.
- Employees' attitude and behaviour must instil confidence into their customers at all times.
- The SAABSC need to make sure that their customers feels safe when busy doing any transaction with the company.

Empathy Dimension

• SAABSC can ensure that they have convenient operating hours for their customers; this will entail having the call centre open and making

deliveries to customers at convenient times.

- Employees of the SAABSC need to understand the needs of their customers.
- Employees must be sincere in their dealings with customers and have their best interest at heart.

Finding 2

Respondents indicated that they all expect the SAABSC to deliver on the five service quality dimensions. What is significant in this result is that the respondents in the urban and the rural area did not differ in their opinions about what they expected the SAABSC to deliver on. Both areas (urban and rural) tended to agree that the SAABSC need to deliver on all five service quality dimensions.

It is recommended that the SAABSC need to focus their attention on all five service quality dimensions to improve their service offering to their customers. The SAABSC should not deem any of the dimensions more important than another dimension, as the respondents indicated that there is a minimal difference between what they expected in each dimension (they tend to agree that the SAABSC should deliver on all five service quality dimensions).

Results do not indicate that one dimension is more important than another dimension. The SAABSC must not go about improving on certain dimensions that they feel are important to their company, but should do so holistically and improve on all dimensions.

Finding 3

There are no significant differences between urban and rural respondents' realisation of SAABSC actual service delivery on all five service quality dimensions. They indicated that the SAABSC does not deliver to their full satisfaction on all five service quality dimensions. The urban areas realisations do not differ from the rural area realisations. Overall the respondents indicated that the SAABSC fail to deliver on all five service quality dimensions.

It is recommended that the SAABSC need to ensure they deliver on all five service quality dimensions; the data analysis shows they deliver poor customer service to their customers across the board. They need to improve their sales/call centre employees'/operational teams' interaction skills when dealing with customers; customer service training is also encouraged. For example, the SAABSC can present a customer service course for their drivers and crew.

Finally, the SAABSC should also not deem urban areas customers more important than rural customers and vice versa when delivering a service. Differentiation between urban and rural customers can lead to customer defection, loss of sales and loss of profit.

Conclusion

Quality of service provides a competitive advantage and serves as a marketing tool for many companies; it also contributes to customer loyalty and retention. Pelser (2014b: 700) reports that service quality has been linked to an increase in profitability and is therefore considered a vital approach to ensure a competitive edge over competitors. For the past five financial years the SAABSI had seen year-on-year diminishing volume growth. This was a cause for concern to the SAABSC in the industry; and the reason why the researcher's conducted this particular study.

The study investigated the relationship and determined if differences exist between customer expectations and customer realisations of SAABSC service delivery to their customers, based on their geographical location (rural vs. urban).

The results from the study indicate that customers expect the SAABSC to deliver on all five service quality dimensions but fail to do so to their satisfaction. Recommendations on how to improve on these dimensions are given in the form of CRM strategies that SAABSC can implement. Ensuring that these recommendations are implemented will ensure a higher level of service quality and customer satisfaction. This should lead to increased customer retention, sales and profit growth, increased loyalty, the addition of new customers and overall better customer relationship.

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Government-to-Government e-Government: A Case Study of Challenges Facing User Adoption in KwaZulu-Natal¹

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Abstract

e-Government (e-Gov) projects are continuing to fail in countries across the world, including South Africa. Therefore, although e-Gov presents a means to transform government service delivery to citizens, the intended benefits are not achieved. In addition, the failure of e-Gov leads to significant wasteful expenditure. This paper focuses on a specific category of e-Gov, Governmentto-Government (G2G), concerned with the use of Information and Communications Technology to automate and streamline business processes within a government department and across departments. Challenges facing user adoption of G2G in a South African context are analysed using the KwaZulu-Natal Department of Transport as a case study. As the first step in this research, cases of G2G user adoption challenges in South African government were identified. This helped inform the focus of the literature review and the research instrument used. A qualitative research methodology was used to understand the G2G user adoption challenges. This research has shown that user adoption is a central challenge facing G2G. User adoption is influenced by six main themes: Addressing User Requirements, Business Process Management, Change Management, User Involvement, Organisational Culture and Priority. The six main themes in turn are influenced by subthemes: strategy, usability, complexity, HR skills, resistance, systems development methodology, management support and data quality. Technology infra-

¹ This article is drawn from an unpublished doctoral thesis.

structure was identified as an important yet peripheral issue affecting G2G. This research has provided a deeper understanding of the challenges facing G2G user adoption, by focusing on these emerging themes and sub-themes and describing how they impact on G2G. The findings are summarised in a G2G User Adoption Challenges model.

Keywords: e-Government, Government-to-Government, User adoption, G2G challenges.

Introduction

Although there is no universally accepted definition of e-Government (e-Gov) (Halchin 2004; Yildiz 2007; Abrahams 2009), one view of e-Gov is the provision and enhancement of government services, internal processes and service delivery through the use of technology (Maumbe *et al.* 2008). The categorisation of e-Gov efforts into the three broad categories of Government-to-Government (G2G), Government-to-Business (G2B) and Government-to-Citizen (G2C) is an approach that has been used to classify e-Gov initiatives (Brown & Brudney 2001; Ndou 2004; Presidential National Commission (PNC) 2012; Department of Communications (DoC) 2013).

G2G is a specific type of e-Gov concerned with the inter- and intragovernment use of Information and Communications Technology (ICT) (Ndou 2004; PNC 2012). Examples of G2G include financial and human resource management systems used within government departments (Ebrahim & Irani 2005; DoC 2013) and the National Automated Archival Retrieval System (NAAIRS), which is used by government for automated access to archived government records (Cloete 2012; DoC 2013).

There are a number of motivators for implementing e-Gov. One such motivator is the potential of e-Gov to transform government's relationships with citizens and businesses through the use of ICT (Cloete 2012). In addition, e-Gov can promote citizen empowerment, improved service delivery and accountability, increased transparency and improved government efficiency (Maumbe *et al.* 2008; World Bank 2011; DoC 2013).

The South African government also recognises these motivators for e-Gov and the fact that e-Gov can play a role in transforming service delivery to citizens (Department of Public Service and Administration (DPSA) 2001; DPSA 2008; DoC 2013). Accordingly, R1.7 billion was allocated by the South African government to be spent on ICT over three fiscal years through to 2012 (BMI 2012).

Considering the different motivations for implementing e-Gov and the financial resources that are allocated to ICT in South Africa, it is reasonable to assume that there is a need for e-Gov initiatives to succeed and deliver on expected benefits. However, the majority of e-Gov initiatives fail (Heeks 2003). In the developing world, research has shown that e-Gov failure rates are as high as 85% (Heeks 2003). It would therefore appear that the implementtation of e-Gov faces certain challenges.

This article attempts to better understand e-Gov challenges in South Africa with specific focus on user adoption challenges facing G2G. G2G was selected in particular as it is believed that other forms of e-Gov such as G2C and G2B are dependent on G2G in order to provide enhanced e-Gov value to citizens and businesses.

For instance, online booking for a driver's license test (G2C) will be of limited value if the application form is completed by the applicant online whilst the back-end processes executed thereafter by the department staff to process the application, conduct the test and issue the license are not automated or supported by technology (G2G).

In addition, e-Gov and G2G success is particularly important at present, as a number of Government departments in the South African national and provincial government (including the KZN Provincial Government and the KZN DoT) plan on implementing e-Gov and G2G applications. It is therefore important to understand and address G2G challenges in order to improve chances of successful implementation of G2G. Accordingly, such research can be useful in developing more robust and effective plans in anticipation of what often goes wrong in e-Gov projects (Dada 2006).

The remainder of the article is structured as follows: Section 2 states the problem followed by Section 3 which presents a review of the literature on G2G user adoption challenges, including the current state of e-Gov in South Africa and cases of G2G challenges in South Africa; Section 4 describes the methodology used in this research; Section 5 provides an overview of the case being the KZN Department of Transport; Section 6 presents data analysis and research findings; finally, Section 7 discusses recommendations and limitations.

Problem Statement

Although it is acknowledged that G2G can improve government service delivery and significant financial resources have been allocated to its implementation, G2G suffers from a high failure rate. G2G therefore faces challenges, which include lack of user adoption, preventing the full benefits from being realised. The research questions are therefore:

- 1. How does user adoption affect G2G?
- 2. What are the other challenges affecting G2G?

The primary objective of this research is to aid in *explaining* the phenomenon of G2G in South African provincial government. This explanation is intended to promote a greater understanding of, or insights into, the phenomenon of interest (Gregor 2006). The specific research objectives were:

- 1. To determine whether user adoption presents challenges to G2G in KwaZulu-Natal; and
- 2. To better understand user adoption challenges of G2G, should such challenges exist.

Literature Review

The literature review comprises four parts (1) An overview of the state of e-Gov in South Africa; (2) presentation of selected cases in South Africa where G2G challenges were identified; (3) review of literature on G2G user adoption; and (4) conclusions.

State of e-Government in South Africa

e-Gov is part of the South African government's vision of making services more accessible to citizens. This is confirmed in the South African government e-Gov policy framework (DPSA 2001; Abrahams 2009; Cloete 2012). Various national and provincial government departments, state-owned and public entities in South Africa have undertaken e-Gov initiatives that also highlight

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some progress in implementation of e-Gov (Moodley 2005; Naidoo 2007; PNC 2012; Cloete 2012; DoC 2013).

Other approaches used in the literature to assess the state of e-Gov in South Africa include the following:

- 1. An investigation into whether e-Gov investments in South Africa are paying off against the expected benefits. It has been determined that formal benefits realisation is generally adopted as an approach. However, managing and realising benefits is less formal and sometimes not executed at all on e-Gov projects. South African participants in the study also acknowledged that planned e-Gov benefits were not always realised (Naidoo & Palk 2010).
- 2. A qualitative study into the challenges of e-Gov in South Africa focused on the Western Cape provincial government. Leadership, project fragmentation, perceived value of ICT, citizen inclusion and co-ordination of tasks were identified as some of the key challenges inhibiting e-Gov success in the Western Cape provincial government (Matavire *et al.* 2010).
- 3. Rorissa *et al.* (2011) provide five alternative e-Gov benchmarking frameworks. According to their preferred benchmarking framework, South Africa ranks third in Africa in the e-Gov benchmarking index. Egypt and Tunisia are ranked first and second respectively.

e-Gov is therefore a priority for South African government and some progress has been made in the implementation of e-Gov. Challenges have however been identified in South Africa as well.

Cases of G2G Challenges in South Africa

There is a lack of published research into the current state of G2G and G2G challenges in South Africa. Thus the following limited set of cases was identified as a reference for G2G challenges in the country. These cases served to (1) create initial context and understanding of the G2G challenges; (2) inform the focus of the literature review; and (3) limit the scope of the research by specifically seeking to understand G2G challenges which were illustrated in the cases.

Integrated Financial Management System (IFMS)

The IFMS aims to integrate human resource, payroll, financial and supply chain management and business intelligence in national and provincial government. Its objectives include replacing ageing technology and implementation of the Public Finance Management Act and Public Service Act.

Cabinet memos 16 of 2005 and 22 of 2007 provided the approval to initiate this project. Expenditure to date is reported at R559 million (PMG 2012).

The following challenges were identified in this project (PMG 2012):

- 1. Complexity of the IFMS program;
- 2. Procurement and contract negotiation processes taking longer than expected;
- 3. Scope related issues related to the additional responsibility of moving Phase III deliverables (acquisition and implementation of COTS products) to Phase II;
- 4. Readiness and change management issues of lead sites;
- 5. Misalignment of product procurement and product development; and
- 6. Lack of functional skills and capacity in some departments.

Durban Council's Community Information Link (CIL)

This project was initiated by the Durban Metro Council using an existing library network to provide web-based community and council information. The system was intended to provide a database of small for-profit businesses in the community.

It also allowed for capturing of CVs, vacancies, classifieds and sharing of information from the council. 40 public libraries were targeted and the librarians served as the content moderators. The pilot project was rolled out to 18 libraries with hardware and software costs of \$175 000 (Heeks 2008).

Heeks (2008) describes the following challenges encountered on this project:

1. There was little use of CIL as content was only in English and not in any other language;

- 2. The information from the council was not kept up-to-date;
- 3. Lack of HR capacity due to insufficient library staff; and
- 4. Lack of support and ownership from the highest levels in the library system, as well as a lack of support from within the Council.

eNaTIS

The National Department of Transport developed the Electronic National Transport Information System (eNaTIS) over a period of five years (1 June 2002 to 11 April 2007), at a cost of R594 million. The main objective of eNaTIS was to centralise the management of the vehicle and driver's licensing records in South Africa. Fifteen databases of the previous system were migrated into one national database.

The Auditor-General information systems audit report of 2008 on eNaTIS reported findings that were still to be addressed or partially resolved (AGSA 2008). These included:

- 1. Project costs significantly exceeding the tender amount;
- 2. Inadequate infrastructure resulting in poor system performance;
- 3. System and user manuals and procedures still required and enhanced support required at provincial level;
- 4. Security issues related to user access and segregation of duties, physical access control at eNaTIS data centre, disaster recovery site and backups not tested, logical access controls as well as database and operating system security;
- 5. Unresolved data errors that were transferred to the new system and lack of data migration documentation; and
- 6. Scope changes resulting in significant overruns in terms of cost and implementation date were also noted (AGSA 2008).

HR Management System – Personnel Salary System (PERSAL)

The Presidency (2010) highlighted challenges in the Personnel Salary system (PERSAL) which is used across all National and Provincial government departments in South Africa:

1. Functionality was deemed to be lacking in the PERSAL system,

negatively impacting on the public service ability to plan strategically around human resources;

- 2. Data quality is highlighted with data clean-up projects planned;
- 3. The enhancement of skills and capacity was highlighted through training on system functionality and awareness campaigns on the system; and
- 4. Change management strategy was identified to create awareness of the project, its benefits and improve management and use of the Personnel Salary System (PERSAL).

The four G2G cases discussed above indicate that G2G faces challenges in South Africa. User adoption has also been identified as a challenge facing G2G, together with several other related challenges.

G2G User Adoption Challenges: Reviewing the Literature

In order for ICT to improve the productivity of organisations, it must be accepted and used by the employees of the organisation (Venkatesh *et al.* 2003). This applies to G2G as well with the success of G2G dependant on appropriate use of the system by the intended user base i.e. user adoption.

Failure to adopt the system may mean that the expected benefits of G2G cannot be realised (Koh *et al.* 2010). Lack of G2G user adoption is however complex and can be caused by different reasons; some of these reasons are discussed below.

Lack of User Involvement

Lack of user involvement is one reason that may hinder adoption. Ciborra (2005) mentions the Jordanian government sales tax e-Gov project, which faced user resistance. This was due to lack of user involvement and participation.

Similarly, Braa and Hedberg (2002) mention Health Information Systems in South African provincial government departments, which were abandoned by users or eventually replaced by other systems. Thus, inadequate user involvement in G2G projects may result in user resistance or system abandonment.

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Abrahams (2009) highlights the need for e-Gov to focus on the challenges facing citizens and other governmental stakeholders. Thus, e-Gov should be concerned with making government services readily available and accessible with a quicker turnaround time. In order to achieve this outcome, citizens must be involved in e-Gov implementation strategies whilst also developing mechanisms to evaluate and monitor service delivery enabled by e-Gov (Mututla 2012).

Inadequate Change Management

Change management during the course of an e-Gov project also affects user adoption. Change management includes user awareness, involvement and consultation to build support and minimise resistance (Ndou 2004; Ciborra 2005; Hossan *et al.* 2006). Strong change management in e-Gov also requires leadership with a project champion (Mutula 2012). Incentives to create ownership and commitment are also required (Hossan *et al.* 2006), whilst governments must commit to genuine transformation focused on more transparent and citizen-centred government (Mutula 2012).

Readiness and change management have also been identified as a challenge in the implementation of the Integrated Financial Management System (IFMS) in South Africa (PMG 2012), in the Personnel Salary System (PERSAL) (The Presidency 2010) and in the Durban Community Information Link (Heeks 2008). It would therefore seem as if change management requires different forms of interventions to ensure user adoption.

Organisational Culture Barriers

Organisational culture may also prove to be a barrier to user adoption of e-Gov (Ndou 2004; Ebrahim & Irani 2005). In this case, lack of adoption by users may be pre-meditated. The introduction of an automated solution may make certain issues apparent, such as the identification of bottlenecks or the lack of adherence to procedures. This is highlighted in the case of Vijayawada Online Information Center (VOICE) in India. Users who feared job loss, a reluctance to learn new technologies and work practices, as well as loss of income received from bribes led to user resistance (Ndou 2004).

Another example of organisational culture affecting user adoption is the 'angry orphans' phenomenon. ICT specialists who are involved in the current applications in government are threatened by the introduction of new e-Gov applications; hence they respond by creating obstacles and making e-Gov project work difficult to complete (Ciborra 2005).

Within a South African context, there is a need to consider the various diverse governmental departments and other entities that have a role to play in e-Gov, which in turn may impact on a specific department's e-Gov initiatives (Abrahams 2009). In addition, any e-Gov initiative must be tailored to a local context, considering language, culture, content and accessibility (Mutula 2012). Thus, when a specific government department undertakes an e-Gov initiative due consideration must be given to the holistic context of e-Gov in South Africa whilst simultaneously considering the tailoring required to fit into that department's context. There is therefore a need to identify, understand and address potential organisational cultural barriers.

Addressing User Needs

Users' needs must be addressed in order to achieve user adoption. These needs are defined in the user requirements specifications; therefore, requirements specification is the most important part of the software development life cycle, particularly in large-scale systems such as e-Gov applications (Kayed *et al.* 2010).

However, requirements specification is also difficult, especially in the case of G2G systems (Parrish 2006). Paetsch *et al.* (2003) indicate that chains of knowledge in requirements specification lead to misunderstandings; therefore, talking to the user directly to obtain information on requirements reduces the likelihood of misunderstandings (Wing 1990; Paetsch *et al.* 2003). However, hierarchical governmental structures make it difficult to talk directly to the user and understand user needs (Matavire *et al.* 2010). In a South African context, the lack of documented business processes has been identified as a challenge to e-enablement of government services (Abrahams 2009). Therefore, difficulty in eliciting and accurately documenting user requirements contributes towards lack of user adoption.

Conclusion of Literature Review

G2G faces user adoption challenges in South Africa as illustrated with the examples of cases identified. The literature has confirmed the importance of

user adoption for any system to realize intended benefits. In addition, the literature has highlighted some of the G2G user adoption challenges as: the lack of user involvement, inadequate change management, organizational culture barriers and the failure to address user needs.

Research Methodology

The research question aimed to understand how the identified challenges (identified based on G2G cases in South Africa and confirmed by the literature review) affect user adoption of G2G. A qualitative research methodology was used in this study with a case-study research design. One reason for choosing a qualitative research methodology was a response to the dominance of quantitative research in e-Gov (Heeks & Bailur 2007). In research conducted by Irani *et al.* (2012), e-Gov academic journal articles published between 2000 and 2012 were analysed and only 7% were found to be qualitative.

The research sites were the KwaZulu-Natal Department of Transport (KZN DoT) and the KZN State Information Technology Agency (SITA), which is the ICT arm of the South African Government and provides ICT services to the KZN DoT.

The boundaries of the case-study were defined by:

- (1) Systems must meet the definition of G2G which was established upfront;
- (2) G2G site and timeframe: G2G systems which were implemented or implementation in progress at KZN DoT were considered within a defined five year timeframe; and
- (3) G2G Challenges: the research focused on G2G challenges with a definition of a *challenge* established upfront.

In addition, specific challenges were identified by the cases of G2G in South Africa and the literature review; these specific challenges formed a further boundary around the case.

Data on G2G challenges in KZN DoT were gathered through semistructured, in-depth interviews and document analysis. Firstly, an open-ended question about the interviewee's experiences with G2G user adoption challenges was asked, followed by further specific probing questions based on G2G user adoption challenges identified in the literature and in the cases of G2G user adoption identified in South Africa.

Fifteen research participants were interviewed from the KZN DoT (8 interviewees) and KZN SITA (7 interviewees). Purposive sampling was applied as interviewees who had prior experience with planning, design, development and implementation of G2G in KZN DoT were included in the study. The profile of interviewees included G2G users, management and technical staff. Purposive sampling was also applied to documents related to or referencing G2G in the KZN DoT, and included Request for Proposal (RFP) documents and KZN DoT G2G project related documents.

Thematic analysis was applied in conjunction with qualitative coding to analyse field data. These processes can be described as first- and second-cycle coding, where the first cycle of coding is an initial way of condensing and summarising data identifying prompts or triggers for deeper reflection on the meaning of the data (Creswell 2007; Miles *et al.* 2014). Thus, more general ideas, instances, themes or categories can emerge from within the data (Lewins & Silver 2010). NVivo 10 was used as the Computer Aided Qualitative Data Analysis Software (CAQDAS).

This data analysis approach has provided deeper, contextual understanding of the challenges facing G2G within the established boundaries of this case study.

This research aimed to elaborate on existing research. Although the literature has identified several e-Gov challenges, there are gaps in terms of the G2G specific challenges in a South African context. There are also gaps in terms of user adoption challenges, in particular.

The Case: KwaZulu-Natal Department of Transport

This research is a descriptive case study on the KwaZulu-Natal (KZN) Department of Transport (DoT), a provincial government department in the KZN province in South Africa.

The KZN DoT's core functions include transport infrastructure services (concerned mainly with road construction and maintenance) and transport service provision (concerned mainly with road safety, the road traffic inspectorate, vehicle and license registration, public and freight transport). The support functions of the KZN DoT include financial services, supply chain management, ministerial support, strategic planning services and corporate

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services. ICT support is provided from within the corporate services function in the department (KZN DoT 2011).

The KZN DoT works with and takes direction from the National Department of Transport (KZN DoT 2011). The KZN DoT also works with local government in the KZN province from a roads and traffic management point of view (KZN DoT, 2011).

Research Findings

Results

For the purposes of this study, user adoption refers to the end-user in the department transacting on a G2G system to execute a business process. The field data has confirmed that user adoption is an important challenge facing G2G. As one interviewee puts it, G2G user adoption *'is the most critical part of a successful G2G system. If the users do not use the system, there is no value'* (Andre* - pseudonym used).



Figure 1: Field data evidence supporting user adoption as the central challenge of Government-to-Government

The field data has also identified six main user adoption themes, eight user adoption sub-themes and various relationships between user adoption, the main themes and the sub-themes. These main themes, sub-themes and relationships have provided insight into G2G user adoption. An overview of the data is shown below, and the subsequent sections discuss the main themes and sub-themes in detail.

A graphical representation of the field data identifying G2G user adoption, or one of the G2G user adoption main themes, as the central challenge of G2G is shown in Figure 1 above.

This graph is based on actual evidence from the field data, as illustrated in the sample quote above. 13% of interviewees (two out of 15) agreed that user adoption is the most important challenge facing G2G, whilst 54% of interviewees (eight out of 15) agreed that one of the user adoption main themes is the most important challenge facing G2G. 33% of interviewees (five out of 15) did not provide a clear response on whether user adoption or one of the user adoption main themes is the most important challenge facing G2G. None of the interviewees disagreed that user adoption is the central challenge facing G2G.

Figure 2 (overleaf) shows the percentage of field data evidence per interviewee in relation to the total data yielded for each of the main themes, thus supporting the six main themes as challenges related to G2G user adoption.

Main Themes of G2G User Adoption

The field data has also expanded the understanding of the concept of G2G user adoption; six main themes related to G2G user adoption were identified and described: Addressing User Requirements, Business Process Management, Change Management, User Involvement, Priority and Organisational Culture. These main themes, with the exception of Priority, were also evident in the literature review. The findings for the main themes are discussed below together with an illustrative example from the field data:

1. Addressing User Requirements: The G2G system must ensure that the most important business needs of users are addressed. Not addressing user needs reduces the likelihood that the system will be adopted by users.



Figure 2: Field data per interviewee as a percentage of total data yielded for the theme

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This can however be difficult to achieve as requirements cannot be easily prioritised 'Instead of just focussing on the minimum to get things going, you find we want the Rolls Royce and things just don't go anywhere. The systems end up being too big, too complex' (Billy*).

- 2. **Business Process Management:** When a G2G system is implemented, business processes must be adapted for changes which the system may impose. Conversely, if business processes are not intended to change then the system must be adapted to business processes.Walter* explains one reason why G2G is abandoned by users 'Maybe this is because the business processes are able to run without the system, so it is just bypassed. The systems should be a central part of the process, there should not be a way to get around the process without using the system. I think that once you have these workarounds, people tend to bypass the systems and eventually stop using it'.
- 3. Change Management: Users must be aware of the implementation of G2G systems and their buy-in must be obtained. Communication to users throughout the G2G project is a form of effective change management. Effective change management was seen as a pre-requisite for user adoption and it should not be done only at 'face value' level. Ron* indicates the importance of change management in user adoption 'I think change management is the most important component of user adoption. You have to make the departmental staff aware of what's coming down the line, and more importantly how it will affect them. You cannot just say that from today onwards forget how you did things over the last 10 years, just start using the system now'.
- 4. User Involvement: Users must be part of the process of designing and implementing G2G. This increases likelihood of user adoption. According to Walter* 'Users must be involved throughout the whole process. They need to be given the opportunity to provide their inputs and requirements, as they are the ones who will eventually use the

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system. I mean you do not send someone else out to buy a car that you will drive'.

- 5. **Priority:** G2G systems must be given priority in the business environment. This includes prioritising project related tasks over business tasks to ensure that the project meets its deadlines and objectives. It also includes prioritising use of the system so that users do not attempt to bypass the system in the daily tasks. Conflicting priorities can also impact on G2G user adoption as explained by Andre* 'Getting cooperation across departments is very difficult due to different priorities. If one of the parties is not getting something out of the system, you can count on the fact that you are not going to get their commitment to get the G2G system off the ground. They don't have anything to gain from it'.
- 6. **Organisational Culture:** The culture of the organization must be open to the use of technology and the changes which will be introduced by G2G systems. Organisational culture barriers (such as not wanting to create transparency on business functions and performance) may pose challenges to G2G user adoption. Culture can also negatively impact G2G user adoption as indicated by Ron* 'People talk amongst themselves and you find that one person will tell another person about their negative experience on the system, and soon the whole section will end up being against the system'.

Sub-Themes of G2G User Adoption

The challenges of G2G user adoption are not straight-forward but multidimensional and complex in nature. The field data has also shown that within the six user adoption main themes, there are a number of sub-themes which serve to further explain the G2G challenges in the KZN DoT. Sub-themes were seen as important if the number of interviewees supporting them as challenges exceeded the number of interviewees who did not support them as a challenge.

The sub-themes identified include Strategy, Usability, Complexity, Resistance, Systems development methodologies, Management support, HR

skills and Data quality. Using the field data, these sub-themes can be defined as follows:

- 1. **Strategy:** A long-term vision and high level plan to achieve business goals.
- 2. Usability: The ease of use of a system and the extent to which it meets user needs.
- 3. Complexity: This includes human, business and technical factors.
- 4. **Resistance**: Users deliberately refusing to make use of a G2G system or deliberately making the implementation of G2G difficult. This includes lack of support and involvement required from users.
- 5. **Systems development methodologies:** A structured approach to prioritising, designing, developing, implementing and supporting G2G systems. In this study. The methodology extends before and beyond the traditional systems development lifecycle (SDLC).
- 6. **Management support:** Buy-in, involvement and belief in the value of G2G from senior executives in the department.
- 7. **HR skills:** Adequate number of human resources and the expertise of the resources.
- 8. **Data quality:** The accuracy, reliability and validity of data that is used to make business decisions.

Table 1 provides an overview of how each of these sub-themes affects G2G user adoption and presents challenges to G2G.

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Sub Theme	Impact on G2G User Adoption
Complexity	Complexity exists in analysing and documenting user requirements, as well as dealing with varying business processes across the environment. Lack of knowledge management, outsourcing of G2G, outdated technologies and incompatible technologies also introduce complexity.
System development methodologies	Systems development methodologies must be in place. The methodology must ensure that appropriate G2G design and architecture is defined, appropriate users are identified, change management is planned for and implemented, business process changes are addressed, and that system documentation is produced. Changing user requirements must be managed by the methodology. The methodology should also ensure that provision is made for the support of G2G post-implementation, considering that staff may turnover.
Resistance	The culture of the organisation may affect G2G, especially where decisions are made at top level without user involvement. Effective user involvement may reduce resistance; however mechanisms must be in place to address competing or contradictory views and requirements from users. Lack of buy-in from users results in resistance, whereby users do not contribute to defining the requirements of G2G

Table 1. Impact of sub-themes on G2G user adoption

Sub Theme	Impact on G2G User Adoption		
Skills	Adequate types of skills and number of resources must be in place for successful G2G implementation. The types of skills required are technical and user skills. These include skills in business process re-engineering, articulating and documenting user requirements, implementing change management, and making system changes to G2G effectively.		
	The reliance on consultants, changes in resources and heavy reliance on specific individuals poses challenges to G2G.		
	Appropriate training must be provided for G2G throughout the lifecycle of G2G, and not only at implementation.		
Strategy	An overall strategy for the implementation of G2G is required. The strategy must provide a roadmap for each of the e-Gov systems in the landscape.		
	Strategy should also address how HR skills will be provided, how cut-over to new systems will be addressed, and how technical infrastructure requirements are to be met.		
Management Support	Management must serve as a driver of G2G, ensuring that there is awareness of the value of G2G, and to enforce the cut-over from manual processes or existing systems to G2G. They need to be involved in G2G personally, provide direction for G2G and ensure that change management is effectively implemented.		
	Management must prioritise G2G in relation to current staff workloads, and support from management should be part of the organisational culture in order to be most effective.		

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Sub Theme	Impact on G2G User Adoption		
Data Quality	High quality data can improve users' confidence in G2G, whilst user involvement in G2G can assist with improving data quality during implementation of G2G.		
	The culture of the organisation influences discipline with respect to G2G usage, which in turn affects data quality. In order to improve data quality, G2G must be embedded in business processes.		
Usability	User friendly designs must be considered to increase likelihood of user adoption.		

Technology Infrastructure

Appropriate technological infrastructure, such as networks, servers, routers and Internet connections are important for e-Gov success (Ebrahim & Irani 2005; Gil-Garcia & Pardo 2005). Research also indicates that the success of e-Gov in a developing country relies on firstly ensuring that all the appropriate technological infrastructure is in place (Ndou 2004; Dada 2006).

In this study, technology infrastructure in itself was not seen by interviewees as an important challenge. This means that whilst interviewees believed technology infrastructure does affect G2G, there was a clear understanding of the issues around technology infrastructure, and what solutions are required to address them. The known technology infrastructure issues which emerged were (1) the lack of availability of infrastructure such as PCs and servers; and (2) inadequate bandwidth which affects the performance of G2G systems.

However, interviewees believed at the same time that there are issues underlying technology infrastructure that are problematic. In particular, it emerged that technology infrastructure is related to the sub-themes described in the previous section; these relationships are summarised in Table 2.

Table 2. Impact of Technology Infrastructure on Sub-Themes

How 'Technology Infrastructure' supports sub-themes of G2G User Adoption				
OVERALL IM	РАСТ			
Overall impact	Technical Infrastructure	Government Networks		
Overall impact of 'Technology Infrastructure' on G2G	Differing views on whether the technical infrastructure for G2G is adequate;	Government networks are inadequate for G2G; Bandwidth must be increased and budget allocated for such upgrades;		
FURTHER EXPLANATION OF HOW 'TECHNOLOGY INFRASTRUCTURE' SUPPORTS SUB-THEMES OF G2G USER ADOPTION				
Sub Theme	Technical Infrastructure	Government Networks		
Strategy	Strategy must be in place to acquire G2G technical infrastructure and to look into newer infrastructure solutions; Strategy is required to standardise on infrastructure, conduct capacity planning for infrastructure and obtain tools to manage the infrastructure effectively;	Strategy must address effective management of networks, investigating devices to optimise existing bandwidth, conduct detailed analysis of current network to identify potential existing issues; Need to consider availability of budget to upgrade networks, look into alternate network solutions; Need to provide technical support for networks;		
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Usability	Newer infrastructure solutions may improve usability of G2G;	Poor network capability affects user experience and hampers G2G usabi- lity;
Resistance	User may resist using G2G due to inadequate technical infrastructure;	Network capability impacts on user experience of G2G and users may resist using the system if experiences have been negative;
Systems development methodologies	Methodology must ensure that G2G system is developed optimally to minimise negative impacts on the technical infrastructure; Technical infrastructure is required to conduct testing of G2G, and test environments should be similar to the live environment; Methodologies must ensure that technical infrastructure requirements of G2G are established early in systems development lifecycle;	Network requirements must be considered in systems development methodology; System design must be aligned to available network capacity; Methodologies must ensure that the impact of G2G is tested on the network prior to implementation; Volumes of users of G2G and impact on the network must be established early and constantly monitored;

Management support	Managers must ensure that budget is available to provide adequate technical infrastructure;	Management must ensure that budget is available for network upgrades; Management may decide to abandon G2G if the performance of the system across the network is so slow that productivity is seriously impacted;	
HR skills	Skills are required to support technical infrastructure, as well as to provide correct specifications for the infrastructure that will be required by G2G;	Skills are required to advise the Department on how to address bandwidth constraints, to provide technical skills in network support and managing and monitoring the network; Service providers must possess skills to configure G2G to operate optimally over the Government network.	

Emerging Model on G2G User Adoption Challenges

This research has shown that user adoption is a central challenge facing G2G in the KZN DoT. User adoption is influenced by six main themes: Addressing User Requirements, Business Process Management, Change Management, User Involvement, Organisational Culture and Priority. The six main themes in turn are influenced by sub-themes: strategy, usability, complexity, HR skills, resistance, systems development methodology, management support and data quality.

The field data has identified relationships between main themes and sub-themes, which has provided a deeper understanding of both the themes and

sub-themes. However, there is insufficient evidence in the field data to confirm the completeness and accuracy of the identified relationships. Thus, relationships between themes and sub-themes, although important in developing an understanding, have not emerged as significant in the final analysis.

Technology Infrastructure in itself did not emerge as an important challenge facing G2G since the issues related to Technology Infrastructure are well understood, as are the solutions that must be in place to address these issues. Thus, Technology Infrastructure in itself is not seen as important, but the issues underlying Technology Infrastructure give rise to it being viewed as a challenge.

Although Technology Infrastructure does not have an impact on the central theme of G2G user adoption or on any of the six main themes, relationships have been identified between Technology Infrastructure and the sub-themes. The sub-themes are affected by Technology Infrastructure and Technology Infrastructure affects the sub-themes.

These research findings can be summarised in a model of the challenges of G2G in the KZN DoT as shown in Figure 3. This model highlights an 'onion-like' structure to the challenges. The model is 'onion-like,' as the challenges can be seen as analogous to peeling off layers of an onion. Sub-themes (the outer layer) must first be addressed. This is followed by the main themes (middle layer), and finally the central challenge of G2G. It would seem that the central challenge of user adoption will be addressed by default when the main themes are addressed.

Whilst Technology Infrastructure exists as a peripheral challenge, it has to be considered and incorporated into addressing the sub-themes. Thus, addressing sub-themes would likely automatically address the Technology Infrastructure challenges. Although the model primarily provides a means of under-standing G2G challenges, the structure that has emerged in the model may also provide a structure for addressing G2G challenges and planning G2G projects.

Conclusion and Recommendations

It is interesting to note that the central challenge of user adoption, as well as the main themes and sub-themes, have a strong emphasis on what is often termed 'softer issues'. This link to soft issues points toward a need to address people, management and procedural issues in order to improve the likelihood of G2G success. Technology Infrastructure may be viewed as a more 'technical issue' and this has emerged as a peripheral challenge facing G2G. Thus, it would seem that the 'softer issues' facing G2G must be given more attention.



Figure 3. Final model – Challenges of Government-to-Government in the KwaZulu-Natal Department of Transport.

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However, in the researcher's experience in G2G and other systems projects, 'softer issues' are often neglected, with the primary focus being on 'technical issues'. This research highlights a need for a change in thinking and a change in approach to G2G, addressing 'softer issues' first and then focusing on 'technical issues'.

One recommendation from this research is to further unpack the new challenges that have emerged, to unpack the relationships and dependencies between the challenges, as well as to unpack some of the challenges that are less established in the literature. These challenges may be tested through a quantitative study.

An interpretive analysis can be conducted according to the three respondent types (user, management and technical) in order to understand the different points of view of these G2G stakeholders. This will assist in establishing a holistic view of the challenges as seen from the perspective of different, yet equally important, G2G stakeholders.

This research is based on a case-study design with the site being the KZN DoT. Thus, one limitation is that the findings may not necessarily be applicable to other government departments in South Africa. This research has, however, attempted to provide sufficiently thick description to explain research findings so that readers may judge for themselves whether the findings may be applied to their circumstances.

The research focused specifically on G2G. One of the reasons for this is due to the lack of prior research focusing on G2G. Another reason is the researcher's view that G2G is foundational for other forms of e-Gov to be successful. Thus, another limitation is that the findings from this research may not necessarily be applied to other forms of e-Gov such as G2C and G2B. However, again the thick description of findings may be used by readers to judge transferability for themselves.

By design, this is a qualitative study and represents the interviewees' views and opinions at a specific point in time. It is acknowledged that other people not part of this research may have different views and opinions, and that the interviewees' views and opinions may change over time.

Future Research

The G2G challenges model described in this research may be developed further to assist practitioners. For instance, a set of checklists or criteria could be developed for the themes and sub-themes, describing various characteristics of the themes and sub-themes. Practitioners can use the checklists or criteria to score the themes and sub-themes and obtain a deeper understanding of each challenge in their specific G2G project context;

Following on from the previous recommendation, a set of generic strategies may be developed to address the challenges. Using the checklists or criteria for each challenge, possible approaches to resolve the challenge may be suggested.

Finally, comparative studies could be undertaken in other government departments so as to deepen the research findings.

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Green IS Management Framework Corroboration and Verification: Explicating the Enabling Capabilities of Green IS

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Abstract

The first objective of the paper is to demonstrate the quantitative corroboration of the Green Information Systems (Green IS) management framework, which comprises the enabling capabilities of Green IS, the moderating concepts, and their relationships to environmental sustainability. The second objective is to demonstrate the framework's verification using the focus group method and member checking. The achievement of these objectives establishes that the framework successfully captured the essential Green IS concepts and interrelationships to be relevant for environmental sustainability, that it was credible, relevant, and an original contribution to the academic body of knowledge. The research was empirical, confirmatory, quantitative, and qualitative. The study provides research design insights by detailing research design choices and rationale. The framework presents verified and salient management focal points for environmental sustainability in the South African banking sector.

Keywords: Content analysis, correspondence analysis, environmental sustainability, Green computing, Green Information Systems (Green IS), Green Information Technology (Green IT), framework, focus group, member checking.

Introduction, Background and Context

People are entirely dependent on the Earth's natural resources for their existence. Nevertheless, human activities are degrading and depleting these resources, and this threatens human well-being and possibly long-term human survival (Elliot 2011; Melville 2010; Watson, Boudreau & Chen 2010; UNEP 2010). In reaction, the concept of environmental sustainability confronts this problem. Environmental sustainability aims to maintain the environment in order to support human well-being and life into the far future (Goodland 1995).

Specifically, there are four degrees of environmental sustainability, namely very weak, weak, strong, and very strong (Goodland & Daly 1996; Ekins, Simon, Deutsch, Folke & De Groot 2003). Very weak and very strong environmental sustainability are not feasible, and weak promotes sustained capitalism and business at the expense of the environment (Laine 2010; Manzini, Islas & Macías 2011; Jenkin, Webster & McShane 2011). However, strong environmental sustainability demonstrates the non-substitutability of manufactured capital for all natural capital (Dietz & Neumayer 2007) and its necessity is substantiated by the indisputable scientific evidence on environmental resource depletion and degradation.

The unit of analysis and focus is the organisation. Organisations are the drivers of the world's economies (Watson & Boudreau 2011) and are responsible for considerable natural resource degradation and depletion (Perrow 1997; Hoffman 2010). Nonetheless, organisations present significant opportunities for environmental sustainability (The Climate Group 2008). In particular, banking organisations offer an opportunity, through their widespread investment and financing activities, to address extensive environmental resource degradation and depletion (Allenby, Compton & Richards 2001; EP 2012).

Importantly, Information Systems (IS) have been prominent in transforming the world's organisations (Pitt, Parent, Junglas, Chan & Spyropoulou 2011; Kuo 2010; Mithas, Ramasubbu & Sambamurthy 2011; Besson & Rowe 2012) and have fulfilled a critical enabling role (Tambe & Hitt 2012; Chen 2012; Aral, Brynjolfsson & van Alstyne 2012; Roberts & Grover 2012; Dao, Langella & Carbo 2011). Thus, IS present an essential mechanism for addressing environmental resource degradation and depletion within organisations. However, prior research has not exposed the enabling and transforming capabilities of Green IS for environmental sustainability (Meacham, Toms, Green Jr & Bhadauria 2013; Howard & Lubbe 2012).

Subsequently, an empirical Green IS management framework was developed using a grounded theory approach in the South African (SA) banking sector. Thereafter, the framework was corroborated and verified, this is the focus of the paper.

Research Problem, Objectives, and Questions

The paper has two objectives. The first objective is to demonstrate the quantitative corroboration of the Green Information Systems (Green IS) management framework, which comprises the enabling capabilities of Green IS, the moderating concepts, and their relationships to environmental sustainability. The second objective is to demonstrate the framework's verification using the focus group method and member checking. These objectives address the problem of an unverified framework and their achievement shows that the framework was credible, and relevant.

The achievement of the first objective answers the first research question: quantitatively, how do the enabling capabilities of Green IS, the moderating concepts, and environmental sustainability relate to one another? The achievement of the second objective answers the second research question: according to experts, does the framework successfully capture the essential Green IS concepts and interrelationships to be relevant for environmental sustainability?

Literature Review

There are numerous terminology debates concerning the definitions and boundaries of IS and Information Technology (IT). Nonetheless, the paper adheres to the view that IT is a component of IS (Watson, Boudreau, Chen & Huber 2008). Thus, IT focuses on the technological systems comprising physical devices and associated software that are used to retrieve, transmit, process, and store data and information (Watson *et al.* 2008). In comparison, IS are systems comprising social systems that include people and processes and the aforementioned IT in support of individual, organisational, or societal goals (Watson, Boudreau & Chen 2010; Lee 2004). Consequently, Green IT involves environmental sustainability throughout the IT lifecycle (Molla, Pittayachawan & Corbitt 2009; Murugesan 2008) focusing on energy efficiency maximisation and e-waste minimisation (Watson *et al.* 2008). In comparison, Green IS are specialised IS that address the problem of

environmental resource depletion and degradation attributable to all organisational activities (Watson *et al.* 2008).

Green IS provide the information processing, knowledge, and response capabilities for organisations relating to the environment and facilitate environmental decision-making based on complex and large-scale environmental information (Holmström, Mathiassen, Sandberg & Wimelius 2010). Green IS are appropriate for addressing the substantial cognitive load of environmental information and help to embed sustainability into an organisation's operations and culture (Volkoff, Bertels & Papania 2011). Green IS facilitate sustainability by the provision of accurate, timely, and useful information concerning the flows of energy, materials, and water, and the corresponding monetary effects on costs, savings, and earnings (Curry, Hasan, ul Hassan, Herstand & O'Riain 2011). The generation of digital data by Green IS motivates sustainability changes that produce operational efficiencies and improvements, maintenance cost and emission reductions, and improved profitability (Watson, Boudreau, Li & Levis 2010). Particularly, Green IS promote the measurement of complex environmental measures in order to reduce risk and uncertainty in environmental sustainability decisionmaking (Watson, Corbett, Boudreau & Webster 2012).

Methodology

Content and Correspondence Analysis

In order to corroborate the framework, which was initially developed using a grounded theory approach in the SA banking sector, content and corresponddence analysis was conducted. Content analysis is an approach to the analysis of texts and documents, including interview transcripts, and aims to objectively quantify the content in terms of predetermined categories in a replicable and systematic way (Bryman & Bell 2011; Ceci & Iubatti 2012). It is objective because it is transparent in its procedures for assigning data to categories, it is systematic because the rules are applied in a consistent manner, and it is replicable because any researcher can employ the same rules to achieve the same results. These aspects of content analysis mitigate personal researcher bias.

The term 'correspondence analysis' is a direct translation of its original French term *analyses des correspondances*, which means a system of associations between sets of variables, with the objective of facilitating interpretation with a global view of the data (Lee 1996). Correspondence analysis

complements content analysis by providing a perceptual map of the multivariate data in order to substantiate findings, corroborate theoretical interpretations, and facilitate deeper understanding (Remenyi 1992). It provides a statistical visualisation of the associations within a two-way contingency table (Lee 1996). Importantly, this analysis is suited to social science research, which is consistent with IS research, and especially appropriate for categorical data in a contingency table (Greenacre & Lewi 2009; Greenacre 2006; Phillips 1995). The only data requirement for correspondence analysis is a two-way contingency table with non-negative data elements, such as a contingency table produced during content analysis (Nagpaul 1999).

Correspondence analysis provides an appropriate means for exposing systematic relationships between variables. It greatly simplifies complex data while accounting for all information in the data (Nagpaul 1999; Phillips 1995) by reducing the dimensionality of a data matrix to produce a graphic in a low dimensional subspace, usually a two-dimensional subspace or two axes (Nenadic & Greenacre 2007). Correspondence analysis illustrates the nature of the relationships between variables, and not just that there are relationships (Nagpaul 1999).

Focus Group

In order to verify the framework a focus group was conducted with expert informants. Such a focus group provides conclusive evidence from knowledgeable and professional practitioners in the field for verification (Rosemann & Vessey 2008). The focus group approach is consistent with the purpose of interpretivism and appropriate for IS research (Tremblay, Hevner & Berndt 2010) and for testing frameworks (O'hEocha, Wang & Conboy 2012; Rosemann & Vessey 2008; Soni & Kodali 2013).

To locate experts, Internet searches were done for SA-based sustainability experts, leaders, and management. Importantly, no experts that had already participated in the study were invited to the focus group. The necessary criteria for an expert were relevant and expert knowledge and experience with regards to environmental sustainability and related IS, time, willingness, capacity to participate, and effective communication skills (Carey & Asbury 2012).

During the focus group, the lead researcher did not participate in the discussions in any way, either verbally or non-verbally. He was present only

to do the necessary administration, personally thank the participants, and perform an observer and note-taker role. The session was moderated entirely by a university lecturer who was not involved in any type of sustainability research; this prevented any content bias on the part of the moderator. The focus group took place in a private corporate boardroom located in Johannesburg, SA during February 2014.

The expert status of the nine focus group participants was justified in terms of formal qualifications and experience. In terms of highest relevant qualification, three had PhDs, two had master's degrees, two had SA professsional chartered accountancy registrations, one had a postgraduate honours degree, and one did not provide qualification information. All had between 5 and 20 years of direct relevant experience, with an average of over 9 years.

The direct relevant experience was evident in the participants' occupations, namely a recently retired company partner and director and leader for Integrated Reporting, a sustainability professional and sustainability reporting standard council member, an IS research professor not related to the study in any way, a consultant in sustainability and Integrated Reporting, a consultant and advisor to multinational and domestic companies on legal, tax and sustainability compliance, governance and risk management, a consultant and author on sustainability and Integrated Reporting, an environmental specialist who was also a portfolio planner and environmental analyst, a sustainability consultant, who was also an adjunct faculty member at a leading business school and advisory committee member on a United Nations sustainability body, and a consultant evaluating and promoting the role of business in global sustainable development, who was also a researcher, writer, and strategy consultant.

In addition, the participants were from relevant SA organisations, namely a large and prominent auditing firm, a large financial services company, a large university, a large bank, a consulting firm providing a variety of environmental legal services, a leading accountancy body, a government banking organisation, an independent consultant, and a sustainability strategy and management systems company.

Member Checking

Member checking is considered one of the most important provisions for a study's credibility and also provides verification of the researcher's emerging theories and inferences (Shenton 2004). Member checking involves presenting

the research findings to key informants to determine whether they can recognise their experiences in the findings (Krefting 1991). The member checking took place during March 2014.

The key informants for the member checking were the original key informants or interviewees from the initial framework development (Howard, 2014). During the initial framework development there was one key informant from each sampled organisation except the SA sustainability software vendor that had two key informants. The number of people managing what is termed sustainability in these organisations was small. Thus, a single high-level key informant from each organisation was appropriate. All the key informants were specialist management, senior level management, or directors who had the necessary strategic, management, and operational sustainability knowledge. The corresponding sampled organisations were the five largest SA corporate banks, a large SA retail bank, a SA banking industry body, and a leading SA sustainability software vendor.

These sampled organisations made up 100% of the corporate banks in the JSE's top 100 companies list by market capitalisation (the JSE is SA's Johannesburg Stock Exchange and it is the African continent's premier stock exchange) or 70% of all the banking organisations, not just corporate banks, in that list or 58% of all the SA registered banking organisations that are under SA control, not just corporate banks and not just those on that list. This represented a significant proportion of the SA banking sector and of the influence of the sector on the SA economy and natural environment. Of all the original interviewees, only one of the corporate banks and the industry body did not provide feedback due to work pressures. Furthermore, an additional corporate sustainability software vendor was approached for member checking because of its particular prominence in the SA market relating to sustainability software.

Research Findings Initial Framework

The initial framework was developed using a grounded theory approach in the SA banking sector. A high-level concept that emerged from the data was environmental sustainability transformation. The SA banks were undergoing a process of transformation relating to environmental sustainability and demonstrated this, albeit to varying degrees. This transformation related to

each bank's own or internal transformation and to the transformation of other organisations throughout the economy or external transformation as a result of financing and investment by the banks. The dominant type of transformation was a combination of economic, environmental, and social, where the environmental competed against both social and economic sustainability, of which economic had the highest priority. This equated to a weak form of environmental sustainability. Nonetheless, there was also evidence of a strong form of environmental sustainability transformation although to a far lesser degree.

Another high-level concept that emerged from the data was the enabling capability of Green IS, which is the intangible characteristic of Green IS that provides the means for environmental sustainability. Significantly, there was only evidence of the enabling capability of Green IS and no evidence of the transforming capability of Green IS, which is the intangible characteristic of Green IS that drives organisational transformation for environmental sustainability. The enabling capability of Green IS had six definite aspects and each was a manifestation or evidence of the enabling capability of Green IS or a Green IS enabled management function. These aspects were business process efficiencies, environmental data management, environmental analysis, environmental information disclosure, carbon footprint management, and environmental risk management.

The first aspect, business process efficiencies, was IS that were not explicitly designed for environmental sustainability purposes, this aspect was implicitly Green IS because its implementations affected environmental sustainability, e.g. IS-enabled automation of paper-based processes resulting in decreased resource waste and/or usage. The second aspect, environmental data management, was Green IS that enabled the management of organisations' environmental data, e.g. kilowatt-hours, which were signifycantly different to the organisations' financial and transactional data. The third aspect, environmental analysis, was Green IS that enabled analysis of the effect of business activities on the environment and exposed meaningful patterns, e.g. environmental dashboards. The fourth aspect, environmental information disclosure, was Green IS that enabled the disclosure of an organisation's environmental information, e.g. specialised environmental reports.

The fifth aspect, carbon footprint management, was Green IS that enabled the management of an organisation's greenhouse gas (GHG) emissions and was primarily internal in focus. The sixth aspect, environmental risk management, was Green IS that enabled the management of the risks to a bank arising from financing and investment activities and was primarily external in focus, e.g. credit risk and reputational risk. In addition, business process efficiencies, environmental data management, environmental analysis, and environmental information disclosure were considered lower level aspects, while carbon footprint management and environmental risk management were regarded as higher-level aspects because, in many instances, these higher-level aspects subsumed the lower level aspects.

Importantly, there were three concepts that moderated the relationship between the enabling capability of Green IS and environmental sustainability transformation, namely Green IS integration, environmental data quality, and environmental-financial translation (Howard 2014). It was evident that a lack of integration of Green IS into organisational systems and processes resulted in the exclusion of environmental considerations, which negatively affected environmental sustainability transformation. It was also evident that environmental data quality had a substantial effect on environmental sustainability transformation. In addition, evidence showed that without environmentalfinancial translation, the transformation could not be controlled or managed, which had a material effect on environmental sustainability transformation.

Content and Correspondence Analysis

The content analysis investigated the intensity of the context units contained in the interview transcripts (Remenyi 1992) of the original key informants or interviewees from the initial framework development. Content analysis can be performed on various types of context units such as specific words, sentences, characters, or concepts (Ceci & Iubatti 2012). The context unit in this study was the concept. More specifically, it was the concepts that emerged during the initial framework development because these concepts were the concepts of interest to the research and their analysis provided an answer to the first research question. Thus, the 208 pages of typed interview transcripts produced during the initial framework development were content analysed in terms of the emergent concepts (Bhattacherjee & Premkumar 2004). The content analysis produced a concept-count matrix or concept contingency table as shown in Table 1 below.

Table 1: Concept contingency table – cf. overleaf.

rp Total k E E)	3 235	2	21	3 77	19	62
D Banl (Cl	Х	1	0	1	5	9
Corp Bank] (CD)	32	0	0	٢	1	0
Retail Bank (RB)	35	0	17	20	٢	Ś
Soft Vend (SV)	31	0	0	ω	1	13
Ind Body (IA)	33	0	0	0	1	4
Corp Bank C (CC)	13	0	0	0	0	9
Corp Bank B (CB)	19	0	1	16	7	6
Corp Bank A (CA)	19	1	σ	18	Ś	19
Organisation Concept	Weak environ- mental sustaina- bility transfor- mation (WEST)	Strong environ- mental sustaina- bility transfor- mation (SEST)	Green IS enabled business process efficiencies (GIEBPE)	Green IS enabled environmental data management (GIEEDM)	Green IS enabled environmental analysis (GIEEABA)	Green IS enabled environmental information disclosure (GIEEII)

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p Total	73	51	57	224	47	7 868
Cor Bank (CE	6	4	Ś	82	12	182
Corp Bank D (CD)	m	20	20	32	ŝ	118
Retail Bank (RB)	20	0	9	42	13	165
Soft Vend (SV)	18	10	4	Г	6	06
Ind Body (IA)		-	7	m	7	47
Corp Bank C (CC)	0	0	1	16	4	42
Corp Bank B (CB)	12	L	7	×	-	82
Corp Bank A (CA)	×	6	12	34	6	137
Organisation Concept	Green IS enabled carbon footprint management (GIECFM)	Green IS enabled environmental risk management (GIEERM)	Green IS integration (GII)	Environmental data quality (EDQ)	Environmental- financial translation (EFT)	Total

Green IS Management Framework Corroboration and Verification

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The contingency table data was input into the statistical software application called SPSS (IBM SPSS, n.d.) producing descriptive statistical analyses for a basic level of insight into the data. In order to gain deeper insight for corroborating the framework, it was appropriate to perform correspondence analysis based on the same contingency table data, also using SPSS. Figure 1 below describes the correspondence analysis output, namely the perceptual map that is analysed in the following paragraphs. The axes are numerical scales to illustrate relative distances from the centroid to each profile point (Remenyi 1992).



Dimension 1

Figure 1: Correspondence analysis perceptual map description

Before analysing the perceptual map, there were a number of important outputs to consider, relating to the selected number of dimensions of the perceptual map and the related inertias. Table 2 below shows how the total inertia is decomposed along the maximum number of dimensions based on the contingency table data. The first dimension accounted for 32.1% of the total inertia and the second dimension for another 26.4% of the total inertia. Therefore, displaying two dimensions accounted for 58.4% of the total inertia or almost two-thirds, and yielded useful analysis. Therefore, the analysis proceeded with a two-dimensional perceptual map.

	Proportion of Inertia		
Dimension	Accounted for	Cumulative	
1	.321	.321	
2	.264	.584	
3	.206	.790	
4	.119	.910	
5	.051	.960	
6	.035	.995	
7	.005	1.000	
Total	1.000	1.000	

 Table 2: Total inertia per dimension

Furthermore, analyses of how each concept contributed to the inertia of the first two dimensions and how the first two dimensions contributed to the inertia of each concept determined that the concepts were suitably represented in the first two dimensions, which further supported proceeding with a twodimensional perceptual map. Similarly, analyses of how each organisation contributed to the inertia of the first two dimensions and how the first two dimensions contributed to the inertia of each organisation determined that the organisations were suitably represented in the first two dimensions, which also supported proceeding with a two-dimensional perceptual map.

Figure 2 below presents the two-dimensional perceptual map for the concepts. The map shows a general horizontal axis split, where the top rectangle grouping incorporates the concepts weak environmental sustainability transformation (WEST), strong environmental sustainability

transformation (SEST), Green IS integration (GII), environmental data quality (EDQ), and environmental-financial translation (EFT). These are the framework concepts relating to environmental sustainability transformation and the moderating concepts, suggesting that the moderating concepts are associated with environmental sustainability transformation.



Dimension 1 Figure 2: Concept perceptual map

The bottom rectangle grouping incorporates the Green IS enabled aspects, namely environmental risk management (GIEERM), environmental information disclosure (GIEEII), environmental data management (GIEEDM), environmental analysis (GIEEABA), carbon footprint management (GIECFM), and business process efficiencies (GIEBPE). This suggests that there is a Green IS enabling association among them. Notably, business process efficiencies (GIEBPE) is away from all the other aspects to the right, which supports its unique and implicit Green IS relation. In addition, environmental risk management (GIEERM) is away from all the other aspects to the left, supporting its unique external focus. Furthermore, the large distance between environmental risk management (GIEERM) and business process efficiencies (GIEBPE) illustrates the uniqueness and dissimilarity between these concepts, being externally and environmental sustainability focused and internally and cost efficiency focused, respectively.

In addition, there are a number of closely grouped clusters. Strong environmental sustainability transformation (SEST), environmental data quality (EDQ), and environmental-financial translation (EFT) are one such cluster, suggesting that environmental data quality (EDQ) and environmentalfinancial translation (EFT) are particularly associated with strong environmental sustainability transformation (SEST).

Another cluster is environmental risk management (GIEERM), Green IS integration (GII), and weak environmental sustainability transformation (WEST), which suggest that the current form of environmental sustainability transformation, namely weak environmental sustainability transformation (WEST), is associated with environmental risk management (GIEERM) and moderated by Green IS integration (GII). This provides support that Green IS integration (GII) was necessary to leverage Green IS enabled environmental risk management (GIEERM) for weak environmental sustainability transformation (WEST).

The third cluster is environmental information disclosure (GIEEII), environmental data management (GIEEDM), environmental analysis (GIEEABA), and carbon footprint management (GIECFM), supporting the framework depiction where carbon footprint management (GIECFM) is closely associated with, and in many cases, subsumes these aspects.

Figure 3 below presents the two-dimensional perceptual map for the organisations. The map shows that the organisations are widely spread, indicating that they had unique characteristics, even though many were in the same banking industry. This supports the adequacy of the sample by showing that the data accounts for wide variety across the industry. Nevertheless, there are a number of closely grouped clusters. These clusters are corporate bank D and the industry body; corporate banks E and C; and the software vendor and corporate bank B. The clustered organisations indicate commonality between these organisations. It is apparent that the industry body had comparable views to one of the corporate banks, as did the software vendor; this provides support that these non-corporate banking organisations understood the corporate banking aspects relating to the study and were relevant to the study. The retail bank stands out on its own away from the other organisations, which supports

its role as a negative sampling instance, because such a bank does not provide financing to organisations throughout the economy.



Figure 3: Organisation perceptual map

Figure 4 below presents the two-dimensional perceptual map for both the concepts and organisations. The map presents three general clusters of concepts and organisations. The first cluster shows that corporate bank D and the industry body are associated with environmental risk management (GIEERM), Green IS integration (GII), and weak environmental sustainability transformation (WEST), exposing their focus on Green IS integration (GII) to leverage environmental risk management (GIEERM) for weak environmental sustainability transformation (WEST).

The second cluster illustrates that corporate banks C and E are associated with strong environmental sustainability transformation (SEST), environmental data quality (EDQ), and environmental-financial translation (EFT); that is, they are focused on environmental data quality (EDQ) and environmental-financial translation (EFT), and a basic level of strong environmental sustainability transformation (SEST), although corporate bank C is further away from strong environmental sustainability transformation (SEST).

The third cluster demonstrates that corporate banks A and B, the software vendor, and the retail bank are associated with environmental information disclosure (GIEEII), environmental data management (GIEEDM), environmental analysis (GIEEABA), and carbon footprint management (GIECFM). Indeed, within this cluster the software vendor's close proximity to environmental information disclosure (GIEEII) and carbon footprint management (GIECFM) is explained by their software offering that is focused on carbon footprint management and related reporting. In addition, the software vendor is away from environmental data management (GIEEDM) and environmental analysis (GIEEABA). Notably, the retail bank is the closest to business process efficiencies (GIEBPE), which is one of their main focuses.



Figure 4: Concept and organisation perceptual map

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Focus Group

The aim of the focus group method was to provide conclusive evidence from knowledgeable and professional experts in the field for verification of the initially developed and corroborated framework. Interaction effects were evident during the focus group session, especially in terms of group learning. On several occasions, an initial opinion was expressed and as participants joined that particular discussion, the initial opinion was developed into a more complete group opinion. Furthermore, initial opinions seemed to become more considered, in terms of the overall group discussion, as the discussions unfolded and other perspectives, experience, and information were provided.

The focus group did not result in significant changes to and provided support for the framework's core concepts and their interrelationships (Howard 2014). The modifications to the framework as required by the focus group related mostly to contextual detail additions to enhance its usefulness for practitioners. In addition, there was a terminology change request relating to the enabling capability of Green IS aspect called carbon footprint management. The group indicated that ecological footprint management provided a more holistic concept for application to all organisations. Therefore, this concept's name was changed to carbon (and ecological) footprint management. Given that carbon footprint management is still a priority in the banking industry and prevalent in comparison to the other ecological footprint items, the term carbon footprint management remained central to this aspect. Thus, with confirmation of and without changes to the framework's core concepts and their interrelationships, the framework was verified and was regarded as relevant through expert evaluation, which is competent research evidence.

Member Checking

The aim of the member checking was to provide credibility to the study and further verify the framework. The member checking provided support for the framework's core concepts and their interrelationships and did not significantly change it. The modifications to the framework, as required by the members, related to more contextual detail to enhance its usefulness for practitioners. The main feedback that was received was that the framework would be useful in practice for its purpose and that it conceptualised the role of Green IS in the domain. Thus, the framework was regarded as credible and the framework's core concepts and their interrelationships were regarded as verified.

The Verified Green IS Management Framework

The verified Green IS management framework, which has been corroborated using content and correspondence analysis and verified through focus group analysis and member checking, is presented below in Figure 5.

Conclusion

The paper has addressed the research problem of an unverified framework. The paper met the research objectives and answered the research questions. The paper demonstrated the quantitative corroboration of the Green Information Systems (Green IS) management framework, which comprises the enabling capabilities of Green IS, the moderating concepts, and their relationships to environmental sustainability. In addition, the paper demonstrated the framework's verification by detailing the focus group method and member checking. The achievement of these objectives establishes that the framework successfully captured the essential Green IS concepts and interrelationships to be relevant for environmental sustainability and that it was credible, relevant, and an original contribution to the academic body of knowledge.

From a methodological perspective, the study provides research design insights by detailing research design choices and rationale. This provides value for academics by demonstrating the value of such quantitative analysis for enhancing qualitative framework development. In addition, the suitability and application of the focus group method for framework verification and relevance is demonstrated, as is the use of member checking to provide credibility, relevance, and verification.

This provided triangulation that strengthened the research findings, improved the accuracy of inferences, and increased credibility. Furthermore, it mitigated the problem of inherent bias that exists in any one particular approach, mitigated the limitations of a single research approach, benefited from different epistemological perspectives, had greater applicability to the complex organisational contexts, and made a more significant contribution to scholarly and practical knowledge.



Figure 5: The Verified Green IS Management Framework

Green IS Management Framework Corroboration and Verification

Addressing environmental resource depletion and degradation is a permanent business reality for organisations; it is a challenge and an opportunity. The Green IS framework depicts how IS can be leveraged to further environmental sustainability. The framework highlights the enabling capabilities of Green IS that facilitate environmental sustainability, both within the banking organisations and in other varied organisations throughout the economy through their business interactions with the banking organisations. The framework also emphasises three key concepts that moderate how the enabling capabilities of Green IS facilitate environmental sustainability. Attention to these three moderating concepts is vital for furthering environmental sustainability and the framework provides management with a handle on these vital concepts.

Nonetheless, there are numerous future research opportunities. The South African economy is influenced by numerous international banks, not just SA banks, via their SA branches, and these potentially provide opportunities for new data to elaborate on and extend the Green IS framework, both locally and internationally. Additionally, the entire SA financial services sector, not just banking, may potentially provide new data for elaborating on and extending the Green IS framework.

Another interesting avenue for research may be extending the Green IS framework to organisations in other industries, apart from financial services. Such extension will raise the theoretical abstraction of the framework as well as its relevance and usefulness in practice. It may require adapting the financing aspect of the framework to supply chain aspects.

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Problems around Accessing Information in Rural Communities

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Abstract

Poverty is known to be a rural phenomenon regardless of developments taking place. Rural communities of underdeveloped countries are regarded to be living in those parts of the country that lack almost all kinds of services and basic needs even worse. Information society should be maintained because information has a significant impact in ensuring development in communities but this is not the case in rural areas because of information poverty caused by lack of means to access it. The study addresses the problems to access information in rural communities. This research explores the problems to access information through ICTs such as computer and Internet in rural communities and proposes guidelines on how to ensure proper access to information for rural residents. Rural communities and the government will benefit a lot from the success of this research. Government is the one that ensures that every citizen has the means to access information in order to bridge the gap of information poverty and digital divide.

Keywords: Digital Divide, Information Poverty, Information Society, Rural Communities, Telecentres

Introduction

It is said that the information society is maintained because information has an impact in ensuring development in communities (Koutsouris 2010). He continues to argue that information access, distribution and creation costs are

lower through the use of ICTs. This research is based in the field of IT. Consequently this research explores the aspects of rural areas with reference to telecentres.

The study is about the problems to access information using ICTs, such as computer and Internet in rural communities. Rural residents are less likely to have access to telecentres due to the long distance that they have to travel to urban areas and lack of technological infrastructure (Hale *et al.* 2010). Having no access to such facilities, it causes the increase of digital divide (Koutsouris 2010).

The provision of telecentres enables access to computer training, the use of computers, Internet and other communication technologies. According to Soriano (2007), telecentres are resources that speed up the knowledge of creating development opportunities.

The background to problem statement and problem statement of the study is given. The objectives of the study are explained followed by a literature. The research method discourse of plan of the study is given next and a conclusion of the chapter is discoursed finally.

Problem Statement

Rural areas are those parts of the country with dispersed population outside urban areas. South African rural areas are distant from almost all kinds of services ranging from health, education to social and technology, therefore rural residents will have to travel to urban areas to access adequate services. Rural residents have a problem of accessing information as compared to those in urban areas (Jacobs & Herselman 2006). This may be because of lack of infrastructure in rural areas that contribute to digital divide.

Jacobs and Herselman (2006) argue that information is a driver of developments through knowledge but only becomes valuable and significant only if it can be accessed. People in rural areas needs to access information technologies that will enable them to gather information, create, learn, and communicate with others while they develop important digital skills. Computers are widely used in various environments such as workplaces, homes, and schools. Most rural residents don't have access to computers connected to internet because there are no public centres around their respective rural communities; therefore, for them to access computer they must first travel long distances to urban areas for telecentres or internet cafés. Computers require specific skills that people in rural areas must acquire before they use computers because they are computer illiterate.

The study is conducted in Makgobistad village, Mafikeng, North West Province with a population of about 748. A quantitative methodology was used to randomly select a sample of 250 people to meet the requirements of accuracy and reliability.

Overview of Literature

The themes Telecasters, Information Technology (IT), Information and Communication Technologies (ICTs) Infrastructure and Digital Divide and lastly Rural Development are reviewed and serve as a key words for this section and other chapters that will follow. The search engines that were used to gather the literature include but not limited to Google, Google Scholar, Science Direct and other online search engines for journal articles and theses and dissertations.

Understanding Telecentres

Since telecentres form part of this, it is important that the term is explained through reviewing what various scholars have said about it. The term telecentre is a generic one for all kinds of arrangements such as Rural Knowledge Centre, Information Kiosks, Village Knowledge Centres etc- that seek to provide shared and mediated access to information and services by using new technologies especially computers and internet (Mukerji 2008).

Thus telecentres were conceptualised as space where public can access ICTs (Colle & Roman 2001). The concept of telecentre originated for the purposes of development of human capacity and encouraging social and economic development through ensuring access to ICTs (Oestmann & Dymond 2001) and digital-divide, with strong emphasis on providing shared access to expensive technologies like computers and internet services (Mukerji 2008).

The earliest forms of telecentres were established during the 1980s in developed countries with the primary purpose of overcoming the remoteness of rural and isolated location often characterised by low purchasing power and lack of quality telecommunication infrastructure (Mukerji 2008). In their establishment they provided a means of approaching and enhancing participation of rural communities in the emerging information economy (Colle & Roman 2001).

Though telecentres were mainly established for rural communities to access and share to address issues such as socio-economic development, Soriano (2007) presents a contesting view that making telecentres available in rural communities, however, does not ensure that all poor people will and can use them to create and share knowledge that could help lift them out of poverty. In this regard views contained in this chapter from the reviewed works of other researchers that ICTs contribution to economic development stands to be contested or questioned.

Generally there is no universally approved definition of what a telecentre is, however what is of common understanding between scholars such as Mukerji (2008), Colle and Roman (2001), Hedberg (2010), Reilly and Gomez (2001), Soriano (2007), and Fong (2009) is that telecentres are various physical structures used by rural communities to access ICTs services and that telecentres contribute to educational, social and economic development.

Information Technology

As much as the term telecentre is important in this study, the term IT is equally important hence an understanding of the term is also essential. IT is concerned with the knowledge process and its applying methods, processing, transferring and making information in progress. IT involves the gathering, processing, storing, distribution and using the information in the form of sound, picture graphic, text, number, by using the computer and telecommunication tolls. From the above definitions of Information Technology, it is clear that IT and telecentre are two terms that are deeply related and inseparable as they both deal with knowledge transfer and sharing.

Because of lack of access of ICTs through telecentres in most rural areas, it is suggested that the processing, transferring and gathering of information is limited if not impossible in such areas. Some scholars have argued that in the less developed world where there is lack of access to IT the poverty of information exists. To capture this more clearly, Gebremichael and Jackson (2006) observe that information poverty in the Sub-Saharan African region is part of a larger pattern of political, social and economic problems.

Mahmood (2005) maintains that owing to the unavailability of infra-

structure people living in rural areas cannot afford to have ICTs facilities. Both authors continue to note in agreement that because of the availability of ICTs infrastructure in urban areas, resident in such areas enjoy the fruits of ICTs better as compared to those in rural areas.

With respect to various countries, researchers commonly agree that developed countries take advantage of ICTs to further boost their development, while the developing and poorest countries are left behind as a result of lack of ICTs infrastructure. This is supported by Rose (1999) and Fong (2009) stating that there exists a positive relationship between ICTs and economic growth in developed countries as opposed to developing countries. In this sense, weak economic growth in the latter case was attributed to the absence of ICTs adoption in developing countries.

ICT Literacy and the Digital Divide

Information literacy is understood to be a dimension involving the use of a minimal set of skills to use information-seeking tools, to locate appropriate sources and retrieve useful information, to evaluate and access informational relevance, and to synthesize that information into a mechanism capable of solving an information problem (Bertot 2003). On the other hand IT literacy is known to be a determinant of the digital divide and as a divide itself (Ferro *et al.* 2010).

Hence as seen in the above section, scholars such Rose (1999) and Mahmood (2005) establish consensus on digital divide between the rural poor and urban communities. In their assertion they point out that the most poorest and rural communities lack access to ICTs infrastructure as opposed to urban communities who have access to ICTs infrastructure.

From the above section it is important to define digital divide and go into its detail as it is connected ICT literacy and tools to access content. Vengefeldt (2003) defines digital divide as the gap between communities, geographical areas and business at distinct social and economic levels regarding their opportunities and privileges to access Information and Communication Technologies (ICTs) more easily and to use internet to better their day-to-day activities.

Carpentier (2003) state that the definition and discussion of digital divide is based on the combination of three elements namely:

- Significance of accessing computers connected to the internet;
- Computers connected enhance level of information that will eventually lead to knowledge, also the level of communication and other valuable benefits being social or economic; and
- These benefits are essential in that without access, the resulting impediment for example computer illiteracy or any other issue will ultimately create a divided society

The low levels or non-existence of IT literacy levels in rural areas deal a negative blow to local schools and teachers (Poynton 2004). Rural community schools in the 21st century where IT is the way of life for various political, economic and social spheres should contribute in terms of ICTs literacy, Government and private organisations should take the blame for these low literacy levels in rural areas where schools exist (Poynton 2004).

Mossberger *et al.* (2003) described IT skills as the knowledge and skills needed to use IT effectively, highlighting the need for both technical competencies (e.g., skills needed to operate hardware and software) and information literacy (e.g., the ability to recognise when information use can solve a problem). The fact that there are low levels of IT literacy in rural areas means that rural people lack effective and technical skills to operate hardware and software products. However, as mentioned earlier in the section on ICTs infrastructure and digital divide, skills is necessary in a community dependent on agriculture for economic base for development. The argument seeking to contest that these skills are not necessary may be that, acquiring such skills may be useless as these skills will end up not being used. This will be primarily because such a community needs technical agricultural skills rather.

Rural Development

Poverty is known to be a rural phenomenon irrespective of society becoming more urbanised. Anriquez and Stamoulis (2007) argue that 75 percent of poor people in the world reside in rural areas or communities and they depend heavily on agricultural methods for survival. Falola and Salm (2004) also maintain that poor people are classified as rural people because they do not have proper access to clean water, electricity or sanitation facilities. Anriquez

and Stamoulis (2007) conclude the above section by asserting that rural economy can help to enhance employment opportunities in rural areas, reduce income inequality, reduce rural-urban migration, and eventually reduce poverty from its root if it is promoted and sustained.

Before giving a definition of rural development it is important to define and understand where the developments will be taking place. There is no clear or brief definition of what rural is but Joubert *et al.* (2008) describe the latter as a word that expresses exclusion in terms of characteristic of what urban areas is not and further defines what is meant by exclusion. Urban areas are defined as jointly, clustered group which meet population density requirement of at least 3 000 and by exclusion rural is defined as a population density less than 300 and geopolitically, urban is described as all districts, state, and region capitals or centres, and by the term exclusion rural is defined.

There is no exact definition of rural development because of changes in mechanisms and development goals and objectives. Many scholars have defined rural development differently. Since agriculture is being observed as the enhancer of rural development primarily on job creation and output in production, researchers such as Joubert *et al.* (2008) both state that the distribution of ICTs has been considered as an accelerator in terms developing rural communities. Rural development in terms of ICT is a broader issue that is under close scrutiny because it falls under the cloud such as digital divide, e-governance and systematic distribution of broadband.

A large quantity of literature has been documented by researchers such as Soriano (2007), Hammond and Paul (2006), and Chilimo (2008) on the role of ICTs in development. These researchers maintain that ICTs have a critical role in enhancing development, hence Fong (2009) notes the consensus around ICTs having propensity of contributing to economic growth and improving the quality of life. For instance these technologies can be deployed to facilitate integration of value chains within and among firms, industries and economic sectors (Fong 2009). In addition, they can enhance productivity and improve competitiveness for business through appropriate strategic applications.

These technologies have also been viewed by governments and international aid agencies as important tools for national integration because they are capable of enabling greater access to health and education services, and creating economic opportunities for the underprivileged masses (Mercer 2001; Reisman *et al.* 2001; The World Bank 2001;UNDP 2001; Oberski 2004; Jensen 2007).

With respect to rural communities, ICTs have a huge potential to play a role for social and economic development of rural population, this is more so since ICTs have had a great impact on local empowerment and employment (Mahmood 2005). Thus ICTs through telecentres are major catalysts for information and knowledge that can create development opportunities and choices for rural communities (Soriano 2007).

There are various empirical studies carried out by researchers that have investigated the impact of ICTs on economic development. A case in point Canning (1999) and Breitenbach *et al.* (2005) in their studies found the existence of a positive causal relationship between the Gross Domestic Product (GDP) and telephone penetration rate. In addition, Maiorano and Stern (2007) in their study concluded that mobile telecommunication infrastructure contributed to higher levels of per capita GDP in 30 low and middle-income countries between 1990 and 2004.

Similarly, Jensen's (2007) study on fishermen in Kerala found that the usage of mobile phones can promote economic and social welfare for the fishermen and consumers. The above findings have led to researchers such as Mukerji (2008) arguing that telecentres affect economic development by generating direct or indirect employment; integrating relatively isolated communities into national and international information network, thus accelerating the exchange of private goods and services. Telecentres can lead to an increase in income and hence improvements in the livelihoods of the people by providing increased access to information related to market, better farming practices, available job opportunities etc.

This usage of mobile phones both as a phone and a gadget to access the Internet promoted economic and social welfare for rural communities and it also applies to macro-economic sectors of government and big co-operations (Maiorano & Stern 2007). Therefore this research document tries to explore with specific focus on Makgobistad village the effects of ICTs or lack thereof on economic development. In this regard the unavailability of telecentres in Makgobistad negatively impacts local economic development of the community at large. Although for the latter and former questions may be legitimate, the general view by scholars who have contributed on the subject of ICTs and economic development is that ICTs access through telecentres has direct positive impact on economic development. Thus, access to telecentres has been accepted by international agencies and national bodies as a development strategy (Mukerji 2008).

Computer Literacy

Prior to giving a discussion on ICTs it is also important to give a detailed discussion on the abilities needed to use ICTs referred to as computer literacy. Scholars such as Poynton (2004) defined it concisely as knowledge, skills coupled with behaviour required by all member of the society to effectively interact with a computer and its technologies.

In today's information and computer-centric society, computer literacy is as important as acquiring normal literacy and numeracy in a formal education system (Gallagher *et al.* 2005). Poynton (2004) states that as societies move into 21^{st} century people's lives are changed and partially relies on the technologies that are widely circulated by computers and Internet ranging from social to economic. In support of the latter Gallagher *et al.* 2005) also maintain that in the job market computer literacy is one of the prime requirement and it also include one in social and economic aspects around the world. In the most organisations computer and Internet plays an important in helping to satisfy its goals and objectives.

Poynthon (2004) encourages the issue of computer literacy by asserting that computers are capable of doing what printing press did many decades ago by actually making the process of information reproduction and distribution much easier. Thus as one require writing and reading skills to gain from information accessed through printing press, one also requires computer literacy skills to gain from information accessed through a computer.

Gupta (2006) and Gallagher *et al.* (2005) argue that older people who left schools prior to the introduction of computers on the mainstream curriculum or people who have lower level of education in the rural communities are computer illiterate and this illiteracy act as an impediment to access ICT tools such as the internet and electronic communication as well as e-commerce participation on trade and perform transactions online. Older people who are computer illiterate contribute a high risk to information poverty. Gallagher *et al.* (2005) conclude the above statement by stating that it must be ensured these groups of people are not overlooked when developing an information society. Older people aged 50 to 60 dominate by larger number in rural areas; therefore it won't make economic sense in terms of development if this group is isolated.

Schools in rural communities should contribute effectively in childhood computer literacy because it will give children the required knowledge and skills to use current computer technology and adjust to emerging computer technologies. Children without computer access either at schools or at homes will negatively impact information society and eventually creating information poverty. In today's society computer interaction is as significant to early evolution of computer literacy as they are to reading and writing being taught at schools (Poynton 2004).

Research Questions

Though literature review provided the background and history on information access and telecentres, most questions were addressed but the following questioned remained unanswered:

- Are people in the community computer literate or not?
- Can availability of ICT infrastructure in the form of Telecentre contribute positively to information access and bridge the gap of digital divide?
- Can access to Telecentres contribute in social and economic development?

Research Methodology

Blumberg *et al.* (2005) provide a distinction between two widely used research approaches, namely quantitative and qualitative research and goes to assert that the choice between then depend heavily on the research problem. Many scholars still find the differentiation between qualitative and quantitative data problematic

Questionnaires are mainly used in research surveys and determine how data are collected (Blumberg *et al.* 2005). They assert that questionnaires are special document that permits the researcher to collect data and the opinion form potential respondents. Questionnaires permit the researcher to collect data form a larger sample while maintaining uniform responses by asking same variety of questions.

Based on the above section the researchers developed a questionnaire to collect data and were administered to targeted sample. This permitted quantifiable data to be collected and also permitted data to be analysed in a quantitative manner to find out patterns and relationships between variables.

Research questions can be regarded as vital questions based on the problem investigated. Research questions were used to implicate question-naires as follows:

- Are people in the community computer literate or not?
- Questions 7 11 in the questionnaires
- How can the availability of ICT infrastructure in the form of telecentres contribute positively to information access to bridge digital divide?
- Questions 12 16 in the questionnaires
- Can accesses to telecentres contribute in social and economic development?
- Questions 17 20 in the questionnaires

The entire Makgobistad Village residents served as a population element that can be included in a sample but due to the population being large and the inability of the researcher it cannot all be included. The population of 748 consists of both male and female who resides in Makgobistad Village. In this research a sample consists male and female ranging from the age of 21 to 60. A sample size of 250 was randomly selected for statistical purposes.

Data Handling

Permission was required to conduct a survey in Makgobistad Village and it was granted prior to provision of the letter from the Information Systems department. Questionnaires were administered to and collected from the respondents. Data was analysed through the use of Excel application and the University's Statistics Department staff were consulted.

Data Analysis and Interpretation

Two hundred and fifty respondents answered the questionnaire designed by the researcher. Some respondents grew up in Makgobistad village and others in urban areas of South Africa.

Problems around Accessing Information in Rural Communities



Figure 1: Respondents by Race

The population is made up of various races and ethnic groups. The African race makes up 87.60% of the respondents in the community. The reason for this high percentage might be for the fact that the black ethnic group, are Zulu, Xhosa, North Sotho, South Sotho, Tsonga, Venda, and Ndebele. Coloured made 2.80% of the respondents followed by Indians 8%. Coloured, Indian and white populations are found mostly in urban areas. More Asians and Coloured are found in Kwazulu-Natal and the three Cape provinces, but few of these groups live in Gauteng. From this analysis it can be noted that the majority of population that live in the community are blacks. These people are classified as rural people since they do not have proper access to clean water, electricity or sanitation facilities (Falola & Salm 2004).

As stated by Anriquez and Stamoulis (2007), poverty is known to be a rural phenomenon irrespective of the community developments, and they went on to support this by saying that high percentage of blacks resides in rural communities and they depend heavily on traditional agricultural methods for survival. Based on the study the large percentages of race groups are African which differ significantly from Indians when it comes to the knowledge and use of technologies.

Based on Figure 2, below, females are 56.80% of the respondents followed. From this it can be noticed that in rural areas males are not easily accessible, this is because males are deputed to perform physical work and they take control as they are considered as the head of the family. This low percentage on males is due to the fact that the male embark out to the cities and towns away from the community to look for jobs. Many males work away from

the community and frequently visit the community to provide their families with money.



Figure 2: Respondents by Gender

As males go out to work in towns and cities they get exposed to IT because it is used on a daily basis. High percentage of females in the community demonstrates that females don't generally go out and work in cities because they are taking care of the children, thereby forcing them to stay in the community. Therefore gender is a contributing factor to information haves and information have-nots.



Figure 1: Age groups

Based on the diagram above, only 10% of the respondents ages between 21 to 30 live in Makgobistad Village; the reason for the low

percentage in this age category is because most of them finished matric and they move to urban areas to seek for jobs to help their families in rural communities financially or to further their studies in Colleges, Technikons or University. In support of the above reason, Falola and Salm (2004) state that lack of adequate job opportunities and quality education in rural areas contribute to rural-urban migration in Africa. According to them, the method by which employment is measured counts only for individuals looking for jobs and not others.

The age group of 31 to 40 that makes 36.80% which is the higher percentage of the respondents and the age group of 41 to 50 that make 20% which is the second highest percentage; these are people who contribute to high birth rate in the community. In the African ethnic practices, when females fall pregnant they usually leave their jobs in urban areas and come to the rural community to take care of the young. This process usually takes about seven to 8 years once children have started and settled in school, hence the high percentage in these two age groups.

Lastly ages 51 to 60 make 10% of the respondents and ages older than 61 make 8.80% of the respondents. These age groups have lowest percentages because they are financially secure and they tend to move to urban areas to settle. In rural communities, such old age groups contribute to high mortality rate.



Figure 2: Rural and urban demographic

The analysis demonstrates that 86.94% of the respondents grew up in rural areas. Based on the interpretation of Figure 4, it can be noted that large

percentage of Africans grew up in the community. Based on literature provided it is a phenomenon that black race resides in rural areas and Coloured, Indians, and Whites resides in urban areas. He further asserts that more Whites are exposed to ICTs and most of them are computer literate than African in rural communities.



Figure 3: Employment rate

Based on literature reviewed, scholars such as Anriquez and Stamoulis (2007) showed that 75% of poor people in the world live in rural communities. In support of this statement, Figure 4.5 demonstrates that 64.08% of the respondents are unemployed.



Figure 4: Level of formal education

As stated in the theory by Bertot (2002), the majority of people in rural communities particularly African is illiterate. In African culture, female were

assigned to stay at homes and take care of the household chores and also children, while males were assigned to do the physical work at the farms or move cities and towns to look for jobs. Form the figure above 21.20% of the respondents have less than 9th grade of formal education, followed by 47.60% of those with 9th to 12th grade, 15.20% of those with a diploma, 12.80% of those with a degree. The level of education is low in this community because most of these people live in poverty and what they do is spending their time in agriculture for survival instead of education and it is also due to high unemployment rate in the community.

Computer Literacy in the Community

Computer	Non-	Beginner	Average	Good	Expert
Skills	user				
Frequency	144	23	47	34	0
Percentage	58.06	9.27	18.95	13.71	0.00

Figure 7: Level computer skills

Most respondents never used computer in their lives (144). As asserted in literature review by Vengefeldt (2003), lack of social, economic, educational, political and financial aspects may negatively impact the existence of computer skills level and he goes further to conclude that lack of such skill will impedes others the possibility to gain from the benefits provided computers and related technologies. These contribute to digital divide which is an issue of concern in this research. Twenty-three of the respondents were average, followed by 47, which were good. These respondents are those that were employed or had higher education.

Correlation between Age and Level of Computer Skills

The variables are defined as follows: level of computer skills = X and age = Y.

X		Non-user	Beginner	Average	Good	Expert
	21 to 30	17	8	9	5	0
	31 to 40	47	4	22	19	0

Y	41 to 50	38	8	15	10	0
	51 to 60	20	3	2	0	0
	61+	22	0	0	0	0

Figure 8: Correlation between age and level of computer skills

Most respondents that did not have computer skills were between the ages of 31 to 40. Most of these people were not educated or dropped out of school due to ethnic obedience. The government should consider this issue when it plans to introduce methods of reduces the digital divide.

In support of the above interpretation, Gupta (2006) and Gallagher *et al.* (2005) argue that older people who left schools prior to the introduction of computers on the mainstream curriculum or people who have lower level of education in the rural communities are computer illiterate and this illiteracy act as an impediment to access ICT tools.

Correlation between Gender and Level of Computer Skills

Correlation was used to determine if there is a relationship between gender and computer skills, defined X = level of computer skills and Y = gender.

Х		Non-				
		user	Beginner	Average	Good	Expert
	Female	82	15	26	19	0
Y	Male	62	8	22	15	0

Figure 9: Correlation between gender and level of computer skills

Figure 9 demonstrates that more female were computer illiterate than males. As discussed earlier this is mostly due to cultural, socio-economic and political issues. Coefficient of correlation is 0.026, which it is close to zero. It is evident that the respondent's computer skills does not depend on gender because any one can be taught or learn how to use computer despite gender.

The figure below demonstrates the attendance of computer training courses in the community. A large percentage of respondents (63.27%) never attended computer-training courses. Poynton (2004) stated that people who never attended computer training or taught how to use a computer due to lack on ICT infrastructure or unemployment contribute a high risk to information poverty.

Problems around Accessing Information in Rural Communities



Figure 10: Attendance of computer training courses

According to Gallagher *et al.* (2005), to encourage computer literacy by saying that the latter is as important as acquiring normal literacy and numeracy in a formal education system.

Correlation between Level of Computer Skills and Attendance of Computer Training

Correlation is used to determine the extent of relationship between level of computer skills and computer training attendance, defined Y = Level of computer skills and X = attendance of computer training.

Χ		Once	Many	Never
	Non-user	0	0	143
	Beginner	12	2	9
	Average	25	17	6
Y	Good	13	21	0
	Expert			
	-	0	0	0

	X	Y
X	1	0.585
Y	0.585	1

Figure 11: Correlation of level of computer skills and computer training attendance

It is evident from the results that there is a statistical significance, positive correlation between variable X and Y where r = 0.585 (n = 250, p < 0.05). This positive relationship between two variables demonstrate that the more one tend to attend computer training courses the more one's computer skills level will improve.

Computer and Internet access	Just computer	Computer and Internet	None
Access	40	62	147
Percentages	16.06	24.90	59.04

Figure 12: computer and Internet access

The analysis above indicates that 147 respondents never access computers in their lives. This could be interpreted back to the issues of high percentage of computer non-users in the community. In support of the interpretation, Vengefeldt (2003) broaden the issue of access in the literature review by saying that the access to ICT is accompanied by the skills describing the capabilities to use them.



Figure 13: Computer usage

The figure above shows that 58.63% of the respondents never used computers in their lives. The reason for this might be high level of computer illiteracy and high rate of unemployment in the community. Mahmood (2005) stated in that due to high rate of unemployment and unavailability of ICT

infrastructure people living in rural areas cannot afford to have ICTs facilities. It is also noted that most of those who access computer daily and weekly they access it at their workplace. Lastly 11.24% access it monthly from home, Internet café or neighbourhood.



Figure 14: Internet usage

Based on the figure above 65% of the respondents never used an Internet and most of these respondents are those that don't have access to a computer. This is followed by 12.96% of those who access it daily and 12.15% who access it weekly mainly from the work place. Lastly 8.91% access it monthly, which is either from home, Internet or neighbourhood.

Correlation between Computer and Internet Usage

Variables are defined as follows, X = Internet usage and Y = computer usage.

Χ		Daily	Weekly	Monthly	Never
Y	Daily	32	2	0	0
	Weekly	0	27	4	9
	Monthly	0	0	18	9
	Never	0	1	0	145

	X	Y
X	1	0.794
Y	0.794	1

Figure 15: Correlation on computer and Internet usage

It is noted from the results that there is strong and positive correlation between the two variables, the excel results are summarised as (r = 0.9981, n = 250, p < 0.05). The correlation is close to zero, which means that there is a relationship between the two variables. This implies that for to use the Internet, one must have access to a computer.

Method of	Hom	Internet	School	Workplace	Neighbour	None
computer	e	Cafe				
and						
Internet						
access						
frequencies	26	12	11	52	3	145
percentage	10.44	4.82	4.42	20.88	1.20	58.23
S						

ICT Infrastructure and Digital Divide

Figure 16: Primary method of accessing computer and Internet in the community

Most of the respondents (52) access computers and Internet from where they work followed by those that access mainly computers at home (26). Most of the respondents work at the town (Mafikeng), which is 50 kilometres away from Makgobistad Village and also 12 respondents access computers and Internet in Internet cafes which are found only in town. Few access computers and Internet in schools and in the neighbourhood. This clearly shows that there is a lack of ICT infrastructure in the community and it is most found in urban areas. In support of the interpretation, researchers have largely agreed through documentation that the most poorest and rural communities lack access to ICTs infrastructure as opposed to urban communities who have access to ICTs infrastructure.

Rose (1999) observed that the poorest countries particularly in their rural, remote or disadvantaged communities often are prevented from fully enjoying the advances of modern ICTs because of factors such as lack of infrastructure. It must be considered that lack of ICT infrastructure contribute positively to digital divide, in support of this statement, Vengefeldt (2003) defined digital divide as the gap between communities, geographical areas and

business at distinct social and economic levels regarding their opportunities and privileges to access ICTs more easily and to use internet to better their dayto-day activities.



Figure 5: Public centers where computer and Internet can be access in the community

Based on the analysis of primary method of accessing computer and Internet in the community, it is evident from this figure why people travel long distance to town only to access computer and Internet. This figure demonstrates that there are no public centres where computer and Internet can be accessed.

Rural Development and Telecentres





Due to the statistical evidence that there are no public centres (telecentres) where computer and Internet can be accessed in the community,

73.09% of the respondents would like to see telecentres be implemented in the community. This also shows that people want to access computer and Internet without travelling long distances to urban areas and they believe that they can benefit from the implementation of telecentres. Only 7.23% of the respondents don't want telecentres to be implemented in the community, these are mostly those that have computer and Internet access at their homes.

This analysis is in agreement with Fong (2009) that developed countries take advantage of ICTs to further boost their development, while the developing and poorest countries are left behind as a result of lack of ICTs infrastructure. He goes further to assert that there is a positive relationship between ICTs and economic growth in developed countries as opposed to developing countries. In this sense weak economic growth in the latter case was attributed to the absence of ICTs adoption in developing countries. Oestmann and Dymond (2001) concluded the above supporting research literature by stating that the telecentre originated for the purposes of development through ensuring access to ICTs with strong emphasis on providing shared access to expensive technologies like computers and internet services in order to bridge the gap of digital divide.

Conclusion

This chapter provided a discourse on data obtained through questionnaires that were completed by Makgobistad Village residents. The results that were obtained from data and demonstrated in tables and graphs were analysed and interpreted. The relationships between data variables and the summary of statistics were also provided through interpretation. The essence of this was to investigate the preliminaries into problems to access information in Makgobistad village.

The research discovered that most people in Makgobistad Village are illiterate, they don't have computer skills, access to computer and Internet, are unemployed, and they travel long distances to access computer and internet. In addition, the statistics demonstrated in Figure 4.10 that 100% of the respondents maintain that there are no public centers where computers and the Internet can be accessed in the community. Most of the respondents want to see telecentres be installed in the community because they believe that they will benefit from them. Next, we provide a conclusion of the study and possible recommendations and identify possible future research.

Conclusion and Managerial Guidelines

The community that was used as a case study for this research is Makgobistad Village found in Mafikeng, North-West province. The community comprises of people who grew up in rural and urban areas were investigated in terms of computer literacy and computer and Internet access.

The study was directed at establishing the problems to access information through computer and Internet access in the community. It was also directed to determine the level of computer skills and access to computer and Internet.

This research provided an analysis of impact of computer skill on accessing computer and Internet form Information systems perspectives. It was observed that computer illiteracy and lack of ICT infrastructure were significant problems to information access and the very same factors play an important role in the gap of digital divide.

Data analysed and interpreted in the previous chapter disclosed that 100% of the respondents stated that there are no public centers where information can access through computer and Internet connections. Also the statistic revealed that 73.09% of the respondents want to see telecentres implemented in the community so that the information is accessed easily through computer and Internet.

Answers to Research Questions

The essence of this section is to establish the relationship between the main research findings provided in the previous chapter and the research questions outlined in the research literature review.

Are people in the community computer literate or not?

The research found out that more than 58% of the people in the Makgobistad Village are computer illiterate. Vengefeldt (2003) argues that computer literacy involves three levels of capabilities instrumental, structural, and strategic skills and he emphasize that must have at least foundation or certain level of formal education to grasp these capabilities. The reason for this computer illiteracy is due to the fact that most people in the community are not educated and they

leave school early due to ethnic practices. Another reason for this is that there are no telecentres that provide computer access and training easily.

In support of the findings, Vengefeldt (2003) argues the low levels or non-existence of IT literacy levels in rural areas deals a negative blow to local schools and teachers. Rural community schools in the 21st century were IT is the way of life for various political, economic and social spheres should contribute in terms of ICTs literacy and government and private organisations should take the blame for these low literacy levels in rural areas where schools exist.

How can the availability of ICT infrastructure in the form of telecentres contribute positively to information access to bridge digital divide?

The findings disclosed that 73.09% of the respondents wanted to see telecentres implemented in the community. Due to the fact that there are no telecentres in the community and people are computer illiterate, information available through computer and Internet cannot be accessed. Hedberg (2010) argues that telecentres can be used to bridge the gap of information poverty and digital divide if they provide necessary ICT literacy skills and making sure that it allows proper access to computer and Internet so that information can be easily accessed without travelling long distances to towns and cities.

Can accesses to telecentres contribute in social and economic development?

Telecentres were conceptualised as space where public can access ICTs, for example, access to fax, e-mail, social network, Internet banking, and even access to training on various software packages (Colle & Roman, 2001). The concept of telecentre originated for the purposes of development of human capacity and encouraging social and economic development through ensuring access to ICTs (Oestmann & Dymond 2001) and digital-divide, with strong emphasis on providing shared access to expensive technologies like computers and internet services (Mukerji 2008). Soriano (2007) maintains that telecentres were mainly established for rural communities to access and share to address issues such as socio-economic development.

Managerial Guidelines

Based on the outcomes of this study the following managerial guidelines are given the rural communities that have problems of accessing information through ICT tools such as computer and Internet:

- Educational facilities must be enhanced in order to improve the level of formal education. Findings revealed that there is a high illiteracy level in the community of about more than 60% and government, and rural schools are blamed for this illiteracy level. Formal education is a foundation of computer literacy (Vengefeldt 2003).
- Community members must be taught how to use computer and associated technologies so that they can realise ICT benefits. Study indicated that 57.83% of the community members are computer illiterate and 73.09% want to access computer through telecentres but due to their computer illiteracy it can be possible. These implicate that community members must be trained on how to use such.
- ICT infrastructure in form of telecentres must be implemented in the community so that necessary ICT tools, such as fax, computer and Internet can be accessed without travelling long distances to towns and cities. The study found out that there are no public centres where computer and Internet can be accessed in the community and 100% of the respondents agree with that.

Conclusion

There are various factors that impact information access and the very same factor influence its success. The research was about the investigation of preliminaries to the problems to information access in Makgobistad Village, how they contribute to digital divide and impact the social and economic development of the community.

People in the community are willing to acquire computer literacy skills and have access to computer and Internet but due to lack of ICT infrastructure in a form of telecentres in the community this is not possible. Financing is very important in terms of funding implementation of telecentres. Rural communities without information access and necessary ICT Infrastructure increases digital divide.

In order to bridge the gap of information poverty and digital divide and familiarise the community members with ICT tools will need the large amount of capital particularly from government but on the other hand community members must not depend entirely on external sponsors but themselves.

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Gesture-based Technology and Organisational Strategy: A Study of a Quick Service Restaurant Franchisor

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Abstract

The aim of the study was to derive a theoretical framework that is hinged on critical success factors, enablers and Inhibitors, for the Alignment of Gesture-Based Technology and Organisational Strategy for the quick serving restaurant sector. The critical success factors, enablers and inhibitors that were used to formulate the framework were extrapolated from the literature. The sample design of this research study is a Non-Random, Purposive Sample. The key analysis of the research was to test whether critical success factors, enablers and inhibitors indeed can be used to derive a theoretical framework using a questionnaire. It was concluded that critical success factors, enablers and inhibitors were indeed core to the formulation of a theoretical framework. All of the critical success factors, enablers and inhibitors presented in the sample were accepted.

Keywords: Theoretical framework, gesture-based technology, organizational strategy, alignment, critical success factors, enablers, inhibitors

Introduction

This paper focused on deriving a framework for the alignment of Gesture Based Technology (GBT), specifically tablets and touch screen devices (mobile smart phones), with organisational strategy. To undertake this research

the organisation Yum! Restaurants International was used based on the prevalence of this technology within the organisation. The literature used was scholarly journal articles, and text books published 2004 - 2011.

Literature Review

Over the years there has been an infiltration of new technologies that redefined business and the manner in which business is undertaken. This is affirmed by likes of Lubbe (2005), Tarafdar and Qrunfleh (2010), and Chan and Reich (2007). Like the Internet, the social networking paradigm, mobile computing, and of recent GBT has once again radically redefined the manner in which business is undertaken (Johnson *et al.* 2010).

Musuka (2006), Lubbe (2005), Lubbe and Pather (2003), Tarafdar and Qrunfleh (2010) all researched the problem of aligning IT and business strategy. The common theme that permeates through the research on the Internet and business strategy alignment is that competitive advantage and success aligned with real threats around inefficient business processes and market penetration.

Yum! is a restaurant company with more than thirty-six thousand restaurants in the world and a presence in more than one hundred and ten countries. Yum! has three key companies Yum!, Yum! Restaurants International (YRI) and Yum! China. The company has three key brands in its stable and these encompass Taco Bell, Pizza Hut and Kentucky Fried Chicken (KFC) (Blanchard *et al.* 2004). The systems at a store (e.g. KFC) level predominantly entail touch screen point of sale systems that evolves into next generation services systems.

GBT architecture incorporates wireless technology as its principle and primary network connectivity model to transfer and relay information around gestures (Roth 2000). Smart-phones, Tablets and even Sixth Sense technology (Mistry, Maes & Chang 2009) adopt wireless technology for network connectivity (Johnson, Levine, Smith & Stone 2010). Motion detection (GBT) devices like Sony's, Microsoft's Kinect and also Nintendo's Wii (Shah & Haigh 2005) all require wireless connectivity to connect controllers to the control unit.

Gesture Based Technology

Traditionally and the keyboard and mouse are the primary and most renowned

ways to interact with and input data into a computer. In the last decade a greater emphasis has been placed on innovative ways of computer input for example direct input via touch screen devices, tangible user interfaces and recently GBT (Wu & Luo 2006). Mobile Devices (Smart Phones and Tablets) and Touch Screen Computers solve for gesture based interaction by exploitation of screen input through finger touches, swipes and taps (Wilson 2004; 2010; Lee 2010). Sixth Sense (Mistry *et al.* 2009) technology is an example of a combination of input and interaction methods.

Organisational Strategy and IT Alignment

Alignment of IT/IS with organisational strategy has been researched since the conflation of technology into the business landscape. Strategy can be defined as the long-term plan to achieving business objectives taking various environmental factors into account. Gregor, Hart and Martin (2007), and Bush, Lederer, Li, Palmisanno and Rao (2009), define alignment as the degree to which the IT mission, objectives, and plans support and are supported by the business mission, objectives and plans.

A critical success factor for Wireless Grids is the willingness for consumers to share resources and the technology is significantly reliant on the notion of sharing (Roussos & Kostakos 2009). Closely linked to wireless grids are Radio Frequency Identity (RFID) chips. These chips need to be small, less intrusive and robust and need to have alternate power sources that are long lasting (Roussos & Kostakos 2009). When researching touch pens a critical success factor that stood out was its size and accuracy to capture the users actions that is writings (Wu & Luo 2006) For Brain Computer Interfaces (GBT foundation) the critical success factor would be the ability to interpret and understand human thoughts (Nijholt, Plass-Oude & Reuderink 2009; Wobbrock *et al.* 2008).

Chang and Yang (2008), Huang and Hu (2007), and Tallon (2008) argue that the sharing of business strategy, goals and objectives with the IT team and its leaders is a key enabler. Chen (2010), Huang and Hu (2007), Musuka (2006), and Tallon (2008) also assert that, and that the advantage of alignment is that you will have business and IT strategy that complement each other, and create harmony between business and IT. Another advantage is that alignment will ensure that IT and business leaders can converse and engage in terms of similar understanding of their businesses.
Research Methodology

A summary of the research problem stated as questions was: What are the Critical Success Factors (CSF's), An identification of Enablers and Inhibitors that would drive that alignment of GBT (touch screen, smart phone and tablet technology) and organisational strategy to ensure competitive advantage and enhanced business performance is not easy.

Germinating out of the research problem are research questions.

- 1. What are critical success factors for the alignment of GBT (touch screen, smart phone and tablet technology) and organisational strategy;
- 2. What are the enablers for the alignment of GBT (touch screen, smart phone and tablet technology) and organisational strategy; and,
- 3. What are the inhibitors to the alignment of GBT touch screen, smart phone and tablet technology) and organisational strategy

The research method chosen for this study is a quantitative research design type. By using the various numerical and statistical tools and methods, various permutations and responses were formulated that could help answer the research questions. The primary data were collected through a questionnaire that was circulated to the sample using Surveymonkey.

The questionnaire was superseded with a covering letter outlining the confidentiality of the data and also the ability of a respondent to answer questions anonymously. The population encompassed a total of approximately five hundred employees. Yum! Restaurants International and its African subsidiary together with two other companies and Yum! make up the multinational company Yum!. The Sample adopted for this research study is a Non-Random, sampling design. A sample size of one hundred and four (104) has been surveyed.

Research Findings

The age groups of respondents were between thirty-five and forty-nine years (56.1%), followed by between twenty-five and thirty-four years (36.6%). Therefore it is evident that a consistent cross section of the sample across age

groups was present. There are always differences in the views and opinions of females and males (Wijngaert & Bouwman 2009). The numbers infer that Yum! Restaurants International (YRI) employs more males than females. The sample breakdown was considered to be a fair representation of the demographics at YRI restaurants with respect to GBT and Organisational Strategy Alignment (53.7% males).

The years of employment by employees within an organisation is crucial to it sustenance, growth and maturity (Chen 2010). The tenure group was greater than five (> 5) years (39%) followed by zero to one (0-1) years (18.3%). The research revealed that the majority of the respondents were working at YRI for more than five years.

The job ranking within Yum! was Managerial (68.3%), followed by Non-managerial (25.6%). The sample is dominated by respondents who were in the managerial ranking and this is pivotal in deriving a deep understanding the impact of GBT and Organisational Strategy Alignment enablers, success factors and inhibitors (Musuka 2006). Furthermore a holistic picture can be achieved since the input of Non-managerial respondents (25.6%) and Administrative staff was invaluable in identifying these success factors, enablers and inhibitors. The role played by respondents in the development of organisational and technology strategy, was a moderate role (43.9%) followed closely by the key role (42.7%). An almost even distribution of respondents who feel that they play a key role and those who play a moderate role in the development of strategy.

Understanding and Knowledge of Gesture Based Technology, and of Technology and Organisational Strategy Alignment

Having a sample would the correct knowledge and wisdom around the topic being researched lends itself to deriving a research study with a high accuracy and reliability (Leedy & Omrod 2005).

The knowledge level of GBT was 'I am a novice' (39.5%) followed by 'I have expert knowledge' (27.2%). It must be noted that almost 40% of the sample have novice knowledge of GBT, 27.2% of the respondents have expert knowledge. Furthermore 12.3% of the sample has no knowledge of GBT. The research confirms the fact that GBT is essential for the progress and the achieving of goals within YRI since 96.3% of the respondents in the sample reveal that they own at least one device. The response to this question was 'I have not been involved' in the roll out of any tablet, touch screen smart phone, or any touch screen device in the organisation.

Know and Understand Your Organisational Strategy

The response was 'I have expert knowledge' (33.3%) followed by 'I am a novice' (29.6%) when it comes to knowledge of the organisational strategy. The research reveals that collectively 90.1% of the sample considered the GBT (tablets, touch screen smart phone or any touch screen device) and the business strategy to be aligned as important to significantly important. This reiterates the fact that in order for any organisation to be productive it is imperative that the GBT and the business strategy be aligned.

Critical Success Factors, Enablers and Inhibitors of GBT and Organisational Strategy Alignment

The critical success factors presented to the sample were derived from the research undertaken by Roth (2000). The three Critical Success Factors of GBT was: 1) Having a Wireless Network in place (17.7%); 2) Cost of GBT (16.4%); and 3) Accuracy in capturing gestures (finger taps, finger swipes and finger pointing) (15.1%) and Various value added services offered by the GBT (15.1%). From the above the critical success factors can be derived in relation to the respondents' preference and immediately the Critical Success Factors are identified.

The enablers presented to the sample were hinged on the research undertaken by Wijngaert and Bouwman (2009). The analysis finds the following for 1) Demand three enablers GBT: for ubiquitous (anywhere/anytime) computing/technology (21.2%); 2) Accessibility of GBT (17.6%); and 3) Lower costs of GBT (15%). The three inhibitors for GBT were: 1) Total cost of ownership for deploying GBT (31.5%); 2) GBT computers capabilities (processor power; memory and storage capacity) (15.2%); and 3) Limited features of GBT (11.5%). The inhibitors used in this research study were adopted from the research undertaken by Roussos and Kostakos (2009).

All the critical success factors extrapolated from the literature review have been identified and selected by the sample as critical success factors for strategy alignment. Chan and Reich (2007), Chen (2010), Tarafdar and



Qrunfleh (2009), and Roussos and Kostakos's (2009) research formed the basis for the critical success factors presented to the sample.

Figure 1: Critical Success Factors of Gesture-Based Technology

The five enablers for strategy alignment identified encompass: 1) Sharing the business strategy with IT; 2) Having complimentary IT and Organisational strategies; 3) Having enterprise architecture for GBT; 4) Criticality of sharing information and knowledge across multiple platforms to



the business; and 5) Lower costs of GBT. The sample selected them all.

Figure 2: Critical Success Factors of Strategy Alignment

The five Inhibitors for Strategy Alignment presented to the sample encompassed: 1) IT now knowing the business strategy; 2) No organisational strategy for the use of GBT; 3) Traditional role of IT in the business; 4) Readiness of business environment for GBT; and 5) IT not driving innovation in the

business. The inhibitors are embedded in the research undertaken by Chan and Reich (2007); Chen (2010); and Musuka (2006). The sample supported the five Inhibitors presented to them. From the research undertaken by Wijngaert and Bouwman (2009), Musuka (2006) it is evident that having a balanced approach in relation to demographics steers insightful research is important.



Figure 3: Enablers of Strategy Alignment

Understanding and Knowledge of Gesture Based Technology and Organisational Strategy Alignment

Wijngaert and Bouwman (2009) state that the readiness of an environment and the knowledge within the organisation of the technology lead to its successful adoption and use. Thirty nine point five percent of the respondents felt that they are novices regarding their knowledge of GBT whilst 27.2% of the respondents felt that they had expert knowledge. The researchers find that regarding the usage of GBT, the respondents classified themselves as a competent user (48.1%) and a somewhat competent user (34.6%) whilst 46.9% of the respondents own 2 or more GBT devices and there was an even split of those who owned (2) devices 24.7%. The research reveals that when it comes to the rollout of any tablet, touch screen smart phone or any touch screen device solution in the organisation, respondents have not been involved (67.9%) and or haven been moderately involved (21%).

Enablers and Inhibitors of Gesture Based Technology and Gesture Based Technology and Organisational Strategy Alignment

The objective of presenting these extrapolations to the sample is to gain confirmation of its validity.

Descriptive Statistics

In this section the mean, the mode, the median, the sample variance and the sample standard deviation are discussed. The majority of the questions have modes of '2' and '3' and these can be translated in accordance with the responses from the scales of the relevant question. The standard deviations were consistently about '1' and this indicates good consistency between the observations due to the low variability. The mean and median values are consistent with modal values.

Reliability Analysis

The Cronbach's Alpha was calculated as part of reliability and validity analysis. A value of 0.7 or higher was deemed to conclude a good internal

consistency and reliability amongst the questions. The Cronbach's alpha can range from zero (0) to one (1).Cronbach's alpha was also calculated as part of the reliability test to assess how consistent the results were and to determine if similar results will be obtained to generalize if the sample size was increased. A value of zero point seven (0.7) or higher was a good value that enabled the researchers to state that the results would stay the same if the survey was carried out with a larger sample of respondents. The Cronbach's alpha was calculated for all the questions that have the same scales in each section.

Kolmogorov Smirnov Test

The Kolmogorov-Smirnov tested whether the sample responses follow a normal distribution and whether or not parametric or non-parametric techniques can then be used on the sample responses. The two hypotheses formulated are as follows:

H0: the tested variables come from a Normal distributionH1: the tested variables do not come from a Normal distribution

At the 5% significance level, H0 has to be rejected for the questions of which p-values are less than 0.05 and conclude that the tested variables do not come from a Normal distribution. In this case since the p-values are all less than zero point zero five 0.05, H0 is reject and the conclusion is that further analysis is required on these questions using non-parametric tests.

Testing of the Objectives

In order to test the objectives, the Chi-Square goodness of fit test was used. Leedy and Omrod (2010) state that there are two main types of chi-square test. The results from the test are summarized below:

H0: The use of the enablers, inhibitors and success factors are not necessary to develop a founding theory for GBT and organisational strategy alignment.

H1: The use of the enablers, inhibitors and success factors are necessary to develop a founding theory for GBT and organisational strategy alignment.

Test Statistics

At the 5% significance level the p-values are less than 0.05, therefore H0 is rejected. The conclusion is that the use of critical success factors, enablers and inhibitors are necessary to develop a theory for GBT and organisational strategy alignment.

Testing for Relationships between the Demographics and the Understanding and Knowledge of Gesture Based Technology

Question	Chi-square test statistic	P-value
3.1	16.608	0.411
3.2	12.179	0.732
3.3	30.855	0.002
3.4	13.597	0.093
3.5	21.724	0.152
3.6	17.192	0.143
3.7	7.690	0.262
3.8	90.881	0.000

Table 1: Chi-Square Test of Independence - Relationship between age and knowledge of gesture based technology

At the 5% significance level the conclusion is that there is a relationship between age and question 3.3 and question 3.8. Question 3.3. Do you currently own a GBT device in the form of a tablet, touch screen smart phone or any touch screen device? Question 3.8. How important is it to have GBT (tablets, touch screen smart phone or any touch screen device) and the business strategy aligned? However, for the rest of the questions since the p-values are greater than 0.05, the conclusion is that there are no relationships between age, the understanding and knowledge of GBT.

Question	Chi-square test statistic	P-value
3.1	13.292	0.010
3.2	9.515	0.049
3.3	21.309	0.000
3.4	15.542	0.000
3.5	15.599	0.004
3.6	9.475	0.024
3.7	1.884	0.390
3.8	4.723	0.193

Gesture-based Technology and Organisational Strategy

Table 2: Chi-Square Test of Independence - Relationship between gender and knowledge of GBT

At the 5% significance level the conclusion is that there is a relationship between gender and all of the questions since their p-values are less than zero point zero five (0.05). Question 3.1. Do you have knowledge of GBT (GBT)? Question 3.2. Do you currently use a GBT device in the form of a tablet, touch screen smart phone or any touch screen device? Question 3.4. Have you been involved in the rollout of any tablet, touch screen smart phone or any touch screen device/solution in your organisation? Question 3.5. Do you know and understand the organisational strategy? Question 3.6. Do you think it is important to have technology and business strategy alignment?

Question	Chi-square test statistic	P-value
3.1	15.874	0.462
3.2	23.222	0.108
3.3	16.807	0.157
3.4	4.512	0.808
3.5	21.135	0.173
3.6	11.876	0.456
3.7	3.746	0.879
3.8	19.280	0.082

Table 3: Chi-Square Test of Independence - Relationship between tenure and knowledge of gesture based technology.

At the 5% significance level the conclusion is that there are no relationships tenure and understanding and knowledge of GBT since all the p-values are greater than 0.05. The relationships between the rankings within Yum! and YRI, and understanding and knowledge of GBT using the Chi-Square test of independence, was tested.

At the 5% significance level the conclusion is that there are relationships between rankings within Yum! and YRI, and question 3.2, 3.3, 3.5 and 3.6 since the p-values for these questions are less than 0.05. The chi-square test for independence was also used to test for a relationship between developmental role and understanding and knowledge of gesture based technology.

Question	Chi-square test statistic	P-value
3.1	14.531	0.069
3.2	21.442	0.006
3.3	21.634	0.001
3.4	18.263	0.001
3.5	32.081	0.000
3.6	23.864	0.001
3.7	6.028	0.197
3.8	11.757	0.068

Table 4: Chi-Square Test of Independence - Relationship between a role in developing organisational strategy and GBT, and knowledge of GBT

At the 5% significance level the conclusion is that there are relationships between developmental role and questions 3.2, 3.3, 3.4, 3.5 and 3.6 since the p-values for these questions are less than 0.05.

Relating the Demographic Variables to Critical Success Factors, Enablers and Inhibitors of GBT and Strategy Alignment

The assessment of the demographic variables in relation to the critical success factors, enablers and inhibitors will lead to a significantly reliable and valid research study. Some of the key literary studies, Leedy and Omrod (2005),

Musuka (2006) place emphasis on correlating the demographic variables with the core of the research study. In so doing they argue there will be significant better insights and answers into the research question.

As is evidenced by the analysis and table above, the critical success factors are the same across all of the age groups. Within this section it is established that the critical success factors extrapolated are consistent across the age groups. This confirms a level of reliability and validity with the analysis and findings.

Age	Demand for ubiquitous (anywhere/a nytime) computing / technology	Cloud computing technology	Lower costs of Gesture Based Technology	Accessibility of Gesture Based Technology	Size and robustness of Gesture Based Technology	Having a library of gestures (finger taps, finger swipes, etc)	All of the above	None of the above
18-24 yrs								1
25-34 yrs	18	12	8	12	14	4	8	
35-49 yrs	21	16	21	21	13	3	15	
50-60 yrs	2			1		1	2	

Table 5: Relationship between Age and Enablers of Gesture Based Technology

The analysis of the table above indicates a consistency of across all the ages in relation to the enablers. Only one respondent within the age group of eighteen to twenty four years did not believe that any of the enablers were applicable. These enablers are in line with literary review undertaken. It is evident the extrapolated enablers are consistent across the age groups. This confirms a significant level of reliability and validity with the analysis and findings.

The analysis of table 6 indicates a consistency across all the ages in relation to the inhibitors. These inhibitors are in line with literary review undertaken. The extrapolated inhibitors are consistent across the age groups. This confirms reliability and validity with the analysis and findings.

Age	Total cost of ownership for deploying Gesture Based Technology	Limited features of Gesture Based Technology	Stability of Gesture Based Technology	Screen size and ease of use	Gesture Based Technology computers capabilities (processor power; memory and storage capacity)	Understanding a multitude of gestures at once	All of the above	None of the above
18-24 yrs								1
25-34 yrs	21	7	9	6	8	7	4	1
35-49 yrs	27	10	9	11	17	10	9	1
50-60 yrs	4	2		1				

Table 6: Relationship between Age and Inhibitors of Gesture Based Technology

As is evidenced by the analysis, the critical success factors are the same across all of the age groups. The sample all agree with the critical success factors extrapolated. Within this section it is established that the critical success factors extrapolated are consistent across the age groups. This confirms a significant level of reliability and validity with the analysis and findings.

Age	Sharing the business strategy with IT	Having a complimentary IT and Organisational strategy	Having an Enterprise Architecture for Gesture Based Technology	Criticality of sharing information and knowledge across multiple platforms to the business	Lower costs of Gesture Based Technology	All of the above	None of the above
18-24 yrs							1
25-34 yrs	13	8	5	11	6	14	1
35-49 yrs	26	27	10	19	15	19	
50-60 yrs	3	3	2	2	3	1	

Table 7: Relationship between Age and Enablers of Strategy Alignment

The enablers extrapolated from the research undertaken by Bush, Lederer, Li, Palmisanno and Rao (2009) encompass: 1) Sharing business strategy with IT; 2) Having complementary IT and Organisational strategy; 3) Having and enterprise architecture for GBT; 4) Criticality of sharing information and knowledge across multiple platforms to the business; and 5) Lower costs of GBT. The sample selected all of the enablers presented to them. The table indicates that the enablers extrapolated are consistent across the age groups.

It is that the age groups twenty five to thirty four, thirty five to forty nine and fifty to sixty years are age groups with the greatest representation across the inhibitors. It is therefore deduced that the inhibitors are evenly distributed across the above three age groups. It is also deduced that the respondents are predominantly within the ages of twenty five to fifty years. This once again confirms the diversity and wealth of knowledge available on new technologies. Wijngaert and Bouwman (2009), and Musuka (2006) all related the importance of having a representative sample within the appropriate age bands.

Gender	Having a	Accuracy in	Accuracy in	Gesture	Cost of	Various	All of the	None of
	Wireless	capturing	interpreting	Based	Gesture	value added	above	the
	Network	gestures	gestures	Technology	Based	services		above
	in place	(finger taps,	(finger taps,	ergonomics	Technology	offered by		
		finger swipes	finger swipes	and		the Gesture		
		and finger	and finger	durability		Based		
		pointing)	pointing).			Technology		
Males	23	23	18	11	26	17	15	
Females	18	12	12	9	12	18	17	1

Table 8: Relationship between Gender and Critical Success Factors of GBT

The criticality of correlating gender to the critical success factors is to establish if any significant differences exist between males and females in relation to critical success factors chosen (Wijngaert & Bouwman 2009; Cheng and Wang 2010). It is generally accepted that males and females do have differing tastes, preferences and choices (Leedy & Omrod 2005). As is

evidenced both males and females have chosen similarly the critical success factors of GBT.

Gender	Demand for	Cloud	Lower costs	Accessibility	Size and	Having a	All of the	None of
	ubiquitous	computing	of Gesture	of Gesture	robustness	library of	above	the
	(anywhere/an	technology	Based	Based	of Gesture	gestures		above
	ytime)		Technology	Technology	Based	(finger		
	computing /				Technology	taps,		
	technology					finger		
						swipes,		
						etc)		
Males	27	19	21	21	16	4	10	
Females	14	9	8	13	11	4	15	1

Table 9: Relationship between Gender and the Enablers of GBT

Table 9 provides data on how male and female respondents chose enablers of GBT. Wijngaert and Bouwman (2009), Musuka (2006) state the importance of having demographic variables correlated with the enablers. Within the context of gender it would be to establish if any significant differences exist between males and females in relation to enablers chosen. It is generally accepted that males and females do have differing tastes, preferences and choices (Leedy & Omrod 2005). As is evidenced in Table 17 males and females have chosen similarly the critical success factors of GBT.

Gender	Total cost of ownership for deploying Gesture Based Technology	Limited features of Gesture Based Technology	Stability of Gesture Based Technology	Screen size and ease of use	Gesture Based Technology computers capabilities (processor power; memory and storage capacity)	Understanding a multitude of gestures at once	All of the above	None of the above
Males	34	11	9	12	12	10	6	
Females	18	8	9	6	13	7	7	3

Table 10: Relationship between Gender and the Inhibitors of GBT

As stated it is important to correlate the relationship between gender and three core sub problems that is critical success factors, enablers and inhibitors. In this section of the research study the relationship between gender and inhibitors is explored. The inhibitors like the critical success factors and enablers are extrapolated out of the literary review it is established that all six inhibitors presented to the sample have been selected. As evidenced in Table 10 there is a fairly even distribution between males and females in their choices of inhibitors.

Gender	The skills and expertise of IT in the organisation	The Leaderships view of Gesture Based Technology within the organisation	Willingness of users and business to adopt Gesture Based Technology	Cost of Gesture Based Technology	Having Gesture Based Technology being part of the IT strategy	All of the above	None of the above
Males	24	24	17	23	19	10	1
Females	13	14	16	12	12	23	1

Table 11: Relationship between Gender and the Critical Success Factors of Strategy Alignment

Table 11 provides data on how male and female respondents chose critical success factors of strategy alignment. The criticality of correlating gender to the critical success factors is to establish if any significant differences exist between the perceptions of males and females in relation to critical success factors (Wijngaert & Bouwman 2009). As is evidenced in Table 11 both males and females have chosen similarly the critical success factors of strategy alignment.

As is evidenced by the analysis and table below, the enablers are the same across males and females. It is also evident that only two respondents, one male and one female selected that none of the enablers were relevant for strategy alignment. The enablers extrapolated from the research undertaken by Gregor, Hart, and Martin (2007) encompass: (1) Sharing business strategy with IT; (2) Having complementary IT and Organisational strategy; (3) Having and enterprise architecture for GBT; (4) Criticality of sharing information and

knowledge across multiple platforms to the business; and (5) Lower costs of GBT. The sample selected all of the enablers presented to them.

Gender	Sharing the business strategy with IT	Having a complimentary IT and Organisational strategy	Having an Enterprise Architecture for Gesture Based Technology	Criticality of sharing information and knowledge across multiple platforms to the business	Lower costs of Gesture Based Technology	All of the above	None of the above
Males	25	22	11	15	14	15	1
Females	17	16	6	17	10	19	1

Table 12: Relationship between Gender and the Enablers of Strategy Alignment

It is evident in the age groups twenty five to thirty four, thirty five to forty nine and fifty to sixty years are age groups with the greatest representation across the inhibitors. Once again all of the inhibitors extrapolated are applicable. It is also deduced that the respondents are predominantly within the ages of twenty five to fifty years. This once again confirms the diversity and wealth of knowledge available on new technologies. Wijngaert and Bouwman (2009) relate the importance of having a representative sample within the appropriate age bands.

The relationship between ranking in an organisation directly ties into the knowledge and understanding of any new technology and how this ties into the organisational strategy. Wijngaert and Bouwman (2009) succinctly encompass the criticality of ranking in relation to binding organisational strategy and any new technology. As stated, ranking is integral to gaining an accurate understanding and insight into the critical success factors, enablers and inhibitors.

Wijngaert and Bouwman (2009) state that ranking is crucial to understanding the data collected and can influence the outcomes of new technology on and organisation. The managerial ranking was representative followed by the non-managerial and administrative rankings.

Gesture-based Technology and Organisational Strategy

Ranking	Having a Wireless Network in place	Accuracy in capturing gestures (finger taps, finger swipes and finger pointing)	Accuracy in interpreting gestures (finger taps, finger swipes and finger pointing)	Gesture Based Technology ergonomics and durability	Cost of Gesture Based Technology	Various value added services offered by the Gesture Based Technology	All of the above	None of the above
Managerial	32	26	21	12	28	24	17	
Non- managerial	7	7	7	6	8	9	11	1
Administrative	2	2	2	2	2	2	4	

Table 12: Relationship between Ranking and the Critical Success Factors of GBT

The effect of ranking on the inhibitors selected was minimal. Therefore there is a close correlation between the inhibitors for GBT chosen by the different ranks and those rendered. The conclusion is ranking did not affect the choice of inhibitors.

Ranking	The skills and expertise of IT in the organisation	The Leaderships view of Gesture Based Technology within the organisation	Willingness of users and business to adopt Gesture Based Technology	Cost of Gesture Based Technology	Having Gesture Based Technology being part of the IT strategy	All of the above	None of the above
Managerial	26	28	22	27	21	20	1
Non- managerial	10	10	10	8	9	10	1
Administrative	1		1	0	1	3	

Table 13: Relationship between Ranking and the Critical Success Factors of Strategy Alignment

To iterate Wijngaert and Bouwman (2009), ranking is key to understanding the data collected, and can influence the outcomes of technology and strategy alignment. Table 13 summarises the findings of the critical success factors for strategy alignment across the various rankings. The managerial ranking again dominates the findings. As expected the administrative ranking is the least representative. Two respondents (one managerial and one non-managerial) state that none of critical success factors are applicable.

Ranking	Sharing the business strategy with IT	Having a complimentary IT and Organisational strategy	Having an Enterprise Architecture for Gesture Based Technology	Criticality of sharing information and knowledge across multiple platforms to the business	Lower costs of Gesture Based Technology	All of the above	None of the above
Managerial	29	30	13	21	17	24	
Non- managerial	11	7	4	8	5	8	2
Administrative	2	1		3	2	2	

Table 14: Relationship between Ranking and the Enablers of Strategy Alignment

Table 14 summarises the findings for the enablers of strategy alignment across the various rankings. The managerial ranking dominated the responses. The correlation of the enablers for strategy alignment and ranking were similar. Therefore, ranking had little effect on the respondents' selections of enablers as extrapolated by the research of Chen (2010), Huang and Hu (2007), and Tallon (2008).

These inhibitors are hinged on the research undertaken by Chan and Reich (2007), Chen (2010), and Huang and Hu (2007). All the inhibitors have been selected by the respondents. From the analysis above the managerial ranking dominates the findings. However overall there is no difference between the different rankings with respect to the inhibitors for strategy alignment selected. Therefore ranking does not influence the inhibitors of strategy alignment.

Findings and Recommendations

Wijngaert and Bouwman (2009) note that it is critical to have a sample that is diverse in its representation of age and gender composition. Having such representation will enable insightful and knowledge contributing views to be derived. The majority of respondents of the sample fall in the age group of between twenty five and thirty four (25-34) year. Implicit in this finding is that there will be a diversity of perceptions and knowledge of GBT with respect to organisational strategy. This also signals there will be varied and extremely insightful views on the aims and objectives of the research.

Knowledge of Gesture Based Technology (Gbt)

Johnson *et al.* (2010), Lee (2010) state that it is important to have knowledge of any new technology in order to effectively use it and understand its use and benefits. Wijngaert and Bouwman (2009) reiterate this view by stating that the readiness of acceptance and knowledge of the technology lead to successful adoption and use of technology. The respondents knowledge of GBT fell within a normal distribution and the majority of the sample had either expert or novice knowledge. From this analysis it is evident that the knowledge of GBT is not significant and more importantly cannot adequately support any of the research findings objectives.

The critical success factors presented to the sample were extrapolated from the literature researched. These critical success factors focused distinctly on GBT and strategy alignment. The key finding is that a wireless network and cost of GBT is the heart and soul of the critical success factors. These two findings are in line with the research undertaken by Gegor *et al.* (2007). The top three inhibitors indentified by the sample include: the total cost of ownership for deploying GBT; GBT capabilities (process power; memory and storage capacity); and limited features of GBT. These findings are indifferent to Roussos and Kostakos (2009). The cost of GBT can be considered the most important criteria for the alignment of GBT and organisational strategy. It has featured as critical success factor, an enabler and now an inhibitor. Therefore ensuring the correct pricing of this technology will lead to mass adoption and arguably alignment of organisational strategy and GBT (Gegor, Hart and martin 2007).

The critical success factors presented to the sample for the alignment of GBT and organisational strategy were extrapolated from the literature

presented by Chan and Reich (2007), Tarafdar and Qrunfleh (2009), Chen (2010), Huang and Hu (2007). There is not deviation to the literature that was found. The findings reaffirmed the critical success factors that were presented to the sample. An explanation of the findings is detailed below.

Enablers

Sharing the business strategy with IT featured as the number one enabler for strategy alignment. This shows the importance of having the IT department knowing what the business intends on doing, which will enable it to support the organisation. Chan and Reich (2007), and Chen (2010) argue the same in their literature. The second ranked enabler for strategy alignment was having a complimentary IT and organisational strategy. This enabler was extracted from the research undertaken by Huang and Hu (2007).

Relationship Testing

A key component of the research paper is testing the relationships between various variables. Wijngaert and Bouwman (2009) and Musuka (2006) all advise that having a representative sample ill result in insightful and incisive research.

Research Questions

In this section the research question is answered. A recollection of the research problem is: What are the Critical Success Factors (CSF's), Enablers and Inhibitors that would drive that alignment of GBT (touch screen, smart phone and tablet technology) and organisational strategy to ensure competitive advantage and enhanced business performance.

Sub-Question 1: What are critical success factors for the alignment of gesture based technology (touch screen, smart phone and tablet technology) and organisational strategy?

From the data gathered it is evident that six critical success factors have been presented for consideration, for GBT. These critical success factors were extrapolated from the research undertaken by Chan and Reich (2009). The

focus of this analysis would be to assess if there are significant deviations from or with the proposed critical success factors that are hinged on the literature.

The seventh critical success factor states that all of the critical success factors are important whilst the eight option states that none of the options presented are important or relevant. Therefore the combined weighting of the six options presented add up to 85.8%. This weighting is significantly higher than the 50th percentile and above the median. This shows that the findings are aligned with the literature reviewed and confirm that these critical success factors are indeed appropriate and relevant.

Similarly, seven options have been presented to the sample as choices for the critical success factors for strategy alignment. Five of these options were extrapolated from the research undertaken by Chan and Reich (2007), Tarafdar and Qrunfleh (2009), and Huang and Hu (2007). The five options add up to a weighting of 83.2%. The 'all of the above' option has a percentage of 15.8%. Once again all of the options presented are significantly above the median, whilst the 'none of the above' is significantly below the median. The implicit pronouncement is that the literature and the findings are aligned and the findings can be adopted.

Therefore all critical success factors are recommended. Due to the cost option being included in both GBT and strategy alignment and chosen, it is only stated once, therefore reducing the critical success factors recommenddation to ten options. These are as follows:

- 1. Having a Wireless Network in place;
- 2. Accuracy in capturing gestures (finger taps, finger swipes and finger pointing);
- 3. Accuracy in interpreting gestures (finger taps, finger swipes and finger pointing);
- 4. GBT ergonomics and durability; and
- 5. Cost of GBT.

Sub-Question 2: What are the enablers for the alignment of gesture based technology (touch screen, smart phone and tablet technology) and organisational strategy?

When the data is analysed for the enablers of GBT and strategy alignment the same conclusions can be drawn as per the critical success factors stated above.

The combined weighting of the six options for enablers of the GBT is equal to 86.4%, whilst the combined weighting for five options of strategy alignment is equal to 80.9%. With the enablers of strategy alignment what is evident that any two options together with 'the all of the above option' will have a weighting greater than 50%.

Therefore ten enablers are presented as enablers for the alignment of GBT and organisational strategy alignment. Once again lower costs are presented as an option in both GBT and strategy alignment, and chosen in both instances. Therefore it is rendered only once below as it is applicable to both areas. Some of the enablers are as follows:

- 1. Demand for ubiquitous (anywhere/anytime) computing / technology;
- 2. Cloud computing technology;
- 3. Lower costs of GBT;
- 4. Accessibility of GBT; and
- 5. Size and robustness of GBT.

Sub-Question 3: What are the inhibitors to the alignment of gesture based technology (touch screen, smart phone and tablet technology) and organisational strategy

The inhibitors recommended for this research sub-problem encompasses the eleven options (six for GBT and five for strategy alignment) presented to the sample. Both the six options presented for GBT and the five options presented for strategy alignment have a weighting of above 50% and are above the median. The 'none of the above' options presented in each instance have a weighting of 1.8% and 1.2% respectively. These are significantly below the median and can easily be rejected. Some of the recommended inhibitors are therefore as follows:

- 1. Total cost of ownership for deploying GBT
- 2. GBT computers capabilities (processor; power; memory and storage capacity)
- 3. Limited features of GBT
- 4. Stability of GBT
- 5. Screen size and ease of use

The above inhibitors are indifferent to the inhibitors presented by Wijngaert and Bouwman (2009), Roussos and Kostakos (2009). This confirms the reliability of the findings. The aim of the analysis was to solve for the critical success factors, enablers and inhibitors that could be used to formulate a theoretical framework for the alignment of GBT and organisational strategy. Crucial to this analysis and research paper was the need to distil established and existent critical success factors, enablers and inhibitors to the sample for review and selection. The expectation was that there would be very little, or no deviation from the extrapolated critical success factors, enablers and inhibitors presented.

Recommendations

Chen (2010) advises that having a concise and accurate focus is the foundation for a successful strategy. Therefore the theoretical framework recommenddations took in to consideration the top three findings for each of the sub problems focus areas, that is GBT and strategy alignment. These top three findings for each focus area where chosen based on its ranking. Implicit in this is that the top three were chosen on a rating of ascending order. The synergies and critical overlaps of the top three findings single them out as the heart and soul of the recommendations. However, this does not prohibit the various other findings to be used as part of the theoretical framework and can appropriately be adapted. The critical success factors for the theoretical framework recommendations are:

- 1. The organisation must have a wireless network in place;
- 2. The cost of GBT must be in line with the organisation's expectations;
- 3. GBT must accurately capture gestures (finger taps, finger swipes and finger pointing).

The recommendations for the enablers of the theoretical framework encompass:

- 1. Having an organisation that is demanding of ubiquitous (anywhere/ anytime) computing or technology;
- 2. Having accessibility to GBT; and

3. Decreasing costs of GBT.

The inhibitors for the theoretical framework include:

- 1. Total cost of ownership for deploying GBT within the organisation;
- 2. The hardware capabilities (processor power; memory and storage capacity) of GBT devices; and
- 3. GBT having limited features.

The first recommendation is the need to drive communication across all tiers of the organisation around technology evolution and organisational strategy. Some respondents signalled a lack of understanding of GBT and the organisational strategy, which sparked the communication need. The second recommendation entails ensuring that all ranks within the organisation are included in the strategy formulation process. This would include the technology strategy formulation as well. The next recommendation entails driving greater training initiatives that would enable sharing technology knowledge, organisational knowledge and associated information within the organisation. Finally, any new technology deployment requires significant monetary investment. By including the costs associated to new technology in the planning process (three or five year cycle) the organisation can adequately budget in the costs of new technology.

Conclusion

The newness of GBT lends itself to research and from the literature review it is evident that there is a dire need to have GBT and organisational strategy aligned. The focus of this is the discussion around the research analysis and the provision of recommendations for the research study. This is initiated with an introduction and flows into the discussion of the analysis of the previous. It is followed by recommendations. The recommendations entail the theoretical framework recommendations, general recommendations and recommenddations for research.

The heart of recommendations is the critical success factors, enablers and inhibitors for the theoretical framework. Six critical success factors have been recommended for the theoretical framework. The key critical success factor identified is having a wireless network in place. Seven enablers are recommended and the key enabler was the demand to ubiquitous computing and technology. Finally, six recommendations have been made for the inhibitors and the number one recommendation is the cost of deploying GBT. It is interesting that the cost of GBT spanned across the critical success factors, enablers and inhibitors. Therefore cost can be considered the most important recommendation for the theoretical framework.

It is also recommended that organisations drive communication across all tiers of its organisation to ensure knowledge and information sharing of technology and organisational strategy. A key future research recommendation entails creating a criticality matrix for the critical success factors, enablers and inhibitors of GBT and strategy alignment. The section is finally concluded and ultimately results in the conclusion of the research study.

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Students' Use of Smartphones at a Historically Disadvantaged University

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Abstract

As technology becomes cheaper the potential for learning is greater, preparing and disseminating learning material through smartphones is likely to become popular. However, it was not clear whether students from the most disadvantaged backgrounds, have the right equipment (smartphones) to support learning at a historically disadvantaged university. This study assesses smartphone ownership as a potential tool for enhancing students' learning at a relatively resource-poor higher education (HE) environment in rural KwaZulu-Natal. Correspondence universities, such as 'Unisa' and examples worldwide in HE, use students' smartphones for educational purposes. Primary data were collected from postgraduates and undergraduate students using a selfadministered structured questionnaire for all faculties. The unified theory of acceptance and use of technology (UTAUT) was employed to account for students' perceived ease of use (EOU) and perceived usefulness (PU). The results revealed smartphone ownership and use was greater than the ownership and use of regular cellular phones. Regular cellular phone users commented on smartphone capabilities as enhancing learning.

Keywords: Smartphones, socio-economic status, learning, unified theory of acceptance use of technology, consumer perceived values, access, M-learning, ease of use, perceived usefulness, HE, Information Technology (IT).

Introduction

The changing world of mobile telecommunication is driven by smartphone

availability and potential in each and every industry. The use of smartphones as a learning tool is inevitable, and the availability of these devices must be facilitated at HE institutions (Yu & Conway 2012:831). For improvement of communication channels, information search and business daily updates on the move, the smartphone is the imperative tool for use. Since smartphones have been identified as potential tools for gathering and disseminating information, the new path to grow their use is in education (Mokoena 2013). Smartphone popularity is increasing among the general public at an even ever faster pace (Samar & Soomro 2013:216).

Today users are caught in distracted smartphone societies in hospitals, shopping malls, educational institutions and public places because of its ubiquitous nature. Smartphones as potential tools (Woodcock, Middleton & Nortcliffe 2012:2) incorporate computing capabilities: their functionality comprises recorders, cameras, web browsing, media production, social media, full QWERTY keyboards, communication and entertainment, complemented by a range of applications (apps) that are installed through downloads.

Mobile learning through the use of smartphone developments and new capabilities has changed the academic environment of students at universities and colleges (Yu & Conway 2012). This has raised a question: to what extent are access and ownership of smartphones prevalent at an HDU as a potential tool to enhance students' learning? Many studies (El-Hussein & Cronje 2010; Woodcock *et al.* 2012; Yu & Conway 2012; Bakon & Hassan 2013) have investigated the use of smartphones by students at HE institutions, including distance learning universities and resource-rich HE institutions in both developing and developed countries. There has been little attention to residential universities as to whether the right tools are available to enhance students' learning. This paper investigates the use and ownership of smartphones among university students from the lower socio-economic backgrounds, and whether they have the right tool to enhance their learning at a poorly resourced HE institution.

The use of smartphones will increase students' engagement with and commitment to their learning activities (Clough, Jones, McAndrew & Scanlon 2007:368). The literature reviewed showed a possibility that smartphone availability and potential supports the use of the device as a learning tool in HE (Yu & Conway 2012:831).

This paper is structured as follows; the researchers draw the literature from the peer-reviewed article on technology acceptance and use of the UTAUT

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model by Venkatesh, Morris, Davis and Davis (2003:425) to form the theoretical framework of the investigation. They then employed the research methodology that provided the investigation with the required data. The findings supported the desirability of smartphones being available in an HDU as a potential tool to enhance students' learning. Then conclude with discussions and recommendations for future research.

Literature Review and Theoretical Background

In defining the smartphone, the study considers what makes the smartphone 'smart'. Yu and Conway (2012:832) notice the smart features in the device that allows the user to search and access information anytime, anywhere. According to Varkasalo, Lopez-Nicolas, Molina Castillo and Bouwman (2010:242) the smartphone enables the user to install and use the applications on their own, based on their own interest and need. The user downloads applications (apps) to boost his or her performance level. That is the smart act of the smartphone. Customising the device according to the owner's needs and the constant connectivity to the internet makes it smarter. Caverly, Ward and Caverly (2009:38) note that with the 3G internet-capable mobile phones, there are over 60 000 apps for 3G mobile phones.

These apps can be part of educational development. The use of smartphones is gradually increasing and diversified across different sectors of education in both developed and developing countries (Ally 2009:10). At the University of Central Arkansas smartphones have changed students' lives and behaviour due owing to its universal acceptance and powerful functionality (Yu & Conway 2012:832). At the University of Bath in England students recommend the texting service as a powerful reminder for engagement in their daily activities (Jones & Edwards 2009:7). HE students in Malaysia (Bakon & Hassan 2013:3) indicate that social values, including the overall customer perceived value (CPV) associated with the smartphone, have a profound effect on students' academic performance, and that effect has spread across students who differ in behaviour and academic performance levels.

The perceived values of the smartphone have changed students' perception about the device, their behaviour, and their academic performance levels because of its capabilities (Mokoena 2013). For developing countries the constant availability of the Internet on smartphones has compensated for the limitations on internet access. Owing to the lack of ICT infrastructure in certain

areas of Africa, the existing telecommunications cannot reach the bulk of the population. Therefore African countries are experiencing more growth in wireless infrastructure and wireless devices than first world countries (Barker, Krul, & Mallinson 2005:20). The high speed of Internet connectivity is part of students' means of access to information related to his/her studies. Bruner and Kumar (2005:553), in explaining the consumer acceptance of handheld internet devices, note that their perceived usefulness contributes to consumer adoption of the Internet service of handheld devices.

This mobile browsing connectivity increases the availability and growth of the smartphone in developing countries, villages and HE institutions (Yu & Conway 2012:835). Today, mobile phones are playing a role as a mechanism for delivering distance learning between students and the university. UNISA prefers SMS communication by smartphone to facilitate distance learning in that the message goes directly to the intended student (Nonyongo, Mabusela, & Monene 2005:1). Sarwar and Soomro's (2013:218) study discloses key positive and negative impacts of smartphone use and its availability on society at large.

According to Lunden (2014:1) on the device forecast for the world of communications and technology indicates that mobile-wireless technology is increasing fast. The worldwide combined shipment of technology and communication devices amounts to 2.5 billion PCs, tablets and mobile handsets. Of those devices, probably 1.9 billion are mobile handsets; 1.1 billion which use the Android Operating System. This has indicated the growth of smartphone ownership has overtaken that of PCs, which had dominated the market before. Yu and Conway (2012:831) note the evolution of smartphones and lists literature on the device in the settings of higher education that reveal it as a powerful tool for students' learning.

Attewell and Savill-Smith (2005:3) refer to mobile learning as the process of pocketing and using smartphones and cellular phones by students wherever and whenever to be able to receive unbroken transmission signals. This is one of the challenges in developing countries (Islam & Gronlund 2011:6).

Theoretical Background – UTAUT Conceptual Research Model

Several models are used to investigate new technology adoption in IT. The

UTAUT by Venkatesh *et al.* (2003) uses eight theories in their varied training which are: the theory of reasoned action (TRA), the technology acceptance model (TAM), the theory of planned behaviour (TPB), combined TAM and TPB, the diffusion of innovation theory (DIT), the social cognitive theory (SCT), the motivational model (MM), and the model of Personal Computer use (MPCU). The UTAUT serves as a baseline model, and has been applied to the study of a variety of technologies in both organisational and non-organisational settings (Venkatesh, Thong & Xu 2012:157).

These eight theories have different ideas and principles, and were mixed to reach a combined view of user acceptance of IT (Abdulwahab & Dahalin 2010:268). The first theory integrated in the UTAUT is the TRA (Fishbein & Ajzen 1975) that explains the links between the beliefs, attitudes, intentions, norms and behaviour of individuals. Behavioural Intention (BI) determines personal behaviour to perform interaction, and itself is determined by the person's subjective norms and attitude towards the behaviour. TAM deals with the predictions of acceptability of an information system or a tool. This model suggests that the acceptability of an information system is determined by two main factors: perceived usefulness and ease of use).

The TPB (Ajzen 1991:182) results from the limitations on behaviour over which people have little control. This theory focuses on perceived behavioural intention, which refers to readily available resources, skills and opportunities, as well as the person's own perception of the importance of achieving results. Combined TAM and TBP (Taylor & Todd 1995:145) is the combination of theory predictors of the TAM and TPB that both perceived usefulness positively influences attitudes on subjective norms, and perceived behavioural control positively influences usage behaviour. DIT is the theory of how, why and at what pace new ideas and technology grow across cultures, operating at both an individual and organizational level (Oliveira & Martins 2011:111).

The SCT (Bandura 1986) is about self-efficacy as a key self-discipline, which refers to the judgment of one's ability to use technology to accomplish a particular task. Behaviour, environment, personal attitude and motivation influence individual behaviour. MM states that the behavioural intention of using new technology is affected by internal motivation and external motivation. Internal motivation refers to the enjoyment of using the Information System (IS), and external motivation refers to the perceived usefulness of the IS (Davis, Bogozzi & Warshaw 1992).

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Lastly, the MPCU covers factors affecting the use of a new technology system, including perceived consequences affecting social factors and facilitating conditions. The perceived result of MPCU covers complexity, job fitness and long-term consequences (Thompson, Higgins & Howell 1991).

The UTAUT Model Variables

These variables indicated by the UTAUT were reviewed and presented to determine the behavioural intention (BI) on the use and ownership of the smartphone by students (Venkatesh *et al.* 2003).

Performance Expectancy

According to Wang, Wu and Wang (2009:95) five constructs are suggested from the existing model to capture the concept of performance expectancy. Which are perceived usefulness (TAM and C-TAM-TPB), internal motivation (MM), and job fit (MPCU), relative advantage (DIT), and outcome expectations (SCT). Performance expectancy is the level of an individual user who believes that using the smartphone for learning will help in enhancing his/her performance (Abdulwahab & Dahalin 2010:269). This building part of the UTAUT was reported as more important in all measurements despite environmental settings.

Effort Expectancy

Three constructs from different models relate to effort expectancy: perceived ease of use (TAM), complexity (MPCU), and ease of use (IDT). The critical determinant of behavioural intention in the early stages of mobile learning is effort expectancy (Wu, Tao & Yang 2008:921).

The Influence of Rural Socio-Economic Measures

Socio-economic measures representing a developing country are the wealth, income, expenditure, education and housing conditions (Doocy & Burnham 2005:2). Social and economic influences are key in shaping one's use of new

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technologies. Three constructs from the models capture the concept of social factors: subjective norms (TRA, TPB and C-TAM-TPB), socio-economic status (MPCU), and image (DIT) (Wu *et al.* 2008:930). The perception is that the individual user believes that s/he should use smartphone technology for learning, and it is important. The social influence construct has the most facts and ideas from six theories/ models used (Abdulwahab & Dahalin 2010: 269).

Self-Management for Learning

This is the degree to which an individual feels s/he is self-disciplined, and can engage in autonomous learning using the smartphone devices. Since mobile learning is defined as learning using the mobile devices, it is expected that a person's level of learning using the smartphone will have a positive impact on his/her behavioural intention on self-management for learning through mobile learning (Wang *et al.* 2009:100).

Behavioural Intention

The behavioural construct has a direct impact upon the individual's actual use of technology. This construct originates from the TRA. The technology acceptance model is the key standard in user acceptance research owing to its importance in information management, so behavioural intention is introduced to the Management Information System (MIS) through the TAM (Abdulwahab & Dahalin 2010:270).

User Acceptance

In this study the ownership and use of the smartphone as a potential tool for students' learning was used as the indicator of user acceptance, as it is quite a challenge to have data about the actual usage (Abdulwahab & Dahalin 2010:271). In undertaking the theory of market research and the theory of consumer behaviour about smartphone use as a potential tool in HE institutions, new opportunities are spotted in supporting students' learning environments, processes and activities on campus (Lamb, Hair, McDaniel, Boshoff & Terblanche 2008).

Research Questions

- How has smartphone use affected students' way of learning at an HDU?
- What access to smartphones do students at an HDU have?
- What smartphone capability or function enhances students' learning at an HDU?
- How do students' use a smartphone with functionalities to make learning enhancement feasible at an HDU?
- How many students' at an HDU possess a smartphone to enhance their learning?

Methodology

The study is a descriptive study observing a subset of students from poor socioeconomic backgrounds at an HE institution. It targeted postgraduate and undergraduate students from all faculties at HDU. The HDU is one of South Africa's so-called 'historically disadvantaged universities', located in a remote rural area of KZN, with a number of students, most of whom are from least advantaged backgrounds with low socio-economic status. A cross-sectional research design was conducted by assessing variables of interest in a sample once, and applying the results of to the population. Quantitative method was used. Quantitative researchers seek statistical perceptions, the collection of facts, and relationship of one set of facts to another (Bell 1999).

The investigation focused on the use and ownership of the smartphone at an HDU as a potential tool to enhance students' learning. Geographical parameters were strictly limited to students from the main campus four faculties: Education; Commerce, Administration and Law; Science and Agriculture; and Arts. A stratified random sampling method was used. The study sample was divided into strata of postgraduates and undergraduates from all faculties. Table 1 represents the population from which the sample size was drawn. Table 2 represents the sample size of the investigation. 386 students were taken from the population of 14 687 as study respondents.
Study Context and Sample

Faculty	Postgraduate Students	Undergraduat e Students	Total
1. Arts	425	4 112	4 537
2. Education	323	5 103	5 426
3. Commerce, Administration and Law	75	2 771	2 846
4. Science and Agriculture	337	1 541	1 878
Total	1 160	13 527	14 687

Table 1: Student Population at an HDU (2010)

Source: HDU website (2010).

A 95% confidence level was used, which resulted in a risk estimate of 5%. At 95%, the response distribution is 50%. The formula to calculate the sample size is:

$$n = x^2 NP (1 - P) / d^2 (N - 1) + x^2 P (1 - P)$$
 (Krejcie & Morgan 1970)

n = required sample size

 x^2 = the table value for 1 degree of freedom at the desired confidence level

N = the population size

P = the population proportion (assumed to be 0.50 since this provides the maximum sample size)

 d^2 = the degree of accuracy expressed as a proportion of 0.05 (Krejcie & Morgan 1970).

Faculty	Postgraduate Students	Undergraduate Students	Total
1. Arts	11	108	119
2. Education	8	134	142
3. Commerce, Administration and Law	2	73	75
4. Science and Agriculture	9	41	50
Total	30	356	386

Table 2: Sample Size

Data Collection

Secondary data was collected by means of a literature search, and examining theories underpinning the UTAUT model. They provided the investigation on how smartphone use has changed students' behaviour and performance levels. The literature searched was focused on how students at HE institutions view the use of smartphones. The literature revealed that students' viewed the smartphone as a potential tool to enhance their learning irrespective of the location of the institution (Yu & Conway 2012:832).

A structured questionnaire with closed-ended questions was used to collect data from the participants of the study. Each participant was asked the same questions. The questionnaires used had three sections, requesting data on biographical information, students' opinions and experience on smartphones as a potential tool to enhance their learning. The questionnaire was distributed to all faculties and was distributed to the respondents from 08h00 to 16h00 for a period of two weeks.

Data Analysis Techniques

Data collected was quantitative in nature, summarised in tables. SPSS package was used for calculating and analysing descriptive statistics. According to

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Babbie (1992), the binomial test is an exact test of statistical significance of deviations from a theoretically expected distribution of observations into two categories. This test was used to determine whether there is a significant difference between the number of smartphone users and regular cellular phone users.

The following definition was noted when interpreting the results of the statistical analysis since large sample statistics have relatively small variances: Statistical significance is concerned with whether a research result is due to chance or sampling variability; practical significance is concerned with whether the result is useful in the real world (Kirk 1996:5).

Findings

Data collected from the respondents' biographical information were used for classification such as gender and the mobile phone type. Data were reported through tables. The Table 3 question was answered by 386 respondents. Of the 385 respondents, 195 (50.6%) were male and 190 (49.4%) were female. Wang *et al.* (2009:102) use gender and age as determinants to investigate the acceptance and adoption of mobile learning. Compare the study on by Nonyongo *et al.* (2005) at UNISA.

	Frequency	Percent
Female	190	49.4
Male	195	50.6
Total	385	100.0

Table 3 Gender distribution of the sample

The use of mobile phones in all age groups has been increasing and the majority of the respondents falls in the youth category (Wang, Wu & Wang 2009:102; Nonyongo *et al.* 2005:4). Ninety eight percent of the study sample falls in the youth category, which is the age 18-35.

	Frequency	Percent	Cumulative Percent	
<=18	25	6.5	6.5	
(18-20]	57	14.8	21.3	
(21-23]	121	31.4	52.7	
(24-26]	79	20.5	73.2	
(27-29]	55	14.3	87.5	
(30-32]	27	7.0	94.5	
(31-33]	12	3.1	97.7	
(34-36]	5	1.3	99.0	
36<	4	1.0	100.0	
Total	385	100.0		

 Table 4 Age distribution of students

Table 5 illustrates the respondents' faculties where they are registered. According to Bakon and Hassan (2012), the researchers collected data from a wide range field of study and different levels of study for investigating the perceived value of the smartphone on HE students in Malaysia. The largest percentage of respondents per faculty of the study sample indicated that 36.9% of users of mobile phones are from the Faculty of Education.

	Frequency	Per cent
Arts	118	30.6
Education	142	36.9
Commerce, Administration &	75	19.5
Law		
Science & Agriculture	50	13.0
Total	385	100.0

Table 5 Distribution of students by faculty

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The respondents were asked to indicate their degree level, shown in Table 6. The largest percentage of respondents of the study sample is 89.6%, which indicated that more users of mobile phones were undergraduates. Woodcock *et al.* (2012:5) use an in-depth online survey in sampling different faculties for considering the smartphone learner at the university. The present study uses undergraduate and postgraduate students' interest in the use of personal technology to enhance learning. This response indicates that the study sample was dominated by undergraduates as they are the majority of students on campus.

	Frequency	Percent
Undergraduate	345	89.6
Postgraduate	40	10.4
Total	385	100.0

Table 6 Distribution of students by degree level

Table 7 indicates the current type of mobile phone students are using. The largest percentage of respondents of the study (56.88%) indicated that there are more users of smartphones than the 43.12% who are regular cellular phone users. This result showed that the majority of students are moving towards owning a smartphone rather than a regular cellular phone. Analysing non-users and users of smartphone applications is what really drives the intention to use a smartphone app and features across users and non-users (Verkasalo *et al.* 2010:242). This is to be expected since the price of the product is decreasing, and a wide variety of models becoming available.

The binomial test was used to determine whether there is a significant difference between the proportion of smartphone users and regular cellular phone users (see Table 7). For the research, questions constructed and tested were as follows:

- 1. How has smartphone use affected students' ways of learning at an HDU?
- 2. To what extent do students have access to smartphones at an HDU?

3. What smartphone capability or function enhances students' learning at an HDU?

The results for the main objective of the study in Table 7 indicate that the study sample is concentrated on smartphone users rather than regular cellular phone users. According to the associative test results on mobile phone capabilities and mobile phone type users, regular cellular phone users commented on smartphone capabilities as enhancing learning more. The ownership and use of smartphones were higher than the ownership and use of regular cellular phones.

Table 7 Results on the Proportion of Smartphone and
Regular Cellular Phone Users

Test Result	Category	Ν	Observed Prop.	Test Prop.	P-value (2-tailed)
	Smartphone	219	.57	.50	.008
Phone Type	Regular Phone	166	.43		
		385	1.00		

The p-value of 0.008 indicates that there was a difference between the proportion of smartphone users and regular cellular phone users at the 5% level of significance. Smartphone capabilities drive the use and owning of the smartphone that is mobile Internet (Verkasalo *et al.* 2010:242). The developments and improvements of the smartphone by product designers induce consumers to move towards owning one.

The main study objective was reached, and research questions were formulated and tested using the binomial test. The findings confirmed the alternative hypothesis that smartphone users surpass regular cellular phone users (Mokoena 2013). These findings confirmed that the availability of smartphones is greater than the availability of regular cellular phones.

The proportion of smartphone and regular cellular phone users was analysed. The study findings revealed that the study sample was dominated by smartphone users. Students regarded smartphones as a useful tool for their learning. Even the regular cellular phone users regarded the smartphone capabilities as useful functions for students' learning (Mokoena 2013).

Conclusion

This paper has investigated smartphone use and ownership as a potential tool to enhance students' learning at 'Unizulu' as a poorly resourced HE environment. Most studies of this nature (Nonyongo *et al.* 2005; Bakon & Hassan 2013; and El-Hussein & Cronje 2010) have been outlined in distance learning and urban universities, but not in a rural residential university with students of a poor socio-economic background. The results indicated that there are more smartphone users than regular cellular phone users. Students have access to the right potential tool to enhance their learning at 'Unizulu'. This investigation has laid a foundation to implement mobile learning at rural residential universities inasmuch as the study results indicated that the majority of students own the right potential tool to enhance their learning.

Ally's study (2009) indicates an increase of smartphone use across different sectors of education in developed and developing countries. The supply of mobile handset devices using the Android Operating System surpasses the shipment of any kind of telecommunication technology devices in 2014 (Lunden 2014:1). This has indicated an increase in smartphone availability worldwide in developing and developed countries. Sarwar and Soomro (2013:223), in studying the impact of smartphones on society state that they are beginning to be a norm in the society: consumers are in the process of moving away from regular cellular phone use. Even in resource-poor HE in SA, the results found that the majority of students are smartphone users rather than regular cellular phone users.

Most of the literature reviewed acknowledged that smartphone technology has the potential to enhance students' learning at university (Yu & Conway 2012; Jones & Edwards 2009; Nonyongo *et al.* 2005; M-Learning Conference 2004). At the University of Bath in England students recommend the smartphone texting service as a powerful tool that works as a reminder about work to be done, important deadlines and administrative changes on campus.

This investigation contributes to the body of knowledge for smartphone use in an HE environment, specifically in rural residential universities in developing countries such as South Africa. The study revealed that even in rural residential universities with students from a poor socioeconomic background, the majority of these students are smartphone users rather than regular cellular phone users. This indicates that the transition to smartphone use is growing fast even in HDUs located in developing countries Students' Use of Smartphones at a Historically Disadvantaged University

of Africa. This indicates the potential growth of developing countries' higher education resources can be built on the foundation of technological integration in areas of rural development. The literature also provided models and theories used in understanding technology acceptance by consumers in a variety of training settings.

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Hands-on Postgraduate Research Proposal Design

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Abstract

The purpose of this article is to provide an account of empirical research among postgraduate first-time researchers regarding what skills are required to develop sound quality research proposals. The authors identify challenges that novice researchers encounter when designing their research proposals. The first of these challenges is to design a problem statement. The second challenge is how the researcher identifies an appropriate theoretical framework that is compatible with the problem set under investigation. This contribution also explains how the matrix method of literature review could be used ensure a review only references that relate to the problems under investigation.

Keywords: word quality, difficulties, research proposal, University, design, challenge, writing skills.

Introduction

This article provides background information that novice researchers could use when writing a research. The common mistakes and challenges students encounter during the process of designing the research proposal are identified (Simelane 2015). Writing a research proposal is a source of anxiety for most students according to Onwuegbuzie (1997) who argues that many students feel lost in face of the novelty of the research process, by being pressured by time restrictions and stressed by the forthcoming evaluation of their work.

Problem Statement

The need for this study is apparent with all the queries from postgraduate students for formatting good proposals. Sharts-Hopko (2000) argues that to start analysing the context for postgraduate research proposals, researchers also need to keep in mind the levels of knowledge and expectations of their eventual readers, as well as the general expectations for content, layout, and the format of academic discourse in their particular discipline.

Some researchers neglect to link their area of research interest to their problem statement when designing the research proposal (Simelane 2015).

According to Kate and Cadman (2002) in preparing one's research proposal, there are several easily neglected areas to which students need to pay attention during research design:

- Intellectual property rights;
- Authorship;
- Ethical clearance;
- Financial implications;
- Availability of data; and
- Access to data and materials.

Common mistakes in research design include failing to cast a broadenough net within the scope of one's problems analysed - that is, not reviewing all of the important studies that relate to the problem set that one intends to solve. Boscolo, Arfe and Quarisa (2007) describe an intervention aimed at improving the quality writing beliefs about academic writing and discuss the effect on student ability to produce written syntheses of multiple sources.

Bruce (2006) argues that while students are still developing their own understanding of research problems literature is commonly seen as a written discussion of current theory and access to previous investigations. At the end students are trying to create a linear argument that takes the reader from knowing little about one's topic to a point where the reader wants to do the project more than anything in the world.

According to Martin and Fleming (2010) researchers should provide details of all data collection instruments used in their research, including sound and video recordings, literature reviews, questionnaires, interview schedules, observation techniques. Tas (2010) notes the importance of using clear, understandable English, not only for grammatical discourse, but also reveal how these modes of discourse changed over time. She argues that academic writing is not merely a linguistic process, but also a socio-political process in which writers claim power during discourse.

Literature Review

The following keywords have been extracted from the above general problem statement: quality, difficulties, research proposal, design, challenge and strategically research proposal were used to search for articles. Search resources such as Google, Google Scholar, Science Direct and Duckduckgo were utilised as search terms to identify problems that relate to the problem under investigation.

Common Mistakes

According to Heath and Tynan (2010), the following common mistakes are made when designing a research proposal: Lack of ideas or too many ideas; Ideas that are not feasible to research or that will not add to existing knowledge; it may not be clear about what is the problem or issue to for research; it is not always clear about, about the rationale for the research; identification of the problem to research comes too late in the text as well as failure to identify key studies and concepts; insufficient explanation of the claims is made lack of integration of contributions on particular themes and lack of critical analysis; and use of other authors' ideas without proper references (plagiarism).

According Heath and Tynan (2010), the following mistakes a student make are: failure to provide the proper context to frame the research question; failure to delimit the boundary condition for the research, and other researcher failure to name landmark studies; failure to accurately present the theoretical and empirical contribution by other researchers; too much time reading before starting to write; failure to develop a coherent and persuasive argument for the proposed research, and too much detail on minor issues, but not enough detail on major issues.

Understanding the common mistake in design the research proposal can help the researcher to (Heath & Tynan 2010) critical or strategically eliminate his or her own mistake. This is to try and eliminate the mistake of designing a quality research proposal. Swales and Feak (1994) state that academic writing for students is still consistently pragmatic in both the ways it can be used as a reader and in the way that lecturers can use it as a reference for teaching the micro and macro organisation of texts.

Introduction and Conclusion of the Proposal

The importance of the proposal introduction is to show the audience where the project will sit within the broad picture of the subject and the discipline (Cadman 2002). It is important to place the study into context while addressing these issues. It could be of benefit if the student shows how s/he has collected theory (articles) and what the problem is that would be addressed. The strength of the proposal will be present in the presentation of the research question(s).

Parker and Steeves (2005) state that a proposal should start with a brief introduction, introducing the problem to be studied and an overview of the importance of the problem and then end the section with the specific aims. These aims are important and will help with setting the research questions and hypotheses (if any). Sharts-Hopko (2000) argues that a review of past issues will demonstrate the breadth of topics and that the design of a study should be an iterative one and not a linear one.

Research Methodology, Literature Review and Results

The choice of methodologies is widening (Cadman 2002) and the students will improve their work the world of good by showing a research question and the link to the approach that will be used (Klopper & Lubbe 2011). The modern tendency is to concentrate on research questions. A research question is vital because there are approaches that can be taken that a vague question will mislead the methodology (Cadman 2002).

Each word written must be carefully considered because the proposal is a promise what the research will do (Parker & Steeves 2005). A section of the proposal called background and significance may be used to justify and explain the wording in the aims. The section should conclude with a statement explaining how the current gaps in the field could be filled. The entire proposal should reflect the specific aims. Also, the literature review should be critical showing the students included all relevant literature, critically reviewed it and synthesised the key studies (Parker & Steeves 2005). The student should highlight any controversies. A stand should be taken on a well-stated rationale. The question has always been asked should students start with a theory and end with a theory. There is no standard answer to this.

Parker and Steeves (2005) state that the methods section depends on the work that the students had done previously. There should be an estimate of the sample size and whether the work will be empirical, quantitative. Fahy (2008) argues that the debate should be regarded as a formal method of taking a position and arguing what students want the people to believe. Heath and Tynan (2010) state that sometimes the literature review is incorporated into the introduction section. However, most academics prefer a separate section, which allow a more thorough review of the literature. The literature review serves several important functions: ensure that students are not reinventing the wheel, give credits to those who have laid the groundwork for the research, demonstrates the understanding of the research problem, demonstrates the understanding of the theoretical and research issues related to your research question, provide new theoretical insights or develop a new model as the conceptual framework for research. Bruce (2006) argues that a literature review is a long-standing tradition in research and scholarship. A literature review is used as a database report of primary or original scholarship and does not report new primary scholarship itself.

The Matrix Method of Literature Review and Research Phases Alignment

Klopper and Lubbe (2012) propose that researchers could use two types of matrices as conceptual scaffolding at the beginning of a problem-solving research project when data-driven empirical solutions are sought to problems under investigation.

The first type of matrix is the problem-research question alignment matrix used to ensure that the sub-problems that are identified in problem statements are properly aligned with the research questions that the researcher poses and further develops in more detailed research questions in questionnaires or interview schedules to ensure viable empirical results.

The second type of matrix is the concept matrix used to present a concept-centric rather than an author-centric literature review, thereby ensuring that one's literature review does not become a subjective process of stitching together a patchwork quilt of references, or the unilateral cherry picking of references that supports a preferred point of view. The use of matrices in research is innovative rather than novel, for matrix analysis integrates and align existing isolated methods proposed by other researchers into a single, powerful, integrated research methodology. By integrating separate methods into an integrated methodology researchers, particularly novice researchers are provided with powerful, practical tools to plan research, to obtain a prospective eagle's-eye perspective of the whole process from the research design phase to the final phase when researchers are able to evaluate the extent to which they have been able to solve the research problems that they have identified.

The Research Proposal The Uses of Research Proposals

Heath and Tynan (2010) discuss the process of producing a research proposal and the sections appropriate for such a document. Additionally, they raise some questions that will help researchers to assess the quality of their proposals. They concluded by presenting a table summarising the main problems found in the various stages of developing a research proposal, and ways to deal with them.

Balakumar, Inamder and Jagadeesh (2013) argue that the purpose of a research proposal is to produce a template of common understanding from which tasks are allocated, divided and discussed by researchers, clinical staff and in some cases, research participants. The finished product is used to communicate intent to ethics committees and grant funding bodies before authorisation is granted and research funds are awarded. Denscombe (2013) states that research proposals have a well-established place in business and management education. At masters and doctoral level students either have to write research proposals research methods course, or in preparation for a dissertation or thesis to be earned by means of independent research.

The Step Model of The Research Proposal

Martin and Fleming (2010) argue that constructing the proposal is a challenging process. It is, nevertheless, a critical part and should be given

careful consideration since it provides logic and structure to the envisaged study. A research proposal follows a set of sequential steps that provide structure to the prospective study. It is a written submission which spells out the design of the intended research project. An example of a generic template for writing a research proposal is presented.

Martin and Fleming (2010) argue that the successful research proposal should include the following steps which are given the research proposal a title, Provide relevant personal and professional details, Provide a short abstract or summary of around 300 words, Supply six keywords to describe the research proposal, Contrast an introduction that contains a rationale and relevant literature review, State the aim, research question, sub-questions and hypotheses or null hypotheses of the proposed research study, Outline the research methodology, Select setting, participants, sampling method, inclusion or exclusion criteria and method of recruitment, Describe data collection instrument, Detail intended data processing and analysis, Declare any ethical considerations and outline data protection procedures, Produce a timetable and consider potential problems, Estimate resources that may be required, Append relevant additional material and Append key references. Craig, Plume, McVeigh, Pringle and Amin (2007) emphasises the importance of open access (OA). This is taken broadly to mean that accessing, downloading, and reading material is free to the entire population of Internet users, several options for the provision of that access have emerged and it good initiative for designing the research proposal.

Research Questions

The following research questions were explored in this study because the literature did not solve the full problem statement:

- 1. What are the current challenges that researchers are faced with when it comes to drafting a good research proposal?
- 2. How does the researcher show the ability to formulate a research proposal?
- 3. What determine the quality of the good research proposal?

Research Plan and Methodology

This study was quantitative in nature, and was conducted by means of a survey that made use of a structured questionnaire. The study may contain reference to a general objective to identify challenges when designing a quality research proposal. It will address issues to design a quality research proposal, and also the matrix that may be used to design a research proposal. This study therefore focused on collecting information that could be used.

Data Analysis

The respondents for this study were the post graduate students in the Faculty of Commerce in the Departments of Business Management and Economics. The respondents were deemed representative of postgraduate students for the purpose of the study. The research used a random sampling method to analyse the critically challenge of research proposal. The population was 34. The data instrument that was used is a questionnaire that helped to collect primary data from the students. The questionnaire contained 5 sections.

Results and Evaluation

The research questions used to collect the data are: What are the current challenges that researchers are faced with when it comes to drafting a good research proposal? How does the researcher show the ability to conduct the proposed research proposal? What determine the quality of the good research proposal? This research questions will be used to improve the level of designing the research proposal.

The respondents for this research are the post graduates in the Faculty of Commerce in the Departments of Business Management and Economics. The research used a random sampling to analyse the critically challenge of research proposal. The population was (34) for the post graduates. The data instrument used is a questionnaire to collect data from the respondents. The questionnaire contained 5 sections. The following section will be the interpretation of the data.

Demographic Data

Eighty five percent of the sample falls in the age group 21 - 30 years and rest in the 12 % of the sample falls in the age group 30 - 40 years. This means that older students may be able to demonstrate a better approach to research because they should be able to motivate their arguments using experience the may have picked up previously. Most of the respondents were male (65%). This means that there are more male postgraduate students. Most of the respondents who are doing postgraduate studies at the Faculty of Commerce have been at university for 3- 6years. This shows that students will have experience about what system to use in their research.

Figure 1, on the next page, shows that the majority are doing B.Com Honours in Management (44 %) followed by B.Com Honours in Economics with 23 %. This means most of the respondents in this research come from Business Management. It is clear that a researcher in business management face challenges when it comes to designing a quality research proposal.



Figure 1: Type of qualifications of the respondents.

The Challenges that Researchers Face When Designing a Good Research Proposal



Figure 2: Is the student able to design the problem statement at the Honours level

Figure 2 shows that the majority of the respondents are facing challenges when designing their research proposals. One of the problems is gaining access to data sources using search engines such as Google, GoogleScholar, ScienceDirect, Duckduckgo. This result shows that some of the students face a problem of designing a proper problem statement. This means that supervisors could provide more assistance in writing a problem statement. Each word must be considered carefully because the proposal is a promise what the research will do (Parker & Steeves 2005).

Figure 3 shows that the majority of the respondents are facing the challenge of accessing research material in general. As a result designing the research proposal can be time consuming. This means that there should be enough time gives to complete the research proposal. Developing an understanding of an issue, identify, reading and summarising the relevant literature and developing the student's own perspective on the problem are time consuming. The researcher should have enough time to design a quality research proposal. According to Heath and Tynan (2010), too much time reading before starting to write, failure to develop a coherent and persuasive argument for the proposed research, and too much detail on minor issues, but not enough detail on major issues is a problem.



Figure 3: Is the time frame to complete the research proposal appropriate?



Figure 4: The attitude researchers to designing a research proposal?

Figure 4 demonstrates that the majority of the respondents have the right attitude to design the research proposal. Writing a research proposal is a source of anxiety where it can prevent the researcher to design a research proposal for students (Onwuegbuzie 1997). Students may feel lost in face of the novelty of the process, pressured by time restrictions and stressed by the forthcoming evaluation of their work. Under these circumstances the researcher may still have the attitude to do a research proposal.



Figure 5: When designing a research proposal the student shows fear of application of research knowledge?

Figure 5 shows that the majority of the respondents have feared their application of research knowledge. The result was that some of the respondents disagree that researchers have the enthusiasm to design a research proposal. Students may fear research because they cannot work independently on a research proposal. Heath and Tynan (2010) argue that researchers fail to acknowledge landmark studies and the use of other authors' ideas without proper references (plagiarism).



Figure 6: Do researchers prefer resources such as books, dissertations, journals, as source for a good research proposal.

Figure 6 shows that the majority of the respondents agreed that quality research proposal depend on the initiative such as open access (OA). Furthermore, it was clear that good resources such as books, thesis and dissertation, journals, etc determine a good quality research proposal. This means that academic resources are helpful to the researchers and prove to be a mode to gain in-depth knowledge. This is essential because of the fact that case studies are available for students to base research on when it comes to an academic journal. As a researcher, students can make use of case studies to test a statement. An in-depth analysis can be reached with its help.

Heath and Tynan (2010) argue that to demonstrate the understanding of the research problem, researchers should demonstrate the understanding of the theoretical and research issues related to the research question. They can provide new theoretical insights or develop a new model as the conceptual framework for research. Academic journals also help researchers to exercise fluent writing. After all, as a student, one got their own thoughts and ideas to express and that can only find fruition when one has been given the scope to write freely.



Figure 7: Have you considered the ethical implications of your study

Figure 7 show that the majority of the respondents agreed that researchers should consider ethical implications while designing a quality research proposal. Atherton and Iain (2010) argue that important issues about how the process of applying for ethical permission should be viewed as more

than a bureaucratic exercise. The reality is that doing research ethically remains a challenge.

According to Sharts-Hopko (2000) in preparing the research proposal, there are several areas to which students fail to pay their attention to: Intellectual Property, Authorship, Ethical Clearance, Financial Implications, Availability of and Access to Data or Materials. Heath and Tynan (2010), argue that the literature review serves several important functions: ensure that students are not reinventing the wheel, give credit to those who have laid the groundwork for their research, demonstrates understanding of the research problem, demonstrate understanding of the theoretical and research issues related to the research question, provide new theoretical insights or develop a new model as the conceptual framework for the research.

Correlation Analysis

After the empirical research was conducted, the correlation between research material and proposal is 0.565. This means that researchers are able to access study materials through academics sites like Google Scholar. As a result students at are able to write research papers. By using academic sites students can access academic journals and other similar material also giving them the scope to exercise fluent writing. According to Cadman (2002), an academic journal also helps with the scope to exercise better writing in a research proposal to place the study into context while addressing issues.

The correlation between the ethics and research proposal show 0.419, a positive association. Because this indicates that students understand the importance that they should apply ethical implications when designing the research proposal. Ethical implications involve a great deal of cooperation and coordination among many different people in different disciplines of study and institutions. Ethical standards promote the values of the research proposal and if no ethical implications are considered then it can lead to problems when doing the research proposal.

Regression Analysis

The regression between these variables is between 0.279, this means that re-

searchers experience challenges to state the area of interest on the problem statement and to develop the idea. Bruce (2006) argues that developing an understanding of an issue, identify, reading and summarising the relevant literature, and developing an own impression of the problem are time consuming and often a frustrating process. The regression between two other variables is 0.248, this means that the time frame of the research proposal is not appropriate to some researchers. This is because designing the research proposal is time consuming and it requires some processes to complete the study. Developing the idea is time consuming because some of the researchers have ideas to apply the idea on the research proposal. It is also important to know where ideas come from and how do you know if this idea is useful (Sharts-Hopko 2000). The regression between the variables the researcher is satisfied with resources such as books, dissertations, journals, etc. and the used sources for the research proposal are 0.933. This means that the resources are useful.

Answering Research Questions in Terms of Collected Data What are the current challenges that researchers face when it comes to designing a good research proposal?

Researchers face the challenges of choosing the right topic for their research proposal; the topic should hold interest for the research proposal and the context of the research. This study shows that researchers face the challenges of designing a research proposal; some of the challenges are limited access to a computer laboratory to access the online academic journals. Common mistakes in this part of the proposal include failing to cast a broad-enough net, that is, not reviewing all of the important studies. Tynan and Heath (2010) a good research proposal should persuade its readers that there is an issue worthy of research and that the researcher is sufficiently familiar with the key existing literature to do so in a meaningful way.

The critical challenges faced by the researcher when designing the researcher proposal is that some of the researchers are unable to design a problem statement at the postgraduate level. It also entail issues such as: logic of argument, well focused research questions, reading as wide and as deep as possible (theoretical framework), feasibility, critical approach to literature, understanding of current issues, aligning methodology to literature, problem statement and research questions, accuracy of English and attention to practical issues.

Sharts-Hopko (2000) states that it is also important to know where ideas come from and to be able to generate ideas when writing the research proposal. Generating ideas can be helpful to understand what the writer is writing about, when generating ideas can be helpful to design the research proposal. Heath and Tynan (2010) state that the following mistakes are made when designing research proposal: Lack of ideas (or too many ideas); Ideas not feasible to research or that will not add to existing knowledge; Not clear or not explicit about what the major problem or issue to research is; Not clear, or not explicit about what the rationale for the research is; Failure to identify key studies and concepts; and Insufficient explanation of the claims made.

How does the researcher show the ability to conduct the proposed research proposal?

Successful researchers are known for their productivity, their ability to focus, and their ability to work very hard on their studies after the empirical investigation on the research. When researchers like what they do, and if researchers have the ability and enthusiasm to do the research and to work hard surely writers will get excellent result on the studies. Researchers show the ability to construct a research proposal by working independently on the research proposal. Even though researchers experience the challenges and anxiety to design the researcher proposal they are determined to design a quality research proposal.

Most of the researchers have the ability to construct the research proposal because the results show that the majority of the respondents agree that researchers having right attitude to design the project. Writing a research proposal is a source of anxiety for students that may restrict the researchers to design a research proposal.

Onwuegbuzie (1997) argues that students may feel lost in face of the novelty of the process, pressured by time restrictions and stressed by the forthcoming evaluation of their work. Under the circumstances of time restriction and the forthcoming evaluation of work the researcher should have the right attitude to do a research proposal. According to Balakumar *et al.* (2013), anxiety is a situation-specific, negative feeling or emotional dispo-

sition. This occurs when a student is in a library setting. Symptoms include confusion, uncertainty fear, tension, helplessness, and intrusive worries which impede information seeking (Balakumar *et al.* 2013).

Even though some of the researchers experience challenges of the anxiety writes are still able to show the right ability to do the research proposal by working hard on the research project that they are assigned to accomplish. Working hard is determined by having enough resources, having the right ability to do the study and having the right attitude to work close with the supervisor of the research proposal.

What determines the quality of the good research proposal?

A quality research proposal is determined by academic references to acknowledge somebody else's work done. Turning an idea into a well thoughtout research proposal requires a number of tasks and usually calls for diverse skills such as considering the ethical implication on the research, and applying research material such as books, etc. that can lead to generate an idea in order to design the quality research proposal.

A quality research proposal is to have enough resources that will assist the researcher to design a quality research proposal, some of the useful initiatives is design for search of the information in the Internet, According to Cadman (2002) in preparing the research proposal, there are several areas to which a student's fail to pay attention to: Intellectual Property, Authorship, Ethical Clearance, Financial Implications, Availability of and Access to Data or Materials. Both historical and the current studies should be considered and need to be addressed as such, that is, a student should present the historical studies as background and show how their premises have been substantiated or revised with more current research (Boscolo, Arfe & Quarisa 2007). Analysing historical and current studies will help the researchers to analyse the literature properly.

Recommendations

Klopper and Lubbe (2012) state that to start analysing the context for a postgraduate proposal, the researcher needs to keep in mind questions about

the audience members' knowledge, values, and needs; expectations for content, layout, and format; and the circumstances in which they will encounter a proposal. The proposal writer should also answer questions about the purpose for doing this research. By considering these questions, the proposal writer analyse the context for the proposal and establish a basis for making wise decisions about what to say and how to say it (Simelane 2015).

The university should hire more postgraduate students doing masters and doctoral degrees as research assistance to assist students when writing a research proposal. This is to minimise the broad challenges facing the researcher during the course of study. In order for the Honours students to Bruce (2006) argues that the literature review is seen as a written discussion of the theory drawing on investigations previously. This is undertaken to develop an understanding of an issue, identify, reading and summarising the relevant literature, and developing their own take on the problem are time consuming and often a frustrating process.

Researchers should design the introduction strategically in order to give a brief explanation or summary of the document. It may also explain certain elements that are important to the essay if explanations are not part of the main text. Parker and Steeves (2005) state that the proposal should start with a brief introduction, introducing the problem to be studied and an overview of the importance of the problem and then end the section with the specific aims. Some of the students at the experience the challenge of language use when writing the research proposal. They should attend extra classes that will assist the students with English to write an effective research proposal (Simelane 2015).

The proposal writer should have some general strategies but there should also be specific strategies. The different sections should be written keeping these strategies in mind. The literature review should show the importance of the research area. Parker and Steeves (2005) note that there is always the problem of finding the right balance between critique and acceptance.

The university should have support offices for every department to assist honours students in terms of how about to generate the ideas when designing a research proposal. The fundamental starting idea would be a clearly formulated problem statement. In most cases these will help with the formulation of a specific research question. It also therefore limits the creation of an expected questionnaire by many of these institutions. The other problem would be to expect proposal writers to specify in advance likely results and actions that could help with this (Disney 2001).

Conclusion

This study may help to improve the level of a quality research proposal, the study also identifys the critical challenge when drafting a research proposal. Heath and Tynan (2010) state that the importance of a quality research proposal is increased further when it is used to seek funding for one's project to apply for a scholarship. According to Heath and Tynan (2010) to write a good research proposal is a demanding task and requires high calibre writing skill, organisation, and the intellectual capacity to critically to analyse and evaluate research, both other people and one's own.

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Report on the 2016 KwaZulu-Natal Pearson eLearning Pilot Project

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Abstract

Governments and institutions in Africa are increasingly turning to ICT-based solutions in order to improve the education performance of their students. Specifically, the promise of eLearning to improve and to better facilitate learning has spurred innovation towards provision of eLearning resources on mobile devices such as tablets. Tablets hold enormous potential in delivery of eLearning due to their portability and provision for multiple uses. This study aimed at understanding the efficacy of tablet-based digital content on teachers and learners and consequently, to offer recommendations for sustainable, scalable eLearning models. This report presents key findings from an eLearning research pilot conducted in 12 schools at KwaZulu-Natal province in South Africa. The results indicate that an eLearning intervention could have an impact on the learners' subject-specific skills, that teachers and learners gained digital literacy in their use of the eLearning intervention, that learners gained confidence in using the eLearning intervention and integrated various digital resources in their learning over time, that learners were sharing content more over time, that the majority of the teachers felt comfortable integrating the digital content in their teaching over time. The findings in this report would help educational leaders, content developers, technological providers and the Department of Education to make sound decisions in relation to developing and implementing eLearning interventions, especially in South African schools. Based on the findings of the eLearning research pilot, this report also presents recommendations based on pedagogy, eLearning, training, support and facilitation, implementation, hardware, partnerships and provides possible considerations for tablets in educational rollouts.

Keywords: Baseline assessment, Digital content, eLearning, eReader, ICTbased solutions, ICT knowledge, ICT capacity, Information and Communication Technologies (ICT), computers, interactive boards, Internet, laptops, mobile devices, mobile learning projects, mobile phones, project assessment, qualitative data, quantitative data, tablets, Wi-Fi routers.

Introduction

This article reports key results and conclusions about a more comprehensive pilot project related to the feasibility of introducing eLearning in KwaZulu-Natal public schools, conducted with the financial support of Pearson Education South Africa. This is an abbreviated report that publishes selected highlights of the more comprehensive in-house report written by Klopper, Mbogo and Rosen (2016). The empirical research for both projects utilised a problem solving approach to identifying problems around eLearning in KwaZulu-Natal public schools.

eLearning has been defined as learning supported or enhanced through the application of Information and Communication Technologies (ICT) (Ssekakubo, Suleman & Marsden 2011). In Africa, eLearning has grown in leaps and bounds over the past several years. The affordances of new and powerful communications technologies and their ability to create and sustain communities of learners have established eLearning in the mainstream of education (Garrison 2003). This is evident from the increasing number of eLearning conferences that are based in Africa alone, such as eLearning Africa and the eLearning Innovations Conference, and the growing number of eLearning initiatives, projects, organizations and partnerships. Further, it is claimed that in Africa's schools, old-fashioned, dusty textbooks are gradually being replaced by tablets, computers and mobile phones (Robson 2014). In addition, an emerging body of evidence strongly suggests that effective eLearning can produce promising effects. Research also seems to indicate that a more technology-rich environment delivers greater impacts (Intel 2012). Thus, education systems are looking to eLearning programs to address learning challenges and to substantially improve quality and content of their education (Olson et al. 2011).

Governments and institutions in Africa are increasingly turning to ICT-based solutions in order to improve the education performance of their

students. For example, one of the strategies that the South African Department of Education (DoE) put in place to contribute towards improving performance among students is the integration of ICT in teaching (Matshediso 2015). Further, in its 2015 five-year strategic plan, the South African Department of Basic Education (DoBE) emphasized that the integration of ICT in teaching and learning will form a part of the core strategies for developing learners and teachers who have relevant skills that match the modern needs of the changing world (DoBE 2015). Indeed, the DoBE strategic report acknowledges that access to ICT resources is no longer a nice-to-have but an urgent requirement for advancing teaching and learning (DoBE 2015).

The current research on the feasibility of introducing eLearning in KwaZulu-Natal public schools forms part of long-term research on this topic, for instance the masters and doctoral level empirical projects that were conducted under the supervision of the lead author of the current article, Klopper. See Mhlane (2007), Nkabinde (2007), Matsemela (2007), Mazibuko (2007), Majozi (2008) and Woldu (2009).

The necessity of fostering 21st century skills cannot be underplayed. Problem solving has been highlighted as one of the key 21st century key skills (Mosharraf and Rosen 2014). Problem solving was identified as the top skill that is currently needed in the workplace (*The Economist* Intelligence Unit 2014). One of the ways that problems solving skills can be fostered in learners is by training learners in digital literacy and supporting their learning using technology. In fact, studies conducted by UNISA (Bester & Brand 2013) emphasize that learners would retain more information with the help of sufficient stimulating technological content in their learning materials. Further, the study showed that in technology-rich learning environments, learners can explore new information, construct new knowledge and link theories into practice, thus maximizing their achievement.

Clearly, the promise of eLearning to improve and to better facilitate learning has spurred innovation towards provision of eLearning resources. However, most learners who are in resource-constrained environments, such as in parts of South Africa, still have limited access to computers while outside the schools. In fact, statistics compiled by Stats SA show that only 21.4% of households in SA have a computer at home and, out of that percentage, only 10.1% have an Internet connection (Matshiana 2015). Within the institutions themselves, some schools have a limited number of desktop computers than could be shared among learners. Even in a relatively well-resourced

developing country like South Africa, it is not uncommon for a school of 1,000 learners to have only one computer room with 30 PCs (Traxler & Vosloo 2014). Thus, learners still need resources that support their learning and that they could use anywhere, anytime.

Mobile Devices

The availability and flexibility of mobile devices provides an opportunity to use them as a resource to support learning. This is especially because, in developing countries, mobile devices hold enormous promise as the single ICT most likely to deliver education, and to do so in a sustainable, equitable and scalable basis (Traxler 2011). Importantly, using mobile devices to enhance the learning process as well as the learning outcome is one of the common recommendations to approach the Education For All (EFA 2015) and Millennium Development Goals. To this end, a majority of Africa's mobile learning projects focus on formal education in primary and secondary schools, with a high concentration of projects in South Africa, Kenya and Uganda (Isaacs 2012). Most of these project use mobile phones to support the improved delivery of teaching and learning within classrooms, or to promote improved learner performance in ways that consider both formal classroom settings and informal learning environments (Isaacs 2012). For example, the X-kit Achieve! Mobile application¹ was launched in South Africa in October 2014. X-kit Achieve! Mobile is an application that recognises the need for revision and practice anywhere at any time. The application covers all cognitive levels and aids learners in mastering content and application thereof. The application was piloted with Grade 8 learners at a public secondary school in Johannesburg. Results from the pilot study show that there has been significant improvement in the performance of learners in Mathematics from the time they started using the application.

Evidently, mobile devices offer the promise of a sustainable solution to supporting learners. Mobile devices include laptops, tablets and mobile phones. Tablets have recently been introduced in schools through government and private partnerships and they hold enormous potential in delivery of eLearning due to their portability and provision for multiple uses. In fact, a project conducted by Pearson in 2014 indicated that single purpose devices are

¹ http://www.x-kit.co.za/
low priority for the market with more teachers and learners claiming to intend to purchase devices with multiple uses. 17% of teachers and 20% of school learners claimed that they were planning on buying tablets in the next two years, compared to 8% of learners and 13% of teachers who claimed they would be investing in an eReader in the next two years.

Problem Statement

It is presently unknown what the efficacy of the integration of tablet-based digital content in Natural Science, Mathematics and English FAL would be to primary and secondary school teachers and learners in public schools in KwaZulu-Natal.

Research Questions

To address the research problem, two research questions were posed:

- 1. What is the efficacy of the tablet-based digital content on learners and teachers in Mathematics, Natural Sciences and English?
- 2. What are the recommendations for sustainable, scalable eLearning models for high quintile and low quintile schools?

Research Approach

The study aimed at understanding the efficacy of the tablet-based digital content on teachers and learners and consequently, to offer recommendations for sustainable, scalable eLearning models. Therefore, the first step was the identification of 12 schools in KZN to participate in the study. Before the start of the eLearning research pilot, all the participating schools entered into a Memorandum of Understanding with the Project. Of the 12 schools that participated in the study, two are quintile 5 schools, seven are quintile 4 schools, and three are quintile 3 schools. All South African public schools are categorized into five groups, called quintiles, largely for purposes of the allocation of financial resources; schools in quintile 1, 2 and 3 have been declared no-fee schools, while schools in quintiles 4 and 5 are fee-paying schools (Casey 2013). For the purpose of this study, the two schools in quintile

5 were categorized as upper quintile schools, while the ten schools in quintiles 3 and 4 were categorized as lower quintile schools. Of the 12 schools, 6 are primary schools while 6 are high schools. The learners who participated in the study were in Grade 7 and Grade 8.

The schools were outfitted with interactive boards and teachers were supplied with laptops. Teachers were trained on the usage of the interactive boards and laptops. One class was selected per school to participate in the study. The teachers and learners of these classes were issued with tablets containing digital content on Mathematics, Natural Science and English FAL. The eLearning content was provided in the form of eBooks, interactive games and videos. Additional equipment such as Wi-Fi routers were also issued. At the beginning of the study, the teachers were trained on the use of the tablets and digital content in order to make them aware of the new content and also to address and demonstrate ways to use the tablet and content in the classroom. The tablets with digital content were used in the schools from February 2015 for a full school year.

The research was conducted in two ways: (i) using baseline assessment; and (ii) project assessment.

Baseline assessment was conducted first in order to understand the preproject ICT knowledge and capacity of the schools, teachers and learners, and also in order to make comparisons after the tablets have been used. The baseline and project assessments were conducted using focus groups, surveys, classroom observations, test and improve assessments, and analysis of examination results. The baseline assessment was conducted in three ways: (a) overall pre-project status; (b) pre-project status among teachers; and (c) preproject status among learners.

- a. The overall pre-project assessment was measured along three metrics: the status of the digital infrastructure of the school; overall classroom challenges and subject specific challenges; and classroom beliefs and behaviours.
- b. Among the teachers, pre-project assessment was measured along four metrics: home technology access; digital literacy level; previous level of technology initiative; and previous technology skills development.
- c. Among the learners, pre-project assessment was measured along six metrics: home technology access; digital literacy level; day-to-day

learning tools; prior technology usage in class; peer assistance with technology; and prior digital awareness. The test and improve baseline assessment was conducted among learners and was measured along three metrics: learners per performance category; performance per summary skill; and performance by sub skill per class.

- d. The project assessment was conducted in two phases: assessment of the initial use of the digital content among teachers; and follow-up assessments of the use of the digital content among teachers and learners. The project assessment was conducted in order to address the two research questions.
- e. To address the first research question, qualitative data was collected during the initial use of the digital content by teachers in order to analyse: the implementation challenges; usage experience across the three subjects; and how the digital content was used across the three subjects. Further, quantitative data was collected in order to analyse the frequency of use of the digital content across the three subjects.
- f. To address the first research question, qualitative data was collected during the follow-up digital content use by teachers in order to analyse: confidence with the digital content; current level of technology initiative; current technology skills development; teacher user experience across the three subjects; barriers to use of the digital content; how the digital content was used across the three subjects; impact of the digital content on the teaching style; how teachers collaborated and shared content; and teachers' perception on the use of the tablets and digital content. Further, quantitative data was collected in order to analyse the frequency of use of the digital content across the three subjects.
- g. To address the first research question, qualitative data was collected during the follow-up digital content use by learners in order to analyse: what learners liked and disliked about the tablets and the digital content; which eLearning programs were used across the three subjects; how the eLearning programs were used; and use of the digital content in class. Further, quantitative data was collected in order to

analyse: learners' perception on the use of the tablets and the digital content; test and improve follow-up assessment; and examination results among learners who used the tablets and learners who did not.

In summary, the findings from the qualitative and quantitative data were analysed in order to answer the two general research questions:

1. What is the efficacy of the tablet-based digital content on learners and teachers in Mathematics, Natural Sciences and English?

In order to address this research question, four sub questions were posed:

i. How did the teachers and learners experience the implementation of the tablet-based digital content?

To address this research question, an analysis was conducted to understand: the implementation challenges; teacher and learner usage experience across the three subjects; barriers to use of the digital content; and what learners liked and disliked about the tablets and the digital content.

ii. How did learners and teachers' access and use the digital content?

To address this research question, an analysis was conducted to understand: how the digital content was used across the three subjects; the frequency of use of the digital content across the three subjects; which eLearning programs were used across the three subjects; how the eLearning programs were used; and the use of the digital content in class.

iii. What was the effectiveness of the digital content in assisting the teacher to deliver the curriculum timeously?

To address this research question, an analysis was conducted to understand: confidence with the digital content; current level of technology initiative; current technology skills development; impact of the tool on the teaching style; how teachers collaborated and shared content; teachers' perception on the use of the digital content; and learners' perception on the use of the tablets and the digital content.

iv. What was the standard of learner achievement and competency in terms of subject-specific skills and ICT skills?

To address this research question, an analysis was conducted to understand: test and improve follow-up assessment; and a comparison of examination results between learners who used the tablets and learners who did not.

2. What are the recommendations for sustainable, scalable eLearning models for high quintile and low quintile schools?

Analysis of the results that addressed the first research questions led to recommendations based on pedagogy, eLearning, training, support and facilitation, implementation, hardware, infrastructure, and suppliers, which addressed the second research question.

Research Design and Evaluation

In this section, the research design used in the eLearning research pilot is discussed by first describing the study participants. Thereafter, the data collection methods are described, followed by a discussion on the criteria used to address the research questions in the baseline assessment and the project assessment. The results from the study are presented in section 3.

Study Participants

Participants in the study were learners in Grade 7 and Grade 8 from 6 primary schools and 6 high schools, respectively, and teachers from these 12 schools. The 6 primary schools were: Isidingo Primary; Isikhwelo Primary; Ndongeni Primary; Sekalani Primary; Glenwood Preparatory; and Cwebeleza Senior Primary. The 6 high schools were: Zwelibanzi Secondary; Mqhawe Secondary; Nkosibumvu Secondary; Velabahleke Secondary; Durban Girls High; and Menzi Secondary. The schools were categorized according to quintiles. For the purpose of this study, the two schools in quintile 5 were categorized as upper quintile schools, while the ten schools in quintiles 3 and 4 were categorized as lower quintile schools. Table 1 shows the 12 schools that participated in the eLearning research pilot from February to October 2015.

School	Quintile
Isidingo Primary	4 (lower quintile)
Isikhwelo Primary	4 (lower quintile)
Ndongeni Primary	4 (lower quintile)
Sekalani Primary	4 (lower quintile)
Glenwood Preparatory	5 (upper quintile)
Cwebeleza Senior Primary	4 (lower quintile)
Zwelibanzi Secondary	4 (lower quintile)
Mqhawe Secondary	3 (lower quintile)
Nkosibumvu Secondary	3 (lower quintile)
Velabahleke Secondary	3 (lower quintile)
Durban Girls High	5 (upper quintile)
Menzi Secondary	4 (lower quintile)

Table 1: Twelve schools that participated in the eLearning pilot project

Data Collection Methods

Test-And-Improve Diagnostic Assessment

Test and improve is a Pearson diagnostic assessment tool used to identify subject-specific skill gaps. It was used as a tracking measure during the study in the three subject areas in order to understand the impact the eLearning solution had on learner performance. The test and improve baseline assessment was administered in March to learners in the classes that received the eLearning solution and to some learners in the classes that did not receive the eLearning solution.

The test-and-improve follow-up assessment was administered in October to a sample of learners in the classes that received the eLearning solution and to a sample of learners in the classes that did not receive the eLearning solution. The results of the test and improve assessments were shared with the relevant teachers. The aim of this was to empower the teachers with the knowledge of the gaps that exist in the subject and also to inform the teacher of the progress being made by learners using the eLearning solution.

Focus Groups

Focus groups were conducted with both teachers and learners in order to assess: teachers' and learners' experience with the tablet and the digital content; and teachers' and learners' confidence and subject skill. Each focus group was conducted by a Pearson and Maths Science Africa representative and lasted between one and one and half hours. Table 2 and Table 3 show the number of teachers and learners, respectively, who participated in the focus groups and completed the surveys from March to October 2015.

Table 0: Number of teachers who participated in the focus groups and completed surveys

Period	Total number of teachers in focus groups	Total number of teachers who completed survey	Participating Schools
March 2015	14	14	All 12 schools
July 2015	14	14	All 12 schools
October 2015	8	16	All 12 schools

Table 2: Number of learners who participated in the focus groups and completed surveys

Period	Total number of learners in focus groups	Total number of learners that completed survey	Participating Schools. (<i>n</i> = the number of learners that completed the survey per school)
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May 2015	32 (2 groups of 8 Grade 8 learners and 2 groups of 8 Grade 7 learners)	524 (252 in Grade 8 and 272 in Grade 7)	Glenwood Primary $(n = 31)$ Cwebeleza SP $(n = 31)$ Isidingo Primary $(n = 62)$ Sekalani Primary $(n = 37)$ Isikhwelo Primary $(n = 53)$ Ndongeni Primary $(n = 58)$ Durban Girls High $(n = 26)$ Mqhawe Secondary $(n = 20)$ Menzi Secondary $(n = 53)$ Nkosibumvu Secondary (n = 42) Velabahleke High $(n = 53)$ Zwelibanzi Secondary (n = 58)
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32 (2 groups 8 Grade 8 learners and 2 groups of 8 Grade 7 learners)
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Paper-based Surveys

The learner survey contained three parts: demographic information that asked about the school, gender, and age; self-rated digital literacy and ownership of electronic devices; and feedback on the use of the digital content. The teacher survey contained three parts: name of school and teaching subject; use of electronic devices in the classroom; use of the digital content; and feedback on the use of the digital content; and feedback on the use of the digital content; and feedback on the use of the digital content; and feedback on the use of the digital content. Table 2.2 and Table 2.3 show the number of teachers and learners, respectively, who completed the surveys from March to October 2015.

Classroom Observations

The lead author did classroom observations as part of teams of Pearson and Maths Science Africa representatives during class sessions. The aim of the classroom observations was to add context to the teacher and learner findings from focus groups and surveys.

Examination

June examination results from a sample of project schools were analysed to compare the performance between the tablet and non-tablet classes.

Equipment and Support

Materials Used

The learners and teachers were issued with Android tablets (Lenovo Idea Tab A7600). The eLearning content was provided in the form of core eTextbooks (Platinum Range); curated digital assets (including games, videos, listening texts and self-marking revision activities); and practice and revision resources (selected X-Kit Achieve! study guides in eBook format, Access to X-Kit Achieve! Mobile quizzes for Mathematics, Natural Science and English for Grade 8, and Smart Kids Interactive Mathematics Grade 7 workbook). In addition, the learners were also issued with headphones, printed lessons plans, access to Longman-HAT Language portal, and eReaders on Platinum English FAL for Grade 7 and Grade 8. Wi-Fi Routers were provided to the schools in partnership with Vodacom.

Each school also received a hardcopy set of the Platinum Learners Books for Natural Science, English and Mathematics together with access to Bounce pages that provide for learning beyond the classroom by providing access to select video content.

Security Provided to Schools

Figure 2.2 shows some of the security features provided in the schools to support the eLearning research pilot. Charging trolleys stored in a school's strong room and burglar bars were installed. This project took the security of learners and staff into account before deploying the devices to schools. Thus, it was agreed with schools that tablets would not be taken home but rather left on the school premises. Pearson and Maths Science Africa worked with schools in upgrading security and identifying secure areas for storing hardware. Of the 655 devices deployed to schools 2 devices have been stolen and 1 device was reported broken over the period January 2015 to October 2015. Hence, only 0.5% of the issued devices went missing or stolen. This shows that the security measures that were put in place to secure the devices and equipment were successful.

Additional Support Provided To Schools

Teachers had support from Pearson Customer services with regards to any queries relating to the tools and services provided throughout the project.

Baseline Assessment

The baseline assessment was conducted in March 2015 in four ways: (i) test and improve baseline assessment among learners; (ii) overall pre-project status; (iii) pre-project status among teachers; and (iv) pre-project status among learners.

Test and Improve Baseline Assessment among Learners

The test and improve baseline assessment was conducted among learners and was measured along three metrics: learners per performance category; performance per summary skill; and performance by sub skill per class.

The summary skills are skills that consist of a number of sub-skills. The sub-skills are the smaller building blocks of the summary skills. The summary skills and the sub-skills are ranked according to performance, from the skill with the lowest score to the skill with the highest score. This is to enable teachers to target the skills with the lowest scores for intervenetion.

Overall Pre-Project Status

The overall pre-project assessment was measured along three metrics: the status of the digital infrastructure of the school; overall classroom challenges and subject specific challenges; and classroom beliefs and behaviours. The status of the digital infrastructure of the school was evaluated through school visits and classroom observations to examine the availability and use of ICT tools.

The overall classroom challenges were evaluated in terms of lack of know-how, restrictions of use, exclusivity attached to the intervention, lack of infrastructure, and technology governance. In addition, subject specific challenges were evaluated in terms of class size, ability to keep up with the curriculum, meeting learners at their level, keeping up with technology, keeping learners engaged, and use of language. Classroom beliefs and behaviours across the three subjects were evaluated to understand the practice in terms of working together to solve a problem, sharing knowledge, how homework is conducted, and how projects are conducted.

Pre-Project Status among Teachers and Learners

Among the teachers, pre-project assessment was measured along four metrics: home technology access; digital literacy level; previous level of technology initiative; and previous technology skills development. Among the learners, pre-intervention assessment was measured along six metrics: home technology access; digital literacy level; day-to-day learning tools; prior technology usage in class; peer assistance with technology; and prior digital awareness.

A survey of home technology access among teachers and learners examined how and which technology teachers and learners had access to outside the classroom. Digital literacy level was measured among teachers and learners and examined the level of literacy from most comfortable to least comfortable. Previous level of technology initiative among teachers evaluated how teachers created awareness of technology to their learners, and the frequency of raising awareness regarding rules that govern digital use. Previous technology skills development among teachers evaluated if teacher have had formal or informal training on ICT. Evaluation of day-to-day learning tools among learners evaluated what ICT tools learners normally use. Evaluation was also conducted to examine learners' prior technology usage in class. Further, evaluation was conducted to examine the level of peer assistance with technology among learners, and their prior digital awareness.

Project Assessment

The project assessment was conducted periodically between March and October 2015 in two phases: assessment of the initial use of the digital content among teachers in March; and follow-up assessments of the use of the digital content among teachers and learners between May and October.

Initial Assessment of Teachers

The initial digital content use by teachers was measured along four metrics: the implementation challenges; usage experience across the three subjects; how

the digital content was used across the three subjects; and the frequency of use of the digital content across the three subjects.

The implementation challenges examined the initial experience with the tablets and digital content from least challenging to most challenging. The usage experience was evaluated by teachers rating their user experience based on various statements, such as ease of navigation on the eBooks, ranging from strongly disagree and strongly agree. Evaluation of how the digital content was used across the three subjects was measured based on four types of use: introducing a new concept; motivating and engaging learners; consolidating a concept; and revision and practice. The frequency of use of the digital content across the three subjects was measured by examining the frequency of use of the various eLearning programs installed in the tablet.

Follow-Up Assessments of Learners and Teachers

The follow-up digital content use by learners was measured along four metrics: what learners liked and disliked about the tablets and digital content; use of eBooks, interactive games and videos across the three subjects; learners' perception on the use of the tablets and digital content; the use of the tablets and digital content in class; and examination results.

The follow-up digital content use by teachers was measured along ten metrics: confidence of teachers with the digital content; current level of technology initiative among teachers; current technology skills development; teacher user experience across the three subjects on scale of strongly agree to strongly disagree; barriers to usage; frequency of use across the three subjects; how the digital content was used across the three subjects; impact of the digital content on the teaching style; how teachers collaborated and shared content; and teachers' perception on the use of the tablet and digital content. To analyse the impact of the digital content on the teaching style, there was an assessment of ICT integration to the teaching style of teachers.

Baseline Results

Learners' Demographics

Learners participated in the study in May, September and October 2015. The information on demographics was obtained from surveys that the learners completed.

May Study

A total of 524 learners from the 12 schools participated in the May Study. Figure 1 shows the percentage of learners from the 12 schools that completed the survey. Figure 2, Figure 3, and Figure 4 show the distribution of the learners based on gender, grade and age, respectively.



Figure 1: Percentage of learners per school who completed the survey in May study

In the May phase of the project 59% of the learners were girls and 40% were boys; 48% were in grade 7 and 52% were in grade 8; 2% were 11 years old, 27% were 12 years old, 47% were 13 years old, 2% were 14 years old, 4% were 15 years old and none were 16 years or older.

Isidingo Primary had the most number of learners who completed the survey. The split across grades was relatively equal, with a skew towards girls. In line with South African school going age, the majority of the sample was 12 or 13 years old. However, 11 of the learners were 11 years old, all in Grade 7,

which may indicate that they went to school early and were yet to turn 12 years old this year. There was one 16-year-old learner but due to small sample the percentage is not visible in Figure 3.4.

September Study

A total of 273 learners from the 12 schools participated in the September Study. Figure 3.5 shows the percentage of learners from the 12 schools who completed the survey. Figure 3.6 and Figure 3.7 show the distribution of the learners based on gender and age, respectively. Zwelibanzi High School had the most learners who completed the survey. There was a skew towards girls. In line with South African school going age, the majority of the sample was 13 years old.

Figure 2: Percentage of learners per school who completed the survey in September study



In the September phase of the project 61% of the learners were girls and 39% were boys; 48% were in grade 7 and 52% were in grade 8; 2% were 11 years old, 27% were 12 years old, 47% were 13 years old, 2% were 14 years old, 4% were 15 years old and none were 16 years or older. Report: The 2016 KwaZulu-Natal Pearson eLearning Pilot Project

Baseline Assessment Results

Test and Improve Baseline Assessment among Learners

All the 12 schools participated in the test and improve baseline assessment in Mathematics, English and Natural Science for Grades 7 and 8. Figure 3 shows the school percentage average per subject for Grade 7 and also the overall school average. Figure 4 shows the school percentage average per subject for Grade 8 and also the overall school average. The overall school averages for Grade 7 were almost the same across the lower quintile schools. On the other hand the upper quintile school (Glenwood Prep) showed a significantly better performance in the subject averages and also the school average for Grade 8 were almost the same across the lower quintile school average for Grade 8 were almost the same across the lower quintile school average for Grade 8 were almost the same across the lower quintile school average for Grade 8 were almost the same across the lower quintile school average for Grade 8 were almost the same across the lower quintile school average for Grade 8 were almost the same across the lower quintile school average for Grade 8 were almost the same across the lower quintile schools, especially in three of the schools. Two of the lower quintile schools recorded a higher overall school average due to a better average in English. On the other hand, the upper quintile school (Durban Girls High School) showed a significantly better performance in the subject averages and also the school average than the lower quintile school average than the lower quintile school average for Grade 8 were almost the subject average in English. On the other hand, the upper quintile school (Durban Girls High School) showed a significantly better performance in the subject averages and also the school average than the lower quintile schools.

Figure 0: Grade 7 school percentage average per subject and overall school average (Baseline Test and Assessment)







The difference in performance between upper and lower quintile schools is further evidenced in the learner performance distribution per category. For example, Figure 5 shows a graphic view of the distribution of scores of a class in Grade 8 English test at Durban Girls High School. The number of learners in the class group is shown per performance category. By contrast Figure 6 shows a graphic view of the distribution of scores of a class in Grade 8 English test at Menzi Secondary. Report: The 2016 KwaZulu-Natal Pearson eLearning Pilot Project

Figure 5: Learner per performance category in English at Durban Girls' High School (Baseline Test)



Figure 6: Learner per performance category in English at Menzi Secondary (Baseline Test Assessment)



The results show that learners at Durban Durban Girls High School had outstanding achievement in the subject, while learners at Menzi Secondary did not achieve above 29%. Learners' marks in these diagnostic tests are generally lower than what they usually obtain in School-Based Assessments (class tests and examinations) because: learners do not have time to prepare; class tests and mid-year exams are set on selected content; and learners might, at the time of the test, not be able to recall the content. Indicating that although they understood the concept at the time, it was never internalised. These reports are not intended to predict exam and test results, but rather to identify potential problem areas for learners as they progress towards Grade 12 and beyond.

Digital Infrastructure

Figure 3.12 shows the level of exposure and experience to digital infrastructure in the 12 schools. The 7 schools on the left of Figure 3.12 had low levels of exposure and experience with technology in the classroom, with the schools tagged red having the lowest levels of exposure to ICT tools. These schools show indications of lower comfort levels with digital tools, a lower ability to smoothly transition digital usage into execution of lessons, little presence of other digital tools in the classroom, low Internet access at school and little previous use of digital and a competency in the classroom. For example, Figure 3.13 shows an example of one of the schools with lowest availability and use of ICT tools. However, some of the schools in this category had some exposure to ICT tools. For example, Cwebezela Senior Primary had a teacher who was bringing a laptop and projector to school to optimize his lessons. On the other hand, Nkosobumvu Secondary and Ndongeni Primary both had smartboards in the classroom that could be used, but they were not being utilized.

The 3 schools in the middle of Figure 3.12 had mid-level exposure to technology in the classroom, or had at least one classroom where a full suite of technology was available and being used, for instance, one Computer room with a projector and smartboard. For example, some of the staff at Sekalani Primary demonstrated enthusiasm and initiative in using the computer room to optimize a lesson with the tablets. Figure 3.14 shows an example of one of the schools with mid-level availability and use of ICT tools.

The two schools on the right of Figure 3.12 demonstrated higher comfort levels with digital tools, higher ability to smoothly transition digital

usage into execution of lessons, presence of other digital tools in the classroom, Internet access at most areas of the school, and evidence of previous use of digital and competency in the classroom. Figure 3.15 shows an example of one of the schools with high-level availability and use of ICT tools.

In relation to the baseline test and improve assessment results reported in section 3.2.1, it is evident that the level of digital infrastructure previously provided by the school impacts the opportunity for optimal usage of the eLearning resource. Schools with better digital infrastructure and usage thereof displayed higher levels of integration of the eLearning resource.

Overall Classroom Challenges

Table 4 overleaf, shows the reported classroom challenges and their specific descriptions. The biggest cluster of challenges was the lack of basic skill in most schools, particularly those where technology in the classroom is a completely new concept. In classrooms where technology has been used before, this challenge was about the need for assistance to make use of the devices and content in a more integrated and personal way. In addition, keeping up with the technology was the topmost challenge across all the subjects. However, other challenges were cited as well for all subjects, such as: class size; keeping up with the curriculum; meeting learners at their level (levelling); keeping learners engaged; and language. Language was more of an issue in Natural Science and Mathematics.

Classroom Beliefs and Behaviours

Table 5, on page 341, shows the applicability of beliefs and behaviours applied in the three subjects. Working together is common across all subject areas, whereas encouraging the sharing of knowledge is less important in Mathematics. Mathematics teachers were also less likely to have homework and projects done in class, and would rather send it home, while English teachers encouraged projects to be completed at school.

Lack of Know-how	Restriction of use	Exclusivity due to the intervention	Lack of infrastru cture	Techno- logy Gover- nance
Lack of basic device familiarity and knowledge. Overwhelmed by navigation of the device. Overwhelmed by the amount of content. Struggling to integrate use of the device and the content with current technology and content. Confusion regarding where to go for technical and software assistance	Inability to take devices home restricts class preparation and impacts time management. Inability of learners to take devices home for homework – cannot make devices and content 'their own' Low levels of familiarity with how to operate device	Non-intervention class curiosity. Teachers having difficulty justifying that only one class may participate in the pilot intervention	Internet connectio n not working. No projectors or screens.	Distractio n of non- learning related content at learners' fingertips. Time taken to re-issue device at the start of every lesson wastes lesson time.

Table 4: Reported Classroom Challenges and their Specific Descriptions

	Natural Science	Mathematics	English
Work together to solve problem			
Encouraged to share knowledge			
Homework is done in class			
Homework is done at home			
Projects are done at school			✓
Projects are done at home			

Table 5 Applicability of Beliefs and Behaviours across the three subjects

Digital Literacy Level

Teachers

The teachers were asked to rate their digital literacy from most comfortable to least comfortable. The majority of teachers claimed to sit in the middle and 'still learning'. For example, some teachers indicated that they had not been exposed to computers before but were still learning. Other teachers claimed to be very confident in use of ICT and indicated that they had had a good background at school.

Learners

Five hundred learners were asked to indicate their level of digital literacy. Figure 7 shows the percentage responses among all the learners. Figure 8 shows the distribution of learners on their digital literacy across Grade 7 and 8.

Almost 7 in 10 learners considered they should still be learning how to use computers and technology. Only slightly more Grade 8 learners felt more confident. Those who felt more confident attributed this to a combination of: having been previously exposed and used computers outside of school; helping

others work with technology; or enjoying exploring technology. Conversely, those who were least confident attributed this to the fact that they had little exposure or use of technology and found it difficult to understand its use.



Figure 7: Digital Literacy among learners

Figure 8: Digital Literacy per Grade



Initial Assessment Results Implementation Challenges

Initial experience of the project was measured by rating the experience from most challenging to least challenging. The majority of teachers claimed that the implementation of the project went smoothly with a moderate number of challenges. For example, some teachers indicated that they did not know how to use some of the applications hence they took the time to familiarize themselves. There was an equal number of teachers who felt that the implementation went very smoothly as there were those who felt that it was very challenging. Those who felt that the implementation went very smoothly claimed a higher access to other devices at home and easier navigation of the device to access the content. Those who found it very challenging mentioned that they experienced operational difficulties with lack of familiarity of device usage among their learners.

Usage Experience across the Three Subjects

More Natural Science teachers really enjoyed using the tablets in class. Although they found the learner eBooks easy to find, most of them felt that it was not easy to integrate the eBook and digital resources. Similarly, English teachers indicated that they also really enjoyed using the devices in class and found that the learners were attentive. However, they were also struggling to integrate the eBook and digital resource content. Mathematics teachers claimed to find integrating the eBook and digital resources easier, and could find them easily, but struggled with navigation of the eBook. Most of them disagreed with the fact that learners were attentive when using the content on the device.

Frequency and Types of Use Across the Three Subjects

The frequency of use of the eLearning solution across the three subjects was measured by examining the frequency of use of: the tablet by teachers and learners; eBooks; digital resources; lesson plan; X-Kit Achieve Mobile application; educational website; and references in lesson plans. Table 3.4 shows a summary of the types of the frequency and type of use across the three subjects. Overall, teachers were only using eLearning resource that they were more familiar with, hence full optimization of the entire suite of content tools

was low. Many of the least used products required use of the Internet. Based on classroom observations, it was also clear that teachers, while using the provided resources, had little knowledge of how to use the applications available on the devices. Although learners were more adept at these, they had little knowledge of applications such as Excel and PowerPoint.

Table 7: Summary of the types of the frequency and type of use across the three subjects

	Natural Sciences	Maths	English
Most Frequent (combination of high frequency and most used)	Learner eBook, Videos	Lesson Plans & Videos	Learner eBooks, Videos, Auto-marking activities & Games
Most used for	Introducing new concepts	Motivating and Introducing new concepts	Motivating and Revision
Least used	X-Kit Achieve Mobile Educational Website references in Lesson Plans	X-Kit Achieve Mobile Auto-marking activities and Games	Educational Website references in Lesson Plans Longman-Hat language portal

Assessments with Learners and Teachers from May to September

Learners Research Results

School-based Assessment

For the purpose of illustration, June examination results for Mathematics, Natural Science and English from three schools are used. A comparison is made between a non-tablet class and a tablet class in an upper quintile school for Grade 7 (Glenwood Prep). Further, a comparison is made between a non-tablet class and a tablet class in a lower quintile school for Grade 7 (Cwebeleza Primary). Similarly, a comparison is made between a non-tablet class in an upper-quintile school for Grade 8 (Durban Girls High School). In addition, a comparison is made between June examination results and December examination results for Durban Girls High School and Isidingo Primary.

Glenwood Preparatory

Thirty-five learners at Glenwood Prep took the June examination in the tablet class and 35 learners in the non-tablet class. Figures 9, 10 and 11 show the number of learners in the various performance categories for Mathematics, Natural Science, and English, respectively. In all the three subjects, all the learners in the tablet classes scored 50% and above, in comparison to the learners in the non-tablet classes. Further, all learners in the tablet English class scored 70% and above, while several learners in the non-tablet class scored learners in the non-tablet classes show evidence that the learners who used the eLearning research pilot benefitted from its use and consequently, could perform better in the subject than those who were not exposed to the eLearning research pilot.

Figure 9: Number of learners in the various performance categories for Mathematics. Marks in %





Figure 10: Number of learners in the various performance categories for Natural Science. Marks in %

Figure 11: Number of learners in the various performance categories for English. Marks in %



Cwebeleza Primary

Thirty learners at Cwebeleza Primary took the June examination in the tablet class and 28 learners in the non-tablet class. Figures 4.4, 4.5 and 4.6 show the number of learners in the various performance categories for Mathematics, Natural Science, and English, respectively. There were more tablet learners who scored 70% and above in Mathematics than non-tablet learners. There were more tablet learners who scored 40% and above in English than non-tablet learners. These results show evidence that the learners who used the eLearning research pilot benefitted from its use and consequently, could perform better in the subject than those who were not exposed to the eLearning research pilot.

Figure 12: Number of learners in the various performance categories for Mathematics. Marks in %





Figure 13: Number of learners in the various performance categories for Natural Science. Marks in %

Figure 14: Number of learners in the various performance categories for English. Marks in %



Durban Girls High School June Examination Results

Twenty-nine learners at Durban Girls High School took the June examination in the tablet class and 211 learners in the non-tablet class. Figures 15, 16 and 17 show the number of learners in the various performance categories for Mathematics, Natural Science, and English, respectively. In all the three subjects, all the learners in the tablet classes scored 60% and above, in comparison to the learners in the non-tablet classes. Further, all learners in the tablet Natural Science class scored 70% and above, while several learners in the non-tablet class scored less than 70%. These results show evidence that the learners who used the eLearning research pilot benefitted from its use and consequently, could perform better in the subject than those who were not exposed to the eLearning research pilot.

Figure 15: Number of learners in the various performance categories for Mathematics. Marks in %





Figure 16: Number of learners in the various performance categories for Natural Science. Marks in %.

Figure 17: Number of learners in the various performance categories for English. Marks in % on horizontal axis



Comparison of Examination Results between June and December for Durban Girls High School

Figure 18 below shows the comparison of June and December 2015 Examination results across the three subjects at Durban Girls High School. In both June and December, the tablet-classes performed better than the non-tablet classes across all the three subjects. These results show evidence that the learners who used the eLearning research pilot benefitted from its use and consequently, could perform better in the subject than those who were not exposed to the eLearning research pilot.

Figure 18: Comparison of average performance in June and December Examinations results for Mathematics, Natural Science and English at Durban Girls High School



Comparison of Examination Results between June and December for Isidingo Primary

Figure 19 below shows the comparison of June and December 2015 Examination results across the three subjects at Isidingo Primary. The results

show that learners in the tablet classes did not significantly outperform cohorts in the non-tablet classes. Learners in the tablet and non-tablet classes performed either on par with each other or slightly better. The tablet classes did not appear to be negatively affected by the introduction of ICT. In other studies it has been suggested that the positive effects of laptop use appeared only after the second year of a recent ICT implementation study due to the steep learning curve required for both teachers and students experiencing a new 1:1 classroom. This indicates that even though the results at Isidingo Primary did not show significant differences between the tablet and non-tablet classes, this is likely to change with future implementations of the Pearson/MSA eLearning research pilot.

Figure 19: Comparison of average performance in June and December Examinations results for Mathematics, Natural Science and English at Isidingo Primary



Report: The 2016 KwaZulu-Natal Pearson eLearning Pilot Project

An analysis of learner performance in the baseline assessment and post testing assessment shows that across subjects and schools learners in the tablet classes improved their results whereas learners in the non-tablet classes showed a decline in results. The biggest discrepancy being in Grade 7 Natural Science and Grade 8 Maths where learners in the tablet classes notably outperformed cohorts in non-tablet classes.

Conclusion

In this section it is shown to what extent the empirical results enable the researchers to answer the research questions shown below, keeping in mind that the extent to which one can answer research questions in problem solving research is the extent to which one has been able to solve the research problems that motivated the research project.

- What is the impact of the tablet-based digital content on learners and teachers in Mathematics, Natural Sciences and English?
- *How did the teachers and learners experience the implementation of the tool?*

Teachers and learners gained confidence in using the eLearning project content, tools and integrating this into their lessons. However, there is still need for training on using some of the digital content and applications. For example, on how to use the Longman HAT language portal, Kingsoft and Microsoft office applications.

• How did learners and teachers' access and use the digital content?

Learners showed increased use of the digital content for class work, searching for information, and collaboration and sharing.

• What was the effectiveness of the digital content in assisting the teacher to deliver the curriculum timeously?

There was an increase in teacher capacity to use the intervention and digital resources. It was also noted that there was a growth in teacher

confidence and ICT literacy skills with a larger number of teachers now comfortable with using the eLearning resources.

• What was the standard of learner achievement and competency in terms of subject-specific skills and ICT skills?

The examination results indicate that the intervention is having an impact on the learners' subject-specific skills. Further, the feedback from the teachers and learners indicate that learners have gained digital literacy not only in using the eLearning solutions, but also in creating knowledge and acquiring problem solving skills. These results show that using technology to foster learning enables learners develop core 21st century skills.

Recommendations

What are the recommendations for sustainable, scalable eLearning models for high quintile and low quintile schools?

This research question is answered by the recommendations highlighted below.

Pedagogy

- The results of the baseline test assessment diagnostic tool indicate that if learners wish to succeed at these subjects by passing, improve or gain access to tertiary studies, the problem areas highlighted in the Test and Improve diagnostic tests should be addressed as soon as possible. Both Science and Mathematics rely heavily on bodies of knowledge in order to build more knowledge. Learners will struggle going forward if they rely on rote learning (memorisation by repetition) for these subjects.
- Differentiated teaching style is most effective. A professional development element focusing in on pedagogy with a digital application is crucial.

E-Learning

• To reduce repetitiveness in content such as Games, these could be designed to adjust according to the learner's level.

- Design eLearning resources that encourage collaboration and sharing among teachers, not just the learners. For learners, there is an opportunity to design collaboration and sharing tools for restricted spaces, such as in libraries or during silent sessions.
- Volume and variety of content included in any eLearning solution should be tailored to user ability. For teachers, the integration of digital content can be at any of the three stages: Stage 1 (not comfortable integrating the digital content in class); Stage 2 (felt comfortable integrating some of the digital content in class); and Stage 3 (felt comfortable integrating the digital content in class). Thus, the teachers at the various stages should be exposed to digital content that suits the stage they are at. As the teachers progress through the three stages, they should be able to select and use additional digital content that suits an advanced level.
- Lesson preparation time may increase with the introduction of eContent. To minimise disruption and maximise learning and teaching time we recommend the following: provide guidance linking digital resources to the delivery of the CAPS curriculum; and provide a search functionality allowing users to search for digital assets per Term, Subject, Grade and CAPS topic.
- Learners are keen to explore content and devices out of class time. An eLearning solution should facilitate learning beyond the classroom and provide for learner driven revision and practice. To implement this, it is recommended that stakeholders work with schools in identifying 'after school' access to technology. Access to mobile friendly content accessible across different devices is further recommended to enable learning beyond the classroom.
- A blended learning approach is the most effective. For example, a library set of hardcopy textbooks per class facilitates continued learning at home.
- A teacher does not need to be a technology expert to facilitate a successful e-lesson. Thus, it is recommended to use learner enthusiasm and technical knowledge to drive change and support teachers. For example, by establishing e-Champion programmes. Since learning does
not always need to be teacher driven, it is recommended to encourage teach back sessions where learners share their discoveries with classmates and teachers.

Training

- Teachers and learners need education regarding ethical and responsible online usage and better understanding of what online means.
- Digital aptitude of users varies hence: user needs analysis to determine focus of training and support is essential; training needs to be ongoing and hands-on for there to be movement from a stage 1 user to a stage 3 user; training programmes need to be tailored for different users (teachers, learners, HODs, IT administrators); and successful teacher training takes technological knowledge, pedagogical knowledge and content knowledge into consideration.

Personal Note by the Lead Author

I was approached by Pearson Education to help identify possible reasons for unexpectedly poor test results in some schools for formerly disadvantaged learners in semi-rural and rural schools around Durban. Consequently I and other fieldworkers attended lessons as silent evaluators to minimise the effect of our presence in classrooms. My *first observation* is that learners at these schools were not adept at using tablet computers loaded with educational content, probably because they were not permitted to use them for individual self-study and Internet access in the classrooms on a regular basis. My *second observation* is that during evaluation sessions I noted with concern the pedagogical practice of educators having learners recite lesson summaries in unison in subjects like mathematics, chemistry and physics. While this approach makes for good discipline in the classroom it confuses memorisation with understanding. From a cognitive point of view personal insight, not rote learning, is the eye of the needle that has to be threaded with knowledge to arrive at real understanding.

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The African Digital Humanities (ADH) and Alternation on OJS (2018 -): Innovation, Pan-African Collaboration, and Trans-Continental Integration¹

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Abstract

This article is a continuation of a condensing of the presentation by Prof J.A. Smit, as the Open Access keynote lecture, of 23 October 2017. Drawing on Michel Foucault's relational explication of the subjective embodied capacity – subjective embodied communication – subjective embodied knowledge-power production triad (cf. Smit & Chetty 2018: 8 – 30), it first explicates its theoretical framework, in terms of the triad's 'external instruments'. This is followed by a systematic exposition of this framework in terms of the opportunities that the African Digital Humanities (ADH) face as at 23 October 2017. From within the institutional framework of the University of KwaZulu-Natal, the article briefly expounds the possibilities that are opened up for the ADH on the Online Journal Management Systems (OJS). This is further done in terms of the conceptualisations of the e-Humanities, or the future of the e-Human in Africa, as we can, at this stage, comparatively, and analogically envision this complex process, as it is happening at the moment, and as it will doubtlessly further expand into a rapidly changing, and high-speed future.

¹ The article is paired with '23/25 Years of *Alternation*, and the African Digital Humanities: Capacity, Communication, and Knowledge-Power', published elsewhere in this issue of *Alternation*. The main ideas explored in these articles first formed part of the Open Access Lecture, 23 October 2017, Westville Campus, UKZN. Denzil Chetty contributed to the production of the presentation by Prof J.A. Smit, as well as these two articles.

Keywords: African Digital Humanities (ADH), *Alternation*, institution of knowledge-power, institutional capacities, intra- and inter-institutional interaction and communication, the stable perspective, the constructivist perspective, contextually-relevant knowledge, e-knowledge-power building, institutional networks, connectivity

Introduction

In this article, we continue critically-constructive reflections on the how, the 'what happens', or what we may also term, following Michel Foucault's foundational thinking with regard to 'the task of philosophy as a critical *analysis* of our world' (p. 335f; e.a.), in terms of what we term, the critical *production*, of our world, and more specifically, our post-colonial and decolonial, Africanising world. With this switch, we acknowledge, that the how, or the processes and procedures of the African Digital Human Sciences are not founded for the cultivation of an outdated, old-style liberal colonising 'analytical' elite, where the colonised system and style caters for the racially-advantaged few, and for the phenomenologising knowledge-production of the phenomenologised African other, for consumption by the EU Other.

Rather, it is for a radical production of the African world via empathetic creative, actively engaged, embodied African subjects' inclusive, embodied knowledge-power productions, in relation to active embodied capacity development, and the development of subjective communication systems and networks, especially via digital media, in the era of the e-Humanities, and e-Human, via Artificial Intelligence. In pursuit of creating a conceptual platform, for this focus, this article starts off by explicating its theoretical framework, comprising of two main perspectives.

Firstly, the article develops Michel Foucault's relational explication of the subjective embodied capacity – subjective embodied communication – subjective embodied knowledge-power production triad (cf. Smit & Chetty 2018: 8 - 30), in terms of the triad's 'external instruments', laws, structures, ideologies, and institutions, as these are relevant in the African context today, from Digital Humanities perspective.

Secondly, as said in Smit and Chetty (2018a:19-20), *Alter*nation's broad-based interdisciplinary approaches – or its template, so to speak – are driven by critically-constructive problematisations, and contextually-relevant production, and transformation of knowledge, articulated with evidence-based,

contextually-relevant, empirical research-led teaching and learning. This section of this article briefly reflects on this notion, 'contextual relevance', and how it provides an interpretive lens, whether consciously theorized by participating researchers and authors or not, for research knowledge that is being used in South Africa, and Africa more generally speaking (and also *Alter*nation over the last 25 years). This is in the interest of the goal-directed purposes of 'the production, and transformation of knowledge, articulated with empirical, evidence-based, contextually-relevant research-led teaching and learning'.

The *second* and *third* main sections of the article respectively deal with a brief summary of the how, or the available 'external instruments' or manifest 'ensemble of actions', of the Digital Era, and explores a few preliminary initiatives, for a decolonising digital system fit for knowledge production in the African Digital Humanities.

1 Theoretical Framework

1.1 Institutional Capacity – Communication – Knowledge-Power: The Stable and Constructivist

In his seminal, *Communication Power* (2009), and reflecting on 'power in the network society', Manuel Castells (2009:10) points out that 'society is defined around values and institutions, and what is valued and institutionalised, is defined by power relations'. This understanding has both a stable, and a constructivist and developmental, or 'in-movement' transformational, rationale. Institutionally understood, we can interpret this statement in terms of Foucault's (1982) schemas, as follows, i.e. as we separate out Foucault's focus on the body, and the institution. (Cf. fig. 1 and 2 below; cf. also Smit & Chetty 2018a).

From a *stable perspective*, or, a perspective on what was inherited as the existing, dominant, and solidified system that was produced under the racist apartheid regime for forty-six years, we have emerged from a system defined by racial *values*, and *institutionalised* oligarchic, racial knowledge-power relational networks inside South Africa, with their international tentacles. This calcified racial system created institutions, in terms of its a-human racial and racist values and ideals, and asymmetrically capacitated a white minority of subjects – academics and intellectuals, entrepreneurs and foot soldiers –, in mind, and consciousness, so to speak. This was done through the production

of a concomitant racially-founded and universally, if not also transcendentally motivated and legitimated racially-defined knowledge-power block, with its own representatives, instruments, vehicles and drivers. Following Castells, and, for our purposes, from education perspective, it was this knowledgepower block that not only 'defined', but actually produced, a racially segregated 'society' that remains still very much in place today. In this endeavor, virtually all the disciplines at the South African Universities became complicit instruments. The result of this period can be empirically observed and evidenced in the material continuation of the asymmetrically raciallyfounded knowledge-production social networks (including academic social networks and journals), in land and property distribution, the actual urban and rural geographies that distinguish between developed infrastructure and underdeveloped (or stunted), the number of productive institutions and companies, together with the large diverse array of cross-cutting para-institutional national and international props and networks.



Figure 1: The institution's united, interactive, and integrative relations between capacity, communication, and knowledge-power

In terms of Castells, then, apartheid's racially-defined *values*, and power relations produced and institutionalized apartheid *society*. And in terms of Foucault, as already pointed out, via its external 'instruments', inculcating these same values in subjects, both white and black, not least through its, 'laws, structures, ideologies, and institutions' for which the Apartheid education

systems, and learned societies and intellectuals, were the incubators, if not the internationally maligned and vilified vanguard.



Figure 2: The relations of the relations of the institution's united, interactive, and integrative relations between capacity, communication, and knowledge-power

From the *constructivist perspective*, the question concerns the changes, or transformations that have taken place in South Africa with regard to the 'laws, structures, ideologies, and institutions', since 1994. On the one hand, and that generatively, much has been changed since 1994. Apartheid's systems of racially motivated laws that generated its values, institutions, and thus, society, were scrapped, and replaced by a democracy with a democratic constitution and the rule of law, and not a racist oligarchy. Concomitantly, the previous racially separated education system was discontinued and replaced with a unitary though diverse, non-racial education system founded on the humanist values of freedom, equality, and social justice. In line with the transformation-oriented Bill of Rights (cf. Smit 2009), many black empowerment systems were created, including the implementation of transinstitutional affirmative action processes and practices, and the Broad-based Black Economic Empowerment (BBBEE). In our modest assessment though, and that from the institutionalised 'capacity - communication - knowledgepower' triad perspective, there has not been sufficient movement in the

research and knowledge production domains of South Africa. And, on this, we wish to make two points.

Firstly, as yet, we have not fully succeeded in producing a non-racial knowledge-power bock, a block that serves all South Africans equally, irrespective of race and class. (Much remain racially skewed, and that in untransformed ways institutionally, as well as in the substance of programmes, disciplines, and research-based knowledge production.) As is well-known from Foucault's life-long project, such a block would require the requisite discourse (or, knowledge-language, or, contextually-relevant concept) production and discursive formation(s) development. In our humble opinion, from the perspective of the subject, that can only come about through what we have termed 'critically-constructive contextually-relevant problematisations, and production, and transformation of knowledge, articulated with evidencedbased, contextually-relevant research-led teaching and learning' (cf. below). To this we must add, that the broad-based goal for this approach, should be that the knowledge-power block, would directly meet the expectations present in the Constitution, the Bill of Rights, and, most importantly, the people on the ground, and in the street, inside the theoretical framework of the highest level of scientific objectivity and accountability. In terms of this article, it would be populated by African subjects capacitated with the highest levels of scientific knowledge and skills, embedded within non-racial academic communication networks that span the country, continent, and also globally. If we fail to do this, we are not only failing at all the three levels of the Constitution, the Bill of Rights, and the expectations of the citizens of our country, but also the responsiveness of science to human well-being and human need, and human suffering, in South Africa, and more broadly afield, our continent, as well as globally. From this perspective, and in the absence of the requisite knowledgeproduction approaches, by its non-engagement, much in southern African academia remains bleak and barren.

Secondly, and staying with this topic of the Knowledge-Power Block (KPB), we believe that we need to think through its relationship with communication, and adjust Foucault's notion of the 'block' to that of the network, i.e. 'Knowledge-Power-Network' (KPN), *in lieu* of our entry into the Berners-Lee era in 1989, five years after Foucault's untimely passing. In the era of *digital networks* – lead by the *www* for instance –, *e-publications*, *information networks*, *academic media*, and *information*, and *data flows*, as well as *e-communication* (including the exploding systems of messaging), we

should re-think the notion of knowledge, as defined by a stable discipline, inside rigid and unchanging boundaries, with an outdated, irrelevant philosophy, conjoined to similar problematisations and research projects. Thomas Kuhn's classical conceptualisation of the notion of the 'paradigm', and what has also been called the 'paradigm paralysis'², comes to mind. Knowledge by definition has always been evolving and been in movement. The only change is the speed with which not only the knowledge systems – their infrastructure(s) – have evolved over the last two decades (via *www* for instance), but also the breakneck speed through which digital institutional research, and educational systems of Teaching and Learning have started to explode over the last two or more years, not to mention the quantum leap in algorithm developments and deployments – cf. below.

As such, the constructivist paradigm does not have to account for the values in themselves – that has been done in the Constitution and Bill of Rights. We need to account for their implementation and the material, subjective, embodied, and social realisation, manifestation, and institutionalization of substantive, sound, and conceptually-relevant conceptually-rigorous knowledge, inherent in the subject – communication – knowledge-power – network relations.

So, we should not keep on thinking of knowledge-power as stable, something solidified, and unchangeable, but something that flows in digital information and data networks. Moreover, in terms of our still young South African dispensation, and, Foucault's triad, such a network would be populated by subjects, who are conceptually capacitated from a knowledge-power perspective, to both clearly analyse and comprehend the problematic nexuses

² We believe 'paradigm paralysis' to be a major challenge in South African academia. The main hurdle is that some who are supposed to be the lead-knowledge producers in the country, are being held captive by an imaginary colonial- and apartheid-inherited paradigm and related practices of not thinking from this space, in the present, by the embodied self, and then to constructively, and creatively engage the South African problematic contexts. This knowledge-practice is steeped in and permeated by the importation of problematisations, and their methods in thought, which are asymmetrical to and not fitting South Africa, and more specifically, African conundrums and conditions, as these have been produced in the closed academic circles of former or foreign, times, and climes for different, non-African populations (cf. Smit 2017:270ff; 2018:11ff).

in society, and have the mind, body, and emotional skills to constructively, and transformatively engage them. They will also be able to participate in the advances of Artificial Intelligence, and to harness and direct its capacities for self, social and knowledge developments, not only by, with and for Africans, but also internationally. (Cf. 1.3 below for a further explication.)

1.2 Transformative Contextually-Relevant Knowledge Production: Theory

In terms of our constructivist question of a critical production of our world – not excluding Michel Foucault's question of 'the task of philosophy as a critical *analysis* of our world' (e.a.) – we want to put forward that this primarily entails the problematisation, research, and requisite knowledge *production* for our world, e.g., on issues and challenges that South African citizens (including refugees and migrants) face on a daily basis, but also structurally. In order to do this, we need a clear understanding of the notion of 'contextual-relevance'. Over the last fifty-odd years, this notion has been deployed in transdisciplinary ways by many disciplines. It is not our objective to overview or review this history here, also not to go into too much detail. By drawing on Dan Sperber and Deirdre Wilson's 1986 *Relevance: Communication and Cognition*, we shall just very briefly indicate, the 'how', the 'what happens', when we deploy their theorising for contextually-relevant research purposes, especially in the African Digital Humanities.

In Sperber and Wilson's theorising, cognition, especially as it happens in communication, takes place through *utterances* (or any kind of sign or stimulus for that matter), which can be either verbal/heard/listened to, or read (pp. 6 - 64). On hearing or reading utterances, we can understand them, because we relate them to assumptions that we have about whatever the utterancestimulus is about – 'utterances encode assumptions' (pp. 5, etc.). In order to do this, we need to match a virtually infinite number of assumptions from our general and specialised knowledge domain, or cognitive context, to the utterance, and is only satisfied that we understand it, when we find an assumption that fits. Understood in this way, '*context*' is a psychological, and more specifically, a *cognitive construct*, comprising of a subset, or cluster of assumptions of all the assumptions that we hold about the world, understood in its broadest and most universal sense (p. 15, etc.). These assumptions can be regarded as *factual*, if, in a specific time and space, or situation, it is possible

to represent the fact mentally and accepting its representation as true or probably true (pp. 39ff; 16). So, in the mental processing of an utterance in verbal communication, a listener or reader accesses assumptions from her/ his cognitive environment, thereby creating a context in which the utterance (or any stimulus for that matter) is interpreted. The (contextual) assumptions which are chosen mentally to make sense of a stimulus, are determined by the principle of relevance (pp. 118ff; 155ff, 177ff). Sperber and Wilson then explicates this principle, in terms of how it provides humans intersubjectively, with the ability to create contextual effects, i.e. continuous understandings, as well as changes, in the mental contexts, or the body of assumptions that humans share, about the world of facts. For contextually-relevant effects though, for change in the cognitive environments, or mental worlds, or ensemble of assumptions, through which we understand our world(s), including Foucault's notion of 'ensemble of actions', it is important to note that humans continuously both communicate, and access 'new' information, vis-à-vis 'old' information (pp. 122f, 136-141). We shall not go deeper into this explication. Suffice to say that Sperber and Wilson go on to theorise it in greater detail, in terms of context as a psychological construct; the principle of relevance and contextual effects; relevance to an individual - to which we must add 'interpretive community'; ostensive-inferential communication; and the interaction of new and old information³. But be that as it may.

For our purposes, it is informative, and helpful, to 1) work with notions of 'assumption', i.e. as in what we assume about our world; 2) the cognitive

³ We need to note that this very brief explication of the theory in *Relevance: Communication and Cognition*, is much more detailed, but very clearly set out by Sperber and Wilson. We also need to flag the fact that their theory of contextual relevance has become part and parcel of many Linguistics 101 courses world-wide, and is to be recommended. Cf. also Sperber's comment on relevance (2002: 140); and on 'relevance' of 'conceptual representations' in symbolic language, in Sperber (1974] 1979: 100ff, 119ff). In *Meaning and Relevance* (2012) Wilson and Sperber have sharpened their argument, i.e. that 'comprehension is a process of inference guided by precise expectations of relevance'. In our assessment, and especially for the ADH, Sperber and Wilson's theorising of relevance have, as yet, merely opened the field of questions, not only with regard to the subject, but also with regard to the esubject, and e-interpretive communities, in the e-communication – e-knowledge-power relational networks of the digital age. Cf. below.

principle of relevance, i.e. as it is used to make mental representations from our cognitive environment, to ourselves, and our communities, about what we regard as true 'facts' about that world; and 3) what they term 'contextualisation'. The latter, which is a very well-known trans-disciplinary notion, they use to indicate the processes through which utterances are brought to understanding. They say,

If all a contextualisation does is add all, some or none of the new information to the context without otherwise altering the context at all, then this contextualisation has no contextual effect. Otherwise, there is some contextual effect, in the form of an erasure of some assumptions from the context, a modification of the strength of some assumptions in the context, or the derivation of contextual implications (Sperber and Wilson 1986:117).

This latter explication is obviously helpful with regard to when we deploy it for purposes of knowledge building and transformation. In principle, it explicates the 'how', for the coining and deploying of concepts that are factually true and correct about the cognitive representations about our world – the old information, or in Foucault's terms, the '*analysis* of our world' as it is –, as well as the production of new concepts and related assumptions, and cognitions, that are not only factually correct and true about our world, but also true for the creation of the world that is envisioned, or towards which a transformation is conducted. This is the new information. And, for purposes of knowledge transformation, intersubjectively, in interpretive communities, or even, in paralysed paradigms, such an explication is helpful.

1.3 Transformative Contextually-Relevant Knowledge Production: Praxis

Taking into consideration the dawn of the Berners-Lee era, and, in our terms, the birth of the e-subject, in e-communication, and e-knowledge-power digital networks, added to the context of the virtual explosion of Artificial Intelligence (AI) systems⁴ and their processes and procedures, we can represent this altered

⁴ The most basic understanding of AI, is that it comprises of some or all of the electronic information or data that humans and/ or machines produce and/ or

system, in terms of Foucault's theorizing as per figure 3 below. In the *first* place, and, to complement Foucault, we need to add the digital, the electronic, or, as has been recognized of late, the algorithm, to his explication of the subject in terms of the body and institution. If we need to think through his system, in terms of the embodied subject, and/ or the institutionalized/ institutionalising subject, we now need to think it through in terms of the e-subject algorithm. Once we cross this threshold – which we have done, since the moment we started to electronically store our intellectual productions in electronic files and folders, followed, too, for instance by the first programmes that automatically corrected our typed language on our PCs according to electronically stored dictionaries and thesauri in the early 1990s – we have entered the domain of an independent intelligence, i.e. independent of embodied subjectivity, or, a dis-embodied subjectivity, if you will. In terms of Foucault's triad, we can represent it as in figure 3 below.

With the dawn, and multiply embodied experiences of the algorithms, we have progressed beyond the bi-stable representations of colonizer and colonized, for instance. We have entered the universe of the unstable, unpredictable, variable and volatile, which ranges from subjective perceptions, through communication networks, to the challenges for knowledge production, not least within the Human Sciences. Even as the legacies of colonization are still all around us, the e-subject – e-communication – e-knowledge-power systems, modelled after Foucault, has taken us beyond it⁵. Simultaneously, it has opened large vistas of possibility for the humanities, especially for its wide variety of potential in digital or electronic forms. Like the old mine-dumps,

store. It may be stored, packaged, used, or developed in a myriad of ways, ranging from saved files on a Laptop, to working robots, to nano-technology products. It also includes all operations that humans require machines (and smartphones, or apps and other 'gadgets') to do, rather than using the brain, or human intellect, such as the use of electronic calculators, Google, or Facebook. ⁵ For now we may also just mention that the notion of the 'relation of the relations', may also be thought in terms of Sperber and Wilson's notion of relevance, as the *principle of the digital relevance*, or *e-relevance* of the relations of the relations of e-capacity – e-communication – e-knowledge-power. At the biochemistry level, and thát, plurally, it could also be thought as clusters of body-algorithms – communication network algorithms – knowledge-power networks, ánd, for that matter, networks of networks, of algorithms.

that are there in all their materiality and cannot be wished, or washed away, and still polluting rivers and ground water, the legacies of colonization are continuing to seep its poisons and contaminations also into our knowledge formations. Yet, the dawn of the e-subject, e-communication, and eknowledge-power networks, have precisely through their instabilities, and variable systems opened a myriad of possibilities for the e-Human and e-Humanities. This has opened possibilities, for e-Knowledge-Power productions, in developing e-Knowledge-Power Networks, especially in the developing and erstwhile colonized world like never before.



Figure 3: The relations of the relations of the e-Subject's, and e-institution's united, interactive, and integrative relations between capacity, communication, and knowledge-power, from the perspective of the networks of networks of the embodied, and dis-embodied algorithm

On the one hand, this provides opportunities to radically create new knowledges, through developing new knowledge-power e-networks, as well as

the networks of networks, together with all the opportunities, and challenges that entail – also for the African Digital, or African e-Humanities. Yet, it also provides us with the possibilities to re-work the rejected stable (and archived) knowledge productions of the past – as they are being digitized –, to still see whether there is still something useful, i.e. nuggets of discarded and denigrated information, which just might still be centrally important, even foundationally. In this endeavor, AI has already proven tremendously helpful, going back to the study of the history of our ecological systems, and humanity's oldest biochemical algorithms. As we are producing a new world, or a new Africa of knowledge-power and of human, and ecological value, the re-working of the old knowledge dumps, whether from the colonial era, or from long before that, though, is only part of the challenge. The main challenge remains the objective, produce the best empirical evidence-based, contextually-relevant to knowledges, together with the requisite data and information productions, and interpretations – with the assistance of algorithms or not –, and, to teach that, via evidence-based, research-lead teaching and learning methodologies.

With regard to the praxis of a *transformative, and transformed, contextually-relevant knowledge production,* the dawn of the algorithm provides immense possibilities and opportunities, for not only personal knowledge and development⁶, but also knowledge production in the e-Humanities more broadly speaking. In the rest of this article, we shall just briefly summarise an example from 2000, of how the knowledge-production networks work, and have been developing, and then provide a sample of perspectives on these processes⁷. Both of these, impact on the two-pronged network development challenges that we face, i.e. Pan-African collaboration, and trans-continental integration.

2 Knowledge Building Processes

Granted that knowledge-building processes are heterotopic, multi-stable interlinked networks capturing multiple complexities, the question is how to

⁶ In the developing *Alter*nation network, Rembrandt Klopper's 2005a and 2005b articles on communication, from the nonverbal to e-communication, were the first to broach this issue. But, on the beginnings of language, see also Richard Bailey (1995).

⁷ Note: This is a sample that was used in the Open Access lecture of 23 October 2017. Much has happened since. We add one reference from October 2018.

understand them⁸. In a nutshell, the argument is that within a sea of information and data productions, disseminations, and flows, it is value-based, or ethical, knowledge-power hubs that provide citizens with ordinary, and close-at-hand, responsive, and responsible means to access useful information and knowledge within the knowledge-power networks. The hubs, comprise of diverse, heterotopic organizing systems and networks that cluster, and compound composite information and knowledge formations from the complexities available, at different levels, arranged in ascending levels of complexity. To render the best service to information and knowledge users and consumers, the generating systems, including the use of algorithms, need to be developed internationally. This, in itself, is a daunting task, but, as we have already learnt and are continuously experiencing, the deployment of algorithms play very useful roles, ranging from the e-subject, through e-communication, to eknowledge-power productions, and digital networking. More than ever before the open vistas for knowledge-power productions in the e-Humanities call for the cooperation of vast arrays of agents and personnel in international, and internationalizing knowledge-power frameworks. As just one example, dating from 2000, we want to flag the factors involved from the contribution Gerry Stahl made to the discussion (cf. figure 4 below).

We have chosen this image because it shows how both the personal and social play a role in the whole process. The one does not exclude the other, and should be seen as integrative. Also important for us, and what we want to complement to Stahl's presentation, is that such a circle should not be regarded as a closed, vicious circle of inclusion and exclusion, but rather as nodal hubs in developing networks of knowledge-power production. So, one hub itself, as it develops to function speedily, efficiently, and optimally with the contribution of its members, also challenges the members that form part of the hub, to feed into further developments of their own networks of choice. Ultimately, from an intellectual and academic level, this means that each subject, or, for that matter, networks of subjects, and networks of networks of subjects, also as they are integrated socially with their communities a la Gerry Stahl below, may have one or more hubs, from within which it operates, or to and with which it is

⁸ For a more comprehensive explication of these understandings, see, Smit and Chetty (2018, forthcoming), as: 'Designing Equitable Foundations for Open Knowledge: Access, Freedom, & e/Quality. *Alternation Special Edition 23: 8 - 33.*

articulated⁹. In terms of such and understanding, we can represent Pan-Africanity, as per Image 1 below.



Figure 4: Thinking knowledge-hubs, in the African Digital Humanities (ADH) or African e-Humanities networks, in terms of African Collaborative Knowledge-Building, thought in terms of the framework of Gerry Stahl (2000)

In terms of the so-called Cold War legacy of the world, and how it has asymmetrically impacted Africa, where the various governments of Africa were pushed to make choices between 'the Capitalist West, and the Communist East', it is incumbent for African hubs to not be pushed into making choices of serving one or the other global military-industrial, or for that matter, digital, or e-humanities-knowledge-power complexes, or networks but rather to ask questions concerning their usefulness, with regard to contextually-relevant knowledge-power productions (CRKPP), and teaching and learning in local, and national African contexts. We also believe that contextually-relevant

⁹ This would mean that we should also understand figures 1 & 2 above, as open triads, or open circles. Internally to countries, especially with regard to governance, we have an example about how it has been developing and is functioning, in Abdulla and McArthur (2018:154 - 186) elsewhere in this issue of *Alter*nation.

transformation questions should remain integrally part of these processes and procedures. And, we also wish to suggest, that it also means that one should seek connectivities, but not be coerced to become part of knowledge-power systems which do not serve the well-being of the people of the African continent, whether the US, EU (incl. or excl. Britain), Russia, China, or any other national, or globalizing knowledge-power formation, including the religious. In this regard, we believe we should be steered by a broad-based African principle of relevance, not least in e-knowledge-power productions. We further also acknowledge, that even as these knowledge-power productions are indeed meeting relevance principle needs and challenges, that all knowledge produced, remains hybrid, and not pure, similar to the human genome. The question should remain though, of usefulness for development, and the reach, spread, and range of such knowledge-power systems, with regard to it serving the human, and ecological well-being of the planet, irrespective of race, class, gender, or any other socially generative system.



Image 1: Image representing e-knowledge-power production hubs on the African continent. (Image widely available on the internet.)

Globally, the digital connectivities are being represented as in images 2-5 below.



Image 2: Continentally-focused global connectivities internal to the continents, image 1. (Image widely available on the internet.)

Thinking from the perspective of the subject, it involves possibilities and opportunities for self and social advancement, via personal capacity and capability developments, and an alliance with and active involvement in eknowledge-power networks. This is important, and will become ever more

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important, in the presumed future disappearance of traditional pre-digital labour and job market opportunities and systems. It will also very soon involve the training of students and young e-human knowledge-power entrepreneurs in the learning of code and the writing of effective code, to perform AI tasks in solving specific e-human problems, and constructively and efficiently engage e-Humanities conundrums according to personal and social e-relevance principles. This also involves, and might even escalate, the physical movement and studying of young students and knowledge-power entrepreneurs from the African continent to as many on-site parts of the world as possible.



Image 3: Continentally-focused global connectivities internal to the continents, as per image 2. (Image widely available on the internet.)

It is true that with the dawn of virtual classrooms, some have argued that face-to-face classroom contacts have become obsolete. The truth, though, as numerous studies especially from the United States have shown, is that people continue to prefer to physically go to campus, for the social interaction and social learning in itself, that takes place there, and, obviously also for multiple exposures to the on-site, spatial engagements of knowledge transfer, mentoring, and knowledge production, and dissemination in actual geographical spa-

ces of interaction and knowledge transfers and productions. Conversely, centripetally, it also involves the sourcing of knowledge, and developing of the latest skills, abilities, capacities, and proficiencies, internationally, for local implementation and use. That is why it remains extremely important that young students from Africa continue to study on-site in as many countries of the world as possible.



Image 4: The main inter-continental connections of information and data networks imaging connectivities inter-continentally, from 1996. In Internet traffic flows between countries in 1996, created by Stephen Eick and colleagues Ken Cox, Taosong He and Graham Wills, Bell Labs-Lucent Technologies / Visual Insight, from Dodge and Kitchin (2001).

And, *fifth*, an image of inter-continental connectivity, as produced by Parag Kanna, of the Instituto per Gli Studi di Politica Intrernazionale, Rome, 31 October 2018. The next, quite substantial quote is attached, to the site, and, even though a bit dated, we quote two Google- translated paragraphs from it.

Connectivity will revolutionize geopolitics

In the vision of Parag Khanna, expert in international relations and author of the best-selling *Connectography: Mapping the Future of Global Civilization*, connectivity creates a reality beyond the state dimension since in most of the world we have moved from vertically integrated empires to horizontally interdependent states. The megainfrastructures overcome the natural obstacles and those of political geography, and their mapping reveals that the era of organizing the world according to the political space (the ways in which the globe is divided from the legalistic point of view) is giving way to its functionalistic planning (how to use space according to utility). Borders define divisions through political geography; infrastructures inform us about connections through functional geography. And geopolitics is profoundly influenced by functional geography: transport routes, energy networks and internet infrastructure are the vehicles through which power is projected and influence is exercised.



Image 5: A recent image on inter-continental connections of information and data networks imaging connectivities external to the continents. Cf. Kanna (2018), and also Chinese Academy of Cyberspace Studies (2017).

How would you explain the relevance of connectivity in the medium to long term?

Connectivity is the most revolutionary force that has emerged in human history and the trend with longer term durability. The use by humanity of all the technology available to build connectivity between cities, communities and individuals is simply an anthropological and central fact in the definition of human beings more than tribalism, the construction of borders and walls, or other instruments of separation. This is particularly important to remember in historical periods such as the current one, where the media and political scenario is dominated by discussions on economic protectionism and border protection. In reality, on the global level, the opposite is happening. In fact, we are witnessing an unfolding of physical connectivity of roads, railways, electricity grids, air routes, and fiber optic internet cabling at a level never reached. We have never achieved such a high degree of connectivity and at such a speed. Soon every single human being or family will have a cell phone. The question is not whether we will be connected, but how we will use this reality and who will benefit from it.

To this, *finally*, we add a sample of research on the opportunities and possibilities for intra-continental knowledge production in Africa, from 2017, based on 2011 data.



Image 6: Academic articles per million capita in 2011. Cf. Graham (2017).

3 Contextually-Relevant Knowledge Production via Knowledge Networks: Continentally and Trans-Continentally

In this section, we just briefly summarise and overview a sample of functioning e-knowledge-production hubs, networks and related events, from the recent past, and present, that may be useful to develop and implement in our contexts.

Firstly, we copy a post from 2013, on the annual meeting of the African Studies Association in Baltimore, where, disciplines from History and Anthropology, to Public Health and Geography, reflected on processes and procedures of developing and involving the then more prominently emerging Digital Humanities. A central question concerns the number of panels that involved e-technologies. From our perspective, it is obvious, that very soon, presentations that do not involve e-technologies, might fall foul of becoming dated, if not locked into knowledge-power circles and blocks that have painted themselves into academic social corners outside democratic digital connective-ties and interactions.



Image 7: Post on African Studies meeting in Baltimore in 2013. Available at: <u>http://chi.anthropology.msu.edu/2013/11/african-studies-in-the-digital-age/</u>

For the *second*, we copy a Call for Papers, by Roopika Risam and Kelly Baker Josephs, for their book, *The Digital Black* Atlantic, from April 2017, currently in production, in the Digital Humanities Series of the University of Minnesota Press. See also Risam's book, *New Digital Worlds: Postcolonial Digital Humanities in Theory, Praxis and Pedagogy* [2019], currently in preparation; and Glover, and Scott (2017), explaining the Digital Black Atlantic Project, as follows:

> The Digital Black Atlantic Project (DBAP) was a multi-institutional and interdisciplinary working group that came together to invent a scholarly resource and digital platform for multimedia explorations and documentations of literary texts, visual documents, sites, moments, rituals and ceremonies, monuments and memorials, performances, and material objects emerging out of and concerning the Black Atlantic world



Image 8: Risam and Baker Joseph's Call for Papers for their book currently in production.

The Quotation is available at:

https://www.socialdifference.columbia.edu/projects-/the-digital-blackatlantic.

The image is available at:

http://dhdebates.gc.cuny.edu/cfps/cfp_2017_digital_black_atlantic.html Cf. also, http://roopikarisam.com/digital-black-atlantic.html and, https://us.amazon.com/gp/product/0810138859/ref=dbs_a_def_rwt_bibl_vppi____i0

For the *third*, we have an image from Cleveland State University on the advancing of 'innovation' in the Digital Humanities, with a focus on the curation of African culture in the digital domain.



Image 9: Curating East Africa – Utilizing Mobile Friendly tools to promote African Culture. Available at: <u>https://www.csuohio.edu/news/advancing-innovation-in-digital-humanities</u>

Fourthly, we have an image focused on African languages, and a linguistic metadata repository, the Ethnologue, mentioning the nearly billion people on the African continent, and its 2 146 languages, of which 174 have institutional status. It was the subject of the European Summer University in Digital Humanities in Leipzig in 2017.



Image 10: Empowering African Languages: Humanities and Technologies. Available at: <u>http://www.culingtec.uni-leipzig.de/ESU_C_T/node/445</u>.

In the *fifth* and *sixth* places, we have two images of the United States' National Endowment of the Humanities (NEH), Office of the Digital Humanities, announcing 31 grants from the 2017 Office of the Digital Humanities, for the advancement of research in their Digital Humanities program, and more specifically, the Institutes for Advanced Topics in the Digital Humanities Program. Significantly, it indicates that these 31 grants, of the 245 grants awarded in 2017, were for the digitally integrated aspects of these projects. The sixth image, is the second from the Office of the Digital Humanities, introducing all 31 of the projects that received grants in 2017.

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ste ← → C {	Secure https://www.neh.gov/division	ns/odh/grant-news/announcing-new-2017-odh-grant-awards	\$	۷	15	Ø
•	CHALLENGE GRANTS * OFFICE OF DIGITAL * HUMANITIES About ODH ODLEST	These awards are part of a larger state of 245 grants just announced by the NEH. Congratulations to a the awards as they begin these exciting new projects! Digital Humanities Advancement Grants (January 2017 deadline) This program is supported in part by the Institute of Museum and Library Services. Projects support	all			
-	Grant News In the Field Institutes BRIDGING CULTURES	through this partnership are indicated by an asterisk (*) in the list below. Association of Research Libraries (Washington, DC) Integrating Digital Humanilies into the Web of Scholarship with SHARE: An Exploration of Requirement Project Director: Judy Ruttenberg Co-Project Director: Cynthia Hudson-Vitale, Washington University in St. Louis Outright: \$75,000	ts			
	ODH RESOURCES RESOURCE LIBRARY HHPC	To support: A series of activities to adapt the SHared Access Research Ecosystem (SHARE) platform the enhances the discoverability of scholarship for use by humanities faculty and librarians. Board of Regents of the University of Wisconsin System (Madison, WI) Investigading the Golden Age of Podcasting through Metadata and Sound* Project Director: Jeremy Wade Morris Co-Project Director: Eric Hoyt	nat			
-	SUBSCRIBE Keep up-to-date with Division news.	Outright: \$74,972 To support: Prototype development and adaptation of open-source software tools to facilitate large- scale search and analysis of podcasts.				
de 3	GRANT PROGRAMS	Carnegie Mellon University (Pittsburgh, PA) Text in Situ: Reasoning about Visual Information in the Computational Analysis of Books				

Image 11 & 12: NEH, Office of the Digital Humanities web-announcement. Available at: <u>https://www.neh.gov/divisions/odh/grant-news/announcing-new-2017-odh-grant-awards</u>

Seventh, we have a 2017 publication on the relationship between digital connectivity and digital content creation, focused on sub-Saharan Africa, by Ojanperä, Graham, Straumann, De Sabbata and Zook (2017).



Image 14: Article, titled, 'Engagement in the Knowledge Economy: Regional Patterns of Content Creation with a Focus on Sub-Saharan Africa', by Ojanperä, Graham, Straumann, De Sabbata & Zook (2017). Available at: https://itidjournal.org/index.php/itid/article/view/1479

In the *eighth* and final place, we have an image from Chain (2007), which, even though from a while back, represents some actual transcontinental organizations, then part of digital networks already.



Image 15: Sample of trans-continental organizations, see Chain (c. 2007) at: <u>http://eadh.org/sites/eadh.org/files/DIGITAL_HUMANITIES.pdf</u>

Conclusion

By writing up his 'The Subject and Power' the way he did, and first published in 1982, two years before his death, Foucault sensed the importance the subject would acquire in the academic domain, in the post-communist, and postliberal, capitalist West politico-military-industrial complexes. That is why, he said, that his main focus for his research has not been 'power' and all the variety of historicized, and historicizeable, aspects that he uncovered through his historical researches. It was the subject. This notion of the subject that he focused on, was indeed, the subject that modernity produced, viewed from the perspective of the systems that produce or generate the knowledge formation subjectivity, as well as the knowledge-formation \rightarrow epistemic → communication system \rightarrow subjectivity articulations. In his triadic articulation though, Foucault reversed the dynamic, and asked these self-same questions of more than twenty years, from the perspective of the subjective, and more specifically, the embodied subject. It is this triadic understanding that we have used in the first article (pp. 8 - 30 in this issue of *Alternation*) as well as this one, as template to not only think through, but also use as a springboard for starting the thinking of the future of the embodied, communication system(s), knowledge-producing African subject.

We have also showed in this article, how this could happen through 'innovation', and pointed to a very small sample of initiatives internationally, and mostly reported on during the last two years. In addition, we have provided a brief glimpse in images, as to the exponential explosion of the digital world internationally, not excluding the Digital Humanities. In this regard, we need to also recognize similar initiatives in South Africa, for instance by Wiser at the University of the Witwatersrand, and also at Stellenbosch University. The first three National Digital Humanities conferences have been organized, and Wiser has recently reported its allocation of 2019 Digital Humanities Research grants. We also note that, whereas the US's National Endowment of the Humanities (NEH), Office of the Digital Humanities, allocated 31 digitally-connected grants for research in 2017, this number has been more than doubled in 2018.

As is evident from these two articles, as based on Prof. J.A. Smit's Open Access lecture of 2017, as well as the explosion of initiatives in the Global Humanities globally, evidenced in our small sample, it is indicative that the processes and procedures being developed, centrally inform the research, as well as teaching and learning in the Humanities in South, and Southern Africa, as well as Africa more broadly afield. We have also sought to flag the ugly truth of the continued effects of apartheid and colonising blocks and knowledge formations. This cannot be wished away, and need to be confronted head-on. That is what has happened, for instance in the #Rhodesmustfall, and #Feesmustfall movements, amongst many others. We think that to think through the concerns of these movements, as these arise from embodied intellectual experiences, and as these relate to the epistemologies of the sciences, especially the Human Sciences, our theorizing and related modelling of Foucault, may provide one perspective to address these. We also think that, as one of the best theorised systems, of the notion of 'relevance', in a communication framework, Sperber and Wilson's theorizing of communicative relevance, may be helpful. We think that by linking it in an interdisciplinary space with Foucault's theorizing may be helpful, for purposes of knowledge production, in the constructivist theoretical framework.

Finally, we have sought to also articulate Foucault's triadic model, from the perspective of the subject, in the framework of the digital, e-communication, and consequently, e-knowledge-power production. On the one hand, we have done this with a view to Castell's emphasis on the fact that, in our argument, national values, as enshrined in our Constitution, and Bill of Rights, should find material expression, and realization, in our *institutions*, and therefore in their shaping of *society*. As such, and since Foucault has not thought the subject as separate from the institutions, but as populating the institutions, and being *effected* or *impacted* by the institution, as it is articulated as a combined 'unity', in its various uses of and impacts by the communication networks, as well as how it produces knowledge-power in the knowledge-power networks (KPNs), with their multiply impacts, that it forms.

On the other hand, we should think through this self-same system in terms of the digital era, digital knowledge-power (social) formations, and ultimately, the algorithm, to which we all are increasingly becoming exposed to. In this focus, and by putting Foucault's understanding to good use, in terms of the myriad of opportunities and challenges we are confronted with, not least with regard, to the dawn of the algorithm, we do believe that humanity, by collective cooperation, can enter a period of better management of not only ourselves, and the populations of the world, but also our environment. And, with all the new and innovative technologies, or 'instruments' we shall be better prepared and endowed, to do that through critically-constructive problematisations, and contextually-relevant production, and transformation of knowledge, articulated with evidence-based, empirical, contextually-relevant research-led teaching and learning (cf. Smit & Chetty 2018 forthcoming). As such, we shall have to be attentive to the macro-, meso- and micro-physics of knowledge-power, and its impacts, not only for the improvement of the quality of life, and well-being, of humanity, but our planet as a whole. And, with regard to the labour challenges we face, we believe that the Digital Humanities, or e-Humanities, and e-human, in collaboration with capital, our companies, and industries, may yet play a critical role. But that is a different story (cf. Nussbaum 2010, amongst others).

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Factors that Influence One's Choice for Viewing Public Television in South Africa

Toyin Shobiye Gedala Mulliah Naidoo Hemduth Rugbeer

Abstract

Public Television Broadcasters (PTB) also known as non-commercial televisions are established to perform specific obligations to the public such as: to inform, educate and entertain with a variety of popular programmes. These programmes are available and accessible to all or the majority of the citizens. Public Television Broadcasters have moved towards incorporating commercial breaks into their programmes. This paper examines factors which influence viewer rating of public television in South African which ought to be informative and educational while providing suitable entertainment. Hence, this study analyses viewers' intentions for watching public television within the City of Durban, KwaZulu-Natal, South Africa. This study employs a descriptive survey technique to quantify data. A sample of 384 respondents participated in the research. Self-administered questionnaires, which contained mostly close-ended questions, were used to extrapolate information from potential respondents. The outcomes of this study highlight various reasons why respondents choose to watch different channels of South African Broadcasting Corporation Television (SABCTV). Analysis of the responses indicated a strong correlation between race and choice of viewing material. Black respondents mostly prefer to watch SABC1¹, Whites prefer SABC2², Indians prefer SABC3³ and Coloureds prefer either SABC2 or SABC3. The

¹SABC1 = South African Broadcasting Corporation Television Channel 1.

 $^{^{2}}$ SABC2 = South African Broadcasting Corporation Television Channel 2.

³ SABC3 = South African Broadcasting Corporation Television Channel 3.

study also reveals that the language, type of programmes, television heritage/ history as well as family and friends have an influence on viewers' choice. The study further exposes short-comings of the public broadcaster's mandate to society.

Keywords: Uses and gratifications, television, programme preference, viewers, and SABC

Introduction

The Uses and Gratifications Theory (UGT) provides an understanding of what motivates people to proactively and dynamically select certain media to fulfil their particular needs. The Uses and Gratifications Theory outlines how people deal with different media rather than the traditional stance of how the media manages people. Nwabueze et al. (2012:2) argue that the Uses and Gratifications Theory is an appropriate way to explain mass media exposure and patterns of media adoption by the audience. Rizkallah and Rizzouk (2006:67) note that the Uses and Gratifications Theory allows researchers to analyse the way in which people use mass media to satisfy their needs and to understand the reasons associated for precise media-related behaviours. Nwabueze et al. (2012:2) are of the view that the Uses and Gratifications Theory explains why people watch, read, and listen to certain media and media contents. The Uses and Gratifications Theory proposes that media audience have preference to choose numerous media which suit them but argue that reasons for choosing a specific medium differ from user to user (Karimi et al. 2014:45). In 1970, Katz (Singh 2011:13) propounds the uses and gratification theory, which states that people have the choice to select what they prefer to see, listen or read and their needs are gratified by different media. Agyekwena (2007:269) posits that the Uses and Gratifications Theory is one of the audience theories that explain the roles of media from the angle of the audience. the Uses and Gratifications Theory suggests that individuals are motivated by basic needs to select and use particular media content in ways they find personally pleasing (Steinberg 2007:269).

The Uses and Gratifications Theory appropriately explains how traditional and new media is used in society (Bondad-Brown, Rice & Katy 2012:488). Blumler (1992) in West and Turner (2004:123) outline four basic

reasons for using traditional media such as the television, radio, newspaper and magazine. These reasons are:

- 1. The need for diversion avoidance (relief from personal and emotional tension);
- 2. The need for human relationships/ affection (the feeling for friendship and help in societal intercommunication);
- 3. Personality/ status (the need for self-concept and confidence for one's impact in the society); and
- 4. Surveillance (the need to be knowledgeable about things that might affect or assist some-one).

A study conducted by Karimi *et al.* (2014:466) indicates that the motives of students at higher institutions of learning for engaging in social networking are to connect with old and current friends as well as to make new friends. McQuail (2005:423) states that socio-cultural factors, such as types of media, availability of media outlets, content and message as well as social pressure on media policy, also affect difference in media uses and gratification.

Lull (2000:103) argues that certain variables such as culture, gender, religion and social class modify needs, therefore, the manner in which we gratify these needs differ across various junctures. Stafford, Stafford and Schkade (2004:259) provide three ways in which consumers can acquire gratification factors. These are:

- 1. Content gratification (when the message of a particular medium is being used by consumers for information or entertainment);
- 2. Process gratification (when consumers prefer to use a particular medium because of enjoyment they find in using the medium); and
- 3. Social gratification (when consumers use a particular medium to satisfy their social interaction needs such as companionship, friendship, interpersonal communication and belonging).

The choice and selection of media by people can also depend on ethnicity, which is based on the language they speak, their cultural experience, the race and group to which they belong. Giles (2012:359) observes that audiences' choice of media is likely to be based on their belief that the message will support their group's vitality. Harwood and Vincze (2011:204) contend that some media choices are driven by unique group-level gratifications sought. They further point out that individuals seek out particular messages which support their social identity and avoid or reinterpret messages which threaten group identity. Williamson and DeSouza (2006:20) note that media which are directed to specific ethnic groups (ethnic media) assists in strengthening community cohesion, minimize social isolation and promote or maintain culture and language. Feng and Nzai (2014:28) view that ethnic media provide the participants with opportunities to make a connection and communicate with their ethnic culture and society. In other words, the motive for selecting particular media by audience has made some of the media become ethnocentric. Matsaganis, Katz and Ball-Rokeach (2011:3) define ethnic media as media, which is produced by and for:

- 1. Immigrants;
- 2. Racial, ethnic, and linguistic minorities; as well as
- 3. Indigenous populations living across different countries.

Matsaganis, Katz and Ball-Rokeach (2011:3) further observe that in Canada, there are 250 ethnic newspapers that represent about 40 ethnic communities and over 40 television stations that present programmes in different kind of ethnic groups. They further indicate that Europe and the United Kingdom are the countries that have witnessed the emergence of the largest number of ethnic media because both British citizens and residents read over 100 ethnics daily and weekly newspapers and periodicals which are also exposed to over 15 ethnic radio stations and more than 30 ethnic television stations. Most countries have exposure to ethnic media in the form of television, radio or print media.

Problem Statement

Public television stations (PSTV) are established by the government of each nation to serve the publics by providing educational, informative and entertaining programmes that its citizens will enjoy without any interruption. Wilson (1992:267) supports this view by indicating that public television is a non-commercial form of broadcasting primarily for providing public services. Folkerts, Lacy & Larabee (2009:170) describe public television stations as educational television stations which are not operated for profit. Bignell (2004:18) gives four aims of the Public Service Television:

- 1. To provide programmes which are educational;
- 2. To help communities create inventive and effective new uses of technology for education;
- 3. To offer a range of different kinds of programmes at different levels of accessibility; and
- 4. To engage audience in the significant events and issues occurring in the present.

Soroka *et al.* (2012:2) posit that public television stations are meant to help citizens get more of the information they need, especially information that commercial media cannot or will not provide. For instance, the section 33 (3) of South African Broadcasting Act (1999) states that 'The South African Broadcasting Station (SABC) must offer, in all South Africa's official languages, a range of informative, educational and entertaining programmes that showcase South African attitudes, opinions, ideas, values, talent and artistic creativity'.

However, due to financial constrain almost all public broadcasting stations have commercialised their news and programmes by welcoming commercials into most of their programmes for financial suitability. Biagi (2013:170) argues that public donations to public television have been declining and this decline in funding has led the public broadcaster to seek underwriting from companies accustomed to advertising. Juneau (2000:7) notes that for the past few years many public television broadcasters have opened up to advertising or resorted to it more increasingly and have created new subscriber services or completely launched commercial activities to finance their main service. The chief executive officer of the South African Broadcasting Corporation argues that the South African Broadcasting Corporation has to rely largely on advertising and not only on the public purse for revenue or else the funding will remain an on-going challenge. He further stressed that the over-reliance of the South African Broadcasting Corporation is on commercial funding in relation to other sources and currently the funding mix is 77% commercial funding, 18% licence fee, 2% government and 3% other funding (SABC Annual Report & Financial Statement, 2007). Poniewozik, (2011) reports that the chief Programming Executive of Public Broadcasting Station in New York, John Wilson recently told 'The New York Times on May 31, 2011 that their famously uninterrupted programmes would

soon be interrupted with commercials just like other television stations. Akingbule (2010:108) points out that the Nigerian Director-General of public broadcasting service announced that a funding arrangement for public broadcasters, which would entail provision of 50 per cent of revenue from a statutory parliament-appropriated budget and 50 per cent from commercial advertising, may be available soon.

On the other hand, the report provided by the Corporation for Public Broadcasting (CPB) in June 2012 states that some public broadcasting stations are no longer focusing on their mission to present educational programmes because some advertisers influence the type of programmes which must be aired. Jjuuko (2002) agrees that the sponsors influence the content and design of programmes on public television. Fashomi (2013:141) agrees that very often the information function of public television can be wavered by advertisers and management is coerced into conforming. Sawers (1989) believes that market pressure can ruin many features of public service programming such as programmes of diversity, since advertising provides streamlined or less varied programmes.

Nevertheless, television viewing is still a matter of choice, since the viewers are not compelled to watch a particular station; they have the right to decide on which television station to watch and which not to watch. Moreover, cable, digital and satellite television such as Digital Satellite Television4 (DStv) also manages and offers various foreign television stations and this provides the opportunity to have freedom of choice of television viewing. Therefore, there is a need to examine whether public television stations in South Africa still gratify the need of their viewers. This study investigates what motivates South Africans to watch public television.

Literature Review

Application of Uses and Gratifications Theory in Television

Television (TV) is the broadcast medium that plays different roles in the lives of individuals because of the attributes it acquires, like offering varieties of shows, such as drama, soap operas, detective and news stories, as well as educational and entertainment programmes. Tager and Chasi (2015:1) suggest

⁴ DStv (Digital Satellite Television) is <u>MultiChoice</u>'s digital satellite TV service in Africa, launched in 1995, providing various bouquets.

that television is a ubiquitous part of our everyday lives. Shamsher and Abdullah (2012:46) concur that regardless of age, sex, income or educational level, television is a powerful medium that reaches large audiences. Brown and Keller (2000) argue that people watch television for a significant purpose and a number of hours per day. Akingulu (2010:29) states that a number of survey reports note that the average daily television viewing time is as high as five to six hours. Viewer's select (use) television channels which gratify their needs. Agyekwena (2007:265) indicates that television is an important aspect of millions of people and the *Uses and Gratification Theory* aptly describes how television fulfils certain needs of viewers.

The Uses and Gratifications Theory has been applied by various scholars and researchers who use it to explain the reasons for television viewing. Chandler (1994) applies the Uses and Gratifications Theory to explain how television programmes gratify different needs in different individuals. Obono and Madu (2010:75) are of the view that most of the television viewers use television as a major information provider. An empirical study undertaken by McQuail (2005:426) and West and Turner (2004:156) explain why people watch television programmes. Their study revealed the following: People watch television:

- 1. To source information about important events and conditions in society;
- 2. To become aware of and to participate in social interaction; and
- 3. For entertainment.

Sonko (2010:2) points out that parents use television to interact with and to keep company with their children. Rubin (1981) in Rizkallah and Rizzouk (2006:72) mentions five most important television viewing motives by old people:

- 1. Relief from boredom;
- 2. Information;
- 3. Entertainment;
- 4. Social interaction; and
- 5. Companionship.

The study conducted by Anjum and Michele (2014:830) discover that the major gratifications derived from watching transnational television among Pakistani Diaspora in Canada were for information, entertainment, and awareness of current, political, social, strategic and economic issues. Rizkallah and Rizzouk (2006:720) discovered in their study that Arab American adult immigrants watch television for entertainment, social interaction, habit and information. Anjum and Michele (2014:830) also revealed in their study that the Pakistani Diaspora in Canada was not watching television for personal and tension release needs. A study by Nwabueze et al. (2012:1) show that the need for information, quality of programmes and entertainment are major gratifications that motivate exposure to satellite television viewing among viewers with satellite households in the Southeast zone of Nigeria. Bhat (2015:8) discovers in his study that most inhabitants of Kashmir Valley in India watch television to get information and education, not for entertainment. Jamal and Mekote (2008:10) examine Kuwaitis' motives for viewing and avoidance of Al-Jazeera television channel; the finding reveals that Kuwaitis watched Al-Jazeera because it provides information without any restriction, freedom of expression to discuss sensitive issues on politics, and it also exposes the bad behaviour of Arab leaders.

On the other hand, ethnicity and language can also be viewed as strong factors that determine television viewing motives. Rizkallah and Razzouk (2006:65) argue that ethnicity has proven to be an important motivating factor for television viewing. Zohhori (1988) in Rizkallah and Razzouk (2006:65) conducted a study on television viewing motives between immigrant children of different ethnic groups and American children. The study revealed that both immigrant children and American children were motivated to use television for learning and social interaction, companionship and escape. Feng and Nzail's (2014:29) study reveals that Chinese participants expected to see their own ethnic, language, racial, and cultural identities, events, and/or news through the Internet and television. Ikeda (1992) in Rizkallah and Razzouk (2006:65) discovers that language learning, entertainment and information are the major television motives for Chinese immigrant children in the United States. Ankit (2014:7) investigates the motives of Arabic speaking viewers for watching English or dubbed television programmes; the study shows that learning English is among the most important motives for the respondents to watch foreign-language programmes. Harwood and Vincze (2011:383) discover in their study that the second language can be a barrier to the viewers in bilingual contexts. Munyoki and Kirigo (2011:8) indicate that motivation for viewing television programmes depends on the language of the programmes. Rizkallah and Razzouk (2006:72) reveal in their study that Arab Americans rely on Arab television for information on what is taking place around the world and in their countries of origin.

Similarly, the choice or preference of television stations can also determine the motivation for television viewing. Munyoki and Kirigo (2011:1) describe preference as a 'choice between alternatives and the possibility of rank ordering of alternatives based on the degree of happiness, satisfaction, gratification, enjoyment or utility they provide'. The study conducted by Alhassan and Kwakwa (2013:203) identify the following: image of the station, clear reception, station heritage, news coverage and kinds of programme as five major factors that influence the choice of television station watched by inhabitants of in the eastern part of Ghana. The study conducted by Munyoki and Kirigo (2013:3) also discovered that community television was preferred by the majority of primary school teachers in Langata (Nairobi) and the significant factors that influenced teachers' choice for selecting a television station were: the quality of news coverage and presenters that appear on the television station, and the variety of programmes that are broadcast through a clear television reception signal. The study carried out by Bhat (2015:8) reveals that television viewers in Kashmir Valley preferred to watch Indian Urdu television channels as compared to other television channels. On the other hand, Munyoki and Kirigo (2011:8) believe that channel loyalty also influence the choice of television channels selected. Goodhardt et al. (1987) in Munyoki and Kirigo (2011:8) define channel loyalty as 'the extent to which viewers tend to view programmes from one channel rather than distributing their viewing time equally among different channels'. Munyoki and Kirigo (2011:8) observe that if the viewer's based their loyalty on a specific television channel, there will be decreased watching of other available television stations.

SABC as a Public Broadcaster

South African public television stations have a fascinating story. In 1976, public television was introduced to South Africans and only 300,000 television sets were sold nationally. According to Tager and Chasi (2015:5) in 1976, television consisted of a single channel named South African Broadcasting Television (SABCTV) or SATV and later introduced a second and a third television station. Before the introduction of the second and third television, the broadcasting in SABC television was only in Afrikaans and English and none of the country's Black languages were included. Tager and Chasi

(2015:5) indicate that SABCTV's programmes were broadcast between 18.00 and 23.00 in the evening, from Sunday to Friday, and seven hours on Saturday. They further stress that equal time was given to English and Afrikaans programmes, for instance; on Mondays, Wednesdays and Fridays broadcasting opened with a short English language news bulletins, followed by entertainment programming for a total of two hours. The Afrikaans broadcasting took over with the main news bulletin at 20:00, followed by prime-time viewing, including hour-long drama programming or dubbed films, until the close at 23:00. On Tuesdays, Thursdays and Saturdays the programmes would be in Afrikaans.

Tager and Chasi (2015:5) state that in the 1970s most programmes were bought from America, Frances or Germany but in 1976, the British Actors' Union imposed a ban on exporting any drama television to South Africa and this ban remained in place for 17 years until 1993, the year after the release of Nelson Mandela from prison. Tager and Chasi (2015:5) further mention that the roles allocated to black actors prior to 1994 were those which reinforced the status quo in the country at the time, which was that Blacks were seen as subordinate to Whites.

SABC Language Issues

When the South African Broadcasting Television was introduced, there was no television programming in any African language. According to Tager and Chasi (2015:5) the introduction of the African languages service was approved by the government in 1979. Tager & Chasi (2015:5) further comment on the South African Broadcasting Corporation Annual Report (1982) that African languages services were inaugurated on New Year's Eve of 1982 in South Africa. The African languages programmes which were broadcast for 27 hours per week and in five languages were divided into two groups: Nguni languages, specifically IsiZulu and IsiXhosa were to be broadcast on SABC2 and the Sotho family of languages, especially SeTswana, SeSotho and SePedi, found a home in SABC3. The two channels, SABC2 and SABC3 are in the same frequency band but transmitted to diverse geographical parts of the country. The first part of the 1980s was a period of expansion. The Advisory Board for Services in Bantu languages was set up to regulate the correct use of African languages in their purest forms. Tager and Chasi (2015:5) explain that this advisory board had memberships both from within and outside the South

African Broadcasting Corporation and endured a continuous supply of neologisms in Africa language. In 1980 the first black member of the advisory board was appointed in the person of Professor Abraham Nkabinde from the University of Zululand.

The South African Broadcasting Corporation re-launched of all its channels in February 1996. According to Tager and Chasi (2015:5) the aim of this re-launch was to become truer to the ideals of public broadcasting. There are three South African broadcasting stations, namely SABC1, SABC2 and SABC3 and they are broadcast freely on air. SABC1 disseminates its programmes in the form of Nguni group of languages such as isiZulu, isiXhosa, and some isiNdebele as well as some in English. SABC2 transmits its programmes in Afrikaans, TshiVenda, TshiTswana and English while SABC3 presents its programmes in English only. SABC1 and SABC2 have the responsibility of being public service broadcasters (African Media Barometer, 2013:30). SABC Africa is one of the South African Broadcasting Corporation channels, which was transmitted through Digital Satellite Television but was later discontinued in 2008. Moreover, SABC1, SABC2 and SABC3 channels are also broadcast via the Digital Satellite Television bouquet.

Objectives

Today, there are 12 million licensed television households in the South Africa; citizens and non-citizens can tune-in to any South African Broadcasting Corporation station they feel like watching. One cannot watch three stations at a time; one will prefer watching one station to another or have reasons for watching a particular station. In other words, the objectives of this study are as follows:

- 1. To examine television viewing motives among inhabitants of Durban in KwaZulu-Natal, South Africa;
- 2. To determine the preferred or favourite South African Broadcasting Corporation channel by inhabitants of Durban; and
- 3. To evaluate the factors that influences the viewers' choice of particular South African Broadcasting Corporation channels in Durban.

Methodology

This study applies the Uses and Gratifications Theory to examine television viewing motives and preferences for public television stations among inhabitants of the city of Durban in KwaZulu-Natal, South Africa. The research employed a descriptive survey research design. Odia and Oamen (2013:49) note that survey design is the research method that is used to assess thoughts, opinions and feelings. The University of Zululand's ethical policy was strictly applied and adhered to in order to safeguard the respondents' privacy and confidentiality.

Target Audience

The target population of this study was residents of the city of Durban, KwaZulu-Natal. Odia and Oamen (2013:49) state that it is not always possible to make an observation on every individual in whom a researcher is interested in due to time constraints and financial costs, however, Durban was considered as an appropriate research field due to its racial diversity. Wimmer and Dominick (2006:88) argue that there is need for a subset from the target population that will be representing the entire target population. A representative sample of the population was used in the study.

Sample Size and Sampling Method

This study adopted the method of sampling as outlined by Du Plooy (2009:119), which estimates that for a population of over 100,000 (one hundred thousand at 95 percent confidence level and \pm 5% error margin) the sample size is 384. About 600 questionnaires were randomly distributed. The first 384 correct questionnaires that were received were analysed. The sample size for this study, therefore, comprised 384 viewers of the South African Broadcasting Corporation SABC1, SABC2 and SABC3 in Durban. Moreover, 384 respondents from the City of Durban were selected by using the random sampling technique.

Data Collection Instrument

This study used self-administered questionnaires. close-ended questions were included in the questionnaires because they permit easier interpretation and tabulation.

Data Analysis and Interpretation of Data

Gender Male 10 Female 21 Age 20-29 20-29 4 30-39 10 40-49 13 Above 50 4 Ethnicity 13 Black 21 Coloured 33 Indian 8 White 6	58 43.8 16 56.2
Male 10 Female 21 Age 21 20-29 4 30-39 10 40-49 13 Above 50 4 Ethnicity Black 21 Coloured 3 1 Mate 6 6	58 43.8 16 56.2
Female 21 Age 20-29 4 30-39 10 40-49 13 Above 50 4 Ethnicity Black 21 Coloured 33 Indian 8 White 6	16 56.2 9 12.5
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Above 504EthnicityBlack21Coloured3Indian8White6	34 34.9
EthnicityBlack21Coloured3Indian8White6	1 10.7
EthnicityBlack21Coloured3Indian8White6	
Black21Coloured3Indian8White6	
Coloured3Indian8White6	10 54.7
Indian 8 White 6	0 7.8
White 6	0 20.8
	4 16.7
Marital Status	
Married (not living with 4	9 12.8
spouse)	
1	1 2.7
Widow 3	1 8.1
Widower	7 1.8
Divorced 9	9 25.8
Separated (0
Single 18	48.7
Other (0
Educational Qualification	
No formal advantiar	

Table 1: Demographic Profile of Respondents

13

3.4

Grade 11 or lower

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Grade 12 (standard	68	17.7
10/matric		
Post matric diploma or	72	18.8
certificate		
University or	141	36.7
Technikon degree		
Post graduate degree	90	23.4

Table 1 provides the demographic profile of respondents who participated in this research. The following variables (Gender, Ethnicity, Marital status and Educational Qualifications) formed a part of the respondent's profile:

- 1. A total of 56.2% of the respondents were female and the remaining 43.8% were male.
- 2. The age distribution also shows that 41.9% were within the ages of 30-39 years, 34.9% were aged between 40-49 years while 12.5% respondents were between the ages of 20-29 years and only 10.7% of the respondents were older than 50 years.
- 3. The distribution of respondents according to their ethnic groups indicates that 54.7% of respondents were Blacks, 20.8% of respondents were Indians while 16.7% of respondents were White and only 7.8% of respondents were Coloured.
- 4. As far as the marital status of the respondents was concerned, about 48.7% respondents were single, about 25.8% were divorced, 12.8% were married and living with the spouse, 8.1% of the respondents were widowed, 2.6% were married and not living with the spouse and 1.8% of the respondents were widowers.
- 5. The distribution of respondents according to their level of education shows that 34.7% of respondents held university or Technikon degrees, 23.4% held a post-graduate degree, 17.7% of respondents obtained grade 12 (standard 10/matric) certificates while 3.4% of the total sample obtained grade 11 certificates.

Time spent on watching TV					
	Number	Percentage			
Less than an hour	48	12.5			
Between one to two hours	90	23.4			
Between two to five hours	132	34.4			
More than four hours	114	29.7			
Total	384	100			

Table 2 Frequency of Watching Television

Table 2 reveals the average time spent watching TV per day by respondents:

- 1. Respondents who spent 2 to 5 hours watching television totalled to 34.4%,
- 2. Those who watched television for more than 4 hours made up 29.7% of the respondents.
- 3. A further 23.4% of respondents indicated that they spent 1 to 2 hours watching television.
- 4. However, 12.5% of the respondents mentioned that they watched television for less than 1 hour.
- 5. Respondents who watch television between 2 to 5 hours and those who watch more than 4 hours totals 64.1 %. This provides a great platform for marketers to advertise their products.

Television Viewing Time				
	Number	Percentage		
Morning	22	5.7		
Afternoon	35	9.1		
Evening	181	47.1		
Night	94	24.5		
Mid-night	21	5.5		
Any time	31	8.1		
Total	384	100		

Table 3: Viewing Period for Watching TV

Table 3 provides information on respondents' peak viewing periods. The following responses were received:

- 1. Respondents who preferred to watch television in the evening amounted to 47.1%
- 2. Night viewing totalled to 24.5%.
- 3. Those who preferred watching television in the afternoon were 9.1%.
- 4. A further 8.1% of the respondents preferred to watch television at midnight.
- 5. Morning viewing was only 5.7% of the respondents.

Many respondents are working, and therefore prefer to watch television in the evening, which is their leisure time. This finding is similar to results of the studies conducted by Odia and Omen, 2013; Shamsher and Abdullah, 2012, Rizkallah and Razzouk, 2006 which revealed that people preferred to watch television in the evening.

Viewers' Motives for Watching SABC Television

Table 4 provides a breakdown of the motives for why respondents watch SABCTV channels. The respondents were allowed to circle more than one motive for watching SABC1, SABC2 and SABC3.

Motives	SABC1	Rank	SABC2	Rank	SABC3	Rank
Entertainment	221	2	153	1	137	2
Information	235	1	76	4	174	1
Relaxation	112	7	82	3	120	3
Instruction	182	5	87	2	111	5
Education	218	3	72	5	118	4

Table 3: Viewing Period for Watching TV

Companionship	167	6	55	7	87	7
Social	213	4	61	6	101	6
interaction						
Total	1348		586		848	

- 1. Table 4 indicates that respondents watch SABC1 for information, entertainment, education, social interaction, instruction, and companionship and for relaxation.
- 2. The table shows that respondents watch SABC2 for entertainment, instruction, relaxation, information, education, social interaction and companionship.
- 3. The table reveals that respondents watch SABC3 for information, entertainment, relaxation, education, instruction, social interaction and companionship.

This demonstrates that respondents show diverse inspirations for viewing SABC1, SABC2 and SABC3 yet respondents' primary purpose for viewing is for information gathering. Decisively, respondents get their information needs for the most part on SABC1 and SABC3. Moreover, Kamiri *et al.*, 2014; Nwabueze *et al.*, 2012; Beverly *et al.*, 2012; Gurleen and Sukhmani, 2011; Jamal and Melkote, 2008; McQuil, 2005, LaRose and Eastin, 2004 additionally discovered comparable inspiration for viewing television in their studies. The table further portrays that entertainment is another solid rationale for viewing SABC1, SABC2 and SABC3. In the same vein, numerous studies (Bhat 2015; Anjum & Michele 2014; Alhassan & Kwakwa 2013; Shamsher & Abdullah 2012, LaRose & Eastin 2004) found in their studies that entertainment is a strong motive for televisin viewing. It affirms that social connection and companionship are the weakest motives of respondents for choosing to watch SABC2 and SABC3 while companionship and relaxation are the weakest intentions in respondents who watch SABC1.

Viewers' Preference of SABCTV Stations

Table 5: shows viewers' choice of SABCTV and in this section, respondents were asked to circle their choice of SABCTV.

Ethnicity	I prefer watching the following channels:	SABC1	SABC2	SABC3
South African Blacks (210)	Yes	210	28	110
	No	0	172	19
	Occasionally	0	10	81
South African Coloureds (30)	Yes	11	30	30
	No	0	0	0
	Occasionally	19	0	0
South African Indians (80)	Yes	0	0	80
	No	72	56	0
	Occasionally	8	24	0
South African White (64)	Yes	0	64	64
	No	64	0	0
	Occasionally	0	0	0
Total=384				

Table 5: Viewers' Preference of SABCTV Stations

Table 5 indicates that most Black South Africa respondents preferred to watch SABC1; a few Black respondents tuned into SABC3 while the majority do not like SABC2 television. The table also shows that Coloured respondents preferred to watch both SABC2 and SABC3, while a smaller group of them watched SABC1 occasionally. Indian respondents preferred to watch SABC3 while a few of them watch SABC2. White respondents preferred SABC2 and SABC3, and none of the White respondents like SABC1.

This study endorses that the preference for viewing South African Broadcasting stations also depends on what specific ethnic group find gratifying. Gratification in this instance is possibly derived from feeling comfortable with a particular language usage. Language use would also have strong ties to cultural themes which a certain channel depicts. For instance, they the data reveals that black South Africa respondents preferred SABC1; this may be due to one of the common African languages used in SABC1, which is IsiZulu and moreover, the province is KwaZulu-Natal, which is dominated by Zulus. The study also reveals that Whites preferred SABC2; this may also be due to one of the languages used in SABC2, which is Afrikaans, a language with which they are familiar. Indians preferred to watch SABC3. This result is largely due to the fact that most Indians speak the English Language only, and SABC3 broadcasts its programmes, including the news, in English. The study also indicates that Coloured respondents in Durban either preferred SABC2 or SABC3. It can be stated that SABC1 and SABC 2 are focused on ethnic public media since the programmes and languages used accommodate specific ethnic audiences while SABC3 is seen as the mainstream media outlet. Feng and Nzai (2014:20) state that ethnic media are tied to a particular minority group and have the capacity to deliver information to that specific targeted audience.

Factors which Influence Respondents' Preference or Choice

Table 6 examines the factors that influence viewers' choice for selecting a particular channel (SABC). In this section, the respondents were requested to circle more than one answer.

Factors of influence	Frequency	Rank
Language of	372	1
programmes		
TV station	283	3
History/Heritage		
Types of programmes	345	2
Family/friends	257	4
influence		
Religious beliefs	40	6

 Table 6: Factors which Influence Respondents' Preference or

 Choice

TV stations marketing	78	5
programmes, e.g.		
advertisements		
Total	1375	

Table 6 provides the various factors that influenced respondents when it comes to choosing a particular SABCTV station:

- 1. A total of 372 respondents were influenced by language of a programme that influenced respondents' viewing preferences.
- 2. Types of programmes were selected 345 times.
- 3. A television station's history/heritage also influenced respondents and this variable was selected 283 times.
- 4. Respondents who are influenced by family/friends were selected 257 times.
- 5. Respondents also indicated that a television station's marketing programmes also influenced them and was selected 78 times.
- 6. It is interesting to note that only 40 selections were made by respondents for religion. This indicates that religion is not regarded to be a strong influencer.

The study confirms that the language in which programmes are broadcast is a very significant factor that determines the viewers' choice for selecting a certain channel from the SABC bouquet. It also means that if the viewers understand and can speak the language used in a particular television programme, they would stay tuned in to such a television station, but if they do not understand the language they would quickly switch to other stations.

Discussion of Analysed Data

This study has examined the television viewing motivations and preferences for public television stations among inhabitants in the City of Durban in KwaZulu-Natal, South Africa. Durban is an appropriate city to conduct such a study due to its racial diversity. This ensured that all ethnic groups in South Africa participated in the study and thus aided in improving the accuracy of the results. The following conclusions are drawn from the findings of the study:

- 1. Respondents are in keeping with revelations of the Uses and Gratifications Theory. Most respondents watch television in the evenings, during their leisure time to source information about important events and conditions in society. They watch news discussions on public television in order to become aware of and to participate in social interaction.
- 2. Contrary to the Uses and Gratifications Theory SABC television was scarcely used for entertainment or relaxation. Many respondents who viewed public television do so because it is free (subject to payment of a licence fee). Social interaction and companionship are the least important motives for respondents watching SABC2 and SABC3. Companionship and relaxation are least important motives for respondents watching SABC1. Pay-TV (such as DSTV) is probably used for relaxation or companionship. SA's pay-TV market is dominated by a single, entrenched player, MultiChoice, with its DSTV offering. According Moyo (2015), DSTV has 5.4 million subscribers in SA.
- 3. Respondents exhibited different motivations for viewing SABC1, SABC2 and SABC3. However, respondents' primary motive for watching SABC1 is information gathering (by watching the news), which was also the same with respondents' first motives for viewing SABC3. Respondents get their information needs mostly from SABC1 and SABC3.
- 4. Social interaction and companionship are the least important motives for respondents watching SABC2 and SABC3. Companionship and relaxation are least important motives for respondents watching SABC1.
- 5. This study endorses that the preference for viewing South African Broadcasting stations also depends on what specific ethnic group find gratifying. Gratification in this instance is possibly derived from feeling comfortable with a particular language usage. The study established that each ethnic group has its own preferred choice of SABCTV stations. For instance, it was discovered that almost all Black respondents preferred SABC1; this may be due to one of the common African languages used in SABC1, which is IsiZulu and moreover, the province is KwaZulu-Natal which is dominated by Zulu speaking South Africans.

- 6. It was also revealed in the study that Whites preferred SABC2. This may also be due to one of languages used in SABC2, which is Afrikaans, a language preferred by Afrikaans speaking Whites.
- 7. Indians preferred to watch SABC3. Indians predominantly speak the English Language, and only SABC3 broadcasts its programmes, including the news, in English.
- 8. The study indicated the Coloureds in Durban either preferred SABC2, or SABC3. SABC1 and SABC2 are ethnic public media platforms due to the diversity of the languages they use for their programmes. SABC3 represents the mainstream media. Feng and Nzai (2014:20) state that ethnic media are meant for a specific minority group and they have ability to disseminate information to that particular target audience.
- 9. The language of programmes is the most significant factor that determines the viewers' choice of SABCTV stations. It means that if the viewers understand and can fluently speak the language used in a particular television programme, they would stay tuned in to such a television station, but if they do not understand the language they would quickly switch to other stations.
- 10. Another important factor that determines the viewers' choice of SABCTV station is type of the programme; this means that if a programme broadcasted by one station is interesting, viewers would like to keep watching that station, but if it is not, they would turn to another television station. In addition, the television history or heritage is also considered a factor that determines the viewers' choice of SABCTV station. It was revealed that family and friends also have the power to influence the viewers' choice of SABCTV station.
- 11. Television marketing programmes like advertisements also determine the viewers' choice of SABCTV station; this can be viewed in two ways: If advertisements are created with likeable factors, it would be watched by the audience. Also information seekers have favourable attitudes towards television advertisements.

12. Religion is the least likely factor that determines the influence of viewers' choice of SABCTV station.

Recommendations

Based on the findings of the study, the following recommendations are suggested:

- 1. The management and board of directors of SABC1, SABC2 and SABC3 must take cognisance of the Uses and Gratifications Theory to understand the reasons for television viewing. It, to a large extent, explains how television programmes gratify various needs in different individuals. The theory clarifies factors that determine the viewers' choice of TV stations, such as the language of the programme, type of programme, TV heritage and history, the influence of family and friends as well as number of advertisements placed on TV.
- 2. It is also recommended that the editorial teams of SABC1, SABC2 and SABC3 take note of their strengths and weakness to produce programmes which gratify the needs of the current views so that viewership is sustained or improved. It is no wonder that SABC's productions and general management is coming under severe scrutiny. Primary issues such as placement unqualified personnel in key positions need serious review because unqualified managers and decision makers will not be able to fully understand the thrust and purpose of research such as this and important theories which guide production. Mediocrity will only breed Mediocrity.
- 3. South Africans have been gently lured into accepting commercial disruptions during their viewing time. On 28 September 2015 at 8H30, SAFM announced that SABC relied heavily on revenue from advertisers. SABC now has a balance of over R1 billion in their account although they showed a loss of R400 million last year. The revenue could be channeled into providing a predominantly English language channel which would cater for the general economic and educational needs of the country. Comparatively, the pay TV platform MultiChoice

has grown by 684 000 subscribers in the last year and the total number of MultiChoice subscribers now stands at 5.6 million households. Revenue of the pay TV business is up 15% to R24.1bn, while trading profits grew 11% to R6.3bn Ferreira (2012). SABC urgently needs to consider other options of fulfilling their mandate to society. This could include introducing more television channels and increasing local content.

4. The advertisers and advertising agents must undertake research based on motivations for viewing television and preference of audiences, especially on ethnic audiences, before placing advertisements on television. In other words, advertisers should also care about viewer segments and viewing choices to ensure that their advertising campaigns are well-spent. If advertisements are created with likeable factors, it would be watched by the audience, and it will engage and influence them towards purchasing the goods. On the other hand, audiences may also dislike advertisements not related to their needs. In addition, advertisers and advertising agencies should try to have their advertisements aired during the evening periods, since the viewership peaks at such times.

Conclusion

In a digital era where broadcasting has become less challenging, SABC sadly only offers three channels with which they assume will gratify the needs of the rainbow nation. The country also has numerous community television stations, such as 1KZNTV which is very popular. The community television stations make a very pertinent contribution towards specific community development initiatives and also provide relevant entertainment.

Each SABC channel has become complacent and believes that it is gratifying the needs of the people by becoming specialist in the most desirable languages of the country. It is debatable whether this situation can really contribute to overall sustainable growth of the country. SABC has the funds and the expertise to extend their viewership by introducing more channels to cater for the needs of such a diverse country. One becomes curious to discern the results of a comparative study between SABC to DSTV (which, again, is an added cost to viewers). One wonders how far South African public television is from achieving its mandate to society. Viewers may simply be watching SABC programmes aired in their respective languages because that is what is available to non-pay TV viewers. Further research in this arena needs to take place as soon as possible.

Wilson (1992:267) supports this view by indicating that public television is a non-commercial form of broadcasting primarily for providing public services. Folkerts, Lacy & Larabee (2009:170) describe public television stations as educational television stations which are not operated for profit.

However, the outcomes of this study has not been able to establish any positive correlation between commercial breaks on public television and viewer motives for watching public television. Commercial breaks are least significant factor that influenced viewing of respondents who watched SABCTV. The language of programmes is the most significant factor that determined the viewers' choice of SABCTV.

Thus far commercial breaks used by SABCTV, as a source of funding, has not been a deterrent or hindrance. In fact, it ought to be a positive factor in fulfilling their mandate with ease by presenting the best educative, informative and entertainment programmes. However, especially in view of the Gupta-gate scandal, caution must be exercised when dealing with sponsors who attempt to control or influence their programme content. South Africa is in a promising situation to produce the most feasible public television programmes. However, further research is required to investigate other viruses that attack the progress of SABCTV such as corruption in financial management as well as employment of unqualified personnel in high profile positions. Much of these issues form regular news headlines in current newspapers.

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