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Alternation

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Guest Editor
Rembrandt Klopper

2011

CSSALL
Durban

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Editorial

Rembrandt Klopper

From the point of view of differences between the submissions that passed peer review, this issue of *Alternation* consists of 19 articles from the fields of Management, Informatics, Media Communication and Research Methodology. All 11 of the *Management* contributions report the results of research in a variety of fields of Business Management, namely Change Management, Diversity Management, Economics, Entrepreneurship, Finance, and Management of Service Delivery. Of the six *Informatics* contributions, three have an applied research methods focus. Two of them focus on specific aspects of Grounded Theory in Information Systems Research, while the third focuses on Information Quality in Information Systems Research. The other three Informatics articles deal with themes like Digital Convergence, Information Systems in Higher Education and Mobile Communication Technologies.

Two contributions have their own particular focuses. One of them analyses Media Communication. The other one focuses on Concept-Centric Literature Review.

The cover of this issue was created by combining the keywords of all the articles, and thereafter generating a visual representation – a font size sensitive lexi-graph of sorts – of how frequently terms are used in relation to one another. This was achieved by using the generously free online service, WORDLE (that is gratefully acknowledged here). WORDLE equates the frequency at which terms are used with their font sizes among the other terms displayed on the image. From the cover page one can therefore see that the most frequently used keyword in this issue is *information*, followed at a considerably lesser but co-equal frequency by *research* and *theory*, and

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thereafter in more or less descending interval steps by *business, grounded (theory), systems, reporting, economic, firm, knowledge, success, differential, entrepreneurial, information, technology, quality, timelines*, etc.

The names of individual contributors appear with article titles and pagination information in the table of contents on the back outer cover. Summaries of individual articles appear as abstracts at the beginning of each article.

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The Quality of the Human Factor and its Implications for Network Dynamics and Small Business Growth and Development¹

Kwame Owusu-Ampomah

Abstract

This paper explores using network theory, in real terms, to explain economic growth and/or organizational performance, and its implications for small business growth and development. Whereas network theory suggests that networks support organisational and/or economic performance descriptive notions of the concept are vague, and network attributes are difficult to measure; how networks work is also unclear. Many observers maintain that trust is the key determinant of network outcomes. In this article it is argued that this position runs the risk of reductionism. The paper postulates that the primary determinant of economic performance in network relationships is the quality of the human factor, of which trust is only one but an important component. The relevance of this thesis in small business growth and development is explored, drawing on data from a study on the network perspective of the growth paths of small clothing manufacturing enterprises in Durban.

Keywords: small business growth and development, network theory, embeddedness, economic performance, trust, human factor.

¹ This paper was presented under the title *Understanding Network Dynamics: The Human Factor and Small Business Growth and Development* at the Business Management Conference, 5th-7th November, 2009, at the Graduate School of Business, Faculty of Management, University of KwaZulu-Natal, Durban, South Africa.

Context and Purpose

Interest in network theory and practice, particularly in relation to organisational performance and national economic growth, has increased phenomenally in the past two decades or so. Whereas in the real world, most firms have or are linked to one or more types of networks the volume of network literature has also increased exponentially across all disciplines. The surge in interest and logic of networks, in part, derives from the widely documented pragmatic gains arising from networks or networking (see, for example, Putnam, Leonardi & Nanetti 1993; Uzzi 1996; Lee & Humphreys 2007 and Ofcom 2008) and the notion of embeddedness – the notion that economic behaviour does not occur in a social vacuum but is embedded in social relations (Granovetter 1985: 485-510). The latter alludes to the recognition that the social is as important as the economic in exchange relations. The social is particularly critical in periods of economic stress or failure of markets and hierarchies, which in part arises from bounded rationality, the idea that individuals ‘... are intentionally rational, but only to a limited extent (Simon 1957b: xxiv, cited in Hardt 2009:34). Shorn of bounded rationality, all economic exchange could efficiently be organized by contract (Williamson 1981:553). Failing this, networks assume an inter-mediating role in the exchange system under the assumption that relational network structures can reduce uncertainty, malfeasance and/or opportunistic behaviour, and thereby lower transaction costs. This notwithstanding, descriptive notions of networks are vague, and network attributes are often difficult to measure. How networks work is also unclear; there is no consensus on the binding mechanism, which provides coherence to a network and its outcomes (Gonzales 2006:1). Whereas some analysts point at licence agreements, shares in equity, subcontracting agreements and/or values (Gipoulox, 2000:58), others (e.g. Arrow 1972; Fukuyama 1995; Algan & Cahuc 2007; Yang 2007) isolate trust as the key determinant of network coherence and outcomes.

Exploring network theory, in real terms, to explain economic growth and organisational performance, this article argues that the notion that trust is the key determinant of network coherence and outcomes runs the risk of reductionism. The article posits that the primary determinant of network coherence and desirable economic outcomes in network relationships is the quality of the human factor, of which trust is only one but an important

component. In other words how networks work is better explained by the human factor paradigm (HFP). In the rest of the article a conceptual overview of networks is provided, focusing on what networks are, and typology. A discussion of the attributes and effects of networks follow this. Next, how networks work is critically analysed; and the human factor paradigm is advanced as the primary explanatory model for network coherence and outcomes. The relevance of this thesis in small business growth and development is explored, drawing on data from a recent study on the network perspective of the growth paths of small clothing manufacturing enterprises in Durban.

Networks – A Conceptual Overview

What are Networks?

The term network is not a new phenomenon. In contemporary usage however, the concept is used in different ways by different people, reflecting ‘some confusion about quite what a network perspective entails’ (Faulkner & de Rond 2000:20). Some analysts perceive networks as a metaphor, lacking any properties and strategies to maximise the benefits of networks (Aldrich & Whetten 1981; Ibara 1992, cited in Faulkner & de Rond 2000: 20). Others view networks as a hybrid form of organisation located on the markets-hierarchies spectrum (Thorelli 1986; Powell 1990). Generally, however, the concept of social networks is often defined as a structure of ties or set of nodes among actors in a social system or a set of high-trust linkages connecting a set of entities (Nohria 1992a:288; Castilla, Hwang, Granovetter & Granovetter 2000; Gipouloux 2000; Casson 2000:170; Bogarti & Li 2009:2). For others like Faulkner and de Rond (2000:20), however, social networks are persistent and structured sets of autonomous players - persons or organisations - who co-operate on the basis of implicit and open-ended contracts.

Besides the general notion of social networks two conceptions of networks have emerged in recent times. At one level, a network refers to a new organisational form - the network organisation. It is a form of organisation which is integrated across formal groups created by vertical, horizontal, and spatial differentiation for any type of relation, and distinct from Weberian bureaucracy or hierarchies and markets (Baker 1992; Piore

1992). The basis of relationships in this new organisational form is also different from those designed by market or hierarchical authority (Nohria 1992a; Nohria & Eccles 1992:288; Piore 1992:430; Ibara 1992:169; Baker 1992).

All organisations are networks – patterns of roles and relationships – whether or not they fit the network organisation image. Organisational type depends on the particular pattern and characteristics of the network. For example, a network characterised by a rigid hierarchical subdivision of tasks and roles, vertical relationships and an administrative apparatus separated from production is commonly called a bureaucracy. In contrast, a network characterised by flexibility, decentralized planning and control, and lateral (as opposed to vertical) ties is closer to the network organisation type (Baker 1992:399-400).

At another level, a variant of the new organisational form derives from the modern information and telecommunications technologies, e.g. facsimile, e-mail, teleconferencing, and Internet. Castells (2000:187) calls this organisational form the network enterprise, defined as ‘that specific form of enterprise whose system of means is constituted by the intersection of segments of autonomous systems of goals’. The conception of network from the information and communication technologies perspective has drawn conclusions towards a vision of Network Nation (Hiltz & Turoff 1978) or Network Society (Castells 2000).

Nohria and Eccles (1992:289) point out that the two conceptions of network often converge but network organisation is not the same as electronic networks although the latter can, and will play a key role in shaping the former. For these authors electronically mediated interactions are not always as effective as face-to-face exchanges. Inasmuch as this may be true, it can also be argued that the use of the electronic medium does not obliterate the traditional medium of communication: printed matter. This view is likely to be upheld by the actor-network perspective of the network phenomenon which emphasises the human as well as the technical components in social network relationships but this need not detain us here. It might suffice to say that actor network perspective recognises an

environment of interconnected hybrid entities, and that '(i)n networks of humans, machines, animals, and matter in general, humans are not the only beings with agency, not the only ones to act; matter matters' (Risan 1997).²

Typology of Networks

The conceptual uncertainty surrounding network theory is not limited to what networks are: typology of networks is, as well, a source of uncertainty. Inasmuch as many types of networks exist, there is also a considerable degree of overlapping. In some cases differences may not be real but a matter of semantics. This is reflected in the works of network analysts such as Redding (1990), Brass and Burkhardt (1992), Ernst (in Castells 2000: 207), Casson (2000), Wu Wei-ping (2000), and Bogarti & Li 2009: 2-3). Ernst (in Castells 2000:207), for instance, maintains that a great deal of economic activity in industries in the global economy is organized around five different types of networks, namely, supplier networks, producer (or factor) networks, customer networks, standard coalition networks and technology co-operation.

Whereas Brass and Burkhardt (1992), highlight communication and fraternal networks, Casson (2000: 178) identifies a spectrum of binary network-types, e.g., regional and inter-regional networks; open and closed networks; vertical and horizontal networks; and visible and invisible networks. For Casson (2000), a network may be forgiving or unforgiving; transparent or opaque; open or closed; tough or lenient; vertical or horizontal; business or social; and visible or invisible. Bogarti and Li (2009: 2-3) on the other hand observe network types at two levels. At the top level the typology divides ties into two basic kinds, continuous and discrete; at the next level, four major groups are identified: similarities, social relations proper, interactions, and flows. The authors maintain that any or all these types of ties can exist simultaneously, a property known as multiplexity.

Arguably, network theory is a labyrinth of conceptual uncertainties, but this does not appear to significantly undermine its instrumental and/or

² For more information on actor-networks perspective see, for example, Callon (1987; 1993); Latour (1992; 1993); Stalder (1997); Risan (1997); Cordella and Shaik (2006).

analytical capacity in the context of economic and/or organisational growth and development. Adapting Hernando de Soto's insight on what the informal sector is, we may not be able to define a network accurately but we know it exists (see de Soto 1989, cited in Parlevliet, Jütting & Xenogiani 2008:1); the key elements being actors, activities, resources and a binding mechanism (Gipouloux 2000:58), which is the focus of this paper.

Network Characteristics and Effects

Several network analysts, e.g., Ibara (1992), Castells (2000), and Casson (2000) observe that network outcomes are contingent upon network type and properties. A well-structured network is an invaluable resource to its members. Castells, (2000: 187), for example identifies two fundamental attributes of a network that determine a network's performance: consistency and connectedness. Consistency refers to the extent to which there is a sharing of interests between a network's goals and the goals of its components; connectedness, on the other hand, refers to the ability of a network to facilitate noise-free communication between its components, i.e., the nature of connections and how it facilitates interactions between the members in a network. The dimensions of connectedness include density (presumably, the most important), positioning, openness, diversity, strength of ties and medium of interactions, e.g., face-to-face (FTF), the print and electronic.

In diverse ways, network characteristics, individually and collectively, affect exchange outcomes, and this is evident in a large and still growing body of literature (e.g. Perrow 1992; Nohria & Eccles 1992; Uzzi 1996; Villasalero 1999; Chan Kwok Bun & Chee Kiong 2000). Perrow (1992:460), for instance, maintain that the success of networks is the result of economic power of economies of scale through networks, trust and co-operation co-existing with competition, and welfare effects of networks that increase the efficiency of regions and industries. However, networks could have fewer welfare functions for society, particularly when an elite that generates trust among its members becomes powerful and exploitative (Perrow 1992:463).

Piore (1992), on the other hand, contends that networks facilitate the deepening of social division of labour, which enhances expertise and

integration, in a way that markets cannot. Whereas networks tend to enhance economic performance through inter-firm resource pooling, co-operation, and co-ordinated adaptation regarding production and information flows, business decisions and organisational learning (Uzzi 1996), Putnam (1993) observes that the quality of networking is a common factor in vibrant regional economies and polities:

Networks facilitate flows of information about technological developments, about the creditworthiness of would-be entrepreneurs, about the reliability of individual workers, and so on. Innovation depends on ‘continual informal interaction in cafes and bars and in the streets.’ Social norms that forestall opportunism are so deeply internalised that the issue of opportunism at the expense of community obligation is said to arise less often here than in areas characterised by vertical and clientistic networks. What is crucial about these small-firm industrial districts, conclude, most observers, is mutual trust, social co-operation and a well developed sense of civic duty – in short, the hallmarks of the civic community (Putnam 1993:161).

Networks also mediate labour and capital flows, with significant effects on industry and economic outcomes (Granovetter 1973; Nohria 1992b; Castilla, Hwang, Granovetter & Granovetter 2000; Kwok Bun & Chee Kiong 2000; Schak 2000). Family and friendship networks are not only a source of start-up capital and recruitment but also hiring of trusted and efficient employees. Granovetter (1973: 1369-1373) observes that recruitment occurs through the strength of weak ties where weak ties are acquaintances that form better bridges to new contacts and non-redundant information relative to strong ties, i.e., close friends who invariably know the same people and have the same information as others in the network. ‘From the individual’s point of view, then, weak ties are an important resource for possible mobility opportunity’ (Granovetter 1973: 1373).

Burt (1992) provides a mirror image of the weak ties argument in his concept of ‘structural holes’ which functions in a similar way as weak ties: diffusion of rich information and knowledge. Although the strength of weak ties argument holds some truth, it does not imply that strong ties can be discounted. Under certain circumstances strong ties generate internal

solidarity and trust with profound effect on collective achievements (Granovetter 1982; Krackhardt 1992).

From the organisational ecology perspective, institutional embeddedness, i.e. relational density – which in a limited sense, increases with population density - confers high survival rates on organisations (Baum & Oliver 1992). Baum and Oliver (1992:541) concur that institutional relationships act as buffers that protect organisations from environmental uncertainty and competitive threats to survival. As their reward for their institutional relationships organisations in a community derive legitimacy, status and vital resources that enhance their chances of survival and growth.

Notwithstanding positive network outcomes, networks could be cumbersome and costly when there are too many obligations to fulfil (Kwok Bun & Chee Kiong 2000:74). Dependence on personalized relations, as in family firms, tends to create problems of inheritance and wealth distribution. In some cases, a firm may dissolve or fragment into separate firms upon the death of the founder. Although family firms are believed to provide an organisational solution to agency costs in the labour market for managers and institutional development, strong dependence on family management coupled with restrictions on family size constrains the firms from optimally choosing management size. Large families, however, are more likely to have a larger pool of potential managers and end up with bigger firms (Ilias 2005:1).

Unguarded openness could also be detrimental whilst information flow could be hampered by gatekeepers or disgruntled network partners. Self-seeking individuals, especially if centrally placed in communication activity and have control over such activity in a network, may block the flow of information, and considerably impact on the distribution of resources (Marsden 1982:205). Similarly, negative connections do not also facilitate information flow and distribution of resources (Yamagishi, Gillmore & Cook 1988). Besides, invisible networks tend to be harmful. In opaque networks, the weak and ordinary members tend to be vulnerable, and easily fall prey to the strong and powerful members of the group (Casson 2000).

In its entirety network theory constructed upon structural and cognitive properties is problematic: structural analytical approach negates cultural nuances, agency, process, and the quality of the human factor. This limitation suggests that structural analysis of network relations, though

useful, cannot, and does not sufficiently explain economic behaviour and outcomes. The question may be posed: What, then, makes networks work? This is discussed in the next section, which also presents a plausible explanatory model.

How do Networks Work?

How networks work or what makes networks work is not easily perceptible (Gipouloux 2000:60). Attempts to explain how networks work tend to focus on co-operation though, paradoxically, co-operation co-exists with competition in the real world. Analysts of diverse theoretical persuasions explain the rationale for co-operation differently. Explanations range from administrative and legal precepts, designed to enforce contractual obligations, to the qualitative properties of networks, particularly the idea of embeddedness, values, culture and social capital (Gipouloux 200:58). Many business networks and/or social capital analysts (e.g. Arrow 1972; Fukuyama 1995; Knack & Keefer 1997; Faulkner & de Rond 2002; Yang 2007)), however, pay particular attention to trust, as the key determinant of economic success. For Faulkner and de Rond (2002):

Trust gives rise not only to lower transaction costs and higher investment returns, but also to more rapid innovation and learning, according to Sabel (1994), as a consequence of a joint problem-solving attitude by the partners, free from the constraints that follow from anticipated defection (Faulkner & de Rond 2002:31).

Fukuyama (1995:7) observes that a nation's (or be as it may, an organisation's) well-being, as well as its ability to compete, is conditioned by a single pervasive cultural characteristic: the level of trust inherent in the society.

Whereas legal-administrative precepts and antecedents are secondary but important devices to pre-empt transaction costs this paper argues that the key role assigned to trust in economic performance in the industrial networks literature is problematic; it runs the risk of reductionism, and as critics of reductionism argue, complex systems are inherently irreducible (wikipedia.org/wiki/Reductionism). Trust does not manifest itself

in isolation of other human characteristics and values; it does so in *pari passu* with several attributes such as honesty, competence, loyalty, accountability, reputation, discipline and responsibility. The degree to which one party trusts another is a measure of belief in the honesty, benevolence and competence of the other party (wikipedia.org/wiki/Trust). Together with other personality traits trust elicits appropriate behaviour that contributes to economic performance.

While it is difficult to refute the role of trust in the functioning of economies, social institutions, organisations and communities, much of the claim is largely anecdotal and/or intuitive. To isolate and establish trust as a decisive factor would require a far more rigorous empiricist approach than has thus far been demonstrated in the literature. Of the few empirical studies of note some have managed to establish a strong correlation, but not causality between trust and economic performance (e.g. Knack & Keefer 1997). Those studies that appear to have offered a plausible causal explanation, have only done so indirectly, using a proxy variable (see Aglan & Cahuc 2007); others have neither found any significant relationship (see Wei-Ping Wu & Choi 2004) nor uncovered significant evidence to support the valorisation of trust amongst other values (see Adobor 2005; McCarthy 2007, in CDE 2008:32-33). A common trend in the literature has, however, been the establishment of the positive effects of socio-cultural factors or social attitudes, which include trust, on entrepreneurship and economic performance.

The difficulty of measuring the causal impact of trust is largely because trust in a moral sense is a mental state that cannot be measured directly although confidence in the results of trusting may be measured through behaviour. Alternatively, one can measure self-reported trust, (with all the caveats surrounding that method) (wikipedia.org/wiki/Trust (social sciences), and the thrust of conceptual complexities underlying trust. On the latter, for example, it may be asked: What kind of trust should be prioritised? Is it trust evoked by personalised confidence or trust conditioned by impersonalised or rationalised confidence (Tönnies 1955)? Or in Luhman's equivalent terminologies, is it personal trust or system trust? (Luhman 1979 cited in Holbig 2000:19)

Whereas these questions are essentially rhetorical, it is even suggested that trust, networks, civil society, and the like are all

epiphenomenal. They arise as a result of social capital but do not constitute social capital itself (Fukuyama 1999: 2). The valorisation of social capital, however, does not resolve the puzzle of pinning down the primary determinant of economic progress. Social capital is conceptually problematic. It has been described as nebulous and unwieldy; an umbrella concept that means many things to many people (Adler & Seok-Woo Kwon 2002); and something of a cure-all (Portes 1998). Nevertheless, used interchangeably with networks, the concept is not entirely irrelevant as it rejuvenates interest in culture in relation to economic growth and development (see Weber 1968). For human factor proponents, however, it is neither social capital nor just simply trust alone that primarily underscores economic or organisational performance but the quality of the human factor (See for example, Adjibolosoo 1993; 1995 and Owusu-Ampomah 2001; 2002).

By human factor it is meant the ‘spectrum of personality characteristics and other dimensions of human performance that enable [or disable] social, economic and political institutions to function and remain functional, over time’ (Adjibolosoo 1995: 33). Extending the human factor concept Owusu-Ampomah (2001: 6) argues that HF also connotes the entire socio-cultural and political milieu in which the being finds expression, and which defines its identity, institutions, values, needs, rights, and duties. This, in effect, implies the social, moral, and political values that promote social cohesion and guarantee the progress of a civic community.

The spectrum of personality characteristics includes honesty, reputation, accountability, trust, commitment and integrity; and the array has been broadly classified as spiritual capital, aesthetic capital, moral capital, human capital, human potential and human abilities (Adjibolosoo 1995). These human characteristics are not only a sine qua non for co-operation and network outcomes but also, more broadly, for organisational performance and/or growth and development (Adjibolosoo 1993; 1995). Whereas the positive human factor of persons in a social network may, for instance, enhance the flow and equitable distribution of resources the negative human factor may compromise the society-wide gains inherent in a social network. Contextually, networks may be either functional or dysfunctional; and the mediating factor is the quality of the human factor. Networks in which the components have positive personality traits are more likely to create

opportunities and benefits for the greatest majority in a society than those with negative traits. The negative personality traits have been described as human factor decay, that is, ‘attitudes, behaviours and actions that are contrary to principle-centeredness, moral injunctions, and ethical standards’ (Adjibolosoo 2004: 14). The greater the level of human factor decay in an organisation or society the lesser the chances of progress; conversely, the lesser the level of human factor decay the greater will be the chances of progress. The development of appropriate human factor is therefore imperative for organisational performance or societal progress. In the next section the relevance of this thesis is explored in the context of small business growth and development, drawing on a study by Owusu-Ampomah (2004) on the network perspective of the growth paths of the small clothing manufacturing enterprises (SCMEs) in Durban.

Relevance of Thesis: Empirical Evidence

Data Description and Results

The study on the network perspective of the growth paths of small clothing manufacturing enterprises in Durban, inter alia, investigated (a) the relationship between network characteristics (density, openness, diversity and geography of networks) and economic performance of small business (b) the scope of networks and inter-firm co-operation amongst the small clothing manufacturing enterprises in Durban, (c) whether the poor performance of the clothing industry could be attributed, at least, in part, to inadequate networking and inter-firm co-operation, and if so (d) the reasons for the inadequate networking and inter-firm co-operation. Ethnographic data was collected from a sample of 61 SCMEs, out of a cluster sampling frame of 237 firms. Eligibility was first determined by a simple quantitative definition of small business, i.e., a firm having not more than 200 employees; followed by a random selection of firms. The sample size was influenced largely by the willingness of the selected firms to participate in the study. Besides the sample of 61 SCMEs five key actors in the industry - representing labour and employers’ unions - were selected on the basis of purposeful sampling for in-depth interview.

Table 1: A Comparison of Very High and Very Low Performance SCMEs

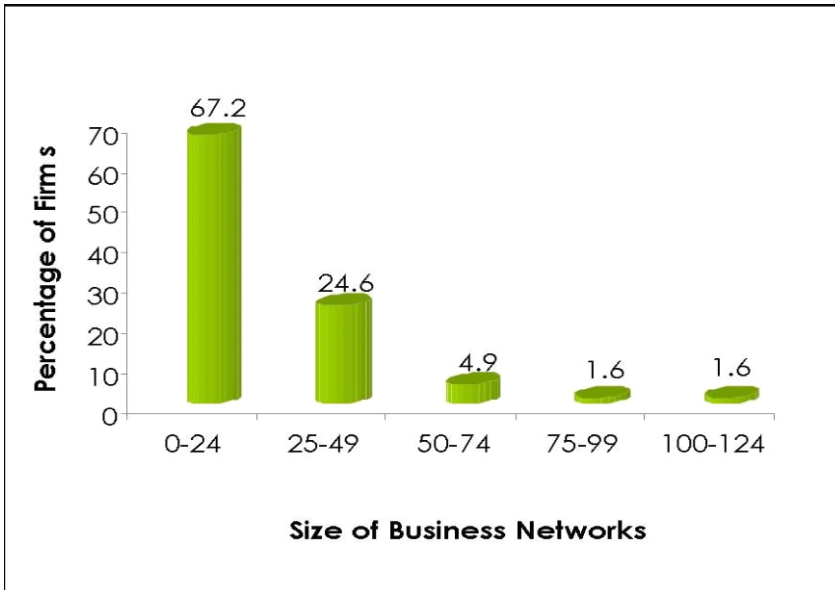
Characteristics	All Sampled Firms (N=61)	Outliers (n=13)	Very High Performance Firms (n=6)	Very Low Performance Firms (n=7)
Size/Density of Business Networks (Direct)				
Mean	23.6	22.9	30.2	16.6
Minimum	6	9	15	9
Maximum	110	50	50	30
Standard Deviation	18.76	14.39	16.73	9.02
Openness Index				
Mean	52.64	58.9	68.8	50.4
Minimum	30	35	50	35
Maximum	95	80	79	80
Standard Deviation	14.93	16.12	10.3	15.78
Diversity of Network Contacts (Mean Points Scored)			25	20
Geography of Contacts				
(i) Local only (%)	58		33.0	83.0
(ii) Local and External (%)	42		67.0	17.0

Source: Owusu-Ampomah (2004)

Combining questionnaire-based and qualitative research approaches, and descriptive network data and hermeneutic analyses the study found limited networks and/or networking and inter-firm co-operation amongst the sampled small clothing manufacturing enterprises (SCMEs) in Durban. The mean density of business networks of the sampled firms (N=61) was 23.6, with a standard deviation of 18.76 (Table 1). The maximum density for the sample was 110, and the minimum was 6. The means for the very high (n=6) and very low (n=7) performance SCMEs were calculated as 30.2 and 16.6 respectively. Within the very high performance firms (VHPF), the maximum density of network contacts was 50, and the minimum was 15. In contrast the maximum density of network contacts of the very low performance firms (VLPF) was 30, and the minimum was 9.

The study strikingly observed that the number of networks of two out of three of the sampled SCMEs did not exceed two dozen, with diminishing proportions in the higher ranks of network contacts (Figure 1). This was in sharp contrast with network density of Chinese firms which could be several dozen at any particular time (Wei-ping 2000:46).

Figure 1. Size of Business Networks of the Sampled SCMEs



Source: Owusu-Ampomah (2004)

Regarding the extent of openness amongst the sampled SCMEs, the study recorded openness indices of 52.64 and 58.9 for the sampled SCMEs as a whole and the outliers respectively (see Table 1). Strikingly, the openness index for the VHPFs (68.8) was significantly higher than the index for the VLPFs, estimated at 50.4. Whereas the data suggested a positive relationship between openness and economic performance of firms, it was evident that the level of openness of the sample as whole was extremely low, and this appeared to partially explain the low performance of the sampled SCMEs in Durban. Similar conclusions were drawn with respect to diversity, which showed a relatively high mean score for the VHPFs (25), compared to the mean score of the VLPFs (20). On the geography of networks, a good majority (67%) of the VHPFs had local and external networks, compared to the VLPFs, an overwhelming majority (83%) of which had locally-based networks. The data reflected the relevance of the geography of networks in relation to economic performance.

In sum, the statistical data confirmed limited network contacts and/or networking and inter-firm co-operation amongst the sampled SCMEs in Durban – to reiterate, network density was low, the firms were significantly inward-looking, the degree of diversity was low, and most of the networks were localised. The data also suggested a positive relationship between network characteristics and economic performance of firms. Density of networks and degree of openness were higher amongst HPFs than they were amongst the VLPFs; similarly network diversity and spatial distribution were more pronounced amongst HPFs than they were amongst VLPFs (see Table 1). This suggested a positive relationship between network characteristics and economic performance. In other words the SCMEs in Durban were more likely to perform better if they were more open, had high network density which were also diverse, and an appropriate mix of local and external networks. On the basis of the statistical data it was clear that (a) the disparities in the performances of the sampled firms, and (b) the relatively poor performance of the industry in Durban as a whole over the past decade and a half, could be partly explained in terms of inadequate networks and/or networking and inter-firm co-operation.

This finding was unanimously confirmed in interviews with a few key actors in the clothing manufacturing industry in Durban. A Cloted official observed that inter-firm co-operation within the industry was at one level primarily pipeline driven. At another level it was needs driven, and often occurred at the level of policy intervention, particularly where the government's trade and industrial policy seemed to have a negative impact on the industry, and success was not always guaranteed. From labour perspective relations in the clothing manufacturing sector was anything but cordial, and clearly not supportive of effective inter-firm co-operation:

The small companies are being squeezed by the big companies. If you are small you'll be small until you die or don't survive; if you are big you'll be big in order to squeeze those that are small. That's the fact of the game in South Africa. Small companies are not enjoying any good co-operation from the bigger companies. In the clothing sector it is really a disaster area, except that if a big company wants to outsource some job because they have a huge customer base that they cannot satisfy then they begin to look for

companies that they can outsource to do the work, i.e. CMTs. But they dictate the price. If you (CMTs) don't take their price you (they) are out. They will look for other smaller companies that will take their price (SACTWU Official 2001).

Comparatively, the Durban cluster appeared to be atypical:

When you look at the Far East the SMMEs are very *supportive* of each other hence they are very successful in the export market. What they do is they try and help each other to overcome problems *all their problems are dealt with by groups of people that have got the interests of the country at heart*. In South Africa we work as individuals because we haven't been exposed to the culture. To a large extent, that explains the failure of the SMME sector to grow as it should (Clofed official 2001; e.a.).

Discussion

Several factors account for the low level of networking and inter-firm co-operation which in turn explains, albeit, partially, the poor performances of the Durban cluster as a whole. The key factors that came to light in the study under reference (Owusu-Ampomah 2004) were human factor decay, cultural and religious differences, and the erstwhile apartheid system. An interview with an official of the South African Clothing Workers Union (SACTWU) in KwaZulu Natal, was very illuminating, and it is worthwhile quoting him at length:

There are two sections of the Indian community: Muslim and Hindu, who traditionally do not want any form of association with one another. *They don't co-operate*. They even undermine each other, which badly affects workers and the industry. Even the nature of the relationship they have with their workforce is different. I don't want to be unfair to any of the religions but to hear a worker say, 'I don't know what it means for my employer to go to the Mosque (or Temple, if you like) and pray while he's doing this to us' is bad for business. I am thirteen years old in the clothing industry so I know that culture and religion play a role in business (SACTWU 2001; e.a.).

A critical element underlying the lack of co-operation between the Muslim and Hindu owner-managers, and the tendency to undermine one another, could be attributed to a high level of mistrust and suspicion, and a Clofed official was unambiguously frank about it: 'When a party approaches you, and tells you here is an opportunity for, say, export, you ask yourself, 'Where is the catch?' That is something of a mindset among the actors in the industry' (Clofed Official 2001). Interestingly, the mindset was not only rooted in religious differences but also in the apartheid system which sowed seeds of fragmentation, hate, selfishness and other forms of human factor decay, and disrupted social and economic relations within and between races (Maasdorp & Humphreys 1975).

It may be conceded, however, that mistrust is ubiquitous, especially in a competitive environment. Co-operation is not enhanced where firms produce the same product and compete in the same market for financial rewards. In this event homogeneity is antithetical to cooperation and ultimate success; diversity in specialisation, e.g., by garment components and gender, may enhance trust co-operation and joint action, say, in export orders. But this is not a reality in Durban's clothing manufacturing sector. Most of the firms compete for subcontracts from the big manufacturers and wholesalers. Specialisation is limited to occupational, age and gender categories (see Owusu-Ampomah 1997); and specialisation by garment components which holds much promise for inter-firm co-operation, is yet to develop on a large scale.

Scholars of the New Institutional Economics (NIE) e.g. North (1981) insist that formal institutions play a significant role in economic performance. However, as Owusu-Ampomah (2004) observed, the owner-managers of the sampled SCMEs did not appear to have faith in their formal network structures - the Clothing Federation of Southern Africa and the Natal Clothing Manufacturers' Association (Clofed Official 2001). While this has the potential to exert negative impact on networking, inter-firm co-operation, and performance, it also suggests that economic actors shape network structures inasmuch as network structures shape actors' behaviours and the performance of firms. In this context, informal institutions shaped by culture, norms, ideology, religious beliefs, values, morals and ethics, often neglected by classical and neo-classical economics and the NIE are critical elements in the growth of firms.

As observed elsewhere in this paper, Granovetter (1985) particularly, stresses the embeddedness of economic behaviour in social relations. But while he may be correct in arguing that economic behaviour cannot be explained by under-socialised (institutional structures) or over-socialised (general morality) conception of humans but by on-going networks of social relations between people (Granovetter 1985:495), he misses the point that the functioning of networks is premised primarily on the human factor as defined in this paper. From the human factor perspective, norms, ethics, values, and social relations are not only instrumental in business performance, but are also 'environmentally determined' (Adjibolosoo 1993:146). For effective and efficient networks, entrepreneurs must acquire appropriate skills e.g. information skills, and personality traits such as integrity, loyalty, drive, positive attitude, vision, negotiation skills, trustworthiness, reliability, reciprocity, willingness to share, credibility, love, responsibility, and accountability. These skills are acutely relevant for fruitful strategic alliances and relationships. Ineffective networks may be the result of negative personality traits in entrepreneurs such as lack of management and information skills, cynicism, suspicion, mistrust, disloyalty, acrimony, deceit, selfishness, fecklessness, dishonesty, penchant for a free ride, fraudulence, haughtiness, and greed, to mention a few. Such qualities are antithetical to building sound business relations rich in information and potentially productive.

Although impersonal social exchange and agency relationships persist, principals still willingly trust strangers (Shapiro 1987). For most people however reputation is worth protecting. 'You sleep with dogs, you catch fleas' (Govender 2001), and therefore partnership, for instance, may be determined not only by opportunity and profit but also the quality of the human factor of potential partners. To be sure, pervasive human factor decay would discourage co-operation, which in turn would underscore poor performance, as has been the case with the small clothing manufacturing enterprises in Durban. Manifesting itself in the larger South African society as racism, deprivation, corruption, discrimination, and hatred, human factor decay has historical roots in the ideological values of the apartheid system. This decay has created a condition for entrepreneurial malfeasance and non-co-operation, resulting in the collective poor performance of the SCMEs in Durban in the last few years, contrary to the collective efficiency theory of

clusters elsewhere (Marshall 1920; Nadvi 1997). Thus, in the same way as colonialism killed the entrepreneurial spirit of Africans (Adjibolosoo 1999), apartheid denied blacks in South Africa the opportunity to acquire the appropriate qualities of entrepreneurship and/or build upon whatever entrepreneurial skills they were endowed with.³ Instead it opened the floodgates for horizontal, negative and/or underground networks that are inconsistent with production coordination, competitiveness and firm/industry performance in the current international capitalist economy.

However, with the advent of the new South Africa, some observers believe that cultural and religious differences among the SCMEs owner-managers are becoming a less serious factor than it was about twenty years ago.

Culture is certainly an issue but mostly among the older generation, who are more conservative and traditionalist. The majority in the clothing industry today regards themselves first as Indian, and Muslim or Hindu, second. As the young become educated, cultural distinctions tend to blur. The level of education of today's CMT operators is higher than that of their counterparts of the past, and what we have today is 'Westernised-Indian' who is more open (Clofed Official 2001).

In spite of this, the level of openness in general is yet to be optimised, although the optimum level of openness necessary to maximise the gains from social and business networks is open to conjecture. Perhaps it is too early to expect too much but if higher levels of networking and inter-firm co-operation are a necessary condition for performance enhancement of SCMEs, rapid transformation of the black entrepreneur is the ultimate solution.

³ It is not implied here that all categories of blacks were equally deprived of economic participation, ideal for entrepreneurial development. Indians/Asians enjoyed far more industrial exposure than Africans, and it is not accidental that, today, they do not only control the Durban economy but also own a sizeable proportion of the country's wealth. Considering the fact that the unit of analysis of the study in question was the clothing manufacturing industry, which is controlled by the Indian/Asian community, this viewpoint is arguable, and ought to be qualified.

Conclusion

This article has explored using network theory to explain economic growth and organisational performance. The article has shown that there are conceptual uncertainties surrounding networks. Acknowledging the role of legal-administrative precepts and trust as important explanatory models for economic performance, the article maintains that while the legal administrative precepts are secondary and critical to the reduction of transaction costs, trust runs the risk of reductionism. The central argument has been that whereas networks provide opportunities and benefits the primary determinant of network coherence and economic outcomes is the quality of human factor, including but not limited to trust. Trust is an indicator of belief in several attributes of the Other, e.g., honesty, competence, commitment and loyalty, and together with these attributes it elicits appropriate response and action in exchange relations for economic performance. On the other hand mistrust and its corresponding negative attributes, or human factor decay, e.g., dishonesty, incompetence, bad reputation, and disloyalty tend to undermine economic performance. Networks may thus be functional or dysfunctional and the primary determinant is the quality of the human factor; not institutions or systems which by themselves cannot function without a network of people who are committed, loyal, honest and determined to make such institutions and systems work.

The article has illustrated the implications of this thesis in the context of the growth and development of the small clothing manufacturing enterprises in Durban. There is empirical basis to believe that the poor performance of the clothing manufacturing industry in Durban is partly due to inadequate networking and inter-firm co-operation, and, controlling for other factors, this in turn is significantly underscored by human factor decay. Whereas other analysts (e.g. Fukuyama 1995) would point at low-trust as the key explanatory factor for the poor performance, this paper has shown that it is not only low-trust but also an array of inappropriate personality traits, i.e., human factor decay that accounts for it. It is thus fair to argue that the development of appropriate personality traits or human factor is a precondition for network effectiveness and economic performance. Entrepreneurs make things happen, not inputs, by themselves; but whereas this is true, it is the quality of entrepreneurship that really matters.

Entrepreneurs who possess appropriate personality traits, including trust, *ceteris paribus*, are more likely to succeed than those who do not. Similarly, industrial districts that boast a network of men and women who are committed to not only their personal successes but also the well-being of the region as a whole, *ceteris paribus*, is more likely to prosper than industrial districts in which entrepreneurs show little or no commitment to the collective good of their society. In light of this, human factor development amongst entrepreneurs, focusing on the spectrum of appropriate personality traits and values, not only trust, is a *sine qua non* for effective networks and small business growth and development, which in turn constitute a catalyst for national economic performance.

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An Orientation and Roadmap to Simulation and Gaming

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Abstract

Simulation and gaming have a rich and long history in the fields of organisational theory and social policy. Simulations have been applied in a variety of ways and to achieve myriad different purposes. They have been used for pedagogical purposes in under-graduate, post-graduate and executive education. They have been applied in a variety of domains such as agriculture, landscape dynamics, natural resources management and strategic management, as a form of social learning and to contribute to policy development and implementation. Other areas of simulation use have been in the domain of organisational learning and change. Although not quite as common, simulations have been utilised as an additional method of research, especially in relation to theory building and testing. Given this wide and disparate purposes and applications of simulation, it appears quite confusing and complex to researchers who may wish to benefit from the field. At a theoretical level, this paper seeks to provide an ordering mechanism to help make sense of simulation and gaming, their objectives, essential components and relationships between them, strengths and weaknesses, design approaches, modalities and deployment. At a practical level, the paper offers suggestions on whether to utilise simulations and when, the importance of the various phases of running simulations, the significance of debriefing, and drawing relationships back to real world contexts. It is anticipated that the paper may serve as roadmap for those who wish to apply simulations in a variety of contexts including teaching and learning, social policy, change management, and problem solving and decision-making in complex and uncertain contexts.

Keywords: Simulation and gaming, change management, social learning, complexity.

Introduction

Thiagarajan (2003: 235) defines a simulation as ‘the representation of the objects, characteristics, behaviours, and relationships of one system through the use of another system, which contains play objects, goals, rules and roles. A simulation is therefore an operational model that allows participants to view a certain system rather than just certain aspects thereof (Le Roux & Steyn 2007). A simulation offers incredible learning opportunities by engaging participants in a unique learning from experience approach. Attention must however be paid to the many factors that can influence the effectiveness of simulations.

Simulations can enhance learning and may be employed by a diverse audience, including those from organisational, teaching and learning, and research backgrounds. This paper therefore sets out to familiarise the reader on the potential of utilising simulations, whether it be for academic or organisational purposes. The paper commences by elaborating on the learning from experience approach found in simulations, as well as the appropriateness for use in complex and uncertain situations. This is followed by a section, which deals with the benefits of using simulations. The focus then shifts to the various settings in which simulations can be used. This subsequently leads into concerns around designing simulations, and the conducting thereof. A brief conclusion is then presented.

Experiential Learning and Complexity

Simulations offer a significantly different and powerful route to learning by immersing participants in a safe environment where they learn from experience. Lane (1995) draws upon Kolb’s model of experiential learning to explain how this occurs. This comprises of participants having concrete experiences, which leads them to observe and reflect on the experience, thereby promoting the development of abstract concepts that should then be applied and tested.

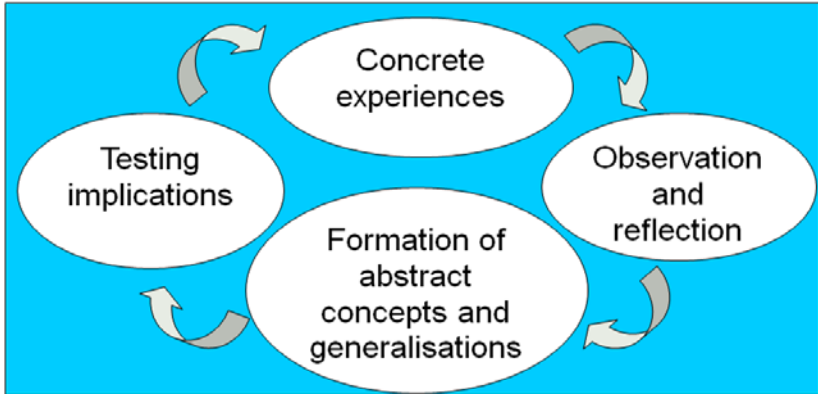


Figure 1: Experiential learning cycle (Kolb 1984 in Enciso 2001: 10)

The experiential learning method presents a way of captivating the attention of those involved. It engages the mental faculties, resulting in participants actively digesting information through involvement in a learning environment (Feinstein, Mann & Corsun 2002). Through the experiential perspective, participants work through an actual and complex problem by learning through various stages (Geurts, Duke & Vermeulen 2007). This then means that simulations are also appropriate for use in complex and uncertain situations. This is pertinent in situations where precedent means very little, and can assist in diagnosis and decision-making in uncertain conditions (Geurts *et al.* 2007; Dooley 2002). Self-organisation in a simulation occurs when behaviour emerges from the actions of various entities; important to note is that no one controls this and that the emergent behaviour has its own rules and laws (Dooley 2002). This feature is particularly potent in offering an alternative to traditional educational approaches, whether it is in a tertiary institution or organisational setting.

Participants can better comprehend complex systems, thereby allowing for the acquisition of systemic skills (Enciso 2001). Enhancing such skills can benefit learners and impact positively on various spheres of their lives. Simulations can also challenge common misperceptions that people have concerning what they think they know for certain, to rather discover emerging possibilities from specific actions (Leigh 2004).

Benefits of Using Simulations

Reframing Mental Models

Simulations offer powerful cognitive learning, which have far reaching consequences that tap into mental models (Dentico 1999). An effective simulation therefore portrays shared mental models and produces holistic communication (Keys, Fulmer & Stumpf 1996). The sort of learning where people engage in processes of interpretation is encouraged, in order for people to understand each other's thoughts and decision-making to consequently react effectively (Fannon 2003).

Double-loop Learning

People can be encouraged to do things differently, through the double-loop learning from the various roles, rules and behaviours found in simulation (Serrano *et al.* 2006). This deeper learning is achieved when the existing ways of thinking about how we go about things are challenged (Enciso 2001). Future behaviour is affected as participants become more cognisant. Simulations also incorporate cognition and emotion resulting in active learning to facilitate with dynamic and complex situations (Enciso 2001). The emotional aspects of the learner are thus acknowledged and embraced to enhance the learning experience.

Organisational Learning

Simulations can be particularly beneficial for organisations. Wenzler and Chartier (1999) argue that simulations are crucial to organisational learning, where the focus is on an organisation's ability to continuously learn and adapt to changes, rather than on attempting to forecast the future. Organisations can use this as an opportunity to approach change management from a very different angle that could have long-term benefits. Simulations provide an opportunity for reflection, experimentation, and action, and are useful in facilitating learning within the organisation (Keys *et al.* 1996). Furthermore, the outlook and behaviours of participants can change through their involvement in the simulation (Keys *et al.* 1996). It is important to note though that this is achieved in an unforced and natural manner, as opposed to the method often found in most traditional educational approaches.

Simulations also play a role in strengthening relationships between organisational members. Independent exploration is promoted (Adobor & Daneshfar 2006) but Pivec, Dziabenko and Schinnerl (2003) also point to a community of learning, which occurs through participants communicating their ideas, problems and solutions to each other. This joint learning is key to organisational effectiveness.

Problem-solving

It is useful to present people with a full view of how things work, but this is however not easily accomplished. Simulations can illustrate ‘the totality of a model and the dynamics of a system’ and prove critical in showing participants a holistic view of a problem (Geurts *et al.* 2007: 544). This is important in having them contribute towards solving the problem, and in so doing become accountable. Simulations allow participants to be introduced to the situation and problem, and they are encouraged to work towards solving it; thus, content is self-discovered (Lane 1995). Another important aspect is that participants may discover new features to a problem, as well as idea generation that can be considered by others (Geurts *et al.* 2007). Simulations can thus elicit creativity and increase respect and initiative amongst participants. Simulations can also unearth how people naturally deal with problems and relate to others in the real world (Stumpf, Watson & Rustogi 1994). This can assist participants in directing future behaviour.

Simulations provide a ‘rich’ experience due to the complex types of knowledge and the mixture of human reactions, emotions and interactions involved (Lane 1995). The richness also originates from the variety of issues involved, and it is this that allows for the creation of a new world emerging during the simulation (Stumpf *et al.* 1994). This includes participants choosing to investigate certain issues, who will be responsible for making choices, power distribution, climate and actions. A simulation can therefore be used to deal with an array of issues, which people may not even have been aware of. It is also more efficient to discuss all the issues concurrently, and while still fresh in the minds of the participants.

It is often difficult to analyse events, which are not in real time. During the rounds in a simulation, ordinarily slow processes are sped up and vice versa (Jackson 2004). Participants can therefore see the outcomes of a

decision in minimal time. The time pressure can also reveal a great deal to participants. Time constraints and uncertainties can affect the manner in which participants' access and share information, and contributes to bounded rationality (Stumpf *et al.* 1994). Simulation can help participants understand how processes are influenced by limited information and resources in reality. In the process, participants can develop critical skills such as decision-making and negotiation (Pivec *et al.* 2003) in the safety of the simulation where there are no serious consequences (Fannon 2003). Participants can therefore unreservedly become more adept.

Communication and Participation

Simulations can be used to engage various individuals in meaningful processes of communication and participation. It can be used to facilitate communication in complex situations with various groups in discussing ideas and closing communication gaps (Geurts *et al.* 2007). This is useful in almost any context. Barreteau, Le Page and Perez (2007) contend that simulations permit for legitimate and candid articulation from all stakeholders by promoting communication, positive dialogue, clarity and training in a complex system. Furthermore, if various participants from different organisational levels and backgrounds, as well as top management, are involved in the simulation, organisational learning can be great (Keys *et al.* 1996). Simulations can thus be used to negotiate through difficult situations involving people from various backgrounds who may have conflicting views. Simulations can also assist organisational members to see how their own role and that of others fits into the big picture. Simulations thus strengthen ties between those dealing with common resources and ensure future exchange among participants (Barreteau *et al.* 2007).

Testing

A problem faced by many organisations is that they often rush into implementation without consideration for a variety of factors. Simulations can aid an organisation confronted with significant change requirements in that strategy and implementation can be practised in a risk-free environment (Keys *et al.* 1996). Enciso (2001) also points out that testing can be repeated as

many times as possible. This allows the organisation to be proactive and take corrective action before implementation of the change. Furthermore, participants can assess whether their skills are indeed adequate to embrace the new changes.

Settings for Simulation Use

Before proceeding into the different contexts where simulations can be used, it is useful to point out that most simulations can be computer-based or interactive. Computer-based simulations essentially use mathematics or object representations to imitate characteristics of a system (Feinstein *et al.* 2002). A problem with such simulations however, is that interpersonal learning and human processes cannot be effectively represented (Feinstein *et al.* 2002; Dentico 1999).

Simulations that do not utilise computers are interpersonal and focus on behavioural learning, with the aim of achieving agreement amongst stakeholders by experimenting and validating requirements for information and coordination (Keys & Wolfe 1990; Dentico 1999). It is suggested that the intended learning outcomes dictate the chosen simulation method (Feinstein *et al.* 2002).

Educational

It has been found that games are often preferred over conventional exercises (Pannese & Carlesi 2007). An example is that of case studies. Case studies are frequently used to assist learners but, as Fripp (1994) argues, fail in providing participants with a chance to experience the outcomes of their choices. Another problem is that case studies lead to single loop learning, whereas simulations offer double loop learning (Dentico 1999). Single-loop learning often results in short-term benefits and will probably be less effective. Simulations can therefore provide a fresh perspective to usual learning activities.

Simulation methods have been employed in many educational settings, both for under-graduate and post-graduate purposes and for a variety of subjects. Some of these include knowledge management, entrepreneurial learning and strategic management (Chua 2005; Pittaway &

Cope 2007; Zantow, Knowlton & Sharp 2005). Emphasis is placed on highlighting the importance of acquiring practical experience to either solidify concepts or to develop professional skills necessary for students to enter into future careers. This could be a way of addressing a common criticism that tertiary institutions often produce graduates who are ill-prepared for the world of work.

Organisational

Much emphasis is often placed on finding ways of engaging adults in learning processes. The use of simulations in a business context can therefore be particularly useful in this regard. Simulations have been used for learning in areas such as, agriculture, landscape dynamics, natural resources management, strategic management, and policy development (Dionnet *et al.* 2008; Depigny & Michelin 2007; Barreteau *et al.* 2007; Zantow *et al.* 2005; Geurts *et al.* 2007). Simulations are powerful tools of teaching (Jackson 2004) and are ideal for adult employees in organisations (Green 2002; Pivec *et al.* 2003). Business games model a whole or partial organisation, so that participants are able to see the connections (Pivec *et al.* 2003). This can enable individuals in various departments to better comprehend the organisation. There are also benefits in engaging learners in environments where they experience similarities to that at work (Feinstein *et al.* 2002). This is most likely to get their attention.

The active component of simulation as opposed to many approaches, which involve mere listening, appeals to executives and an array of problems can be dealt with in minimal time, thereby accelerating learning (Fripp 1994). Simulations therefore encompass the utilisation and not only the knowledge of facts and ideas, which entails a move from passive to active learning (Jackson 2004). This is critical in understanding why isolated training and/or education programmes may be insufficient. Simulations allow participants to produce new knowledge by interpreting their decisions and actions (Enciso 2001). This is a way for participants to become involved and responsible in their own learning.

A few examples of simulations utilised in organisational settings, as presented by Lane (1995) are briefly presented. Fish Banks is a game that teaches sustainable management in the fishing industry by allowing

participants to experience the benefits of initial success, which is later followed by the sudden depletion of the resource. The Beer Distribution Game aims to illustrate the dynamic behaviour of systems by allowing participants to be in charge of an integrated beer production, distribution, wholesaling and retail organisation. People Express Airline is focused on the factors that limit growth in organisations and aims to encourage long-term strategic thinking. These examples therefore illustrate the powerful learning outcomes that can be imparted through participation in a simulation.

Research

Simulations can also be used to aid in research. This is useful in theory testing and building (Dooley 2002). Simulation is thus seen as a different approach to conducting scientific studies, and can be viewed as ‘a third way of doing science’ (Axelrod 1997: 5). Simulations are ideal due to the observations that can be made in the setting, which then allows for the discovery of theoretically pertinent behaviour and outcomes (Feld 1997). Simulations also permit for observations into the future, unlike most research methods which examine the past (Dooley 2002). Researchers can thus engage in very stimulating studies. An appeal by Keys and Wolfe (1990) specifically calls for research into management gaming.

Designing Simulations

There are many notable existing simulations which can be utilised. The following points can however provide guidance in designing a simulation, if there is a need to construct a specialised simulation.

Collaboration in the Design Phase

There are many benefits in involving various individuals in the design phase. Firstly, it is useful to interview internal and external stakeholders to determine problem boundaries (Geurts *et al.* 2007). Furthermore, stakeholders will be in a better position to comprehend models and improve their knowledge by participating in the simulation with the result that a variety of opinions can be expressed (Barreteau *et al.* 2007). It is also important in that the models actually end up being examined, due to having

those who actually do the work, be involved in the simulation (Savolainen 1997). Such feedback can be used for the evaluation of the simulation. Another benefit is that participants will respond more readily to learning, when they feel that those at the top are involved and support the simulation (Green 2002).

Problem Identification and Illustration

The importance of consulting relevant literature is emphasised. Chua (2005) argues that not only should games be based on a sound, methodologically and empirically tested conceptual model, but also that applicable literature must be consulted. Reviewing the literature thus allows for identification of related models and concepts so that critical issues and events can be included in the simulation (Geurts *et al.* 2007; Chua 2005).

The problem should then be identified and its causes and characteristics be determined, and subsequent to that is the simplification and effective representation of critical elements (Leigh 2004). A model therefore is a simplified representation of the real world. It is necessary to simplify aspects in order to grasp the basics (Axelrod 1997); thus, the focus is not on exact duplication (Feinstein *et al.* 2002). This leads to the notion of verisimilitude, which is extremely important in simulations. Verisimilitude refers to the activities in the simulation being similar to those in the real world, so that participants can carry over experiential lessons to the real world (Lane 1995). This therefore means that participants are able to make critical connections to their reality.

Simulations also need to display outward simplicity, while still encompassing inner complexity, in order for participants to better understand issues by focusing on the achievement of a few goals (Borodzicz 2004). Research from Adobor and Daneshfar's (2006) study clearly indicates a link between individual learning, and that of the realism and user-friendliness of the simulation. It is recommended that a balance exists between simplification needed to grasp processes and realism to link this to reality, as this ensures that participants feel confident yet free (Barreteau *et al.* 2007).

Learners

Learners, and precisely what they should learn needs to be determined

(Leigh 2004; Pivec *et al.* 2003). This would entail taking into account the individuality of those involved. Green (2002) warns of simulations failing unless the significance of comprehending what intensifies the learning experience is identified. Furthermore, what learners need to do and the materials that they require must be considered (Leigh 2004).

Conducting Simulations

Simulations essentially consist of three set sequences: briefing, the action and debriefing, as well as further interrelated elements composed of rules which govern actions, specific roles and the relevant situations, and any physical records (Leigh 2004).

Briefing

This phase run by the facilitator is usually not as lengthy as the rest, and essentially involves captivating the interest of participants (Leigh 2004). It may be necessary to highlight the learning objectives of the simulation (Adobor & Daneshfar 2006) as well as the rules and requirements (Chua 2005). This phase although brief, is nonetheless important in ensuring that the simulation proceeds well.

Chua (2005) also advises administrators to incorporate aspects of theory, practice and assurance in the briefing. Furthermore, the intention of the simulation can be explained and this can be an opportunity to ease any fears by perhaps having a question and answer session (Chua 2005). It may be useful to point out that participants can note actions and behaviours, which can be discussed later. This will be useful during the debriefing phase.

Roles Assumed

Barreteau *et al.* (2007) draw attention to roles being formed by simulating certain features of people in the real world. This is influenced by access to resources, personal assets and goals, environmental factors, and behaviours. Players are assigned these simulated roles which may, or may not be similar to their reality, as is the case of those who play opposite roles. It is thus important that designers and facilitators bear this in mind.

During the actual simulation, participants construct their experiences, play their roles and meet set goals, whereas the facilitator steps aside to observe, and may circulate necessary information (Leigh 2004). The facilitator should therefore not interfere but should rather allow the simulation to unfold naturally. It is important that participants play various roles so they can acquire knowledge, practical experience and soft skills (Pivec *et al.* 2003). Participants must discover for themselves what it feels like to be in a specific role, along with the accompanying choices and outcomes (Chua 2005). This could be specifically pertinent in having participants better understand each other's jobs, and the relation thereof to their own.

Participants should be kept engaged, and scenarios can be modified to create fresh experiences for people who have played before (Chua 2005). New unanticipated events to facilitate learning should be introduced (Pivec *et al.* 2003; Borodzicz 2004). A further purpose of playing roles is to ensure that those involved remember that they are participating in a game where they can build the future by drawing on their creativity (Geurts *et al.* 2007). This could therefore lead to the emergence of valuable ideas which could be used.

Level of Challenge in the Simulation

Goals with an adequate challenge level need to be set; the simulation should not be too difficult or easy, as it is important to keep participants' attention (Pivec *et al.* 2003; Chua 2005). It may be useful to have trial runs before the simulation in the case of a game that is difficult to understand (Green 2002). Other benefits of running a trial are to identify any problems and also to become acquainted with the game (Fannon 2003).

The People in the Simulation

It is important to note the influence of group dynamics. Consideration should be given to the mix of people, for example, as Green (2002) points out, having participants together who are familiar with each other could result in groupthink, whereas having different people with their own personalities could create other problems. Issues of social structure between

management and employees may also affect the game negatively and it is important to remember the emotional elements of the game (Bordozicz 2004).

Care must be taken as to how teams are formed. Instructors should decide whether to allocate participants to teams or allow them to self-assemble rather (Adobor & Daneshfar 2006). It is recommended that one bears in mind the purpose of bringing together people and how precisely they are organised (Green 2002). Participants should also be encouraged to engage in constructive debate and dialogue rather than having personal conflicts with other participants (Adobor & Daneshfar 2006). This would be critical in the case of a group that already has existing conflict. Simulations must however not avoid constructive criticism for the sake of keeping peace, as this could result in group-think (Geurts *et al.* 2007). Cohesion building exercises prior to the simulation could assist, as well as the existence of a culture that encourages trust and respect for all people (Green 2002).

Facilitating the Simulation

Keys and Wolfe (1990) argue that the administration of a game is nearly as critical as the quality. Instructors should therefore not only focus on learning but also on factors around learning, like group dynamics (as mentioned previously) and features of the simulation (Adobor & Daneshfar 2006).

Much attention should be placed on preparation. Barreteau *et al.* (2007) caution those in charge of simulations to consider their choice of participants, medium, location, time, as well as illuminating their motives for raising awareness and their role in the process. It is recommended that every aspect, including the rules, confines, and feedback and anticipated commitment levels, of the simulation be made clear (Chua 2005). Leigh (2004) however cautions against facilitators inflicting their own views on participants, as players have to experience the consequences of their own decisions (Pivec *et al.* 2003). This again relates to the facilitator or administrator allowing for the simulation to proceed at its own pace.

The use of simulation essentially centres on facilitators embracing flexibility and releasing excessive command (Le Roux & Steyn 2007). It is important for designers and facilitators to bear in mind that there will be uncontrolled aspects due to the unique experiences and requirements of

participants, but that there will be order despite the appearance of disorder (Leigh 2004). This is in line with the acknowledgement of complexity.

Debriefing

This final phase of the simulation bears the most significance. This is where collective learning and discussions about reality occur (Barreteau *et al.* 2007). The following processes could increase the effectiveness of the debriefing phase. Borodzicz (2004) recommends overviewing the purpose of the game during the debriefing. Debriefing can also touch on positive and negative emotions experienced by participants, and to disengage from the roles (Fannon 2003). Participants can reflect on what they learnt with assistance from the facilitator, and this can be used to decide how to transfer the knowledge to the real world (Green 2002). The facilitator should therefore have been perceptive to occurrences in the simulation, in order to assist participants to reflect and learn.

Chua (2005) explains further advantages of the debriefing phase of the game. Participants can describe their experiences in the simulation to commence discussion. This can open up their emotions to acknowledge the affective component in learning and also encourage trust amongst participants. They can also raise any expectations that they had which were not consistent with the game, so that they can gather new insights (Chua 2005). Facilitators can use such information to assist with future simulations. Pivec *et al.* (2003) argue that participants learn not only by making mistakes but also through the consequent feedback. Learning opportunities that arise from the debriefing should be maximised.

Conclusion

Simulations are ideal in augmenting the learning experiences of students, as well as for addressing a multitude of complex situations faced in organisational settings. Simulations can be thus be used as an alternative to traditional learning approaches which often focus on passive listening. Researchers can also employ simulation as a powerful methodology. Through experiential learning, participants explore a problem and experience for themselves the outcomes of choices that they made. Benefits

of using this method include the opportunity for the exploration of mental models in order to acknowledge stakeholders' varying perspectives. Processes of communication and participation can be better handled, and participants can also test strategies in the simulation before implementation in the real world. On a practical level, it is advised that consideration be given to the many aspects of designing simulations. These include involving participants in the design phase to determine the problems, and how best to represent pertinent issues in a model. Aspects pertaining to learners and their needs, as well as to the designers and facilitators must be taken into account. Attention must also be dedicated to comprehending the different phases of simulations. It is hoped that this paper has illustrated the suitability of simulations for use in a variety of settings and presented a useful framework to navigate through.

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An Orientation and Roadmap to Simulation and Gaming

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A Comparison of Staff and Student Expectations of Service Quality in the UKZN Foundation Programme: Management Implications

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Abstract

Higher Education institutions have been called upon by Government and other stakeholders to address the injustices of the apartheid past through the implementation of access programmes. This, together with the need to increase science graduates, has resulted in access or foundation programmes operating in a more competitive environment. To achieve customer satisfaction in a foundation programme, which is an educational service, managers need to be aware of the beliefs staff have about what is needed for service delivery. What staff believe is important to customers (students in this case) will impact how they behave in the service delivery process. This will ultimately affect the service quality delivered by the University to access students. This research focuses on the Science Foundation Programme (SFP) at University of KwaZulu-Natal (UKZN) and takes a services marketing approach.

Staff involved in the service delivery at the point of entry and the SFP students were asked to complete the SERVQUAL questionnaire. The results were compared and showed that while overall the staff expectations met or exceeded those of students, there were 5 statements where the staff expectations of service quality were lower than those of the students. These statements were in the SERVQUAL dimensions of responsiveness, assurance and tangibles.

Overall the lower expectations of the staff indicate that they perceive these factors to be less important than customers do, and are likely to behave accordingly. This will affect perceived service quality on the part of students. There is thus a need to look at ways of addressing these gaps. This can be incorporated into staff training which should also include knowledge of student needs and expectations. Recommendations in the services context are made to the management of SFP at UKZN to ensure student needs are met.

Keywords: Service quality, staff and student expectations, foundation programme, university science access programme, services marketing, SERVQUAL.

Problem Statement, Objectives and Research Questions

De Jager and Du Plooy (2006: 11) state that traditionally, technikons and universities have competed indirectly, whereas they now compete directly, ostensibly for the same market. A number of tertiary educational institutions in South Africa, such as the UKZN, the University of Cape Town, the University of Witwatersrand, and the University of the North offer a variety of programmes to address the call to provide access to previously disadvantaged students. This increased level of competition in the tertiary education environment has led to institutions of higher education employing managerial techniques to improve the efficiency and quality of their provisions and switching from a passive, to a more active marketing approach (De Jager & Du Plooy 2006: 11).

The Science Foundation Programme (SFP) which is part of the Centre for Science Access (CSA) at the UKZN aims to address the needs of disadvantaged learners and provide access for them into science degrees. As a consequence of South Africa's past, these learners are faced with unique socio-economic difficulties. In ensuring customer satisfaction, especially at the point of entry to university which is when students are the most vulnerable, the CSA needs to be aware of the expectations of staff involved in the service delivery at this point and how these compare with their customers, i.e. the students.

The research objectives for this study were thus:

1. To determine the expectations of students in terms of service quality at the point of entry into the UKZN Foundation Programme
2. To determine staff expectations of what the students require for service quality at the point of entry into the UKZN Foundation Programme
3. To determine whether gaps exist between staff and student expectations.

Literature Survey

Service Quality

Cateora (2007: 338) states that the focus on quality globally, is driven by increasing competition and more choices which ultimately places the power in the hands of consumers rather than producers. He goes on to state that ‘the reason often given for preferring one brand over another is better quality at a competitive price’ (339). One of the major ways to differentiate a service firm is to deliver consistently higher-quality service than competitors (Walker & Mullins 2008: 228). Service quality is defined by customers, and relates to the organisation’s ability to satisfy customers’ needs (Palmer 2005: 261). Service quality dimensions include reliability, responsiveness, empathy, assurance and tangibles (Mullins & Walker 2010: 444). According to Walker, Mullins and Larreche (2008: 231) ‘the results of a number of surveys suggest that customers perceive all five dimensions of service quality to be very important regardless of the kind of service’.

Measuring Service Quality

According to Zeithaml and Bitner (2003: 135) a sound measure of service quality is necessary for identifying the aspects of service needing performance improvement, assessing how much improvement is needed on each aspect, and evaluating the impact of improvement efforts.

One of the first measures to be developed specifically to measure service quality was the SERVQUAL survey (Zeithaml & Bitner 2003: 135). McColl, Callaghan and Palmer (1998: 155) and Palmer (2005: 269) state that the SERVQUAL technique can be used by companies to understand the

expectations and perceptions of their customers better. 'It is applicable across a broad range of service industries and can be easily modified to take account of the specific requirements of a company. In effect it provides a skeleton for an investigatory instrument that can be adapted or added to as needed' (Palmer 2005: 269).

SERVQUAL is based upon a 22-item questionnaire covering the five dimensions of service quality (Palmer 2005: 269). The five dimensions covered are:

Table 1: Five Dimensions of SERVQUAL

Statements	Dimension	Description of dimension
1 to 5	Reliability	dependability, accurate performance
6 to 9	Responsiveness	promptness and helpfulness
10 to 13	Assurance	competence, courtesy, credibility & security
14 to 17	Empathy	easy access, good communications & customer understanding
18 to 22	Tangibles	appearance of physical elements

(McColl *et al.* 1998: 155; and Zeithaml & Bitner 2003: 136)

Zeithaml and Bitner (2003: 95) and Zeithaml *et al.* (1990, cited in Lovelock & Wirtz 2007: 421) say that reliability means that the company delivers on its promises, i.e. promises about service provision, problem resolution, delivery and pricing. Customers want to do business with companies that keep their promises, particularly their promises about the service outcomes and core attributes.

Responsiveness is the willingness to help customers and to provide prompt service (Zeithaml 1990 cited in Walker *et al.* 2008: 230). This dimension emphasises attentiveness and promptness in dealing with customer requests, questions, complaints and problems. Responsiveness is communicated to customers by the length of time they have to wait for

assistance, answers to questions, or attention to problems. Responsiveness also captures the notion of flexibility and ability to customise the service to customer needs (Zeithaml & Bitner 2003: 97).

Zeithaml *et al.* (1990 cited in Mullins *et al.* 2008: 433) define assurance as employees' knowledge and courtesy and the ability of the firm and its employees to convey trust and confidence. Empathy is defined as the 'caring, individualised attention the firm provides its customers' (Zeithaml *et al.* (1990 cited in Walker *et al.* 2008: 230). The essence of empathy is conveying, through personalised or customised service, that customers are unique and special. Customers want to feel understood by, and important to firms that provide service to them.

Tangibles are defined as the 'appearance of physical facilities, equipment, personnel and communication materials' (Zeithaml & Bitner 2003: 98). All of these provide physical representations or images of the service that customers, particularly new customers, will use to evaluate quality.

Customers are asked to complete the 22 statements relating to their expectations and a perceptions section consisting of a matching set of company-specific statements about service delivery (McCull *et al.* 1998: 155). 'They are typically asked to score in each instance, on a Likert scale from 1 (strongly disagree) to 7 (strongly agree), whether or not they agree with each statement ... the outcome from a one-off study is a measure that tells the company whether its customers' expectations are exceeded or not' (Palmer 2005: 269-270).

The People Element of Services

Services have characteristics of intangibility, inseparability, variability and perishability which distinguish them from products and require a different set of elements when marketing them (Palmer 2005: 16). In addition to the traditional marketing mix of product, price, promotion and place (distribution), the service marketing mix includes people, physical evidence and process (Doole & Lowe 2008: 265; and Palmer 2005: 11). To reduce the uncertainty associated with the intangible nature of services, buyers look for 'signals' of service quality, i.e. they draw conclusions about the quality from the place, people, price, equipment and communications that they can see

(Kotler & Armstrong 2004: 299). According to Parasuraman, Zeithaml and Berry (1985: 42) in most cases tangible evidence is limited to the service provider's physical facilities, equipment and personnel.

Thus 'for most services, people are a vital element of the marketing mix' (Palmer 2005: 13). Both provider of the service and the customer, who is present as the service is being produced, affect the service outcome (Kotler & Armstrong 2004: 299). The quality of service and customer satisfaction will be highly dependent on what happens in 'real time', including actions of employees and the interaction between employees and customers (Zeithaml & Bitner 2003: 22). With manufactured goods, 'management can usually take measures to reduce the direct effect of people on the final output as received by customers' (Palmer 2005: 13). According to Palmer the buyer of a tangible product 'is not concerned with whether the production worker dresses untidily, uses bad language at work or turns up for work late, so long as there are quality control measures which reject the results of lax behaviour before the product reaches the customer' (Palmer 2005:13). On the other hand, in service settings the contact person e.g. a lawyer, accountant, lecturer or faculty officer *is* the service, and thus plays a major role in influencing customers' perceptions of the service (Du Plessis Jooste & Strydom 2005: 379). According to Zeithaml and Bitner (2003: 318), service employees are the service, are the organisation in the customer's eyes, are the brand and are the marketers.

Front line employees and those supporting them from behind the scenes are thus critical to the success of any service organisation (Zeithaml & Bitner 2003: 318). Palmer (2005: 13) states that 'while the importance attached to people management in improving quality within manufacturing companies is increasing, people planning assumes much greater importance within the service sector For this reason, it is essential that service organisations clearly specify what is expected from personnel in their interaction with customers. To achieve the specified standard, methods of recruiting, training, motivating and rewarding staff cannot be regarded as purely personnel decisions – they are important marketing mix decisions'. In particular, front-line employees directly influence customer perceptions of responsiveness through their personal willingness to help and their promptness in serving customers. Individual employees with whom the customer interacts confirm and build trust in the organisation or detract from

its reputation and ultimately destroy trust (Zeithaml & Bitner 2003: 321). Zeithaml and Bitner (2003: 321) state that to build a customer-orientated, service-minded workforce, an organisation must hire the right people, develop people to deliver service quality, set appropriate service standards, provide the needed support systems, motivate and reward appropriate service behaviour and retain the best people.

Education as a Service

According to Shaik (2005, paragraph 6), education is a service and students are the prime focus of the institution. Shaik goes on to state that teaching and learning that occurs in the classroom are examples of the core service because it is critical to a successful learning experience. However for education, there are also a number of supporting services which include real-time information about courses, student advice, online registrations, orientation, student accounts, help-desk, complaint handling, and feedback in a friendly, trustworthy and timely manner (paragraph 6). Students regularly come into contact with the staff associated with these services during their stay at the institution. These services create added-value to the student and determine the quality of students' learning experience. The core education service is supplemented by the following categories of services, namely, applications, admissions, orientation, registration, finance, housing, counselling, security, educational resources and essential support services.

In business, strategic planning and management have long been known as effective tools for creating a competitive edge, taking advantage of particular market conditions and distinctive competencies, and forging a niche that a company can dominate (Rowley & Sherman 2001: 17). According to Rowley and Sherman (2001: 17) learners and other consumers of higher education's products and services want to be assured of receiving higher levels of quality, timeliness and responsiveness. Similarly Shaik (2005, paragraph 14) states that students are demanding quality services and are less willing to make compromises in the quality of educational services. Should one campus refuse to meet these needs, learners and consumers simply go to the next campus, whether it is the college or university next door or the one in cyberspace. Farrington (1999 cited in Rowley & Sherman 2001: 17) states that competition exists and campuses really have no choice

but to confront it head-on. Universities thus need to ensure that they provide service quality as a basis for differentiating themselves from competitors.

One of the primary stages where service quality is critical is at the point of entry into the university which is when students are most vulnerable and where they experience a major adjustment. Fisher (1994) states that the transition to university will be stressful for many, particularly if this involves leaving home, due to the requirement of taking on new responsibilities (cited in Robotham & Julian 2006: 112).

In addressing the service quality at the point of entry it is important to look specifically at students in access programmes as their needs differ from other students because of their educational, economic and social background. Callender (2003) states that students from disadvantaged backgrounds are less likely to have parents who attended university (cited in Cooke, Barkham, Audin & Bradley 2004: 409). Grayson (1996: 993) also states that the gap between high school and university is wider for students coming out of black schools, where the problem has been compounded by issues such as severe lack of resources, overcrowded classrooms, underqualified teachers, and unstable and sometimes dangerous social environments.

The focus of this particular research is the Science Foundation Programme at the UKZN. The UKZN rises to Government calls for transformation and redress, and for increased numbers of science graduates, by offering such programmes as the Science Foundation Programme (SFP). The SFP is a one year, alternative access programme which provides an alternative route for underprepared students to enter the Faculty of Science and Agriculture. The programme is aimed at increasing the number of black graduates in science thereby addressing the inequalities of the past. 'The aim of the SFP is to enable black students to overcome the gap between school and university and prepare them for entry into a science (or science-related) degree programme' (Grayson 1996: 993).

The socio-economic background that SFP students come from is associated with a number of difficulties (SFP 1998: 6). Students come from fragmented families and societies; and they struggle with identity and family support, both personal and financial (SFP 1998: 6). They have often come from traumatised communities and some are personally the victims of violence and abuse (SFP 1998: 7). Often the level of poverty is extremely

high and shortages of resources like food, water, transport and housing are not unknown amongst these students. Many students experience high levels of anxiety about finance (SFP 1998: 7).

In achieving its goals it is important for the University to understand the expectations of this specific target market for its access programmes i.e. previously disadvantaged scholars and to determine whether staff involved in such programmes understand their target market. Because the staff play such an important role in service delivery and thus service quality determination, it is critical that their perceptions of what customers expect match those of the students.

Research Methodology

An exploratory research approach was used in this study. Exploratory research was deemed appropriate by the researcher as the objective of this study was to gain insight and perspective into the research problem as advocated by Kinnear and Taylor (1996: 29). In other words the aim of this research was to identify problems and gain perspectives about the expectations of the staff and students on the service quality and the gaps between them. A census of students on the programme in 2006 (99 students) as well as the 10 staff who provide services to students at the point of entry which included the SFP Administration, SFP Counselling, Student Fees, Financial Aid Services and Student Housing.

Data Collection

The SERVQUAL questionnaire was used to obtain information from the students and staff. The SERVQUAL instrument is a 22 item questionnaire designed by Parasuraman, Zeithaml and Berry (Zeithaml *et al.* 2003: 137). The first part of the questionnaire asks customers to reflect on the level of service they would expect from excellent companies in a sector. The second part of the questionnaire obtains the perceptions of customers of the service delivered by a specific company within that sector. For the purposes of this article, only the expectation scores were used as the study sought to compare the expectations of staff with those of students.

Student Sample Profile

The full population of SFP students, which was 99 students, was used in this study. A 96% response rate was achieved. 71% of the sample was male and the majority, i.e. 86% of the students were between 17 and 20 years old. A large proportion of students (42%) came from a rural area where 'Rural' was defined as a village that is further than 50km from the nearest town or city and 'Urban' was defined as a town, city or township.

Staff Sample Profile

9 of the 10 respondents completed the questionnaire thus giving a 90% response rate for this survey.

Data Analysis

Each item on the SERVQUAL questionnaire consists of a seven point Likert scale. A score was generated by the researcher as follows: for each item the average was calculated based on respondents' scoring on the Likert scale. The gaps were defined to be the differences between the averages of the staff and students expectations on an item.

Cronbach's alpha was calculated to test the reliability of the findings. This is a measure of internal consistency of a measurement or test (Welman Kruger & Mitcell 2005: 147). A Cronbach's alpha above 0.7 is deemed acceptable (Hair, Anderson, Tatham & Black 1998: 88). The results of the test were 0.916 for student expectations and 0.885 for staff. The results of the Cronbach's alpha tests are above 0.7 which indicates that the measurement process is reliable.

Validity testing for the SERVQUAL instrument has been carried out as stated in Parasuraman *et al.* (1985: 114) Therefore no validity testing was carried out for this study.

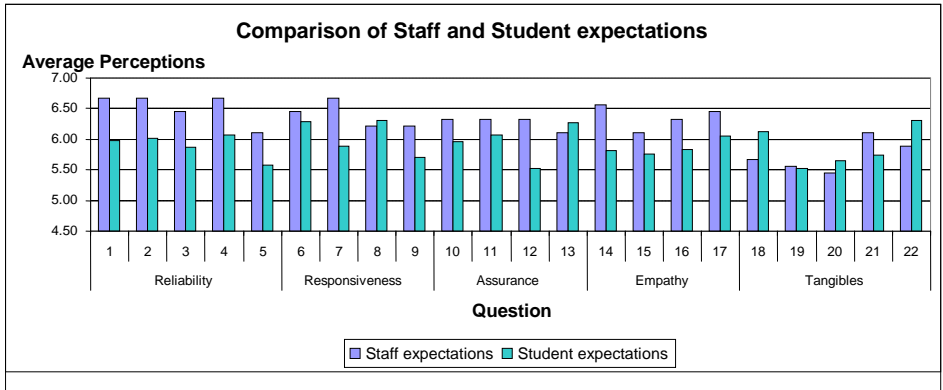
Results

Student Expectations

The top 5 expectation scores of the students were:

1. Statement 8: *Employees of an excellent University will always be willing to help customers* (from the Responsiveness dimension) scoring 6.30
2. Statement 22: *An excellent University will have operating hours convenient to all their customers* (Tangibles) scoring 6.30
3. Statement 6: *Employees of an excellent University will tell customers exactly when services will be performed* (Responsiveness) scoring 6.29
4. Statement 13: *Employees of an excellent University will have the knowledge to answer customer questions* (Assurance) scoring 6.27; and
5. Statement 18: *An excellent University will have modern-looking equipment* (Tangibles) which scored 6.13.

Graph 1: Student and Staff Expectations of Service Quality



Staff Expectations

The highest expectation scores for the staff all scoring 6.67 were:

1. Statements 1: *When an excellent University promises to do something by a certain time, they will also do so* (Reliability);

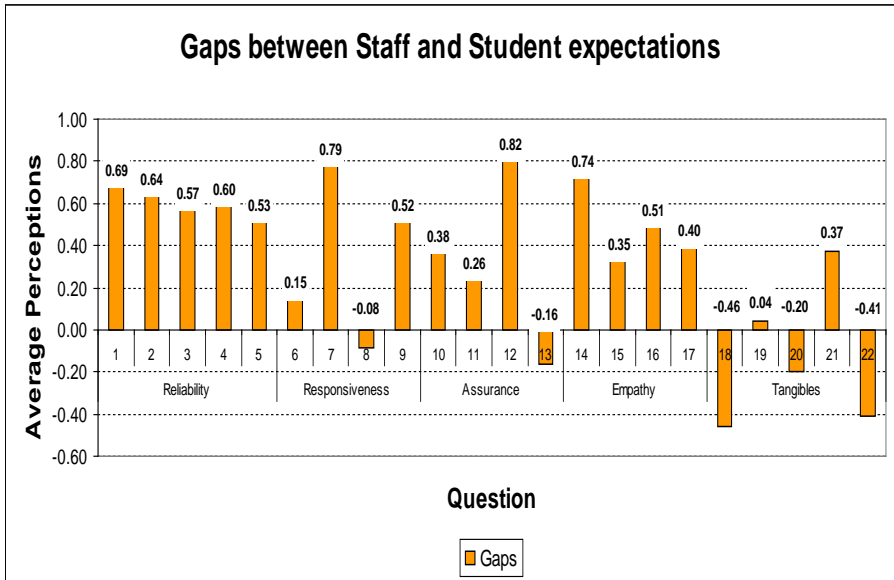
2. Statement 2: *When customers have a problem, an excellent University will show sincere interest in solving it* (Reliability);
3. Statement 4: *An excellent University will provide their service at the time they promise to do so* (Responsiveness); and
4. Statement 7: *Employees of an excellent University will give prompt service to customers* (Responsiveness).

Comparison of Staff versus Students' Expectations

When comparing the expectations of staff with those of students, several levels of analysis could be conducted.

1. A comparison of the most important dimension as determined by dimension averages reveals that the most important dimension to students is Responsiveness (average 6.04) whereas Reliability is seen to be most important by staff (6.51). The highest expectations for the students included the Responsiveness (statements 6 & 8), followed by Assurance (statement 13) and Tangibles (statement 18 & 22) dimensions. In contrast, the highest expectations for the staff included the Reliability (statements 1, 2, 3 & 4), Responsiveness (statements 6 & 7) and Empathy (statement 17) dimensions.
2. Still comparing dimension averages, it was only in the Tangible dimension where the average score of the student expectations exceeded that of the staff. Thus in all dimensions other than Tangibles, staff perceived the dimensions to be more important to students than the students themselves did.
3. The comparison of the staff expectations with the students' expectations of service quality in Graph 2, showed that staff expectations of an excellent university were generally higher than those of students (in 17 of the 22 items). In other words, staff had higher expectations of what was required for excellent service quality than students did.

Graph 2: Gaps between Staff and Student Expectations of Service Quality



Staff Expectations Higher than Student Expectations

The dimensions where the expectations of the staff exceeded those of the students in all the statements were the Reliability and Empathy dimensions. This may indicate that staff are placing more emphasis on these areas than is necessary to meet student expectations. As can be seen in Graph 2, statements 7 (Responsiveness), 12 (Assurance) and 14 (Empathy) had the biggest gaps between the student and staff expectations:

1. Statement 7: Employees of an excellent University will give prompt service to customers;
2. Statement 12: Employees of an excellent University will be consistently courteous to customers; and

3. Statement 14: An excellent University will give customers individual attention

Staff focus on delivering high levels of service related to these activities will require considerable time, perhaps taking time away from activities considered more important to the students ie where negative gaps exist.

Student Expectations Exceed Staff Expectations

Staff expectations were lower than the students in three dimensions: Responsiveness (statement 8), Assurance (statement 13) and Tangibles (statements 18, 20 & 22).

1. Statement 8: *Employees of an excellent University will always be willing to help customers.*
2. Statement 13: *Employees of an excellent University will have the knowledge to answer customer questions.*
3. Statement 18: *An excellent University will have modern-looking equipment;*
4. Statement 20: *Employees of an excellent University will be neat in appearance.*
5. Statement 22: *An excellent University will have operating hours convenient to all their customers.*

Discussion and Recommendations to SFP Management

The aim of this study was to compare the expectations of staff and SFP students of the service quality at the point of entry to the university. Service personnel 'involved in the process of service delivery can be crucial in defining that service and customer's perceptions of it' (Palmer 2005: 48). Thus the staff expectations of what is required for excellent service quality

are critical to assess as these will affect their behaviour in the service encounter.

From the results, overall staff expectations exceeded those of the students and this indicates that overall, their performance in service delivery should match or exceed that required by SFP students. This is commendable and SFP management should acknowledge this and provide positive reinforcement to staff. Meeting and exceeding customer expectations is a goal of many organisations but it is important to ensure that minimum requirements are met across all dimensions first rather than expectations being exceeded for some dimensions and not met for others. Thus, in terms of having limited resources, as most university programmes do, it is necessary to prioritise resources, i.e. time and money, especially in areas that are important to customers. The results showed that the expectations of the staff far exceeded those of the students in statements 7, 12 and 14. Activities assessed in statements 7 (providing prompt service) and 14 (giving student individual attention) in particular, draw on the resource of time of the staff member and money because it impacts the number of employees required to be able to provide this level of service. These resources could be used better towards statements 8, 13 and 22 which were the negative gaps, i.e. where staff expectations were lower than those of the students. One could then expect that service delivery in these areas might not meet student expectations. The dimensions needing attention would thus be as follows.

Responsiveness

The Responsiveness dimension had the highest average score for the students which indicates that the students see this a very important aspect of the service quality. Statement 8 (Employee willingness to help) *in particular*, had a negative gap score.

This is an important area of customer service as it reflects the care and importance of the customer to staff and the institution as a whole. Concerns about the level of caring may be exacerbated by the student's added anxiety about this new environment. For example, it has been found that these students come from fragmented families and societies and they struggle with family support, both personal and financial (SFP 1998: 6). This lack of support structure and increased anxiety about how they will

live, pay for tuition, food etc. may increase their expectations of staff in the university system to be able to alleviate these fears. Thus their expectations are high in terms of staff willingness to help them. This needs to be communicated to staff so that they can empathise with the students and show a genuine willingness to help them.

For this statement staff expectation scores were only marginally less (0.08) and thus staff appear to be almost in line with student expectations i.e. they appear to recognise this expectation of these students. This gap would however, need to be monitored to ensure that it does not widen.

Assurance

Statement 13 (employee knowledge to answer questions): It appears as though staff do not perceive the level of importance students attach to this dimension because they do not perceive the student expectations to be as high as they are. The importance of knowledgeable staff to these students may stem again from their backgrounds in that the university environment is very different to their school environment and thus questions they have may be far more varied than those of advantaged students entering the university system. For example, these students often come from extremely poor areas and experience high levels of anxiety about finance (SFP 1998:7). Callender (2003) states that students from disadvantaged backgrounds are less likely to have parents who attended university (cited in Cooke *et al.* 2004: 409) and thus cannot get answers to basic questions from their parents. Grayson (1996: 993) also states that the gap between high school and university is wider for students coming out of black schools and therefore they may have many more questions than other students. Their questions may also relate to basic survival in a new environment and may thus be deemed more important to these students. Thus staff ability to answer questions may have a greater than usual impact of student perceptions of Assurance and Assurance, as a service quality dimension, may be perceived as being more important to these students than staff realise.

Employees need to be empowered to provide this service to their students. They must be made aware of the information needs of SFP students and be provided with the answers to their questions. Having staff who have the knowledge to answer the typical questions asked by SFP students

without having to refer them to a host of other people will reduce the anxiety levels of these students, make their transition into the university smoother and ultimately improve their perceptions of the service quality offered. Thus a system is needed to monitor whether staff feel that they are able to perform their duties and provide a platform to make their training needs known so that knowledge levels can be improved.

Tangibles

Because of the nature of services, the tangibles associated with the service in terms of the equipment, staff and operating hours become important in evaluating the level of quality they are receiving. The tangibles dimension was the only dimension where the average dimension score for students exceeded that of staff. In other words, this is the only dimension as a whole where student expectations were higher than staff. However it should also be noted that the Tangible dimension average was also the lowest overall. This means that Tangibles are the least important in terms of overall service quality. Nevertheless, three statements in this dimension showed negative gap scores where students had higher expectations than staff. Thus if SFP management wish to increase overall service quality, they should look at these aspects of service quality. The statements were 18 (*modern-looking equipment*), 20 (*neat employee appearance*) and 22 (*convenient operating hours*).

The lower expectations of staff in statement 18 (equipment) could mean that they are more aware of the budget limitations that universities might be experiencing. They may also feel that the equipment merely provides support to their roles in terms of service delivery and thus are less important in terms of ultimate service delivery. Students on the other hand, may have the expectation that universities should have modern equipment. This may stem from the fact that their school environment was likely to lack such facilities as indicated by Grayson (1996: 993) and as they perceive the university to be part of an 'advantaged society' they expect to see up-to-date equipment. While staff does not impact this element of service, the university could consider emphasising in communication with these students, the state-of-the-art equipment the university does have. It could also ensure that teaching facilities are up-to-date and that staff use the various modern teaching tools available to them.

In terms of the gap in expectations for statement 20 (employee appearance) staff may be used to the more casual attire which is common in the corporate environment of a university. Universities have traditionally paid less attention to dress code conformity than even the school system. Staff may also be focusing more on what they do in terms of student administration, counselling etc. than their appearance. Students on the other hand, may be familiar with people of authority such as their school administrators dressing well and therefore have this expectation of staff at the university. SFP management may want to encourage staff to dress neatly and make them aware of the impressions their appearances make on the customers. It is acknowledged that this recommendation may be difficult to implement in the university setting.

The lower expectation of staff in statement 22 (convenient operating hours) could be because many of the staff involved with the SFP students are also involved with other students in the university and thus are unable to adapt their service times / accessibility to the needs of SFP students specifically. The university systems (e.g. opening / working hours) are generally fairly controlled by university policies and rules. However, this was one of the two highest scoring expectations of students, and thus represents an element of service quality that they feel strongly about. If programme management wish to address service quality, then this gap will need to be dealt with. SFP management and staff could look at their operating hours in relation to the students' timetables. It might be necessary to have some restructuring of timetables to accommodate the needs of students.

Conclusion

In addressing the call from Government to address the injustices of the apartheid past through the implementation of access programmes and ensuring customer satisfaction in the service quality offered to access students, it is necessary for managers to be aware of the expectations of staff involved in the service delivery. This study found that overall, the staff had higher expectations than students did and thus the staff appear to understand the needs and expectations of their students. There were however, some negative gaps i.e. where staff expectations were lower than those of students. These may be of concern to SFP management as these lower expectations

indicate that the staff do not place the same level of importance on these factors and are thus not likely to meet student expectations in these service areas. Lower expectations were found in three of the SERVQUAL dimensions, i.e. responsiveness, assurance and tangibles. Recommendations were made to SFP management to align the staff and student expectations on these service elements. Such alignment should ultimately improve the service quality delivered by staff, and perceived by SFP students.

This study was limited to students and staff in a particular year and thus to determine whether such deficiencies are long term problems, it is also recommended that the study be repeated. A further limitation is that the study focused only on the point of entry into the university and thus did not address service quality expectations of teaching staff, for example. Again, to get a fuller picture of the extent of service quality and the alignment of staff and student expectations, this study should be extended to other stages in the service encounter. Despite these limitations however, the transition from school to university is particularly stressful for SFP students due to their disadvantaged backgrounds and thus improving the service quality at the first point in the transition will go a long way to improving the chances of successful integration of these students into the university environment.

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The Threshold, Burden and Usefulness of Financial Reporting for Small and Medium-Sized Entities in KwaZulu-Natal

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Mercy Tafuh

Abstract

A subject of debate by standard setters is whether there should be one set of standards for all entities or different standards for different entities (i.e. differential reporting). The aim of this exploratory study is to examine the impact of International Financial Reporting Standards (IFRSs) on Small and Medium-sized Entities (SMEs) by reporting the results of a questionnaire survey which ascertained the perspectives of users of SMEs' financial statements and accounting practitioners in KwaZulu-Natal in three areas: firstly, the threshold (or cut-off) used in the definition of an SME, secondly, whether compliance with IFRSs places a burden on SMEs, and thirdly, the usefulness of SMEs' financial statements to their users.

This study provides evidence that the respondents to this survey were of the opinion that quantitative size criteria are an appropriate element in determining the threshold for differential reporting, that the costs of preparing financial statements by SMEs using IFRSs outweigh any benefits and that users are of the opinion that the financial statements of SMEs are useful mainly to the South African Revenue Service, followed by financial institutions.

Keywords: Differential reporting, SMEs, IFRSs, cost/ benefit constraint.

Introduction

Prior to the enactment of the Corporate Laws Amendment Act (DTI 2006) on 14 December 2007, all private and public companies in South Africa were required to comply with South African Generally Accepted Accounting Practice (SA GAAP) or International Financial Reporting Standards (IFRSs). The International Accounting Standard Board (IASB) developed IFRSs for listed and multinational companies and did not initially consider the possible impact of IFRSs on small and medium-size enterprises (SMEs) (McBride & Fearnley 1999:71). The objective of IFRSs is to ensure comparability, reliability and the full disclosure of all relevant information to users and more recently, to prevent accounting abuse. However, this has placed a burden on SMEs' financial reporting obligations due to the complex and voluminous nature of these standards. South Africa had been seeking a solution to the increasing complexities of IFRSs on SMEs for some time and in 2007, in anticipation of the enactment of the Corporate Laws Amendment Act which effectively introduced differential corporate reporting, the South African Institute of Chartered Accountants (SAICA) early adopted the Exposure Draft (ED) of an *IFRS for SMEs* (IASB 2007a) developed by the IASB (SAICA 2007).

Problem Statement and Research Questions

SMEs or unlisted entities represent the majority of entities preparing financial statements in all countries (Schiebel 2008:1). Despite the importance of SMEs in a country's economy, SMEs face a number of problems such as access to capital (Luetkenhorst 2004) and compliance with IFRSs. William (2004:16) comments that traditionally standard setters have concentrated on getting it right for listed companies who represent less than 1% of all enterprises while full IFRSs may not be entirely applicable to SMEs.

While studies (Holmes, Kent & Downey 1991; Hattingh 2002; Van Wyk 2005; Wells 2005; Maingot & Zeghal 2006) support the need for differential reporting, there is little consistency in the recommendations as to the appropriate threshold (or cut-off) to be used in the definition of an SME. There is also increasing concern with regards to the high cost of compliance with IFRSs by SMEs (Van Wyk 2005:4; Warren 2004:47; Eurochambres

2004:2; Sealy-Fisher 2005:14). Furthermore, users of SMEs' financial statements are seldom consulted as to the kind of information they require (Schiebel 2008).

This study thus seeks to answer the following research questions:

- What are the perceptions of users of SMEs' financial statements and accounting practitioners on the threshold (or cut off) to be used in the definition of an SME?
- What are the perceptions of users of SMEs' financial statements and accounting practitioners regarding the burden that full IFRSs places on SMEs with emphasis on the cost of complying with IFRSs?
- What are the perceptions of users of SMEs' financial statements and accounting practitioners regarding the usefulness of SMEs' financial statements to certain user groups?

To answer the research questions, the IASB and South African differential corporate reporting requirements are discussed next followed by significant prior research regarding the threshold to be used for differential reporting, the burden of IFRSs on SMEs and the usefulness of SMEs' financial statements to various user groups. The research methodology is then presented followed by the results of the study. Finally, the conclusions, limitations and recommendations for further research are presented.

Differential Reporting Requirements of the IASB and SAICA

The objective of general-purpose financial statements is 'to provide information about the financial position, performance and the changes in financial position of an entity that is useful to a wide range of users in making economic decisions' (IASCF 1989:12). Thus 'IFRSs are designed to apply to the general purpose financial statements and other financial reporting of all profit-orientated entities. Profit-orientated entities include those engaged in commercial, industrial, financial and similar activities, whether organised in corporate or in other forms' (IASB 2007b:para 9). Although the IASB has the preliminary view that the objectives of general-purpose financial statements are the same for all entities, it acknowledges that the types and needs of users of SMEs' financial statements may be

different to those of users of financial statements of larger entities (IASB 2004:15).

The preliminary view of the IASB was that the objectives of a set of financial reporting standards for SMEs should:

- (a) Provide high quality, understandable and enforceable accounting standards suitable for SMEs globally;
- (b) Focus on meeting the needs of users of SME financial statements;
- (c) Be built on the same conceptual framework as IFRSs;
- (d) Reduce the financial reporting burden on SMEs that want to use global standards; and
- (e) Allow easy transition to full IFRSs for those SMEs that become publicly accountable or choose to switch to full IFRSs (IASB 2004:5).

While the IASB did not prescribe a quantitative size test, and rather focused on public accountability, preferring that national jurisdictions would determine which entities would be required or allowed to use IFRSs for SMEs (IASB 2004:21), the IASB focused on a typical entity with about 50 employees. This was not used as a quantitative size test for defining SMEs but rather to help the IASB decide on the kinds of transactions, events and conditions that should be explicitly addressed in the proposed *IFRS for SMEs*.

The South African Department of Trade and Industry (DTI) addressed the issue of differential reporting in its corporate law reform program, which began in 2004 (DTI 2004a). The Corporate Laws Amendment Act, No. 24 of 2006 (DTI 2006) which represents Phase 1 of a two-phase process in reforming corporate law in South Africa provided interim amendments to the current Companies Act and introduced two types of companies for purposes of financial reporting, the widely held company and the limited interest company. As part of Phase 2 of the corporate law process in South Africa, the DTI subsequently issued the Companies Bill, 2007 (DTI 2007). This was superseded by the Companies Bill 2008 (DTI 2008), which has now been issued as the Companies Act, No. 71 of 2008 (DTI 2009).

The Corporate Laws Amendment Act distinguished between widely held and limited interest companies and introduced differential reporting by requiring compliance with different financial reporting standards for the two different types of companies. Because accounting standards had not yet been developed for limited interest companies, section 56(3)(a) of the Corporate Laws Amendment Act provided a transitional provision which, according to SAICA, meant that limited interest companies without public accountability could, in the interim period, either continue to comply with IFRSs, or early adopt the IASB's Exposure Draft (ED) of a proposed *IFRS for SMEs* which SAICA adopted in 2007 as *Statement of Generally Accepted Accounting Practice for SMEs* (SAICA 2007).

The Companies Bill, 2007 (DTI 2007) proposed the following cut-off totals to differentiate between closely held versus widely held for profit companies.

Criteria threshold	Closely held for profit companies
Asset value	< R25 000 000
Annual turnover	<R50 000 000
Employees	< 200 employees
Source: Companies Bill, 2007 (DTI 2007).	

Table 1: Proposed threshold for closely held versus widely held for profit companies in South Africa

The above table shows the proposed threshold for distinguishing between closely held and widely held for profit companies in South Africa. A further condition attached to the above thresholds shown in Table 1 was that widely held for profit companies should also satisfy any two of the following three criteria:

- Average asset value over preceding three years exceeds the threshold asset value.
- Average annual turnover over preceding three years exceeds the threshold annual turnover.
- Average number of employees over preceding three years exceeds threshold employees (DTI 2007).

Companies which do not meet these criteria would not have to be audited and the financial reporting framework would be less onerous.

These quantitative size tests are not in the subsequent Companies Bill, 2008 (DTI 2008) nor in the Companies Act, No. 71 of 2008 which superseded the Companies Bill 2008. Instead two types of companies are identified, namely profit companies and non-profit companies. Profit companies can be a state-owned company, a private company or a public company (DTI 2009: Section 8). Section 29 (5) (c) (ii) allows the Minister, after consulting with the Financial Reporting Standards Council, to establish different standards applicable to different categories of profit companies. However, the Companies Act, No. 71 of 2008 does allow some exemption from the audit requirement for companies based on their annual turnover, the size of its workforce or the nature and extent of its activities (DTI 2009: Sec 30(2)(b)(i)). This may indicate that quantitative size criteria are important.

Literature Review

This literature review discusses three areas relevant to this study: the threshold for differential reporting; the burden of IFRSs on SMEs (i.e. the cost/benefit constraint), and the usefulness of SMEs' financial statements to the users of those financial statements.

The Threshold for Differential Reporting

A number of countries define an SME using quantitative size criteria. For example, the European Commission (2003:2) used a combination of staff head count, turnover, and total assets to determine whether an entity is large, medium, small or micro. These are shown in Table 2.

There are considerable differences in opinion regarding the relevant quantitative cut-off points. While the Czech Republic, Germany, Hungary and Poland agree with the EU recommendations of quantitative size criteria for micro entities, Denmark uses lower cut-off points with 10m DKK (€1,270,000) for turnover, but only 4m DKK (€26,000) for total assets. Estonia uses even lower cut-offs of €639,000 and €19,500 for turnover and balance sheet total respectively (IFAC 2006:25). New Zealand, Australia

Enterprise category	Head count	Turnover	Balance sheet total
Large	< 250	< €50million	< €43million
Medium	> 250	> €50million	> €43million
Small	> 50	> €10million	> €10million
Micro	> 10	> €2million	> €2million
Source: European Commission (2003:2)			
Legend: < greater than/ more than; > less than/ fewer than			

Table 2: European Commission classification of SMEs

and China also use size criteria in the definition of SMEs. These cut-off points could also be compared to the criteria referred to in the National Small Business Amendment Act, No. 15 of 2004 (DTI 2004b) (and contained in the National Small Business Amendment Act, No. 26 of 2003) (DTI 2003) which uses the full-time equivalent of paid employees, total turnover, and total gross asset value excluding fixed property to determine whether the size of an enterprise is micro, very small, small or medium. These criteria differ according to the sector or subsectors in accordance with the Standard Industrial Classification.

The disadvantages of using quantitative criteria are that firstly, there is no uniformity because turnover or balance sheet cut-off totals vary between countries rendering comparability difficult. Secondly, there is a need to constantly revise the amounts to meet the growing pace of the economy. Curran and Blackburn (2001:22) also comment that the number of employees can be distorted by the increasing use of part-time employees, casual workers and outsourcing, while balance sheet figures depend upon the specific rules used.

The advantage of using quantitative criteria is that standards may be set for larger and more complex entities, and do not have to take into consideration small entities. These small entities will have their own standards such as *IFRS for SMEs*.

What should be the threshold for differential corporate reporting has been a continuous debate in many countries (Martin 2005:4).

According to Heymans (2000:para 2), the threshold is an issue not only in South Africa but also in leading countries such as the United Kingdom (UK), Australia, New Zealand and Hong Kong. These countries have addressed differential reporting using size criteria (Martin 2005:1). Size has been described by many as a moving target which is not a measure for differentiation. Wells (2005:106) and Holmes *et al.* (1991:128) identify size criteria and also legal structure as an important element in the definition of differential reporting. Wells (2005) concludes that SA GAAP is appropriate for big entities with users with the rate of acceptability being lower where big entities have a narrow user base or a less regulated entity form. Barker and Noonan (1996) use size and ownership structure as elements to be used for the differentiation of big and small entities. A distinction should be made between the 'small entities staying small' and 'small companies growing'. Entities that have ambition to grow are more willing to accept regulations. These entities see the financial statements as a means of attracting investors. Growing companies always look for outside investors and they would continue to prepare their financial statements in accordance with IFRSs.

An alternative to using quantitative size tests is to define SMEs by identifying who are the users of the financial statements.

The Burden of IFRSs on SMEs

The benefits derived from information should exceed the costs of providing the information. SAICA (2003:Par18) concluded that benefits usually decrease with a decrease in the number and diversity of users and their information needs.

Small companies with limited staff and resources might incur significant incremental costs when required to comply with accounting standards. These full standards place a burden on all companies but the cost for large companies with the advantages of economies of scale may not be significant (Upton & Ostergaard 1985:96). Crains, Hosp and Martins (2006:24) comment that it was probably very complex for listed companies too, but they had the necessary resources to bear the costs. According to Crains *et al.* (2006), the three main areas of cost are audit cost at 40%, increased technology cost at 56% and personnel cost at 4%.

Carsberg, Page, Sindall and Waring (1985:18) outline the different types of costs incurred as a result of compliance as follows:

- (a) Direct costs paid to auditors and external accountants.
- (b) The cost of disclosure of sensitive information to competitors where larger organizations can usually conceal such details in group financial statements.
- (c) Opportunity costs. Companies might miss other profitable opportunities because of the extra work required to comply with standards.
- (d) The cost of credibility with clients and fee write-off. This is when accountants are required to produce pages of reports which require explanation and for which the clients are reluctant to pay.
- (e) The costs of complying with legal requirements.

Cleminson and Rabin (2002) conclude that SA GAAP is a significant problem for SMEs due to complexity of standards and the costs of compliance. Research conducted by Kruger in 2004 as reported by Van Wyk (2005:11) indicates that compliance with SA GAAP is the price to be paid for limited liability and that small entities should have a separate set of accounting standards in order to release these entities from the burden of complying with the SA GAAP.

Carsberg *et al.* (1985) provide some evidence on the burden of GAAP on SMEs from a study on small company financial reporting in the UK. The sampled population comprised directors of SMEs and partners in accounting firms where interviews were done based on questionnaires. They found that small entity directors have little knowledge of the impact of financial reporting on SMEs. Only 4% of these directors thought of financial reporting as a main problem. This was because their financial statements were mostly prepared by the accounting practitioners. Auditors, on the other hand, viewed the burden of financial reporting as serious. Costs identified include:

- the cost of producing financial accounting information, including the direct costs of preparing the information (either from within the business or by hiring an accountant), printing and publishing the information and possibly auditing the information;
- the direct cost, that is the fee paid to the auditors/external accountants;
- opportunity costs which are the loss of profitable opportunities through the burden of compliance; and
- the potential cost of disclosing information to a competitor.

Despite the different costs mentioned in Carsberg *et al.*'s (1985) study as a result of compliance with GAAP by small entities, very little evidence exists to suggest that there is a high burden imposed by the standards on SMEs because a high percentage of the respondents seemed to be unaware of any compliance burden with financial reporting by SMEs.

Eleven years later, Barker and Noonan (1996:13) concluded that the costs of preparing financial statements and audit fees were the most expensive elements of accounting. Practitioners therefore, chose to comply with standards only when these standards are material. Eighty-three percent of the respondents acknowledged that there is a great burden in complying with full GAAP.

Providing a different point of view are Joshi and Ramadhan (2002:438) who examined the relevance of the International Accounting Standards (IASs) (i.e. IFRSs) to small and closely held companies in Bahrain. Joshi and Ramadhan's study examined the attitudes of professional accountants working in these companies. Many of the selected companies had limited liability. The results of the study revealed that 86% of the professional accountants acknowledged that their staff are capable of preparing financial statements based on IASs. Eighty-five percent of the respondents had no difficulties in interpreting these standards. Eighty-five percent of the respondents said IASs are not costly to apply and 86% confirmed that adopting these standards improves the efficiency and effectiveness of financial reporting. It was therefore concluded that IASs

were not costly to adopt by SMEs and that these standards help to achieve the objectives and improve the effectiveness of financial reporting.

In 2005, the American Institute of Certified Public Accountants (AICPA) (2005:18) issued the Private Company Financial Reporting Task Force Report in the United States of America (USA). This study targeted external stakeholders, business owners, financial managers and accounting practitioners. All groups, especially the practitioners, perceived it extremely challenging to keep current and up-to-date with GAAP. Most of the external stakeholders rated GAAP as complex in terms of understanding and usage. The majority of the entities surveyed hired external accountants to prepare their accounts due to the complex nature of GAAP. Comparing the benefits of using GAAP with its cost, all respondent groups, especially the practitioners, rated the benefits of preparing or using the standards compared to the cost as being low.

A survey conducted in Canada by Maingot and Zeghal (2006:522) analysed the responses of 162 CAs and Certified General Accountants (CGA) concerning financial reporting of Small Business Entities (SBEs) in Canada. Respondents were asked to rank the weaknesses of GAAP. 'Time consuming' was ranked as the main burden encountered by SBEs as a result of compliance with full GAAP. 'Too complex', 'too costly' and 'lack of relevance' were equally ranked as reporting problems suffered by SBEs. To reduce the burden of reporting by SBEs, computerization of the accounting system was ranked highest. Several recommendations were made such as the setting of special standards and the reduction of regulations and accounting standards. There was very little support for the complete exemption of accounting standards by the respondents.

The Users of SMEs' Financial Statements and their Information Needs

In Australia, the 'the users of financial statements' is an important characteristic in defining an SME (SAICA 2002:3). SAICA (2001) identifies small entities as those entities with a limited number of users and whose users do not rely solely on the financial statements for financial information. Studies have concluded that the users of small entities' financial statements are financial institutions, creditors and the revenue collection service (Van

Wyk 2005:7; Hepp & McRae 1982:56; Anderson 1999; Maingot & Zeghal 2006:525).

The IASB's conceptual framework identifies the key users of financial statements as investors, lenders, suppliers and other trade creditors, employees, customers, government (and their agencies) and the public (IASCF 1989). The main problem faced by the preparers of financial statements is the identification of the needs of users of both private and public companies. Therefore, for financial statements to be useful, it must meet the needs of different users. The information provided should (SAICA 2003:3):

- fulfil the needs of the users;
- be presented in an easy to understand manner to the users;
- enhance comparability over time and also between entities; and
- enable an assessment of the balance between benefit and cost.

SAICA (2003:para14) identifies the users of Limited Purpose Financial Statements (LPFS) as owners, the South African Revenue Service (SARS) and anyone else entitled to receive the financial statements and who has the right to demand extra information if desired.

Riahi-Belkaoui (2004:50) differentiates between the primary users of financial statements of public companies who are financial analysts and public shareholders as opposed to private companies whose primary users are the owner managers and creditors. These different groups of users are perceived to have different information needs. However, in the conceptual framework, investors are the defining class of users since it is thought that if the contents of financial statements are drawn up with the needs of investors in mind, the various needs of other potential and current users will also be satisfied (IASCF 1989).

Crains *et al.* (2006) analysed the differences between investors in large listed companies and small entities. Investors in large companies need relevant information to buy, hold or sell shares and also to make future decisions over their holdings while investors in SMEs do not have the ability to increase or dispose of their holdings except in the long run.

Although the IASB's preliminary view is that full IFRSs are suitable for all entities, the IASB noted that the users of SMEs' financial statements

may have less interest in some information in financial statements compared to the users of financial statements of entities that have public accountability (IASB 2004:14). For example, the IASB considers that users of SMEs' financial statements may have more interest in short-term cash flows rather than long-term cash flows. The IASB conclude that any differences in full IFRSs and *IFRS for SMEs* will thus be determined on the basis of user needs and cost-benefit analyses. This has led to some criticism of the IASB as it has been contended that the IASB has not considered two vital questions:

1. Who are the external users of SMEs' general purpose financial statements worldwide?
2. What kind of information do those external users need from SMEs? (Schiebel 2008:17).

The AICPA found that there are few users of small company financial statements (Mosso 1983:18). Sixty five percent of small private companies studied by the AICPA have eight or fewer owners and many were owner managers. This was in contrast to large companies which often had more than 300 shareholders. The number of creditors for small entities is also very small when compared to large companies (Mosso 1983:18). Users of small entities' financial reports are predominantly different kinds of people with different kinds of needs from the users of large companies' financial reports, and consequently no practical need exists for comparability.

Unlike public companies, private companies' financial statements are not public documents. They are used only by the managers, tax authorities and creditors. These users have the right to demand additional information.

There has been little research into identifying who are the users of SMEs' financial statements and what their information needs are (Schiebel 2008). Schiebel is of the opinion that this should be the starting point for developing accounting standards for SMEs. To substantiate his position, Schiebel (2008:11) examines the literature on common information needs of external users of SMEs' financial statements and concludes that the research so far has focused on 'one group of external users and one region or country at a time', and that '[n]o information is available about the common

information needs of various external groups on a national or international level.' He argues furthermore that the IASB failed to determine the information needs of external users of SMEs financial statements and the kind of information those external users require from SMEs, and instead has relied on the responses by the accounting regulators, profession and academics when the IASB should have focused on the users and preparers of SMEs' financial statements (2008:18). Literature quoted by Schiebel (2008) includes Evans, Gebhardt, Hoogendoorn, Marton, di Pietra, Mora, Thinggård, Vehmanen, and Wagenhofer (2005) who identified significant gaps in the research literature on SMEs findings and concluded that relatively little is known about the actual views and needs of owner-managers and other users, and Anacoreta and Silva (2005) who note that 12% of the commentators to the IASB's *Discussion Paper* request the IASB to do detailed research into the common information needs of external users of SMEs' financial statements. Evans *et al.* (2005) recommend that the IASB initiate in-depth research to determine to what extent the needs of owner-managers and other users of SME financial statements differ between larger versus the smaller SMEs, and to what extent they may differ internationally. Schiebel (2008) also referred to Sinnett and de Mesa Graziano whose study for the Financial Executives Research Foundation (FERF) in 2006 identified that commercial and investment bankers and equity investors want audited annual US GAAP financial statements, and in fact want more information from unlisted entities than is provided under US GAAP.

The literature survey of Botosan, Ashbaugh-Skaife, Beatty, Davis-Friday, Hopkins, Nelson, Ramesh, Uhl, Venkatachalam, and Vrana (2006) concludes that the major users of unlisted entities' financial statements do not see a need for differential financial reporting and prefer US GAAP. They recommend the IASB to respond cautiously to requests for GAAP exceptions supported primarily by complexity arguments.

Research Methodology

This exploratory study, which provides descriptive data only, examines the perceptions of users of SMEs' financial statements and accounting practitioners (as the preparers of SMEs' financial statements) towards the threshold (or cut-off) to be used for differential reporting, the costs

associated with complying with IFRSs and the usefulness of SMEs' financials statements to its user groups.

To represent the target group of users of SMEs' financial statements, Masters in Business Administration (MBA) students were chosen. This group was characterized by all respondents having a minimum of five years work experience of which three years were either at a supervisory or management level. This respondent group had all completed a module in financial accounting and were all aware of differential reporting. Further-more, they were either employees or owner-managers. As such, this target group was used as a surrogate for the users of SMEs' financial statements.

Liyanarachchi (2007) reviews and synthesises research in this area and finds that accounting students may be adequate surrogates for practitioners in many decision-making experiments. Elliot, Hodge, Kennedy and Pronk's (2009) results indicate that MBA students can be used as proxies for non-professional investors (i.e. users of information) provided that the task is aligned to their appropriate level. In the current study the research task involved answering a questionnaire on a topic of which they had some knowledge and experience. The MBA students were therefore considered suitable to express an opinion on the impact of IFRSs on SMEs.

The choice of the accounting practitioners stems from the fact that they are all chartered accountants (CAs) and thus more knowledgeable or better informed on IFRSs. A background question revealed that 44% of the practitioners had less than four years experience, 22% of the practitioners had between four and twelve years experience and 26% of the respondents had more than twelve years experience. Two practitioners (8%) did not answer this question. Although the respondents had a range of years of experience, the prevalence of more respondents with less experience has also been documented in other South African studies. For example, in the Wells' (2005) study, 30% of his target group had less than 10 years experience.

With regards to size of practice, 15% of the respondents indicated that they belonged to a large practice; 37% belonged to a medium-sized practice and 37% belonged to a small practice. Three respondents (11%) did not answer this question. This analysis shows that the respondents had varying amounts of experience and belonged to different sizes of practices.

However, because the number of respondents in each background demographic is low, experience and size of practice was not used in the analysis of the results which follow.

The target groups were not chosen by statistical sampling but conveniently from the MBA class at the University of KwaZulu-Natal (UKZN) and the population of chartered accountants in KZN. A total of 45 questionnaires were handed out to the MBA students and only 14 (31%) completed questionnaires were returned.

To distribute the questionnaires to the accounting practitioners' target group, three visits and three meetings were held with the Regional Director of SAICA in KZN. As an attempt to e-mail the questionnaire to sixty accounting firms resulted in few replies, accounting firms in Durban were visited and copies of the questionnaire were left for later collection. Out of 161 questionnaires that were administered to the accounting practitioners, only 31 (19%) were returned.

To ensure the reliability and validity of the data, methods of measuring reliability were not used as the target groups were sophisticated sub-populations of all MBA students at UKZN or all chartered accountants at selected accounting firms in Durban. Therefore, reliability was expected. With regards to validity, in view of the straightforwardness of the questionnaire, and the reasonableness of the responses, it was concluded that the questionnaire possessed validity and other methods of approaching validity were not pursued.

Discussion of the Results

Although the theoretical justification of differential reporting lies in the consideration of the cost/benefit constraint and the objective of financial statements, the questionnaire first set out to establish from the respondents whether IFRSs are suitable for all entities irrespective of size, type and nature of the entity. The reason for this question is to establish whether or not the respondent groups are of the opinion that different entities may require different reporting standards and if so, they would then have an opinion on the various matters which were being investigated in this study. The results of this question are shown in Table 3.

	Users		Practitioners		Total	
	No.	%	No.	%	No.	%
Agree	7	50	4	15	11	24
Disagree	7	50	23	85	30	76
Total	14	100	27	100	41	100

Table 3: Are full IFRSs suitable for all entities irrespective of size, type and nature?

An inspection of the total responses presented in Table 3 suggests that full IFRSs should not be considered suitable for all entities. However, the users were split evenly on this issue. This is not true of the practitioners since 85% of the practitioners disagree with this assertion. The support for full IFRSs by users of SMEs may be because their annual financial statements are prepared by experts or CAs hired by their entities or, the MBA students as surrogates for the user group, are not as aware as the practitioners of the issues surrounding the use of full IFRSs. Practitioners may be in a better position to assess the burden of IFRSs on SMEs, hence their lower support.

Reasons given by those respondents who consider full IFRSs suitable for SMEs are that it enhances comparability within entities and countries; that all entities should apply the same standards; that these standards are important enough to be maintained; that small businesses will have the opportunity to do business with large companies and obtain loans from banks; that there should be common standards which all entities should follow irrespective of their size; and that financial statements will be reliable as a result of using full IFRSs. They also perceived that the global application of a one-tier system will lead to harmonization of accounting standards.

On the other hand, respondents who did not perceive full IFRSs to be suitable for SMEs stated that it is too costly; that the standards lack relevance; that much time is needed in the preparation of the financial statements; that the standards are constantly being revised; and that they are very complex. Some other arguments against full IFRSs are that IFRSs are designed for large listed entities; certain aspects of IFRSs provides no value

to small entities; certain aspects of IFRSs are not applicable to small entities and should be discarded; clients resist the high fee which arises as a result of lengthy reports; and there is the need to keep records simple for small entities because detailed disclosures add little value to the entity.

Overall, these results confirm the findings by Holmes *et al.* (1991), Hattingh (2002) and Wells (2005) that there is support for differential reporting, although in this current study, the users are neutral in their response.

The Threshold for Differential Reporting

One of the key issues to be addressed in the context of differential reporting is the use of quantitative size criteria in the definition of SMEs. Respondents were first asked whether size is considered an appropriate element in the definition of SMEs. The results of this question are shown in Table 4.

	Users		Practitioners		Total	
	No.	%	No.	%	No.	%
Yes	11	79	17	63	28	68
No	3	21	10	37	13	32
Total	14	100	27	100	41	100

Table 4: Are quantitative size criteria an appropriate element in the definition of SMEs?

The aggregate responses presented in Table 4 suggest that a quantitative size criterion is considered to be a suitable element in the definition of SMEs with 68% of all respondents in agreement. Size is considered an appropriate criterion in the definition of SMEs by 79% of the users. Only 63% of the practitioners perceived size as being important. This result supports the current situation in the UK, Australia and New Zealand where quantitative size criteria are used as a distinguishing factor for small and large entities.

In order to identify the cut-off values for a suitable size threshold in the definition of SMEs, respondents were asked to suggest suitable amounts for total assets, turnover and number of employers. This question was

directed only to those who perceived quantitative size criterion to be an important element in the definition of SMEs. These results are shown in Table 5.

Table 5 shows that all the respondents who considered size to be an appropriate criterion in the definition of SME proposed an amount for the three elements. Users prefer total assets up to R5 million, revenue up to R5 million and total employees of between 20 and 30. The practitioners, on the

		Users		Practitioners		Total	
		No.	%	No.	%	No.	%
Total assets	R0-R5m	7	64	5	29	12	43
	R5m-R10m	0	0	3	18	3	11
	R10m-R15m	0	0	3	18	3	11
	R15m-R20m	3	27	1	6	4	13
	R20m-R25m	1	9	2	12	3	11
	R25m and >	0	0	3	17	3	11
Total		11	100	17	100	28	100
Revenue	R0 -R5m	7	64	1	6	8	29
	R5 m– 10m	0	0	3	18	3	11
	R15m-R20m	2	18	0	0	2	7
	R20m-R25m	2	18	0	0	2	7
	R25m and >	0	0	13	76	13	46
Total		11	100	17	100	28	100
Number of employees	1-10	2	18	0	0	2	7
	10-20	0	0	0	0	0	0
	20-30	5	46	1	6	6	21
	30-40	1	9	7	41	8	29
	40-50	3	27	1	6	4	14
	50 and >	0	0	8	47	8	29
Total		11	100	17	100	28	100

Note: Total responses correspond to 'yes' in Table 4.

Table 5: Amounts considered suitable in the definition of SMEs

other hand, showed no clear preference with respect to total assets, but preferred revenue of more than R25 million and total employees of more than 50 (with the majority of the practitioners preferring total employees exceeding 30). Table 5 indicates that even though a majority of the respondents support size as an appropriate element in the definition of SMEs, choosing the value of total assets, revenue and number of employees to be used for the threshold of differential reporting is a debatable issue especially for the user group, with the practitioners applying much higher parameters than the user group.

Apart from size, all respondents were asked to identify any other elements that should be taken into account in the definition of SMEs. Table 6 shows the perceptions of respondents concerning other elements that should be used in the definition of SMEs.

	Users		Practitioners		Total		Rank
	(n=14)		(n=27)		(n=41)		
	No.	%	No.	%	N	%	
Users of financial statements	10	71	22	81	32	71	=1
Public versus non-public accountability	5	36	19	70	24	53	=2
Reliance on registered accountants and auditors	10	71	14	52	24	53	=2
Lack of board structure	9	64	8	30	17	38	3
Owner-managed business	9	64	23	85	32	71	=1
Number of owners/shareholders	0	0	16	59	16	36	4

Table 6: Other elements that could be used in the definition of SMEs

Overall, the respondents consider the users of financial statements and whether the SME is an owner-managed business as the most important elements in the definition of SMEs. Accounting versus non-accounting accountability and reliance on registered accountants and auditors was ranked second overall. Lack of board structure, although poorly rated by

practitioners, was considered important by the users. The number of owners/shareholders was rated higher by the practitioners. These results show some support for the IASB where public versus non-public accountability is considered an important element in the definition of SMEs.

Table 6 also shows that users find reliance on registered accountants and auditors to be an important element to be used in the definition of SMEs. A possible reason for support for reliance on registered accountants and auditors as an element to be used in the definition by users could be that most of these respondents rely highly on the registered accountants and auditors for the preparation of their financial statements.

The preference of public versus non-public accountability by practitioners may stem from the fact that practitioners are probably more up-to-date with the deliberations of the IASB which may have influenced their perceptions. However, owner-managed business is ranked first by practitioners (85%). This may be because most owner-managed businesses are usually small in size and the owners are the primary users of the financial statements.

The results in Table 6 may indicate that more than one element could be used in the definition of SMEs.

The Burden of IFRSs on SMEs

Respondents were asked to evaluate IFRSs in terms of the cost of complying with IFRSs, and its volume and complexity. These results are shown in Table 7.

The results presented in Table 7 indicate that IFRSs are perceived by the respondents to be costly, voluminous and complex. This result confirms the findings in Table 5 that full IFRSs are not suitable for all entities. 'Costly' is ranked highest (80%) by the total respondents and 'complex' and 'voluminous' are ranked equal second (78%).

The users considered IFRSs less costly, less complex and less voluminous than the practitioner group. As users of SMEs' financial statements, they are unaware of the complex and voluminous nature of IFRSs.

The practitioners perceive that full IFRS is very costly, too voluminous and too complex for SMEs. As the practitioners are also CAs,

		Very Costly	Costly	Less Costly	Moderate	Total	Very costly and costly and costly No. ¹	%	Rank
1	2	3	4	5	6	7	8	9	10
Evaluation of IFRS in terms of cost	Com- bined Users Pracs.	17	16	3	5	41	33	80	2
		1 16	7 9	2 1	4 1	14 27	8 25	57 93	1 1
		Too voluminous	Voluminous	Less voluminous	Moderate	Total	Too voluminous	%	Rank
Evaluation of IFRS in terms of volume	Com- bined Users Pracs.	17	15	4	5	41	32	8	2
		3 14	4 11	3 1	4 1	14 27	7 25	0 93	2 1
		Too complex	Complex	Less complex	Moderate	Total	Too complex and	%	Rank
Evaluation of IFRS in terms of complexity	Com- bined Users Pracs.	20	11	6	3	40	31	78	2
		3 17	4 7	4 2	2 1	13 27	7 24	50 89	2 2
¹ The numbers in column 8 are derived from the summation of the first two columns.									

Table 7: Evaluation of IFRSs in terms of cost, volume and complexity

they are in a better position to assess the burden of IFRSs since they use these standards to prepare financial statements.

Respondents were asked to list the different ways through which costs are incurred by SMEs as a result of complying with full IFRSs. The majority of the practitioners listed audit fees and accounting fees. Other costs incurred as a result of complying with IFRSs were perceived to be revaluation costs, increased personnel expenses, the possibility of misinterpreting information by employees due to their limited knowledge of IFRSs, payments to IT specialists for a system change, software costs, cost of extra time, additional costs of disclosure, outsourcing of services, the lack of professionals to assist in compliance with IFRSs by SMEs, costs of keeping up-to-date with changing standards, and the cost of hiring experts to provide reliable information.

Many of the users of SMEs did not answer this question possibly because they consider complying with IFRSs suitable for all entities (see Table 3).

Apart from cost, respondents were asked to identify other factors considered to be a burden on SMEs as a result of complying with IFRSs. The factors indicated by the respondents include that IFRSs requires technically complex record keeping, requires constant revision of standards, is too complex for users and preparers to understand, is too complex for a layman to understand, is time consuming, is too voluminous, involves accounting standards that are unnecessarily onerous, and brings about employees' dissatisfaction due to increased workload.

Table 8 shows the results of a question which asked respondents to rank the difficulties faced by SMEs.

An examination of the combined results shows that the problem of obtaining finance is perceived to be the main difficulty faced by SMEs (68%), followed by compliance with legislation (62%). There is limited support for the burden of preparing financial statements and competition (51%), high audit fee (36%) and black economic empowerment (34%). The break down of the results indicates a difference in the responses of the users and the practitioners. Users see the burden of preparing financial statements and audit fees to be the most significant problem (71%), followed by compliance with legislation (64%) and then the problem of obtaining finance (57%).

		Too heavy	Heavy	Neutral	Less heavy	Not heavy	Total	Too heavy and heavy		Rank
		No	No	No	No	No	No	No ¹	%	
1	2	3	4	5	6	7	8	9	10	11
Compliance with legislation	Com-bined	11	14	4	6	6	41	25	62	2
	Users	5	4	0	3	2	14	9	64	2
	Pracs.	6	10	4	3	4	27	16	59	2
Black economic empowerment (BEE)	Com-bined	6	8	3	14	10	41	14	34	6
	Users	2	3	0	4	5	14	5	36	4
	Pracs.	4	5	3	10	5	27	9	33	5
Problem of obtaining finance	Com-bined	19	9	4	3	6	41	28	68	1
	Users	5	3	1	2	3	14	8	57	3
	Pracs.	14	6	3	1	3	27	20	74	1
Burden of preparing financial statements	Com-bined	12	9	2	7	11	41	21	51	3
	Users	6	4	0	3	1	14	10	71	1
	Pracs.	6	5	2	4	10	27	11	40	4
High audit fee	Com-bined	4	12	1	5	19	41	16	36	5
	Users	2	8	0	2	2	14	10	71	1
	Pracs.	2	4	1	3	17	27	6	22	6
Competition	Com-bined	10	10	2	7	11	41	20	50	4
	Users	3	0	0	4	6	14	3	21	5
	Pracs.	7	10	2	3	5	27	17	63	3
¹ The numbers below are derived from the summation of the first two columns.										

Table 8: Ranking of difficulties faced by SMEs

Practitioners on the other hand identify the problem of obtaining finance as the main significant difficulty faced by SMEs. The burden of preparing financial statements by SMEs does not seem to be a prime issue especially to the practitioners because only 40% of the practitioners rated it as a difficulty faced by SMEs. Although difficulties such as raising finance, legislation, competition and BEE might be a problem to most small entities, the use of IFRSs by SMEs has led to a heavier burden due to the increase in the audit fees, and the complex nature of preparing financial statements.

Due to the complex standards developed by the IASB, SMEs rely on external accountants or accounting experts in the preparation of their annual financial statements (Carsberg *et al.* 1985:33). Table 9 summarises the results of the question asking who mostly prepares the annual financial statements of SMEs.

The aggregate responses in Table 9 suggest that external accountants or experts mostly prepare the financial statements of SMEs. This may be because IFRSs are too complex and technical for the directors and account-

	Users			Practitioners			Total		
	No	%	Rank	No	%	Rank	No	%	Rank
Accountants employed by SMEs	4	28	3	6	22	2	10	24	2
External accountants or experts	5	36	1	18	66	1	23	56	1
The director and the accountants	4	29	2	1	4	3	5	12	3
Managers only	0	0	5	1	4	3	1	3	5
Did not respond	1	7	4	1	4	3	2	5	4
TOTAL	14	100		27	100		41	100	

Table 9: Preparation of the annual financial statements of SMEs

ants of SMEs. By implication, extra money is required to hire external accountants or experts to prepare the financial statements of SMEs which leads to increased costs. This result shows little support for accountants employed by SMEs, the directors and the accountants of SMEs and managers as preparers of the annual financial statements.

The result of the current study is similar to Carsberg *et al.* (1985:33) as both respondent groups rank external accountants or experts highest.

The Usefulness of Financial Statements to Users

The results of the question asking respondents for their opinion on the usefulness of SMEs' financial statements to certain users are summarized in Table 10.

The aggregate responses presented in Table 10 indicate high overall support for the usefulness of the financial statements of SMEs to SARS (98%) and financial institutions (95%). The degree of support is lower for shareholders, analysts and managers. This overall response is consistent with those of the individual respondent groups since both users and practitioners favour SARS and financial institutions as important users of financial statements of SMEs. According to the users of SMEs, all five categories of users of financial statements of SMEs are considered important although SARS and financial institutions are ranked highest. Practitioners did not consider analysts, managers and shareholders/owners as the main users of the financial statements of SMEs. The low ranking of analysts could be justified by the fact that they are mostly concerned with public companies. The poor support for shareholders is surprising because prior research indicates strong support for shareholders/owners since the financial statements are used in decision making by this user group.

The results of this study are slightly different from those conducted by Barker and Noonan (1996:19) in which there was majority support for directors/owners, financial institutions and revenue (tax) respectively. Suppliers, customers and employees were perceived to be less important users.

		Very useful	Useful	Neutral	Less useful	Not useful	Total	Very useful plus useful No ¹	%	Rank
1	2	3	4	5	6	7	8	9	10	11
Financial institutions	Com-bined	27	12	1	1	0	41	39	95	2
	Users Pracs.	11 16	1 11	1 0	1 0	0 0	14 27	12 27	86 100	2 1
South African Revenue Service (SARS)	Com-bined	29	11	1	0	0	41	40	98	1
	Users Pracs.	11 18	2 9	1 0	0 0	0 0	14 27	13 27	93 100	1 1
Managers	Combi ned	14	9	5	9	4	41	23	56	4
	Users Pracs.	8 6	4 5	1 4	0 9	1 3	14 27	12 11	86 41	2 3
Shareholders/ owners	Combi ned	16	9	3	12	1	41	25	61	3
	Users Pracs.	10 6	3 6	0 3	1 11	0 1	14 27	13 12	93 44	1 2
Analysts	Combi ned	14	9	7	7	4	41	23	56	4
	Users Pracs.	8 6	3 6	0 7	2 5	1 3	14 27	11 12	79 44	3 2
¹ The numbers in column 9 are derived from the summation of the first two columns.										

Table 10: The usefulness of SMEs' financial statements to certain user groups

Conclusions, Limitations and Recommendations for Further Research

This study provides evidence that there is support for differential reporting as overall the respondents did not consider IFRSs suitable for all entities irrespective of size, type and nature.

This study provides evidence that there is support for the use of quantitative size criteria as an appropriate element in the definition of SMEs. However, there was no clear preference on the appropriate value for total assets, revenue and number of employees to be used in the definition of SMEs. It is interesting to note that the Companies Act, No. 71 of 2008 indicates that quantitative thresholds may be used to determine whether or not a non-public company is audited.

The users of financial statements and whether it was an owner-managed business were identified as important elements in the definition of SMEs. Public versus non-public accountability and the reliance on registered accountants and auditors were other important variables considered relevant in the definition of SMEs.

With regards to the evaluation of IFRSs in terms of cost, volume and complexity, the practitioners were more in agreement than the users that IFRSs were costly, voluminous and complex (see Table 7). A reason advanced for this is that the practitioners are in a better position than the users to have an informed opinion on this matter. The difficulties faced by SMEs are not only financial statement preparation, but also such matters as obtaining finance and complying with legislation. External accountants or experts were found to be the preparers of the financial statements, and with respect to the users, SMEs' financial statements were seen as most useful to SARS.

While this study also provides support for the theoretical justification for differential reporting with respect to the cost/benefits of complying with IFRSs, less clear is whether financial statements prepared using *IFRS for SMEs* will indeed satisfy the needs of the users. All the users listed in the question on the usefulness of SMEs' financial statements, with the exception of the analysts, can demand additional information from the SMEs (see Table 10). The main user, SARS, may prefer the financial statements prepared on a tax basis.

This study does have some limitations. Firstly, the choice of KwaZulu-Natal for both target groups means that the results cannot be generalized to different target groups or to the rest of South Africa. Secondly, the response rate was low with a consequent low level of statistical tests. However, despite these limitations, this exploratory study provides useful and relevant information and extends the research in this area.

Future studies could focus on different user groups such as actual SME owners and provide a better understanding of who are the users of SMEs' financial statements and what are their needs for information and whether *IFRS for SMEs* satisfies this need. This could be done through structured interviews to solve the problem of low response rates. This would provide confirmatory evidence for SAICA and the IASB that *IFRS for SMEs* does meet the different needs for information by the users of SMEs' financial statements.

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The Suitability of International Financial Reporting Standards for Small and Medium-sized Entities

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Abstract

South Africa adopted the International Accounting Standards Board's (IASB) draft International Financial Reporting Standard for Small and Medium-sized Entities (*IFRS for SMEs*) in 2007 as *Statement of Generally Accepted Accounting Practice for Small and Medium-sized Entities (Statement of GAAP for SMEs)*. In 2009, the final *IFRS for SMEs* was approved for use in South Africa and the *Statement of GAAP for SMEs* was withdrawn. This study provides evidence, using exploratory research in KwaZulu-Natal, as to the perceptions of users and accounting practitioners regarding the preferred form and content of *IFRS for SMEs*.

The results indicate that financial statements based on a simplified version of IFRSs are the preferred form for financial reporting for SMEs. With regards to the content of differential reporting, the study found that the while certain standards were considered essential for SMEs (IAS 7, IAS 8, IAS 19 and IAS 20) and others were considered not essential for SMEs (IAS 27, IFRS 3 and IFRS 5), overall there was support for recognition and measurement concessions. This research thus provides some support for the IASB's *IFRS for SMEs*.

Keywords: Differential reporting, Small and medium-sized entities, IFRS for SMEs.

Introduction

According to the conceptual framework of the International Accounting Standards Board (IASB) (IASCF 1989:2), the main objective of financial statements is to provide information by reporting enterprises which is useful to a wide range of users for making economic decisions. While this objective can be justified for public entities on the grounds of public accountability and users such as financial analysts, this is not true for smaller entities whose primary users are perceived to have different information needs (IASB 2004:14). The desirability of, and justification for, different reporting standards for small and medium-sized entities (i.e. differential reporting) has been documented by many research studies (Upton & Ostergaard 1985; Holmes, Kent & Downey 1991; Barker & Noonan 1996; Cleminson & Rabin 2002; Hattingh 2002; AICPA 2005; Van Wyk 2005; Wells 2005; Chand, Patel & Cummings 2006:13; Crains, Hosp & Martins 2006; Maingot & Zeghal 2006).

In South Africa, differential reporting was introduced when the Accounting Practices Board (APB), the official standard setter, approved the IASB's draft International Financial Reporting Standard for Small and Medium-sized Entities (*IFRS for SMEs*) for use in South Africa as *Statement of Generally Accepted Accounting Practice for Small and Medium-sized Entities (Statement of GAAP for SMEs)* (SAICA 2007). In 2009, the APB approved the final *IFRS for SMEs* for use as a statement of generally accepted accounting practice with an issue date of 13 August 2009 and withdrew the *Statement of GAAP for SMEs* (APB 2009).

Problem Statement and Research Questions

Research into differential reporting has focused on the desirability of differential reporting (Holmes *et al.* 1991; Wells 2005), the threshold for differential reporting (Holmes *et al.* 1991; Wells 2005), the burden of International Financial Reporting Standards (IFRSs) on SMEs (Carsberg, Page, Sindall & Waring 1985; Barker & Noonan 1996; Cleminson & Rabin 2002), the due process of the IASB (Anacoreta & Silva 2005; Schiebel 2008) and the reporting needs of users (Mosso 1983; Joshi & Ramadhan 2002; AICPA 2005; Van Wyk & Rossouw 2009). The form for differential reporting and what its content should be are areas requiring further research.

This study thus seeks to answer the following research questions:

- What are the perceptions of users of SMEs' financial statements and accounting practitioners on the form that *IFRS for SMEs* should take?
- What are the perceptions of users of SMEs' financial statements and accounting practitioners on the content of *IFRS for SMEs*?

The importance of this exploratory research is that it provides support for the suitability of the IASB's *IFRS for SMEs* (IASB 2009a), particularly as the IASB has been criticized for not consulting users of SMEs' financial statements (Schiebel 2008). It furthermore provides support for the APB (2007) in adopting the draft, and subsequently the final *IFRS for SMEs*.

The following section of this article discusses the relevant literature in this area. The research methodology and the results of the research are presented next. The article then discusses the conclusions, limitations of the study and areas for further research.

Literature Survey

The literature review discusses research in the two areas, which are the focus of this article: research on the appropriate form for differential reporting and research on what its content should be.

Research on the Appropriate Form for Differential Reporting

The issue of which form financial reporting by SMEs should take has been addressed in many countries and by many standard setting bodies (Maingot & Zeghal 2006:513). Different forms proposed in the literature for differential reporting are the cash basis, the income tax basis, limited purpose financial statements (LPFS), full compliance with IFRSs or the complete separation from IFRSs (Wells 2005).

Maingot and Zeghal (2006) argue that the two main purposes of financial statements of SMEs are for tax authorities and financial institutions and therefore complying with full GAAP is irrelevant. In the United States of America (USA), its *Other comprehensive basis of accounting* (OCBOA)

is in many cases a tax basis (Martin 2005:48) Wells' (2005:100) found that limited deviations from South African GAAP to be the preferred option for differential reporting, followed by a completely separate set of South African GAAP (second), the income tax basis (third), unlimited deviations from GAAP (fourth), and in fifth place, the cash basis. Lötter's (2006) study indicated that the accrual basis, as opposed to the cash basis, is the preferred form for differential reporting by accounting practitioners. In contrast, Van Wyk (2005:9) reported that in Kruger's (2004) study it was found that with regards to the form differential reporting should take, 74% of the respondents preferred the tax basis, followed by the managerial basis and the accrual basis.

The IASB (2009b: BC50,51) argue that while tax authorities use the financial statements as a reference for the taxable income calculation, an accounting standard that is intended to be used globally cannot incorporate national jurisdictions' tax rules, and that therefore *IFRS for SMEs* could serve as a logical starting point for calculating taxable income. The IASB therefore rejected the tax basis as a form for *IFRS for SMEs*.

According to Mosso (1983:19,21), the exemption of SMEs from a few standards is not enough to solve the many problems since several solutions need to be considered, some of which are:

- a) GAAP needs to be simplified and new standards when feasible need to be avoided,
- b) Differential GAAP including disclosure and measurement is needed whenever a legitimate cost-benefit argument can be made for it,
- c) One or more comprehensive alternative bases with standardised disclosure requirements need to be revisited, and
- d) GAAP departures with qualified opinions are needed. The auditors' report should note GAAP departures without conveying undue alarm to the users.

A further argument is that Africa does not have the necessary resources to follow the United Kingdom (UK) approach of developing completely new standards. Hattingh (2006) suggested that standards should be developed using existing IASB standards but that the complexities should be simplified.

Hong Kong, New Zealand and the IASB (Martin 2005: Par 1) have attempted to reduce the financial reporting burden for SMEs. Other countries have made a concession in terms of the exclusion from some part of a 'full' set of rules like Canada because these standards were designed for listed companies (Martin 2005: Par 1).

The IASB developed *IFRS for SMEs* by first taking full IFRSs and then extracting the fundamental concepts from the *Framework for the Preparation and Presentation of Financial Statements* (IASCF 1989) and the principles from full IFRSs and made modifications thereto in light of the cost-benefit constraint and users' needs (IASB 2009b: BC95). In this way a separate standard for SMEs was developed. *IFRS for SMEs* is thus a stand-alone standard, separate from full IFRSs.

The Content of Differential Reporting

Another important issue is which standards from full IFRSs are considered suitable for SMEs. While the findings of some researchers supported the relaxation of some disclosure and presentation requirements, others preferred some disclosure and presentation requirements as well as measurement and recognition principles to be relaxed when developing standards for SMEs (Hattingh 2006). A list of the standards discussed in this article is shown in Appendix 1.

Barker and Noonan (1996:26) investigated the applicability of specific standards in their study in Ireland. Forty-three percent (43%) of the respondents said all standards should apply to all companies provided they are applicable and if the issue is material. However, Barker and Noonan concluded that the responses were skewed in favour of the earlier standards, with the later standards attracting a smaller percentage of applicability. Most of the respondents admitted that they were not fully up-to-date with the standards which could have biased their choice.

The American Institute of Certified Public Accountants (AICPA) (2006) investigated whether financial reporting standards should be different for private companies. They concluded that significant differences in recognition, measurement, or disclosure and presentation should not be solely based on whether a company is privately or publicly held. This is because:

- a) Similar economic transactions and events should be reported consistently regardless of the size or ownership characteristics of the reporting enterprise, and
- b) Different financial reporting standards for private companies could result in additional costs to preparers, accountants, auditors, advisors, and others in the areas of continuing education, authoritative resources, and quality control systems.

Zanzig and Flesher (2006:Par 14) reported on the AICPA's *Private company financial reporting task force report*. The AICPA study, which began in 2004, considered whether the general purpose financial reporting of private companies, prepared in accordance with GAAP, meets the financial reporting needs of the constituents of that reporting, as well as whether the cost of providing GAAP financial statements is justified when compared with the benefits they provide to private company constituents.

The results of one of the surveyed questions on the 12 GAAP requirements indicated that the accrual basis, the cash flow statement, and the classification of liabilities and equity are perceived to be important to decision usefulness. The AICPA (2006) task force concluded that most of the respondents in the study were of the opinion that the underlying accounting for public versus non-public (private) companies was different. It concluded that some of the GAAP requirements for the public companies lack relevance or decision usefulness for private companies. The task force therefore recommended that a recognized set of standards be established as GAAP for private companies.

In South Africa, Wells (2005:110) supported the principle of granting recognition and measurement as well as presentation and disclosure concessions to entities with fewer users. In the Wells' (2005) study only twelve standards (IAS 2, IAS 12, IAS 16, IAS 17, IAS 19, IAS 21, IAS 32 (including IAS 39), IAS 36, IAS 37, IAS 38, IAS 40 and IAS 41) were listed in the questionnaire and the respondents were asked to indicate whether the recognition and measurement, and the presentation and disclosure requirements were appropriate to twelve hypothetical entities varied by size, legal structure and user base. IAS 7, IAS 24 and IAS 27 were also included as separate items. For these three standards the respondents were asked whether the presentation requirements of the three standards were

appropriate for the twelve hypothetical entities. The study found significant differences in the perceived applicability of the standards to public companies when compared to private companies and close corporations. This is similar to the New Zealand (ICANZ 2002) and Canadian differential reporting requirements (CICA 2002). Wells' (2005) results show a significant difference between big private entities with many users and big private entities with fewer users. This was because the respondents (auditors) perceived that all entities with many users irrespective of their size do not require relaxed standards. The relaxation of measurement and recognition principles as well as presentation and disclosure requirements is only essential for big private entities with no users and small entities with no users.

The aggregate responses in the Wells' (2005) study also revealed that the majority of the respondents perceived *Related party disclosures* (IAS 24) to be appropriate only to security exchange listed entities, public and big private entities with users and big close corporations with users. With regards to *Consolidated and separate financial statements* (IAS 27), the majority of respondents perceived consolidated financial statements not to be appropriate for all close corporations and for all private companies with a limited user base. With regards to the *Statement of cash flows* (IAS 7), the overall results found that the majority of the respondents perceived the statement of cash flows to be appropriate and that all companies, except small private companies with a limited user base, should be required to present a statement of cash flows.

Van Wyk (2005:14) in his report of Kruger's (2004) results noted that more than 50% of the respondents rated only thirteen standards (The conceptual framework, IAS 1, IAS 2, IAS 10, IAS 12, IAS 16, IAS 17, IAS 18, IAS 23, IAS 36, IAS 38, IAS 40 and IAS 41) to be the most crucial in the preparation of financial statements for close corporations. (The Kruger study did not consider other entity forms.)

Van Wyk and Rossouw (2009:110) found that 12 standards (IAS 1, IAS 2, IAS 7, IAS 8, IAS 10, IAS 12, IAS 16, IAS 17, IAS 18, IAS 23, IAS 37 and IAS 40) can be considered crucial for SMEs and that the topics of *Consolidated and separate financial statements* (IAS 27), *Investments in associates* (IAS 28), *Business combinations* (IFRS 3) and *Interests in joint ventures* (IAS 31) were found to be mainly not applicable to SMEs.

Complex and voluminous standards impose a high burden on SMEs when compared to simplified standards. Reducing the presentation and disclosure requirements for SMEs by standard setters does not entirely solve the problem but it does reduce the volume of these standards to a limited extent.

In *IFRS for SMEs* (IASB 2009a) (which has sections as opposed to the separate standards found in full IFRSs), many of the principles found in the full IFRSs have been simplified. Some of the differences to be found in *IFRS for SMEs* upon comparison to full IFRSs are as follows:

Table 1: *IFRS for SMEs* upon comparison to full IFRSs

IAS 8	Accounting policies, estimates and errors -	Management may consider the requirement of full IFRSs in determining an appropriate accounting policy, however, management is not required to do so.
IAS 16	Property, plant and equipment -	Subsequent to acquisition, the entity shall measure its property, plant and equipment at cost less accumulated depreciation and accumulated impairment losses.
IAS 23	Borrowing costs -	All borrowing costs are expensed.
IAS 28	Investments in associates -	An entity may elect to account for all its associates: <ul style="list-style-type: none"> • at cost less impairment provided there is no published price for the investment, • using the equity method, or • at fair value with changes in fair value being recognised in profit or loss.

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IAS 38	Intangible assets other than goodwill -	<p>All research and development expenditures are recognised as an expense when incurred unless it forms part of the cost of another asset which meets the recognition criteria in terms of <i>IFRS for SMEs</i>.</p> <p>After recognition, intangible assets are measured at cost less any accumulated amortization and any accumulated impairment losses.</p> <p>All intangible assets are considered to have a finite useful life.</p>
IAS 39	Financial instruments -	<p>The recognition model for basic financial instruments is the amortised cost model.</p> <p>The recognition model for other financial instruments is the fair value model, which is normally the transaction price. This is exclusive of transaction costs.</p>
IAS 40	Investment property -	<p>Measurement is initially at cost and includes costs to bring it into use.</p> <p>Subsequently investment property <u>must</u> be measured at fair value unless a reliable fair value cannot be obtained without undue cost or effort.</p> <p>If fair value cannot be determined, the investment property is treated as property, plant and equipment.</p>
IFRS 3	Business combinations and goodwill -	<p>All business combinations are accounted for using the purchase method.</p> <p>Goodwill is amortized over a period not exceeding 10 years.</p>

IFRS for SMEs does not cover segment information, earnings per share or interim reporting. Should an SME disclose such information, it would need to disclose the basis it used for preparing and presenting such information. The topics *Consolidated and separate financial statements* (IAS 27), *Investments in associates* (IAS 28), *Business combinations* (IFRS 3) and *Interests in joint ventures* (IAS 31) which were found to be mainly not applicable to SMEs by Van Wyk and Rossouw (2009:110) are included in *IFRS for SMEs* but with measurement simplifications.

Research Methodology

This exploratory study, which provides descriptive data only, was carried out at the time the draft *IFRS for SMEs* was under discussion in South Africa (Tafuh 2008). Its purpose was to determine the perceptions of users of SMEs' financial statements and accounting practitioners (as preparers of SMEs' financial statements) towards the form and content of financial standards for SMEs. The methodology is based on survey research which involved the use of a questionnaire. This process included pre-testing and administering the questionnaire, after which the data was captured and analysed.

Out of the 156 questionnaires that were administered to the accounting practitioners, only 27 (17%) were returned. For the users of SMEs' financial statements, a total of 45 questionnaires were administered to MBA students, who were used as surrogates for the user group (Liyanarachchi 2007; Elliot, Hodge, Kennedy & Pronk 2009), and only 14 (31%) were returned. Many of the latter respondents complained that the questionnaire was too technical and that they were unfamiliar with the content of IFRSs.

Discussion of the Results

Form for Differential Reporting

One of the main issues of reporting by SMEs has been the possible form that differential reporting could take. The different forms proposed in this study are the cash basis, the income tax basis, limited purpose financial statements

(LPFS), full compliance with IFRSs or the complete separation from IFRSs. The covering page to the questionnaire defined LPFS as the financial reporting statement of an entity which has a limited range of users who have an interest in the affairs of the entity or business and are thus in the position to call for further information should they wish to do so. The questionnaire further explained that LPFS were prepared using simplified statements of IFRSs.

Respondents were asked to rank the suitability of the different forms for differential reporting ranging from most suitable (=1) to least suitable (=5). The results of this question are shown in table 2. This table shows both the combined and separate results for users and practitioners.

When considering the overall responses, the most favoured form is a LPFS with 28 (68%) respondents in agreement that this form is suitable for SMEs. This is followed jointly by the income tax basis and for the complete separation from IFRSs with 17 respondents (41%) in agreement that these forms would be suitable. The least favoured form for differential reporting is the cash basis with only seven respondents (17%) choosing this basis. The overall results thus show support for the *IFRS for SMEs* issued by the IASB (2009a) in that differential reporting should be based on a simplified version of IFRSs.

An analysis of the responses of both target groups shows that users considered the income tax basis the most suitable form for financial reporting by SMEs with 10 of the 14 respondents (71%) selecting that basis. Table 2 also indicates that there is limited support for the complete separation from IFRSs by this group of respondents. This may be because they are not up-to-date with the IASB's developments on differential reporting.

Eighty-nine percent (89%) of the practitioners perceived the LPFS as the most suitable form for differential reporting.

The results indicate some interest in the complete separation from IFRSs for financial reporting for SMEs by both practitioners and users. Since the LPFS of South Africa has been described by researchers as a cosmetic change, a move away from this system to a better form (complete or partial exemption of both recognition and measurement and presentation and disclosure) may be appreciated (Everingham & Watson 2003:11). However, it must be acknowledged that the complete separation from IFRSs

would be too costly and time consuming especially for developing countries where resources are limited (Hattingh 2006: par 7).

Table 2: Suitability of the possible forms for differential reporting

		Very suitable	Suitable	Neutral	Less suitable	Not suitable	Very suitable and suitable		Rank
		No.	No.	No.	No.	No.	No.	%	
Cash basis	Combined	5	2	11	15	8	7	17	5
	Users	3	0	4	5	2	3	21	4
	Practitioners	2	2	7	10	6	4	15	4
Income tax basis	Combined	6	11	11	7	6	17	41	=2
	Users	5	5	2	1	1	10	71	1
	Practitioners	1	6	9	6	5	7	26	3
LPFS – simplified IFRSs	Combined	20	8	5	8	0	28	68	1
	Users	2	2	4	6	0	4	29	3
	Practitioners	18	6	1	2	0	24	89	1
Full compliance with IFRSs	Combined	4	7	7	8	15	11	27	4
	Users	1	3	1	3	6	4	29	3
	Practitioners	3	4	6	5	9	7	26	3
Complete separation from IFRSs	Combined	4	13	9	5	10	17	41	=2
	Users	1	5	3	1	4	6	43	2
	Practitioners	3	8	6	4	6	11	41	2
Users (n=14)									
Practitioners (n= 27)									

Since prior research has indicated that developing standards for SMEs based on full IFRSs is not appropriate (Martin 2005:2), a separate question asked the respondents if they were in agreement with an approach where standards for SMEs are built on IFRSs, but simplified.

Table 3 shows the perceptions of the respondents concerning the suitability of this approach.

Table 3: An approach where standards are built on IFRSs but simplified

	Users (n=14)		Practitioners (n=27)		Total (n=41)	
	No.	%	No.	%	No.	%
Very appropriate	1	7	6	22	7	17
Appropriate	8	57	17	63	25	61
Neutral	2	14	3	11	5	12
Less appropriate	3	22	0	0	3	8
Not appropriate	0	0	1	4	1	2
Total	14	100	27	100	41	100

Table 3 indicates that 78% of the total respondents perceive that a very appropriate or appropriate approach would be one where standards for SMEs are built on IFRSs but simplified. A higher percentage of practitioners (85%) favour this approach as opposed to only 64% of users. The perceptions regarding the development of standards based on IFRSs but simplified are possibly an indication that South Africa lacks the resources and time to develop a completely separate set of standards.

As South Africa had issued a discussion paper on the draft *IFRS for SMEs* at the time the questionnaire was administered, a question was asked whether the initiative of South Africa and the Eastern, Central and Southern African Federation of Accountants (ECSAFA) (2005) in developing temporary standards, which will later be substituted with *IFRS for SMEs*, is appropriate. The results of this question are shown in table 4.

Table 4: Appropriateness of the initiative of South Africa and ECSAFA in setting temporary standards for SMEs

	Users (n=14)		Practitioners (n=27)		Total (n=41)	
	No.	%	No.	%	No.	%
Very appropriate	0	0	9	34	9	22
Appropriate	4	28	8	30	12	29
Neutral	4	28	8	30	12	29
Less appropriate	5	36	1	3	6	16
Not appropriate	0	0	1	3	1	2
Did not respond	1	8	0	0	1	2
Total	14	100	27	100	41	100

Fifty-one percent (51%) of the total respondents perceive that setting temporary standards for SMEs, which will later be substituted by *IFRS for SMEs* to be appropriate or very appropriate. The limited support for setting temporary standards by users may be because this group of respondents consider it a waste of resources. This respondent group also preferred the income tax basis (see table 2) and this may be a reason why they do not see the need for temporary standards for SMEs.

The early adoption of the draft *IFRS for SMEs* may have solved some of the problems faced by SMEs as a result of compliance with IFRSs. Based on the above findings, it can be concluded that an approach where standards for SMEs are built on IFRSs is appropriate especially for emerging economies like that of South Africa.

The Content of Differential Reporting for SMEs

The questionnaire then attempted to identify which accounting standards ought to be fully excluded from, partially excluded from or fully incorporated into differential reporting for SMEs. The partially excluded option was further divided into recognition and measurement exemptions as well as presentation and disclosure exemptions. Respondents were given a list of 25 IFRSs (see Appendix 1). As differential reporting is effectively in existence in respect of those statements of IFRSs with which unlisted

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entities are not required to comply, such statements of IFRSs were omitted. Furthermore, IFRSs which are industry specific were also excluded except for IAS 41 - *Agriculture* which is considered important in South Africa. These results are shown in tables 5 and 6.

Table 5 shows the overall results, which indicate whether certain accounting standards should be fully excluded, partially excluded or fully incorporated when developing differential reporting for SMEs, and table 6 shows the separate responses for each target group.

The non-response rate in tables 5 and 6 is very high with an average non-response rate of 31% for users and 16% for practitioners. Because of the high non-response rate, a rating of above 40% is considered significant.

Table 5: The content for differential reporting (all respondents n= 41)

Standards	Fully exempt	Partially exempt		Fully incorporated	Did not respond	Total
		Recognition and measurement	Presentation and disclosure			
	%	%	%	%	%	%
IAS 2	2	24	12	37	25	100
IAS 7	24	10	7	46	13	100
IAS 8	12	10	5	54	19	100
IAS 10	24	10	12	32	22	100
IAS 12	7	36	17	17	23	100
IAS 16	0	41	17	22	20	100
IAS 17	29	10	10	32	19	100
IAS 18	0	39	5	32	24	100
IAS 19	15	15	7	41	22	100
IAS 20	5	10	22	44	19	100
IAS 21	7	32	24	20	17	100
IAS 23	12	29	2	37	20	100
IAS 24	34	17	10	15	24	100
IAS 27	51	17	5	10	17	100

IAS 28	32	12	17	15	24	100
IAS 31	34	22	10	12	22	100
IAS 32	15	12	41	12	20	100
IAS 36	7	32	7	34	20	100
IAS 37	10	32	5	32	21	100
IAS 38	10	29	17	27	17	100
IAS 39	10	41	15	17	17	100
IAS 40	7	32	10	29	22	100
IAS 41	20	24	2	29	25	100
IFRS 3	46	20	5	7	22	100
IFRS 5	56	15	2	7	20	100

Table 6: The content for differential reporting (showing the results separately for each respondent group)

Standards	Fully exempt		Partially exempt				Fully incorporated		Did not respond	
			Recognition and measurement		Presentation and disclosure					
	Users ¹	Prac ²	Users ¹	Prac ²	Users ¹	Prac ²	Users ¹	Prac ²	Users ¹	Prac ²
	%	%	%	%	%	%	%	%	%	%
IAS 2	-	4	29	22	21	7	21	45	29	22
IAS 7	14	30	7	-	14	4	28	56	37	10
IAS 8	7	15	7	11	-	7	57	52	29	15
IAS 10	21	26	21	4	7	15	21	37	30	18
IAS 12	-	11	36	37	7	22	29	11	28	19
IAS 16	-	-	43	41	14	19	14	26	29	14
IAS 17	7	41	21	4	7	11	36	30	29	14
IAS18	-	-	43	37	-	7	29	33	28	23
IAS 19	-	22	7	19	14	4	50	37	29	18

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IAS 20	-	7	7	11	14	26	50	41	29	15
IAS 21	-	11	21	37	21	26	29	15	29	11
IAS 23	-	19	43	22	-	4	29	41	28	14
IAS 24	21	41	21	15	7	11	7	19	44	14
IAS 27	36	59	21	15	-	7	14	7	29	12
IAS 28	36	30	7	15	15	19	-	22	42	14
IAS 31	36	33	29	19	15	7	7	15	13	26
IAS 32	-	22	-	19	57	33	7	15	36	11
IAS 36	-	11	43	26	7	7	21	41	29	15
IAS 37	-	15	43	26	-	7	29	33	28	19
IAS 38	14	7	21	33	29	11	21	30	15	19
IAS 39	7	11	36	44	21	11	7	22	29	12
IAS 40	-	11	36	30	14	7	21	33	29	19
IAS 41	7	26	7	33	-	4	43	22	43	15
IFRS 3	21	59	29	15	7	4	7	7	36	15
IFRS 5	63	52	7	19	-	4	-	11	30	14
¹ Users (n = 14)										
² Practitioners (n = 27)										

From table 5 it can be seen that overall there was support for SMEs to be fully excluded from the following standards:

- IAS 27 - *Consolidated and separate financial statements* (51%),
- IFRS 3 - *Business combinations* (46%), and
- IFRS 5 - *Non-current assets held for sale and discontinued operations* (56%).

Table 6 shows that there was less support by the users for SMEs to be fully excluded from IAS 27 and IFRS 3. Table 6 also shows some support by the practitioners for exemption from IAS 17 – *Leases* (41%) and IAS 24 – *Related party disclosures* (41%).

Table 5 shows that the total respondents perceived a number of standards to be appropriate for SMEs and should be fully incorporated in SMEs’ financial reporting standards. These standards are:

- IAS 7 – *Statement of cash flows* (46%),
- IAS 8 - *Accounting policies, changes in accounting estimates and errors* (54%),
- IAS 19 - *Employee benefits* (41%), and
- IAS 20 - *Accounting for government grants and disclosure of government assistance* (44%).

Table 5 also shows some support for IAS 2 *Inventories* (37%) to be fully incorporated into the financial statements of SMEs.

Table 6 shows that the support for IAS 2 and IAS 7 to be fully incorporated into SMEs' financial standards was stronger for the practitioners compared to the users. However, support for the full incorporation of IAS 8, IAS 19 and IAS 20 was stronger for the users. IAS 23 *Borrowing costs* and IAS 36 *Impairment of assets* were both more supported at 41% by the practitioners as compared to the users, whereas IAS 41 *Agriculture* was more supported by the users at 43% when compared to the practitioners.

With regards to recognition and measurement concessions, there was support for IAS 16 *Property, plant and equipment* (41%) and IAS 39 *Financial instruments: recognition and measurement* (41%) (see table 5) with table 6 showing, in respect of IAS 16 that the degree of support was similar for both respondent groups but that, with respect to IAS 39, the concession was more strongly supported by the practitioners. Table 6 also indicates that the users supported recognition and measurement exemptions from IAS 18 *Revenue*, IAS 23 *Borrowing costs*, IAS 36 *Impairment of assets* and IAS 37 *Provisions, contingent liabilities and contingent assets*.

With regards to presentation and disclosure concessions, there was overall support for concessions in respect of IAS 32 *Financial instruments: presentation* (see table 5) with table 6 showing that this was more strongly supported by the users than by the practitioners.

Table 5 also shows that there is less support for presentation and disclosure exemptions when compared to recognition and measurement exemptions, which may suggest that more recognition and measurement exemptions are required.

Table 6 clearly shows that the non-response rate for this question was higher for the user group when compared to the practitioner group. As

indicated previously, the user group indicated that they found this question too technical. A perusal of table 6 indicates that the practitioners saw the need for SMEs to be exempt from more standards when compared to the users.

These findings support the principle of granting recognition and measurement concessions found in Canada's (CICA 2002) and New Zealand's (ICANZ 2002) differential reporting requirements. However, these findings indicate support for more extensive recognition and measurement concessions. The results of this study can be compared to the Wells' (2005) study where there was strong support for the principle of granting recognition and measurement as well as presentation and disclosure exemptions even though this study shows little support for presentation and disclosure exemptions.

Although close corporations, sole proprietorship and partnerships are not required to prepare a statement of cash flows, 46% of the respondents support that the statement of cash flows should be fully incorporated into the financial statements of SMEs. Arguments for not disclosing the statement of cash flows include that it is not always understandable, that its cost of preparation far exceeds its benefits and that cash flow information is provided too late to be used by managers of qualifying entities (SAICA 2003:7). However, the statement of cash flows is important for decision making since it monitors cash flow movements. The Wells' (2005) study also indicated that the majority of the respondents in his study perceived the statement of cash flows to be appropriate for all close corporations and all private companies with a limited user base.

Conclusion

This study investigated users' and practitioners' perspectives on the appropriate form for differential reporting and what its content should be.

With regards to the appropriate form for differential reporting, the study found that limited purpose financial statements were overall the most favoured form for differential reporting. As this is the direction taken by the IASB in issuing *IFRS for SMEs* (IASB 2009a), this result provides evidence that this form is supported. The users showed a preference for the income tax basis, but this may be because they are able to access additional information about the SME should they so require.

With regards to the content of differential reporting for SMEs, the study found support for recognition and measurement concessions with regards to the accounting standards that formed part of this study. However, IAS 2 – *Inventories*, IAS 7 – *Statement of cash flows*, IAS 8 – *Accounting policies, changes in accounting estimates and errors*, and IAS 20 – *Accounting for government grants and disclosure of government assistance* were considered to be important for SMEs.

The standards, which the respondents considered SMEs should be fully exempt from, were IFRS 3 – *Business combinations*, IFRS 5 – *Non-current assets held for sale and discontinued operations*, and IAS 27 – *Consolidated and separate financial statements*.

This study does have some limitations. Firstly, the choice of KwaZulu-Natal for both target groups means that the results cannot be generalized to different target groups or to the rest of South Africa. Secondly, the response rate was low with a consequent low level of statistical tests. However, despite these limitations the study provides useful and relevant information and extends the research in this area.

Future, research could investigate whether users' needs are satisfied with the information that will be provided by SMEs using *IFRS for SMEs*. This study also found that the more technical questions in the questionnaire were not always answered by the respondents. Future research could be conducted using interviews or focus groups to get a better understanding of the usefulness of *IFRS for SMEs*.

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Appendix 1

Selected International Financial Reporting Standards

AC 000	Framework for the preparation and presentation of financial statements
IAS 1	Presentation of financial statements
IAS 2*	Inventories
IAS 7*	Statement of cash flows
IAS 8*	Accounting policies, changes in accounting estimates and errors
IAS 10*	Events after the reporting period
IAS 12*	Income taxes
IAS 16*	Property, plant and equipment
IAS 17*	Leases
IAS 18*	Revenue
IAS 19*	Employee benefits
IAS 20*	Accounting for government grants and disclosure of government assistance
IAS 21*	The effects of changes in foreign exchange rates
IAS 23*	Borrowing costs
IAS 24*	Related party disclosures
IAS 27*	Consolidated and separate financial statements
IAS 28*	Investments in associates
IAS 31*	Interests in joint ventures
IAS 32*	Financial instruments: presentation
IAS 36*	Impairment of assets
IAS 37*	Provisions, contingent liabilities and contingent assets
IAS 38*	Intangible assets
IAS 39*	Financial instruments: recognition and measurement
IAS 40*	Investment property
IAS 41*	Agriculture
IFRS 3*	Business Combinations
IFRS 5*	Non-current assets held for sale and discontinued operations

* - included in questionnaire

The Suitability of International Financial Reporting Standards for SMEs

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Reevaluation of an Experimental Model to Determine the Impact of Entrepreneurial Networking on Small Business Success

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Abstract

Previous studies by the authors (O'Neill, Soni, Coldwell & Edmonds 2007; and O'Neill & Soni 2009) laid the foundation for the development of an experimental model to measure the impact of entrepreneurial networks on the success of businesses and consequently empirically tested this model among 38 small businesses belonging to networking groups within the Chambers of Business in Pietermaritzburg and Durban. In this article the theoretical background to the development of the experimental model is revisited and the model is empirically tested among a further 34 small businesses belonging to a small enterprise development agency in Pietermaritzburg. The findings of this group are consequently compared to the previous study in order to determine whether the same trends could be observed among diverse samples. Although both empirical studies researched only 72 small businesses selected through convenience sampling, which can be argued is by no means adequate to make any generalisations from, it is nevertheless potentially beneficial from an exploratory point of view to determine whether the experimental model of networking and its components have any value as potential contributors to small business success or not.

Keywords: Business success, competitive advantage, critical success factors, entrepreneur, entrepreneurial firm, entrepreneurial networking, small business, testable model.

1.0 Introduction

Businesses do not operate in isolation and it can therefore be argued that all businesses need some kind of networking. The need for external assistance to strengthen an often-weak base of resources is even more crucial in the case of the small business sector that often cannot survive or grow without the networks that facilitate such external assistance. As there is still much uncertainty on the requirements of effective and efficient networking, this paper will explore the nature and characteristics of networking as well as the factors that determine business success in the literature.

In this paper a review of the literature on entrepreneurial networking largely based on the previous study of (O'Neill *et al.* 2007) will be conducted, followed by the presentation and discussion of the experimental model to determine the impact of entrepreneurial networking on small business success. The research methodology to empirically test the experimental model will then be dealt with, followed by the discussion of the findings, summary, caveats and suggestions for further research.

2.0 Literature Review

Networks can be defined as reciprocal patterns of communication and exchange (Powell 1990). Networks refer to 'the coming together' of a group of enterprises or people to use their combined talents and resources in order to achieve results which would not have been possible if they operated individually (Dean, Holmes & Smith 1997). Premaratne (2002) defined networks as personal relationships between an entrepreneur and his/her external actors. These external actors (or outsiders) can be individuals or organisations and are not directly employed by the entrepreneur. Networks have the potential to facilitate collective action for mutual benefit (Taylor, Jones & Boles 2004). A network can be regarded as a series of reciprocal relationships that have the potential to generate customer value and build sustainable competitive advantage for the entrepreneur. Competitive advantage can be seen as an advantage gained over competitors that enables the business to offer greater value to customers at lower prices or by providing more benefits that justify higher prices (Kotler, Armstrong, Saunders & Wong 2002). A network is a structure where a number of nodes (entities) are related to each other by specific threads (links). Both threads

and nodes are loaded with regard to resources, knowledge and understanding as a result of complex interactions, adaptations and investments within and among firms over time. Networking is then a social construction that exists only as a result of the individual's understanding and use of the network (Goudis & Skuras 2000). Networking is important to develop entrepreneurship as it enables entrepreneurs to develop relationships with the outside world. These relationships in turn help the entrepreneurs to achieve their goals and may provide special assistance to entrepreneurs in small businesses despite the fact that they usually have limited resources relative to larger businesses (Premaratne 2002).

Although a universally accepted definition of entrepreneurship does not exist (Republic of South Africa, National Strategy for Fostering Entrepreneurship Study 2001), the following definition of an entrepreneur will be used as a guideline for this article: 'an entrepreneur is a person who generates change through innovation, finds new combinations of resources, takes calculated risks, reorganises and improves existing operations and leads economic activity in times of uncertainty in order to realise a profit'. Based on the definitions of networking and entrepreneurship, entrepreneurial networking refers to the connection or relationship with other entrepreneurs or parties such as organisations or individuals which would result in a reciprocal pattern of communication with the underlying objective of improving the position of both the entrepreneur and the party with whom he/she is networking. Implicit in this objective of entrepreneurial networks is the notion that entrepreneurial networking takes place for a reason. This would further imply that entrepreneurial networking is characterised by a specific goal. The absence of a specific goal would result in aimless networking and consequently disqualify the networking in question from being entrepreneurial networking.

Although prescriptive parameters with regard to the optimum level is provided in the literature, entrepreneurial networking could be characterised by:

- the network size (depth and width);
- extent of network activity (for example frequency of contacts);
- network diversity; and
- success / failure of the networking with regard to achieving its

preconceived goals to add value to the enterprise (Edmonds 2005: 63).

According to Jenssen and Greve (2002) a large body of literature has shown a positive association between networking and entrepreneurship or small business performance. The effects of networking may, however, not always be positive and will depend on the size, type and developmental stage of the firm as well as its competitive strategy (Ostgaard & Birley 1994). According to Sandberg and Logan (1997) research, which examined the composition and size of entrepreneurs' networks found that neither could be conclusively linked to performance. As entrepreneurs are likely to implement multiple networks (Sandberg & Logan 1997), research should go beyond examining the composition and size of an entrepreneur's networks and pay ample attention to differentiating among the uses, purposes and the value of the resources they provide in order to underscore the importance of focused networking. The researcher should rather interpret the entrepreneur's networking as 'the consequences of strategic decisions' concerning targeted markets and the resources needed to compete in them (Sandberg & Logan 1997). Shane and Venkataraman (2000) suggested in this regard that the important question for the researcher is: 'why, when and how some people and not others discover and exploit opportunities?'

Burt (2002) argued that a well-structured network will obtain higher rates of return for the entrepreneur than badly structured networks. In this regard the 'structural hole argument' holds that the structural hole is an opportunity to facilitate the flow of information between people and control the form of projects that connect people from the opposite sides of the hole (Burt 1998). Structural holes are gaps between non-redundant contacts. Unless the hole is spanned, it will act as a buffer in similar fashion than an insulator in an electric circuit. The entrepreneur who identifies and spans the hole, creates a bridge between otherwise disconnected networks and determines whose interests are served by the bridge.

Networks rich in the entrepreneurial opportunities offered by structural holes, could be regarded as entrepreneurial networks as they present the opportunity for entrepreneurs who are skilled in building interpersonal bridges to span structural holes (Burt 1998). In this regard Aldrich (1999) asserted that successful entrepreneurs are not necessarily

those who create structural holes but rather those who know how to use the structural holes they find. A variant of the structural hole argument attributes advantage to the occupation of a bridging position within a network. In this regard Mc Evily and Zaheer (1999) surveyed 227 job shop manufacturers in Midwest USA and found that lower density networks were associated with greater acquisition and deployment of capabilities necessary for competitiveness in the metalworking segment of the automotive industry. The benefits of the structural hole argument were also supported by the research findings of Baum, Calabrese and Silverman (2000) in Canada during the six year period (1991-1996) when comparing 142 start-up biotechnology firms with 471 firms founded prior to 1991. The research showed that alliance partner heterogeneity had a positive effect on subsequent financial performance and innovative capability.

Singh, Hills and Lumpkin (1999) surveyed 256 consulting entrepreneurs in the information technology industry and found that in the early stage of the entrepreneurial process, entrepreneurs appear to benefit from diverse information flows. This could most probably be attributed to the diverse needs during the start-up process. Davidsson and Honig (2003) conducted a study among nascent entrepreneurs (n=380) and a control group (n=608) in Sweden and followed the development process for 18 months. The study found that being a member of a business network had a statistically significant positive effect on the business in general. Human and Provan (1997) in a comparative qualitative study of two networks of small and medium sized manufacturing enterprises in the USA's wood product industry found that network exchanges appeared to add more value with regard to learning about your own organizational capabilities than about market exchanges. It further enhanced knowledge with regard to awareness of who their real competitors were (Human & Provan 1997).

The research of Hoang and Antocic (2003) with regard to previous publications on entrepreneurship, sociology and the role of networks in the entrepreneurial context, suggested that current research work seeking to explain entrepreneurial success is limited by considerable conceptual vagueness with regard to both the resources required for success and how we measure the networks that help to promote those measures. Mapping networks of general information flows may be too far removed from resource flows and more closely linked to an outcome such as business

performance (Hoang & Antoncic 2003). Network data derived from detailed lists of relevant business resources may have more predictive power especially if more attention is paid to how network data is elicited in order to verify the reliability of the source. The uniqueness of the industry researched should, however, be borne in mind and generalizing of findings done with caution (Human & Provan 1997). Entrepreneurial successes and failures are an important contingency that may shape network activity and structure (Hoang & Antoncic 2003). Network research can assist practitioners to meet organizational objectives and help to proactively change networks to improve the performance and effectiveness of their organizations (Nobria & Eccles 1992).

In order to link the potential effect of entrepreneurial networking to business success and the eventual development of a testable model to measure business success, some perspectives on both business success and critical success factors as found in the literature, are consequently considered. Business success can be defined as a clear indication that the business has progressed with regard to a sustained level of growth, continued increase in net profit, continued increase in its asset base while additional factors such as increase in market share, increase in number of employees and age of the business may also be used as indicators of success. The perspective taken by the person determining critical success factors in a business will determine the nature of the critical success factors themselves as each person may have his/her own perception of success and each business will have its own unique critical success factors. These could be some of the major reasons why there is no agreement with regard to a universally accepted list of critical success factors in a business. A generic approach would link critical success factors to issues such as:

- the ability to select the correct target market
- the superior ability to select a target market that has long term growth potential (Davidsson & Honig 2003)
- the sustainability of the business
- appropriate planning for start-up requirements regarding the factors of production (capital, labour, natural resources and entrepreneurship)
- a healthy balance between owners' equity and loan capital

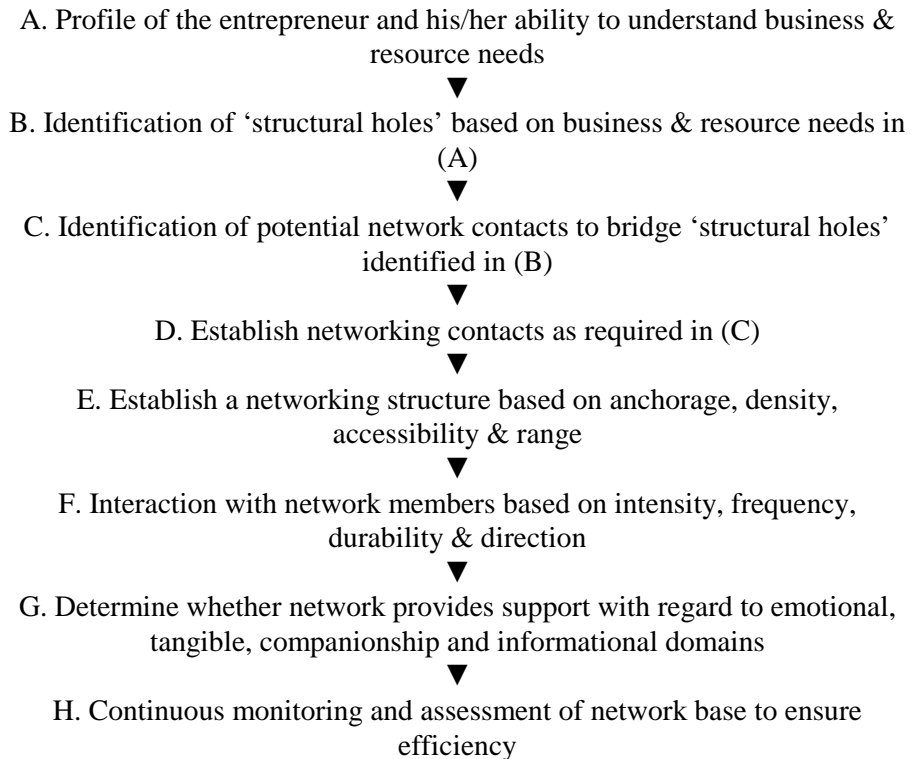
- a clear and realistic vision and mission
- a sustainable competitive advantage (Scarborough & Zimmerer 2003)
- a market-orientated approach
- a feasible business idea
- a realistic strategic or business plan based on solid market research
- core competencies such as superior quality, service, flexibility, innovation and responsiveness(Scarborough & Zimmerer 2003)
- growth potential
- alertness to ensure a continuous flow of new innovations in the market (Nieman *et al.* 2003)
- ample environmental scanning techniques with regard to competition and relevant stakeholders and
- unique knowledge in the field of operation (Hitt *et al.* 2001).

Apart from the above-mentioned generic critical success factors, the business owner needs to continuously ensure that the unique critical success factors pertinent to his/her specific business are identified and responded to in order to survive and grow. In this regard, effective networking could be most beneficial, especially in areas where the small business, in particular, does not avail of the same resources as large businesses (Starr and MacMillan, 1990; Ramachandran & Ramanarayan 1993). Brown and Butler (1995) further emphasised the point by arguing that smaller firms involved in networks that result in gaining superior information would improve their ability to identify opportunities on which to focus their limited resources. This in turn could lead to the establishment of a competitive advantage.

Testable Model

Based on the literature review and previous research, an experimental testable model was developed to measure the impact of entrepreneurial networking on business success. A testable model can be defined as an instrument that will enable the researcher to measure a specific phenomenon, trend or variable. The testable model based on the conceptual framework should contain the following aspects.

... *Impact of Entrepreneurial Networking on Small Business Success*



3.0 Research Methodology

The main research question that this study addresses is the following:

What is the perceived impact of the experimental model developed for entrepreneurial networking on the success of selected small businesses in Pietermaritzburg and Durban?

Overall Purpose

To determine from owners/managers/officers of the businesses in the study, through the use of a semi-structured questionnaire, the perceived impact of the experimental model of networking developed in a previous study on small business success of a select group of businesses in Pietermaritzburg

and Durban and compare it with the responses of two developmental groups of small enterprises.

Research Design

The study employs both an exploratory and a descriptive research design. This was considered necessary as an exploratory design helps to provide the theoretical insight and knowledge base on the subject that in turn would be useful in helping to describe findings arising from the empirical research. A descriptive design would normally address the question of 'what is' which is appropriate in this study as it seeks to answer the question of 'What is the perceived impact of the experimental model of networking on the success of select small businesses in Pietermaritzburg and Durban?'

Sampling

Permission to participate was sought and obtained from respondents who were members of a networking group of both the Pietermaritzburg and Durban Chambers of Commerce. The participation of each group was obtained at their monthly meeting venues. Each group was briefed on the purpose of the study and given the opportunity of either participating in the study or not. In addition to these two groups, a further two groups of entrepreneurs were invited by ABSA Small Enterprise Development Agency in Pietermaritzburg to attend lectures on entrepreneurial networking and participated in the survey as well. Those who agreed to participate completed an informed consent form.

Essentially, the study employed a convenience non-probability sample. The main reasons for using a convenience sample were to obtain information quickly and cost-effectively. Consequently, the study makes no claims of generalisability of the findings and should be considered an exploratory study.

Data Collection

Data was collected through a semi-structured questionnaire (for which ethical clearance was obtained from the UKZN Research Office) that was to be completed by the respondents at the respective Chamber's monthly meeting venue and the mentioned lecture. Content validity is claimed for the

questionnaire as the questions were primarily based on a thorough review of the relevant literature (O'Neill *et al.* 2007).

Questions were developed for all the components of the experimental model developed in the previous study by O'Neill *et al.* (2007). The questions were mainly of a dichotomous and Likert scale type, which helped in reducing the time spent by respondents and the response rate in completing the questionnaire.

4.0 Findings

Study Population

A total of 72 businesses were studied in the Pietermaritzburg and Durban areas. As this was a basic descriptive study of an exploratory nature where a convenience sample was used, no attempt will be made to generalise the results to the population as a whole. A notable difference in the response rate of the two studies, was that while all the members of the network groups responded, only 34 out of 42 usable questionnaires were completed by the members of the ABSA Enterprise Development Agency. This could be attributed to a few possibilities, such as less business experience than the former group, a lower level of networking-orientation or the nature of the measuring instrument. A more positive result could, for example, have been achieved if personal interviews have been conducted or if the questionnaire had been translated into Zulu as the ABSA group predominantly consisted of Zulu-speaking people.

Section 1: Profile of the Respondents

72% of the respondents had passed matric. The majority of the respondents in this study are within the age group 25-36 years. Male respondents in the study were more than twice as many as the female respondents which is in line with the national proportions of business ownership. Respondents spent an average of 5 hours per week on developing and maintaining contacts.

Section 2: Networking and Business Success

A 5-point Likert scale was used to obtain this information. It should be noted

that a median or modal score of 4 and above represents agreement that networking has contributed to the respondent's business success and that a median or modal score of 4 and above was obtained with regard to all the questions regarding the positive effect of networking on business success. An interesting finding, however, was that the older the business, the stronger the perceived contribution of networking has been to the success of the business with a median or modal score of 5.

It is therefore evident that the majority of the respondents (and especially the older businesses) have a positive perception of the contribution of networking to their businesses' success and perceive that networking has contributed positively to their businesses establishing a competitive advantage.

Perceptions of Networking

Regarding the general perceptions of networking in relation to their businesses, median and modal values of 4 and above represent positive perceptions. It is clear from the statements in the table below, that respondents are generally in agreement that networking has been helpful to their businesses.

Perceptions of Networking's Contribution To Business Success

	Median	Mode	Valid N
Q3.5.1- Networking helped to select correct target market	4.00	4.00	N=68
Q3.5.2 - Networking helped provide superior ability in selecting growth target market	4.00	4.00	N=68
Q3.5.3 - Networking increased sustainability of the business	4.00	4.00	N=68
Q3.5.4 - Networking has assisted business in appropriate planning	4.00	4.00	N=67

... *Impact of Entrepreneurial Networking on Small Business Success*

Q3.5.5 - Networking has helped provide a healthy balance between owners' capital and loan capital	3.00	4.00	N=65
Q3.5.6 - Networking has given the business a clear and realistic vision and mission.	4.00	4.00	N=66
Q3.5.7 - Networking has created a sustainable competitive advantage for the business	4.00	4.00	N=62
Q3.5.8 - Networking has helped the business create a market-oriented approach	4.00	4.00	N=66
Q3.5.9 - Networking has assisted in making the business feasible	4.00	4.00	N=65
Q3.5.10 - Networking has helped my business create a realistic business plan	4.00	4.00	N=63
Q3.5.11A - Networking has developed my core business competencies regarding - Service	4.00	4.00	N=64
Q3.5.11B - Networking has developed my core business competencies regarding - Flexibility	4.00	4.00	N=60
Q3.5.11C - Networking has developed my core business competencies regarding - Innovation	4.00	4.00	N=58
Q3.5.11D - Networking has developed my core business competencies regarding - Responsiveness	4.00	4.00	N=58
Q3.5.11E - Networking has developed my core business competencies regarding - Growth Potential	4.00	4.00	N=64
Q3.5.12 - Networking has made me more alert to ensure a continuous flow of innovations	4.00	4.00	N=65

Q3.5.13 - Networking has helped me implement environmental scanning techniques more efficiently	4.00	4.00	N=65
Q3.5.14 - Networking has given me unique knowledge in the field of operation	4.00	4.00	N=66

All the levels of the testable model were perceived to be important to business and networking success. However, certain aspects of levels A, F and G of the experimental model, although perceived to be important, were comparatively regarded not as important as the other levels of the model. These were issues pertaining to anchorage, range, emotional support, material support and tangible support.

Level of Importance/ Unimportance to Business Success

Respondents completed a 5-point Likert scale question depicting level of importance of a number of networking-related issues to the success of their businesses. For this question, a low median or modal score of 2 or less shows a higher level of importance! On the basis of this information, it is clear from the table below that with the exception of a few statements, in general respondents from all three areas regard as being at least important to the success of their businesses the networking-related issues in the table below as depicted by the median and modal values of 2 and very important as depicted by the median and modal values of 1.

Perceived Importance of Networking

	Median	Mode	Valid N
Q3.6A - Importance of correctly identifying resource requirements for business success	1.00	1.00	N=65
Q3.6B1 - Importance of ability to broker connections between otherwise disconnected segments of business contacts.	2.00	1.00	N=65

Q3.6B2 - Importance of correctly identifying opportunities for success	1.00	1.00	N=65
Q3.6C1 - Importance of effectively linking people both inside and outside the business to take advantage of opportunities	1.00	1.00	N=66
Q3.6C2 - Importance of your ability to link people both inside and outside the organisation together	1.00	1.00	N=67
Q3.6C3 - Importance of your ability to identify contacts both inside and outside who can pursue opportunities by working together	1.00	1.00	N=66
Q3.6D - Importance of establishing a networking group	1.00	1.00	N=65
Q3.6E - Importance of being able to establish a networking structure based on Anchorage (ultimate goal of network)	2.00	2.00	N=65
Q3.6E - Importance of being able to establish a networking structure based on Range (differences in background between network members)	2.00	2.00	N=62
Q3.6E - Importance of being able to establish a networking structure based on Reachability (ease of contact between members)	1.00	1.00	N=64
Q3.6E - Importance of being able to establish a networking structure based on Density (greater diversity amongst network contacts/members)	2.00	1.00	N=64
Q3.6F - Importance of being able to address network interaction based on - Intensity (honouring obligations)	1.00	1.00	N=61

Q3.6F - Importance of being able to address network interaction based on - Frequency (regular contacts between members)	1.00	1.00	N=62
Q3.6F - Importance of being able to address network interaction based on - Durability (longstanding relationships between members)	1.00	1.00	N=62
Q3.6F - Importance of being able to address network interaction based on - Direction (goal-oriented behaviour of group)	1.50	1.00	N=64
Q3.6F - Importance of being able to address network interaction based on - Direction (emotional support from network members)	2.00	2.00	N=65
Q3.6G - Importance of addressing network content based on - Emotional support	2.00	1.00	N=64
Q3.6G - Importance of addressing network content based on - Tangible support (Financial)	2.00	1.00	N=65
Q3.6G - Importance of addressing network content based on - Tangible support (Material)	2.00	2.00	N=65
Q3.6G - Importance of addressing network content based on - Companion support	2.00	2.00	N=66
Q3.6G - Importance of addressing network content based on - Informational support	1.00	1.00	N=64

5.0 Limitations of the Study

The main limitation claimed by this study is that non-representative samples

were chosen on a non-probability sampling basis. Consequently, this study can be considered an exploratory study and no claim is made as to the generalisability of the results. The use of a questionnaire-based measuring instrument instead of in-depth interviews could also be seen as a limitation as the exact nature of networking practices and its actual impact on business success were not investigated in sufficient detail. A translated questionnaire could also have resulted in an improved response rate from the ABSA groups as well.

6.0 Conclusion

Despite the limitations mentioned, all the respondents indicated that networking has played an important role in their businesses. In addition, all three groups surveyed perceived that there are many networking-related issues that play an important role in the success of their businesses. The trend with regard to the positive response on the impact of entrepreneurial networking on business success was largely similar for all groups. The impact of factors such as level of business experience, the need for an alternative measuring instrument, a translated questionnaire and a more representative sample and the impact of culture on networking practices should, however, be considered in future research.

Note: A related version of this article was presented at the International Business Management Conference 2009, University of KwaZulu-Natal, Durban in November 2009.

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... Impact of Entrepreneurial Networking on Small Business Success

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The Effect of Transaction Characteristics on the Market Response to Black Economic Empowerment Transactions

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Abstract

Previous studies have found that the announcement of Black Economic Empowerment (BEE) transactions elicits a positive market reaction but recently Strydom, Christison and Matias (2009) found that the positive reaction to the announcement of BEE transactions is not universal. This paper uses an event study approach to investigate the type of BEE transaction and the size of stake acquired as two possible explanations for differing market reactions to BEE transactions. Evidence of a positive reaction to the announcement of Joint Ventures is found but not to Acquisitions or Strategic Alliances. When Acquisitions are analysed by size of stake acquired, however, a positive response to the acquisition of a controlling interest is found but acquisitions of a 100% stake are found to elicit a negative market reaction. Transaction characteristics are thus found to have an impact on the market response to BEE transactions.

Keywords: Black Economic Empowerment, Firm Valuation, Shareholder Wealth, Event Study, Abnormal Returns, Fisher's Separation Theorem.

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Introduction

The social and political imperative of Black Economic Empowerment (BEE) has resulted in companies on the Johannesburg Stock Exchange (JSE) having to undertake major corporate restructuring in order to facilitate the transfer of sizable ownership proportions from existing shareholders to new black shareholders. In addition, especially in the initial wave of BEE transactions, firms had to adopt innovative financing arrangements to enable the purchase of shares by BEE role-players with little or no capital of their own often having to provide BEE partners with the capital to finance the purchase of their own shares (Ross, Westerfield, Jordan & Firer 2001: 649).

Financial theory holds that the goal of a firm is to maximize the wealth of the owners for whom it is being operated (Gitman 2009: 15). It follows, therefore, that the only financial justification for corporate restructuring is if it results in a higher share value (Ross, Westerfield & Jaffe 2002: 815). However, Fisher's Separation Theorem shows that the value of a firm is solely a product of its investment opportunities, how a firm is financed and who owns it should, therefore, have no impact on the value of the firm (Copeland, Weston & Shastri 2005: 18-19).

In general then, theory suggests that changing the ownership of a firm should have no impact on its value and as a result one should find that share prices do not respond to the announcement of BEE transactions. Further, if such a transaction is interpreted by the market as a signal that management are pursuing a costly strategy which will not result in greater revenues or lower risk then it may even result in a decrease in the share price. To date only three studies (Jackson, Alessandri & Black 2005; Wolmarans & Sartorius 2009; Strydom, Christison & Matias 2009) have attempted to empirically test the market reaction to the announcement of BEE transactions. All three studies employed an event study methodology and all three found that BEE transactions were associated with a positive abnormal return indicating a favourable market reaction.

Strydom *et al.* (2009: 75), however, also found that the positive reaction to announcements of BEE transactions is not universal and appears to be restricted to a relatively small portion of the overall sample. In addition, some of the individual firms exhibited negative reactions to BEE transactions suggesting that the nature of the market reaction to BEE

transactions may be related to firm specific and/or transaction specific characteristics. The purpose of this paper, therefore, is to examine the relationship between the market reaction to the announcement of BEE transactions and the nature and size of the transaction. The paper is organized as follows. In the literature review the concept of Black Economic Empowerment and empirical evidence regarding stock market reactions to BEE transactions is examined. Following this, the research problem and objectives are developed and the methodology to be employed is described. The empirical results are then presented and in conclusion the results are interpreted and recommendations are made.

Literature Survey

Defining BEE

The Black Empowerment Commission defined BEE¹ as ‘An integrated and coherent socio-economic process within the context of the national transformation programme, which is aimed at redressing the imbalances of the past by substantially and fairly transferring the ownership, management and control of South Africa’s financial and economic resources to the majority of its citizens’ (BEECom 2002: 4). Similarly, the South African government defined BEE as an integrated and coherent socio-economic process that directly contributes to the economic transformation of South Africa and brings about significant increases in the numbers of black people that manage, own and control the country’s economy, as well as significant decreases in income inequalities (DTI 2003: 12).

It is evident from the above definitions that the concept of BEE is broad and refers to any economic activity that leads to the empowerment of black South Africans. For the purpose of this study, therefore, the authors

¹ Since 2007 the term Broad-Based Black Economic Empowerment (BBBEE) has replaced that of BBE. BBBEE focuses on distributing wealth across a broad spectrum of black South Africans while BEE had a narrower focus on equity ownership and management representation regardless of the number of beneficiaries. Since the sample employed in this study covers transactions between 1996 and 2006 the term BEE more accurately describes the transactions involved and is thus retained.

will focus on a narrower definition of BEE transactions that the government defined as:

- All transactions for the acquisition, by black people, of direct ownership in an existing or new entity (other than a SME) in the financial or any other sectors of the economy; and
- Joint ventures with debt financing or, or any other form of credit extension to, and equity investments in BEE companies (other than SMEs) (Republic of South Africa 2007: 5).

Benefits of BEE Transactions

As with any other form of corporate restructuring, a BEE transaction should only result in an increase in share value if it is perceived by the market to be a positive NPV undertaking; in other words it must either result in increased future cash flows to the firm (whose present value is greater than the cost of the BEE transaction) or a lower cost of capital. In the case of joint ventures and strategic alliances the normal synergistic benefits normally associated with such an undertaking would potentially be on offer. For BEE transactions, a specific potential benefit on offer is that of *revenue enhancement*. Ross *et al.* (2001: 653) indicate that corporate combinations may result in strategic benefits that allow the combined firm to generate greater revenues.

In the case of BEE legislation, being BEE compliant can result in preferential procurement, concessions, licenses and financial support from state owned enterprises (Marais & Coetzee 2006a: 121). BEE scorecards, critical in obtaining lucrative government contracts, reward firms for contracting with BEE firms and so there is also a direct financial incentive for firms not dealing directly with government to be BEE compliant if they want to do business with firms seeking government tenders. For this reason, any firms wanting to do business in South Africa should consider becoming BEE compliant (Araujo, Denenga & Milovanovic 2007: 41).

Surprisingly, Sartorius and Botha (2008: 443), reporting on a survey of 72 JSE-listed companies regarding BEE, found that the foremost reason given for engaging in BEE transactions was that BEE is essential for South Africa to sustain its economic and democratic structures. This suggests that maximising shareholder wealth is not the prime motivation for BEE

transactions. Examining the full range of responses contained in Table 1, however, shows a number of reasons given that relate to financial benefits. 32 firms saw it as an opportunity to grow their business and market share, 23 believed that they would lose market share if they did not implement BEE, 7 saw an advantage in being the leading BEE firm in their industry, 7 reported that their customers required the company to have BEE credentials, 7 used it to raise finance and 5 companies indicated that they were required by Government procurement to comply with BEE requirements (Sartorius & Botha 2008: 443).

Table 1: Reasons for implementing BEE ownership initiatives

Reason	Total
BEE is essential for South Africa to sustain its economic and democratic structures	37
Companies see BEE as an opportunity to grow their business and market share	32
Companies are committed to the principles of BEE	29
Companies realise that BEE is a business imperative and that they will lose market share if BEE is not implemented	23
Companies wish to comply with requirements of their respective industry charter/legislative reasons/licences	19
A BEE ownership initiative is part of a broader BEE strategy	17
Companies hope to attract and retain black staff by implementing a BEE ownership initiative	15
Companies see an advantage in being the first mover or leading BEE company in their industry	7
The companies customers require the company to have BEE credentials	7
Companies use a BEE ownership initiative as an opportunity to raise finance	7
Companies are required by government procurement to comply with BEE requirements	5

Source: Sartorius and Botha (2008: 443).

Previous Studies

Jackson, Alessandri and Black (2005)

The first study to empirically test the market reaction of the JSE to BEE transactions was that of Jackson *et al.* (2005: 13) who used data from the BusinessMap Black Empowerment Database to identify BEE transactions. They identified a potential sample of 208 BEE deals between 1996 and 1998 but after applying several data filters they were left with a sample of only 20 transactions. They employed a standard event-study methodology using the

market model to calculate abnormal return and found that on average the announcement of a BEE transaction resulted in a significant positive cumulative abnormal return (CAR) of 0.013 for the 3-day event window and a 0.018 CAR for the 5-day event window which were found, using a Z statistic, to be significantly different from zero at the five percent level (Jackson *et al.* 2005: 19). Jackson *et al.* (2005: 16) then conducted univariate regressions on the CARs against the percentage of equity purchased by the BEE group, a dummy variable indicating if the BEE group was a union, the size of the discount in the BEE transaction, the size of the transaction in Rand, and a dummy variable showing the industry of the firm. They found that there was a significant positive relationship between the size of the stake acquired and the CAR of the transaction. The other independent variables (namely UNION, DISCOUNT and VALUE), however, were found to not have significant coefficients associated with them (Jackson *et al.* 2005: 19). In addition, Jackson *et al.* (2005: 20) found no relationship between CARs and the industries represented in their sample or with the financing method (debt or equity) used by the BEE group.

Wolmarans and Sartorius (2009)

Wolmarans and Sartorius (2009: 185) used a data set comprising 125 BEE transactions for 95 companies between January 2002 and July 2006. It is worth noting that their sample period does not overlap with that of the Jackson *et al.* study. Following Jackson *et al.* they calculated both a three-day CAR and a five-day CAR. They found a significant positive CAR for the three-day event window of 0.0115. The five-day CAR of 0.0091, however, was found to not be significant at the five percent level (Wolmarans & Sartorius 2009: 187).

Wolmarans and Sartorius (2009: 187) then employed an analysis of variance to test whether or not the year of the transaction and the type of transaction were significant in determining the CARs. Types of transaction investigated were: a) the selling of equity to a BEE company; b) the acquisition of a stake in a BEE firm; c) other BEE transactions such as partnerships or joint ventures. The year of announcement was found to have a significant positive relationship with the three-day CAR but further investigation found that only 2006 had a significant positive CAR indicating

that this effect was restricted to only the one year (Wolmarans & Sartorius 2009: 188). Wolmarans and Sartorius (2009: 187) also found that the type of transaction had no impact on the CARs observed.

Strydom, Christison and Matias (2009)

Similarly to the previous two studies, Strydom *et al.* (2009: 70, 73) employed an event study approach to evaluate the CAR associated with BEE transactions for the period 1996 to 2006, totalling 254 transactions. This study thus employed both the longest sample period of the three studies (the period examined includes both the early study of Jackson *et al.* and the later study of Wolmarans and Sartorius) and the largest sample size. Strydom *et al.* (2009: 73) found a cumulative average abnormal return (CAAR) of 0.0159 for the sample but this result was not significant at the five percent level. The average abnormal return (AAR) on the announcement day, however, was 0.00836 and was significant at the five percent level indicating that positive same-day abnormal returns are associated with the announcement of BEE transactions.

Of the 254 transactions included in the sample, however, only 25 resulted in statistically significant CARs and only 15 of these were positive with the remaining 10 being negative. Similarly, only 33 transactions led to statistically significant announcement-day abnormal returns (AR), 22 of which were positive and the other 11 were positive. Further, only 9 transactions were found to have both statistically significant CARs and ARs (Strydom *et al.* 2009: 74).

Data and Methodology

Research Problem and Objectives

Whilst all three studies discussed above found a positive reaction to the announcement of BEE transactions it was also evident that the positive market response was not universal, in fact in the Strydom *et al.* (2009) study a number of transactions were found to display a negative market reaction! Little is understood as yet, however, regarding what the determinants might be that affect the size and nature of the market's reaction to the announcement of a BEE transaction. The question that this paper seeks to

address, therefore, is to what extent the size and nature of a BEE transaction are related to positive returns to shareholders. Specifically the authors investigate the following questions:

- a) Is there a relationship between the type of transaction and the magnitude and direction of abnormal returns surrounding the announcement of a BEE transaction?
- b) In the case of acquisitions, does the size of the stake acquired affect the magnitude and direction of abnormal returns surrounding the announcement of the transaction?

Research Methodology

This study extends the previous work of Strydom *et al.* (2009) and employs the same data set and event study methodology to generate the abnormal returns. The method involves measuring the difference between the actual returns on a share during a relevant time period (the ‘event window’), and the ‘normal’ returns expected based on some pricing model (Campbell, Lo & MacKinlay 1997: 149-152). For a given event, the presence of statistically significant cumulative average abnormal returns (CAAR) across all firms, for a given event window, would then signify that the event studied has a significant impact on share price. It is also possible to test for the abnormality of returns in respect of a particular day in the event window, either in respect of the sample as a whole (one-day average abnormal return (AAR) or a particular sub-sample.

In order to address research question (a), the authors construct three different samples of firms undertaking the following types of BEE transaction: acquisitions; joint ventures and strategic alliances. They also examine both the CAARs over the event window and the announcement day AARs for the different types of transaction, and test the statistical significance of these measures.

Similarly, in order to address research question (b), the authors classify firms that undertook BEE acquisitions into different samples based on the size of the ownership stake acquired. The following categories were used:

Table 2: Classification of BEE Acquisitions by size of stake

Category	Size of ownership stake acquired
Minor	Below 10%
Substantial	10% to less than 35%
Controlling ²	35% to 50%
Majority	More than 50% to less than 100%
Outright	100%

We then calculate and test the statistical significance of the CAARs and announcement day AARs for each category.

Return Estimation

The study employs the market model to estimate the expected or normal returns for each share. The market model was preferred to other economic models such as the Capital Asset Pricing Model and Arbitrage Pricing Model because of their reliance on assumptions that may influence the results of the event study (MacKinlay 1997: 19). The market model assumes a stable linear relationship between the market return and the security return (Dasgupta, Laplante & Mamingi 1997: 12):

$$R_{it} = \beta_{1i} + \beta_{2i}R_{mt} + u_{it} \quad (1)$$

Here, R_{it} is the return on security i during period t ; β_{1i} is the intercept; β_{2i} is the slope coefficient; R_{mt} is the return on the market portfolio proxy (JSE All Share Index) during period t and u_{it} is the error term for security i , representing the random component of R_{it} not explained by movements in R_{mt} . By assumption, $E(u_{it}) = 0$ and $\text{Var}(u_{it}) = \sigma_{ui}^2$. Therefore, the authors estimate the model $R_{it}(\beta)$ over an estimation window of 205 days, and calculate the normal return, R_{it}^* , as:

² In terms of the Takeover Code introduced under the Companies Act 61 of 1973, the acquisition of a 35% ownership stake is deemed to be the acquisition of a controlling interest.

$$R_{it}^* = \beta_{1i} + \beta_{2i}R_{mt} \quad (2)$$

Abnormal returns are measured using an event window that covers the period from 5 days prior to the announcement to 5 days after the announcement – a total of 11 days. The abnormal return, AR_{it} , is the actual return (R_{it}) of the security for some day t in the event window minus the predicted normal return (R_{it}^*):

$$AR_{it} = R_{it} - R_{it}^* = R_{it} - \beta_{1i} - \beta_{2i} R_{mt} \quad (3)$$

The average abnormal return for some day t (AAR_t) is the average of all the abnormal returns of the securities in the sample for that day:

$$AAR_t = \sum^N AR_{it} / N \quad (4)$$

The cumulative average abnormal return is the sum of the average abnormal returns of all securities in the sample over the course of the event window, which as stated above, lasts 11 days – that is, defining $t = T$ as the announcement date, from $t = T-5$ to $t = T+5$:

$$CAAR = \sum_t AAR_t \quad \text{for } t = T-5, \dots, T+5 \quad (5)$$

Constructing Test Statistics

To test the statistical significance of the CAARs and announcement day AARs estimated for each sample, the authors use a z-statistic defined:

$$z = r / s(r), \quad (6)$$

where $s(r)$ is the sample standard deviation of the estimated return r .

Although the use of a sample standard deviation would suggest use of t-statistics, the measurement window used to calculate the sample standard deviation has a large number of observations (205 days). This has the result that t-statistics would approximately follow the standard normal distribution, or more precisely, follow a t-distribution with such a large number of degrees of freedom that it converges with the standard normal distribution. Therefore, it makes sense to use a z-statistic.

In respect of the average abnormal return across the sample for some day, t , in the event window, the test statistic is defined as:

$$z_{AAR} = AAR_t / s(AAR) \quad (7)$$

In this case, $s(AAR_t)$ requires the estimation of average abnormal returns for each day in the estimation window, to give a sense of the level of non-systematic variation in the sample's average returns under normal trading conditions:

$$s(AAR) = [(1/204)\sum_t (AAR_t - E(AAR))^2]^{1/2}, \quad (8)$$

$$E(AAR) = (1/205)\sum_t AAR_t, \quad (9)$$

$$t = 1, \dots, 205$$

The test statistic for the cumulative average abnormal return for the sample is defined as:

$$z_{CAAR} = CAAR / s(CAAR) \quad (10)$$

where

$$s(CAAR) = s(AAR)(11)^{1/2}$$

The standard deviation of the cumulative abnormal return is simply the standard deviation of a security's one-day abnormal return, scaled up for the length of the event window, which in this study is 11 days (Weston, Mitchell & Mulherin 2004: 167):

To determine whether an abnormal return is statistically significantly different from zero, the test statistic is compared against the five and ten per cent significance level two-tailed critical values from the standard normal distribution, ± 1.96 and ± 1.64 respectively.

Data and Sample Selection

This paper employs the same data set as the Strydom *et al.* (2009) paper. The data concerning BEE transactions for this study were obtained from the BusinessMap Foundation and the Ernst & Young annual reviews of Merger and Acquisition Activity. The data included all the BEE transactions for the period 1996 to 2006, as well as the details for each transaction including the parties involved, the announcement date, and payment terms. Daily share price data was obtained from the McGregors BFA database. The initial data

set contained information on 1,195 BEE transactions. After applying several restrictions (see Strydom *et al.* 2009: 73) a final sample of 249 BEE transactions was left for research question (a) and 160 BEE acquisitions for research question (b).

Empirical Results

For research question (a) the difference in market reaction between types of BEE transactions was examined. It is evident from Table 3 that acquisitions dominated the sample of BEE transactions. The announcement day AAR was 0.00698 indicating a positive reaction to the announcement of acquisitions but the result was not statistically significant at either the five percent or ten percent levels. The CAAR over the event window was also positive at 0.01788 but again this result was not statistically significant.

Joint Ventures, on the other hand, were found to have a statistically significant (at the five per cent level) positive AAR of 0.01579. The CAAR for Joint Ventures was 0.01846 but was not statistically significant. These results would seem to suggest that the market responded more positively to the announcement of Joint Ventures than of Acquisitions. Such a finding would be in keeping with Fisher's Separation Theorem which holds that the value of a firm is not a function of who owns it. In contrast, if Joint Ventures involve the cooperation of two firms to exploit mutually beneficial opportunities then it follows that the market should react positively to the announcement of such a transaction.

Table 3: Tests of significance for transactions by type of transaction

	No. of Transactions	Announc. Day AAR	σ_{AAR}	z-stat.	CAAR	σ_{CAAR}	z-stat.
Acquisition	192	0.00698	0.00524	1.3319	0.01788	0.0174	1.0278
Joint Venture	48	0.01579	0.00647	2.4398	0.01846	0.02147	0.85997
Strategic Alliance	9	0.00285	0.01054	0.2704	-0.00713	0.03497	-0.2039

Research question (b) involved testing whether or not the size of the stake taken in a BEE transaction had an impact on the market's reaction to

the announcement of the transaction. Table 4 presents the results and tests of significance by size of stake.

While the results for the full sample of acquisitions reported in Table 3 indicates that acquisitions do not appear to impact on the acquiring firm's value, when the market reaction to acquisitions is analysed by size of stake, it becomes apparent that BEE acquisitions do have implications for shareholder value.

Table 4: Tests of significance for transactions by size of ownership stake acquired

	No. of Transactions	Announc. Day AAR	σ_{AAR}	z-stat.	CAAR	σ_{CAAR}	z-stat.
Below 10%	8	0.01504	0.00956	1.5733	-0.02286	0.0317	-0.7213
10% to 35%	7	0.00622	0.00761	0.8184	0.0380	0.02522	1.5064
35% to 50%	7	0.01118	0.00588	1.9022	0.03369	0.01949	1.7286
50.1% to <100%	5	0.048687	0.02970	1.6392	0.02116	0.0985	0.2148
Outright	3	-0.04706	0.01001	-4.702	-0.04681	0.0332	-1.4099

Most notably, outright acquisitions appear to destroy shareholder value, as indicated by the statistically significant negative announcement day AAR. While the CAAR is not statistically significant at the ten percent level of significance, it nonetheless reflects a very substantial negative cumulative return. The implication is that the market perceives such transactions as destroying shareholder wealth. At face value these results may seem contradictory. If, however, one considers the potentially substantial legal costs involved in the absorption of an acquired firm it becomes less surprising that outright acquisitions may be viewed as wealth reducing transactions. This situation is compounded if the acquisition involves the payment of a significant premium to the owners of the acquired firm over the market value of the firm, a scenario which is fairly typical for acquisitions. Empirical evidence shows that the returns to the shareholders of acquiring firms are generally low or negative (Firer, Ross, Westerfield & Jordan 2004: 786), often because the potential gains of the acquisition are

overestimated by the management of the acquiring firm leading them to pay more for the target firm than it is worth as the promised benefits fail to materialise in reality (Damodaran 1997: 687).

With respect to partial acquisitions, only acquired stakes ranging from 35% to 50% exhibited a statistically significant announcement day AAR (at the five percent level) and CAAR (at the ten per cent level), in both cases positive. In addition, the announcement day AARs for other partial acquisitions were all positive and in two cases are almost statistically significant at the ten percent level. Insofar as the CAARs for the other partial acquisitions are concerned, none of these are statistically different from zero.

Conclusion

In a previous paper (reported in Strydom *et al.* 2009), the authors found some evidence for the period 1996 to 2006 of a positive market response to the announcement of BEE transactions, particularly on the announcement date. This finding is in line with the studies by Jackson *et al.* (2005) and Wolmarans and Sartorius (2009) who reported a statistically significant positive CAAR associated with the announcement of BEE transactions. The Strydom *et al.* (2009) study however, using a larger sample covering a longer time period, while reporting a positive CAAR across the sample did not find that the relationship was statistically significant. In addition, it was found that the positive reaction to announcements of BEE transactions was not universal, appears to be restricted to a relatively small portion of the overall sample, and in some instances is negative. The implication of these findings is that a positive market response to the announcement of a BEE transaction is not guaranteed but rather depends on specific characteristics of the transaction or of the firms engaging in the transaction. In this study, we therefore set out to investigate the relationship between the market reaction to the announcement of BEE transactions and the type of BEE transaction and the size of the stake acquired in a BEE acquisition.

The authors found that while it appears that acquisitions and strategic alliances do not impact on shareholder value, joint ventures appear to induce a positive market response on the day the transaction is announced. However, in keeping with the findings of Wolmarans and Sartorius (2009),

there is no evidence that any type of BEE transaction returns a statistically significant CAAR. This finding is in keeping with Fisher's Separation Theorem that states that the value of a firm is determined by its investment opportunities, not by whom owns it. If all a BEE transaction achieves is a change in ownership then it is entirely in keeping with financial theory that there should not be a significant market reaction to the announcement of a BEE transaction. Similarly, the finding that the market reacts more favourably to the announcement of Joint Ventures than to Acquisitions is not surprising. Assuming that the market is reasonably efficient and that share acquisitions do not occur at a substantial discount or premium then the Net Present Value of a share acquisition should be zero. If firms engaging in a BEE acquisition pay fair value for the stake that they are acquiring the transaction should not have a significant impact on the overall value of either party.

The above result, however, is based on measuring the CAAR across the entire sample of BEE transactions. When we look at the size of stakes acquired in BEE transactions, we find a more nuanced picture with some evidence of a market response depending on the size of the stake acquired. Most notably, while we find some evidence of a positive market reaction to the acquisition of a partial stake, this effect is most evident for the acquisition of a controlling interest between 35 to 50%, we find that the announcement of outright acquisitions is significantly associated with a negative market reaction. This result would suggest that in general the market believes that the potential benefits of an outright acquisition do not outweigh the greater costs associated with such a transaction.

Unlike Jackson *et al.* (2005), we did not find evidence of a clearly positive relationship between abnormal returns and the size of ownership stake but this may partly be a result of the research design, which divided acquisitions into discrete categories based on the materiality of the acquisitions whilst they employed a univariate regression. This suggests that if this relationship is to be estimated econometrically, a non-linear specification might be more appropriate than the linear specification they used. This represents an opportunity for further investigation. In addition, our results indicate the danger of studying the effects of BEE transactions in a collective manner. It is evident from our results that the market responds differently to different types of BEE transactions, although at this stage there

is still much that is not understood concerning the various factors that determine the nature and extent of the market reaction. Pursuing these interactions in greater detail remains a productive area for further research.

While the evidence presented in this study does not produce unequivocal results regarding the statistical significance of the market reaction to different types of BEE transactions it is nevertheless important to observe that in general the market reaction is at least neutral. As suggested by financial theory then, BEE transactions are not associated with a negative market reaction and if one ascribes broader social benefits to BEE then these results indicate that if the financial effects are neutral then the net societal benefit of BEE transactions would be positive. Given that being BEE compliant may result in real economic benefits to firms, however, it is entirely plausible, as found by previous studies, that BEE transactions may result in a positive market reaction. The results of this study, however, indicate that caution should be exercised in assessing the returns to BEE transactions. As is to be expected in an efficient market, investors appear to be discerning in their response to BEE transactions. Positive market reaction is not general but rather seems to be limited to those transactions that offer the greatest potential for securing real financial benefits to shareholders. The implication for management and policy makers is that in order to achieve real economic benefits through BEE requires that the specific characteristics of BEE transactions should be carefully considered.

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Inflation Impact of an Exchange Rate Adjustment: The Case of Zimbabwe 1990 - 2006

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Abstract

The author aims to econometrically estimate the impact of an exchange rate adjustment on consumer price inflation using Zimbabwe's quarterly data from 1990-2006. The first round impact of devaluation on consumer prices is found to be low. The elasticity is 0.05. This means that, in the short-run, 100 percent devaluation would increase inflation by only 5 percent. The long term elasticity is estimated at 0.51. That is, about half of an exchange rate adjustment would be passed on to domestic inflation and about 51 percent real devaluation would be achieved. This is consistent with the earlier studies on exchange rate pass-through to consumer prices. The author also reports that excess demand exerts strong pressure on domestic prices. Therefore, prudent fiscal and monetary policies are essential to moderate the impact of an exchange rate adjustment on domestic prices.

Keywords: Exchange rate, devaluation, Inflation, Pass-through effect, speed of adjustment, elasticity.

Problem Statement, Objectives and Research Questions

Zimbabwe is generally an agricultural based economy with GDP per capita income of US432 in real terms and a population of 12 million people, (United Nations 1998; 2007). The agricultural sector significantly contributes to foreign earnings, with tobacco, cotton and horticulture being

the main contributors. The other sectors important in terms of foreign earnings are mining, manufacturing and tourism. In the post-independence period the government of Zimbabwe has followed import-substitution and export-oriented policies. Despite, these policies the country has experienced balance of payment problems and a critical shortage of foreign exchange. The macroeconomic imbalances led to problems of high inflation and instability of the exchange rate (CSO 2004; 2007). Thus, chronic high inflation characterized the Zimbabwe's economy throughout the 1990s through to 2006 (a point stressed by Makuyana *et al.* 2011).

Although inflation was steadily rising over the period 1990Q1 to 1997Q3, the end of the last quarter of 1997Q4 experienced a crash of the Zimbabwe dollar and this led to a surge in inflation. The crash in Zimbabwe dollar was to a large extent due to increases in government expenditure requirements in the third quarter of 1997Q3 through to 2006Q4. The increase in government expenditure requirements eroded confidence in both domestic and foreign exchange rate markets; subsequently putting more pressure on the exchange rate, thereby inflation. Despite the disequilibrium in the exchange rate market, the authorities were reluctant to devalue in that devaluation implies increased inflation, and thereby paying more for debt servicing in local currency. Yet, exporters became less competitive if currency is overvalued or misaligned from its equilibrium level. In an effort to curtail inflation programmes such as the Economic Structural Adjustment Programme (ESAP), (1991-1995) and Zimbabwe Programme for Economic and Social Transformation (1996-2000) were implemented, but failed to achieve the desired level of inflation (GOZ 1991; 1996)¹.

The problem statement simply stated is that exchange rate adjustments exerted adverse pressure on Zimbabwe's consumer price inflation in the period 1990Q1 to 2006Q4.

The objectives of the study are to explain the determinants of inflation in Zimbabwe, with particular emphasis on the inflation impact of an exchange rate adjustment. In addition, the author discusses the monetary, fiscal policies and point out the underlying dynamics of inflation in 1990s through to 2000s.

¹ The Government of Zimbabwe (GOZ).

The author attempts to answer three questions: What is the responsiveness of prices to an adjustment of nominal exchange rate, it is how much of the devaluation pass-through to inflation? What are the speed of adjustment and the long run elasticity of inflation with respect to real devaluation of an exchange rate?

The layout of the article is as follows: section one gives the problem statement, objectives, and research questions section two is the literature survey, section three presents the methodology, section four briefly deals with data collection, section five presents data analysis, section six gives answers to research questions and section seven is the conclusion.

Literature Survey

Most of studies on devaluation of the nominal exchange rate and pass-through to consumer price inflation have been carried out in developed economies (Neiman 2010; Gust *et al.* 2010; Burstein *et al.* 2007), among others. However, there is still a dearth of knowledge with regard to similar work in less developing economies. The question often asked is what causes an incomplete or low exchange rate pass-through to import and thereby to consumer prices (Gust *et al.* 2010; Neiman 2010; Burstein *et al.* 2007; Marazzi & Sheets 2007; Taylor 2000).

Several studies using different methods and data to explain the exchange rate impact on inflation agree that in recent years the pass-through has declined implying that a depreciation of the nominal exchange rate led to less than 100 percent increase in consumer price inflation (Gust *et al.* 2010; Neiman 2010; Burstein *et al.* 2007; Marazzi & Sheets 2007; Taylor 2000; Mishkin 2008; Reyes 2007). But they differ in the explanation of the causes of the incomplete pass-through. As a consequence, various hypotheses have been put forward explaining reasons for low pass-through to imports or consumer price inflation. The general hypothesis reported by most studies is that the decline in the pass-through was due to competition in production of products, and trade integration particularly with China (Gust *et al.* 2010; Marazzi & Sheets 2007)

The author notes that several studies on exchange rate pass-through to inflation deal with import prices using aggregate, industry or firm data (Bodnar *et al.* 2002; Heghi 2003; Gust *et al.* 2010; Devereux & Engel 2002;

Neiman 2010; Burstein *et al.* 2007; Marazzi & Sheets 2007). However, other studies examine the broad effect of exchange rate pass-through to consumer price inflation (Taylor 2002; Corsetti *et al.* 2008; Mishkin 2008; Gust *et al.* 2009). In addition, some studies have focused on export prices 'price to market' the exporter set prices using the currency of the country which goods are being exported (Vigfusson *et al.* 2009; Miljkovic *et al.* 2003).

Study by Taylor (2000) show evidence that low inflation and prudent monetary policy led to incomplete or low exchange rate pass-through, which in turn, led to a positive effect on persistent price and cost increases. Gust *et al.* (2010) using 1980s data reported a pass-through coefficient of 55 percent for United States. Marazzi and Sheets (2007) observed that pass-through for the United States declined from 0.5 in the 70s and 80s to 0.2 in the last 10 years. These studies show that with improved trade integration and monetary policy the correlation between exchange rate pass-through and inflation is weak (Mishkin 2008; Taylor 2000).

Although causes of inflation differ from country to country, Lim and Papi (1997) argue that studies have shown that inflation is influenced in three ways. First, the monetary way, this is through growth of money stock. Second, it is argued that inflation originates from high government spending that exceeds revenues at a given time. The increase in debt and short fall of revenues lead governments to borrow from Central Banks, subsequently, increasing the money stock, and thereby inflation. Third, as previously mentioned, it is argued in the literature that inflation is as a result of devaluation of exchange rate. Furthermore, the oligopolistic markets through price wars and collusions lead to inflation (Hegji 2003). In addition, labour unions create price-wage spiral, which lead to high inflation.

Lim and papi (1997) carried out an empirical study for Turkey and examined the monetary, public finance and structural causes of inflation. Their results showed that the public finance variables had more influence on inflation process than other approaches. Moreover recent studies have emphasized the use of structural models to explain inflation and exchange rate pass-through (Corsetti *et al.* 2008) used structural equations to examine both short run and long run exchange rate pass-through using the United States data and concluded that the pass-through were incomplete.

Rittenberg (1973) using the Granger causality tests showed that the causality is from price change to the exchange rate, rather than from the

exchange rate to price level. Thus, the effect of devaluation on prices is inconclusive. They also assert that the expectations are largely due to inflation inertia. The current high level of inflation is expected to lead to further inflation in future.

Studies have shown that one of the causes of inflation is increased government spending that lead to budget deficit (Rodriguez, 1978). The increase in the budget deficit, and its subsequent monetization by the Central Bank fuelled inflation. However, it is believed that devaluation leads and/or triggers inflation process, and subsequent high interest rates, through contraction in monetary policies.

Rodriguez (1978) argues that albeit that devaluation leads to expensive imported goods in domestic prices, the balance of payments experiences a transitory improvement following devaluation. But this improvement could be eroded if government continues to spend on imports. Rodriguez, further argues that countries are not keen in cutting spending for political reasons and resort to small devaluations, which lead to devaluation-inflation spiral.

In spite of these analyses it is often argued that devaluation leads to high input costs, particularly when a country depends on imported intermediate goods for both domestic consumption and exports (Taylor 2002). Rodriguez (1998) noted that the main factors that are responsible for inflation in many less developed countries are the monetization of the fiscal deficit and devaluation of the domestic currency. He argues that in a country that is experiencing shortage of foreign exchange, that is expected to offset the deficit caused by high government spending, the way out would be to devalue the domestic currency, and trigger thereby inflation.

The underlying problem that leads to devaluation and inflation is the macroeconomic imbalances that stem from high government spending and subsequent fiscal deficit. The real government deficit financed through domestic credit creation by Central Bank's accommodation of government debt leads to increases in the monetary base or broad money and thereby inflation. Rodriguez concluded that an assertion that inflation is entirely caused by external factors is inappropriate, however, devaluation, in part, affects inflation, while the other part is attributed to various variables such as import prices or terms of trade.

Ghi and Hinkle (1999: 539-549) assert that if a country needs to im-

prove its competitiveness and require a devaluation of its real exchange rate, it is necessary to devalue the nominal exchange rate, in order to effect changes in the relative prices. However, devaluation could be eroded by inflation if the accompanying fiscal and monetary policies are not adjusted simultaneously to achieve the desire goal. Ghei and Hinkle, further assert that before devaluation of the nominal exchange rate, it is necessary to know the degree of misalignment between the real exchange rate and its equilibrium level. Otherwise if they are already aligned devaluation could lead to undesirable adjustment in the real exchange rate, they further assert that empirical studies have shown that devaluation often leads to inflationary pressure. But, only part of devaluation is transmitted (pass-through) to increases in consumer price inflation (Gust, Leduc & Vigfusson 2010, Neiman 2010; Burstein, Eichenbaum & Rebelo 2007; Marazzi & Sheets 2007) the other part affects the real exchange rate (Edwards 1989)².

Research Methodology

In the literature inflation is defined in many different ways. For the purpose of this study the author defines inflation as a persistent rise in general price level. The model the author adopts is a variant of Lim and Papi (1997) model of the determinants of inflation in Turkey and more recently studies by Taylor (2000); Mishkin (2008). However, the specification, of an eclectic model adopted in this study differs, in that it takes into account factors that have significantly influenced inflation process in Zimbabwe. Despite the focus on inflationary impact of an exchange rate adjustment, the author includes other variables that influence inflation.

The model the author uses for Zimbabwe is based on demand and supply of traded and non-traded goods.³ A convenient starting point in the analysis of inflation process would be to discuss the determinants of aggregate demand (Qd) and aggregate supply (Qs) functions. Any changes in the composition of (Qd) and (Qs) are expected to influence price level. For

² Edwards 1989 ‘pass through coefficient’ and an ‘effectiveness index’ of a devaluation respectively.

³ The production function is assumed to be homogenous of degree one and exhibit constant returns to scale.

example, borrowing from the Central Bank, an increase in government expenditures, monetary expansion and reduction in investment leads to shifts in aggregate demand, thereby increasing price level. Implicitly the resources do not adjust smoothly to changes in variables mentioned above. To encompass factors that influence demand, it is assumed that (Q^d) depends on the real money balances and real income. The aggregate demand function is given as:

$$Q^d = Q^d(M / P, GNP / P, \mu_d) \quad (1)$$

where M is broad money, P, is the domestic price level, GNP is the output, and μ_d the demand random shocks.

On the other hand the price level could be affected by the factors that influence the aggregate supply (Q^s). For example, an increase in energy cost, food prices and devaluation/depreciation of the local currency are expected to shift the aggregate supply. Hence, the encompassing supply function is given as

$$Q^s = Q^s(NER, \pi^e, \mu_s) \quad (2)$$

where: NER is nominal exchange rate, π^e is expected inflation, and μ_s is the supply random shocks. The goods market is cleared when it is at equilibrium price given by

$$Q^d(M / P, GNP / P, \mu_d) = Q^s(NER, \pi^e, \mu_s) \quad (3)$$

Solving equation (3) for 'P' The author obtains the (reduced form) long run equilibrium price equation.

$$P = M + NER + GNP + \pi^e + \mu \quad (4)$$

Equation (4) is the long run price equation that states that in the long run the price level in the goods market is influenced by broad money, nominal exchange rate, Gross National Product and expected inflation.

Equation (4) is estimated and residuals are used to test for co-integration⁴ and in the estimation of the short-run equation (6) below.

The Short-run Inflation Equation

The short run model is expected to encompass cyclical movements, seasonal fluctuation, and irregular variations such as drought, elections and strikes. It is assumed in the model that change in the logarithm of inflation is a function of the logarithm of: a change in nominal exchange rate lagged two quarters, the change in money supply lagged two quarters, the change in Gross National Product (electricity consumption is used as a proxy for GNP) and change in expected inflation. The inflation equation is presented as:

$$\Delta \log \pi_t = \Phi \left(\Delta \log (NER_{t-2}, M_{2t-2}, GNP_t, \pi_t^e) Uhat_{t-1}, \mu_t \right) \quad (5)$$

where Δ is the change,⁵ π is the inflation the dependent variable, Φ denotes a function and the logarithm of⁶: ΔNER , change in nominal exchange rate, ΔM_2 change in money supply, ΔGNP , change in gross national product, $\Delta \pi^e$, change in expected inflation, that the error correction term are independent variables μ the random disturbance whose average value is expected to be zero, and 't' is the time⁷.

The lags included in the inflation equation, strongly influence the dynamics and character of inflation process. For example, in the case of unionized labour force the assumed lags are not unreasonable in that collective bargain in most industries in Zimbabwe takes place once a year. In some cases negotiations drag on for a long time. This is the case with government workers. The lags are also justified in that the process of transforming price change such as exchange adjustment into cost takes months. However, administered prices such as those of electricity, fuel and water, perhaps, are insensitive to changes in demand, thereby inflation. But if they are frequently adjusted as the situation under the study period, they

⁴ $\Delta \mu_t = -\delta \mu_t + \xi_t$

⁵ $\Delta \phi(t) = \phi(t) - \phi(t-1)$

⁶ π , implies changes in price level

⁷ $\pi^e = \phi(\pi_{t-1}, \pi_{t-2}, \pi_{t-3}, \pi_{t-4})$

impact adversely on inflation. Taking the log transformation of equation (5) the log-linear equation is given as:

$$\begin{aligned} \Delta \log \pi = & a_0 + \beta_1 \Delta \log \text{NER}_{t-2} + \beta_2 \Delta \log M_{2t-2} + \beta_3 \Delta \log \text{GNP}_t + .. \\ & \quad \quad \quad (+) \quad \quad \quad (+) \quad \quad \quad (-) \\ & .. + \beta_4 \Delta \log \pi^e_t + \beta_5 \text{Uhat}(t-1) + \mu_t \end{aligned} \quad (6)$$

where: β_i are the parameters that give elasticities of respective variables with respect to inflation and 'i' equal to 1, 2, 3...n. The signs below the variable parameter indicate a priori sign of the variable. Equation (6) is the log linear inflation equation estimated using the OLS method for the period 1990Q1-2006Q4.

Data Collection

Having discussed the variable relations the author now turn to quantitative analysis of the inflation model. The quarterly time series data for 1990Q1 - 2006Q4 is used to estimate an eclectic long run and short-run equations (4) and (6). The data is obtained from Central Statistical Office (CSO). The quarterly data is expected to track inflation process better than annual data. The consumer price index (CPI or P) is used to compute change in prices and it includes administrative prices. The author uses the geometric mean to average the monthly (CPI) in order to obtain the quarterly (CPI). The consumer price index was measured with 1990 as base year.

The choice of the sample series is determined by the date in which economic reforms were adopted and the fact that more recent developments are expected to have a bearing on the future policy management of the price level and the economy. The quarterly data used is measured in millions of Zimbabwe dollars. The exchange rate used, is the nominal official effective exchange rate.

Data Analysis

Before carrying out the ordinary Least Squares estimates for the long run model a test for stationarity of the variable series was carried out. The unit root test is employed to ascertain whether the series is stationary. For the

stationarity to be achieved the author tests the null hypothesis that the variables are non-stationary (Engle & Granger 1987; Dickey & Fuller 1979).

The time series properties of the data indicate that all the variables exhibit unit roots, and implies that they are of I(1) series. The long-run price equation is estimated using quarterly data over the period 1990Q1 to 2006Q4. A test for co-integration revealed that the residuals of the long run price equation are of I(0) series⁸. In other words, inflation is co-integrated with money, exchange rate, GNP, and expected inflation. The results of the long run price equation suggest that in the long run there is not much significance difference in the effects of money and exchange rate adjustment on inflation; output (GNP) has a negative effect, while expected inflation has a positive effect on inflation.

Having established the stationarity and co-integration of the series, the author estimates the short-run Error Correction Model (ECM) (equation 6). Table 1 below reports the results.

Table 1: An Error Correction Model of Inflation

Dependent Variable $\Delta\log(\pi_t)$

Variable	Coefficient	SE	t- ratio
Constant	0.0030	0.0049	- 0.58
$\Delta\log(\text{NER}_t)$	0.0475	0.0189	2.51
$\Delta\log(\text{M}_{2t-2})$	0.0746	0.0532	1.40
$\Delta\log(\text{GNP}_t)$	- 0.0379	0.0157	- 2.41
$\Delta\log(\pi^e_t)$	0.0215	0.0083	2.57
Uht_{t-1}	- 0.1315	0.0216	- 6.07

$R^2 = .71$, $R^2 \rightarrow \text{adj.} = .663$, S.E of regression = .00944

F- stat. F (5, 35) = 16.7552 (.000), DW – stat. = 1.67

RSS = 0.003124 for 6 variables and 41

Observations, Akaike info, Criteria = 130.2

Schwarz Bayesian criteria = 125.06

S.E of Regression = 0.0094

⁸ $\Delta\mu_t = -\delta\mu_{t-1} + \xi_t$

Table 2: The Long Run Price Equation⁹

Dependent Variable Log (P_t)

Variable	Coefficient	SE	t-ratio
Constant	0.18116	0.13112	1.13112
Log(NER _t)	0.51088	0.14270	3.42300
Log(M _{2t})	0.55215	0.12330	4.47500
Log(GNP _t)	-0.2028	0.07465	-2.71700
Log(EINF _t)	0.12028	0.06204	1.939

The estimated long run Coefficient of an Auto Regressive Distributed Lag model (ARDL) chosen by the Schwarz Bayesian Criterion is given in table 2 above. As previously mentioned, the residuals of the long run model is found to be I(0), which supported co-integration.

Key to Variables

INF = Inflation

EINF= Expected Inflation

NER = Nominal Exchange Rate

M₂ = Money Supply

GNP = Electricity Consumption (Proxy for GNP)

CPI = P: Consumer Price Index

Q_i = Quarterly

Answer to Research Questions

The results given in table 1 above indicate that the nominal exchange rate, Gross National Product, expected inflation are clearly significantly different from zero at the 5 percent level of significance in absolute terms. Their t-ratios are 2.51, -2.41, and 2.57 respectively. In the case of the money supply, there is no evidence of a significant relationship from the short run data as applied to the model. However, in the long run the relationship between the money supply and price level is strong. The error correction term Uhat (-1) is significant, and indicates a 13 percent speed of adjustment into the short run process from the previous period. The inflation elasticity with respect to

⁹ $EINF_t = \pi_t^e$.

exchange rate results is a less than proportionate change in inflation. The R-Bar-squared of 66.3 percent presents a good fit and variables have the correct signs. The results indicate an exchange rate pass-through of 0.05 in the short run and an inflation elasticity of 0.51 for long run. Implying that in the short run 100 percent devaluation would lead to a 5 percent increase in inflation, while only 51 percent pass-through to inflation is reported in the long run.

The finding does not support a view that following a devaluation prices would rise by the same magnitude of devaluation. Governments are often opposed to devaluation or exchange rate adjustment in that devaluation implies increase in prices and paying more for debts servicing in local currencies. However, the exporters became less competitive if the currency is overvalued or misaligned from its equilibrium level. The results suggest that policies that favour exchange rate adjustment that achieve alignment are advantageous to the economy.

The demand-pull factors are strong in the case of Zimbabwe. The significant Gross National Product variable is evidence of an excess demand in the economy. As output declines prices of goods and services increase. This evidence is supported by poor economic growth rates that Zimbabwe has experienced in the period 1990Q1 to 2006Q4. The result suggests that a decline in output is, in part, responsible for surge in prices in the early to mid 2000's. The expected inflation influenced the supply side through high wages. Workers real wage variable was found to be inconsistent and thereby dropped in the estimated model. The results indicate that the exchange rate adjustment leads to a less than proportionate change in prices. Thus, our analysis suggests that only a proportion of devaluation impacts on consumer price inflation (Table 1). The long-term elasticity of inflation is approximately 0.51 with respect to nominal devaluation (Table 2).

The findings in the present study have thrown some light on the effects of an exchange rate adjustment on prices. By contrast the findings and evidence obtained in this paper though different in approach and data used they are in line with other similar studies that have been undertaken in Developed and Less Developing Countries.

Summary and Conclusion

The author examines the inflation impact of an exchange rate adjustment,

and has shown that the exchange rate pass-through to domestic price for Zimbabwe is incomplete and the findings and evidence obtained in this paper complement previous literature on the pass-through discourse. The aim of the author is to explain the determinants of inflation in Zimbabwe, with particular emphasis on the inflation impact of an exchange rate adjustment on prices. An attempt is made to analyze the effects of devaluation/revaluation of an exchange rate on Zimbabwe's inflation. The model employed is based on the aggregate demand and supply of goods and services. The co-integration regression equation is estimated using the quarterly data over the period 1990Q1-2006Q4. The residuals from the long run equation are included as a variable in the estimation of the short run error correction model. The findings in this paper indicate an incomplete exchange rate pass-through to consumer price inflation.

The author notes that demand-pull inflation is strong in the case of Zimbabwe's economy. The results have shown that as output declines prices of goods and services increase. The results obtained in this study have shed some light on the effects of an exchange rate adjustment on consumer prices. By explaining the potential consequences of an exchange rate adjustment on inflation it is hoped that the findings might be useful to policy makers and other researchers. It is recommended that a simultaneous devaluation of an exchange rate and tax cuts should reduce the inflation impact of an exchange rate adjustment. The results in this paper are conclusive, though they depend on the specification of the model and quality of data used. Finally, further investigation on the subject of inflation and exchange rate adjustments, could deal with causes of incomplete exchange rate pass-through to consumer prices and remedies of demand pull inflation in Zimbabwe.

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Enhancement of Service Quality in the Intercity Bus Transport Industry

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Abstract

The South African intercity bus transport system plays a pivotal role in the movement of commuters across the country, including contributing to the reduction of traffic congestion. The intercity bus system appears to provide safe, comfortable and cost-effective transportation compared to some of the alternative means. However, there is potential to better serve the needs of its consumers. To this end, paying attention to service quality could prove useful in making this mode of travel the preferred choice to local as well as international travellers. This paper therefore aims to evaluate service quality in the intercity bus transport system and seeks to measure levels of service quality, determine the relationships among the dimensions of service quality and examine the relationship between selected biographical variables and expectations and perceptions of service quality. A literature survey was undertaken in order to determine the theoretical underpinnings of service quality. The empirical study was conducted using the SERVQUAL model. Service quality was measured on the basis of the 25 items that constitute the five dimensions of service quality. The study was conducted using purposive, convenience, and quota sampling among 400 intercity transport bus passengers, including international travellers. The results indicate gaps in four out of the five dimensions of service quality. Recommendations for improvement in service quality have been made.

Keywords: Intercity bus transport industry, service quality, service quality gaps, dimensions of service quality, expectations of service quality, perceptions of service quality.

Introduction

The South African intercity bus transport industry plays a prominent role in the transportation sector, more specifically, in the passenger (commuter) segment. The industry, as part of the public transport network, contributes to the enhancement of social mobility in South Africa. At the same time, this industry helps solve traffic problems created by the excessive use of private motor vehicles in recent years, e.g. pollution and traffic jams (Ongkittikul & Geerlings 2006: 285). The most common difficulties for tourists and foreigners in unfamiliar areas are that public transport is still not accessible and safety is still of great concern. Moreover, South Africa is still considered as a country with an inadequate transport infrastructure (No financial worries about 2010, 2006). The major principles underlying public transport focus on the how to deliver effective public service. These include:

- The promotion of the use of public transport over private transport,
- Ensuring that public transport services address user needs,
- Promoting and implementing a system of regulated competition, and
- Promoting safe and secure, reliable, and sustainable public transport (National Department of Transport 2006).

South Africa has the longest road network in Africa, consisting of around 754 600 km of roads and streets. The national road network covers about 9 600 km. Toll roads, serviced by 32 mainline toll plazas, cover about 2 400 km (South Africa Yearbook 2005/6, 611). In many countries around the world, public transport is considered a favoured alternative to private transport. Buses play a key role in the public transport system (National Department of Transport Strategic Plan 2006-2009, 2006). Intercity bus transport, as a means of bus passenger transport, is responsible for linking the major centres in South Africa, and also serves commuters in rural areas by a network of public and privately operated passenger bus services. The latest available data indicates that between 2002 and 2005, the number of commuters travelling by bus increased by 9.5%, while for the same period, people travelling by train decreased by 3% (Transport crisis could hinder 6% economic growth 2006). Intercity bus transportation appears to provide reliable, safe, comfortable and better-integrated transport, hence proving to be more cost effective, compared to using a private car. However, in some

instances, the price of travel by air is similar to that of intercity bus travel (Getting you from A2B in South Africa 2006).

It would therefore mean that the intercity bus transport industry has great potential to better serve the needs of its consumers. To this end, paying attention to service quality could prove very useful in making this mode of travel the preferred choice to both local as well as international travellers.

Statement of the Problem

The National Department of Transport (2006) has acknowledged that the current public transportation system is not in a position to cater for the needs of the market and furthermore, that the culture of service provision needs to be improved. There is no documented evidence of research being conducted into service quality in the public transportation industry, more specifically, the intercity bus transport industry. This study therefore intends to analyse the elements impacting on the service quality of the intercity bus transport industry in South Africa. The subsidiary problems relate to:

- Measuring the levels of service quality on the basis of the dimensions that constitute service quality in the intercity bus transport industry in South Africa
- Determining the relationships among the dimensions of service quality
- Examining the relationship between selected biographical variables and expectations and perceptions of service quality in the intercity bus transport industry in South Africa.

Objectives of the Study

The objectives of the study were:

- To measure the levels of service quality on the basis of the dimensions that constitute service quality in the intercity bus transport industry in South Africa
- Determine the relationships among the dimensions of service quality

- To examine the relationship between selected biographical variables and expectations and perceptions of service quality in the intercity bus transport industry in South Africa

Research Questions

The key questions the study intended to answer were:

- What are the levels of service quality on the basis of the dimensions that constitute service quality in the intercity bus transport industry in South Africa?
- What are the relationships among the dimensions of service quality?
- Are there significant relationships between selected biographical variables and expectations and perceptions of service quality in the intercity bus transport industry in South Africa?

Literature Survey

The Concept of 'Service Quality'

Service quality has been associated with the satisfaction of expectations. Gronroos (2001: 151) states that customer satisfaction and happiness are more strongly affected by their expectations. The term 'expectations' from a behavioural perspective is not as precise as the usage by mathematicians, who attempt to quantify what, on average, is likely to happen (Metters, King-Metters, Pullman & Walton 2006: 69). Marketing researchers, however, prefer to define service quality from an individual customer's perspective, also referred to as 'user-based' (Fitzsimmons & Fitzsimmons 2006: 128). The expectations are subjective and are based on imagination of the service process and outcomes. Service value is reflected in the satisfaction of customer's demands.

Service quality is a function of the expectations-perceptions gap and pioneering studies into this were conducted in the early 1980s leading to the development of the SERVQUAL model. Today, the results extend into e-SQ or electronic service quality (Zeithaml, Parasuraman & Malhotra 2001: 2). A number of industries were studied to develop and refine SERVQUAL, which has been used to execute a gap analysis of an organisation's service quality performance against customer service quality needs.

The Relationship between Service Quality and Customer Satisfaction

Lovelock and Wright (2002: 87) define customer satisfaction as a form of emotional reaction that arose from an actual experience. Metters *et al.* (2006: 110) indicate that satisfaction is the consumer's fulfilment response. Satisfaction is the customer's evaluation of a product or service in terms of whether that product or service has met the customer's needs and expectations (Bruhn & Georgi 2006: 443).

According to Truong and Foster (2006: 843), customer satisfaction takes place in two situations. One is the result of a product or actual service meeting the customer's expectations. The other is where the result exceeds the expectations. Dissatisfaction will occur where the actual service level is below the expected level. Therefore, satisfaction and dissatisfaction are the outcome of a subjective evaluative process by the consumer. The relationship between service quality and customer satisfaction still remains a mystery, from the point of view of whether customer satisfaction is an antecedent of service quality or *vice versa*. Some researchers suggest that customer satisfaction leads to service quality (Lee, Lee & Yoo 2000:219).

A viewpoint most commonly adopted is that customer satisfaction with a service is related to the perceived discrepancy between actual and ideal levels of service delivery. If experience of the service greatly exceeds the expectations that clients had of the service, then satisfaction will be high and *vice versa* (MORI, 2002). This should, however, not be taken as a cue for service providers to drive down expectations in order to achieve surprise and concomitant customer satisfaction with moderate service quality. Service quality is seen as an antecedent of customer satisfaction (Brady, Cronin & Brand 2002: 18).

According to Zeithaml, Bitner and Gremler (2006: 110), in order to measure customer satisfaction and examine the differences between the desired level of a service and actual service received, the related factors and their relative importance need to be taken into account, when considering areas for improvement as far as the service mix is concerned. Specific product or service features, perceptions of product and service quality, and price influence customer satisfaction, *inter alia*. In addition, personal factors such as the customer's mood, emotional state and situational factors are likely to influence satisfaction.

The Dimensions of Service Quality

Parasuraman, Zeithaml and Berry originally identified ten dimensions that were used to assess service quality (Nowacki 2005: 236). As a result of further interrogation, the ten dimensions were consolidated into five (Gronroos 2000: 74). These are tangibles, reliability, responsiveness, assurance and empathy, and are briefly explained:

- **Tangibles**

Tangibles are related to the appearance and evidence of physical facilities, equipment, personnel and communication materials (Robledo 2001: 26). Since the tangible and visual elements of the site will be critical to efficiency and overall impressions of the firm and the brand, service companies are likely to use tangibles to enhance their image and convey quality service to consumers (Zeithaml *et. al.* 2006: 120-22).

- **Reliability**

Bebco (2000: 11-12) defines reliability as ‘the ability to perform the promised service dependably and accurately’. Reliability is a key factor in helping customers evaluate the quality they experienced relative to the quality promised during the delivery process (e.g. service provision, problem resolution and pricing).

- **Responsiveness**

Zeithaml, *et al.* (2006: 17) believe that service providers should be active and voluntary to assist their customers and be prompt in the provision of services. This dimension makes it necessary that the service provider be flexible in solving customers’ problems and handling requests and queries. This dimension also addresses the need for capacity to customise services to meet the special needs of certain customers.

- **Assurance**

Robelo (2001: 25) regards assurance as the knowledge possessed by employees, their courtesy and the ability of the organisation to inspire trust and confidence. This dimension constitutes four determinants viz. competence, courtesy, credibility and security.

- **Empathy**

According to Curry and Sinclair (2002: 200), the empathy dimension refers to the caring, individualised attention that an organisation provides its customers. To this end, access, communication and understanding the customer are key elements. The basic idea behind this dimension is to provide appropriate and adequate facilities for current as well as potential customers.

Research Methodology

The study was cross-sectional, descriptive and quantitative in nature. The population for this study comprised passengers who made use of the intercity bus transport service. A sample size of 400 was considered appropriate, based on the recommendation of Leedy and Omrod (2005: 207) who believe that a sample size of 400 is adequate if the target population size exceeds 5 000.

Three approaches to non-probability sampling were used. Firstly, on the basis of purposive sampling, the fieldwork was conducted at the Durban Bus Terminal as the sampling location for two main reasons viz. Durban is one of South Africa's major tourist destinations and secondly, that the intercity bus transport network connects Durban with the other major cities and towns. Secondly, convenience sampling was used to select respondents. Thirdly, quota sampling was employed to achieve a balance between local and foreign travellers. 350 South Africans and 50 foreign residents were chosen, based on the attendance figures in the 2010 Soccer World Cup held in South Africa.

The SERVQUAL instrument was used, consisting of 25 questions pertaining to the five dimensions on expectations and perceptions of service quality. In addition, biographic-type questions were included. After a pilot-test, questionnaires were personally administered among respondents.

Data Analysis

The data analysis is presented in this section.

Biographical Detail

As indicated in Table 1, 66.8% of the respondents were male, with 33.2% of respondents being female. It emerged that 26% of respondents were younger than 20 years old, 56.5% being between 20 to 39 years of age, 17% being between 40 and 59 years old, and 0.5% of respondents being over 60 years old. 50.3% of respondents resided in Durban, 37.3% were South African, but did not reside in Durban, 4.8% of respondents were from African countries other than South Africa with 7.8% of respondents being overseas residents.

Table 1: Biographical detail of Respondents

Respondents n=400	Percentage
Gender	
Male	66.8
Female	33.2
Total	100
Age	
Under 20	26.0
20-39	56.5
40-59	17.0
Over 60	0.5
Total	100
Regional distribution	
Durban area	50.3
South African, but from outside Durban	37.3
Other African countries	4.8
Overseas	7.8
Total	100

The Tangibles Dimension

As depicted in Table 2, the lowest expectation score applied to the attractiveness of the ticketing office (3.31) with the highest expectation scores applying to the bus companies having a professional appearance as well as the staff dress being neat and smart (3.69). The lowest perception

score related to the ticketing office not having adequate resources and capacity (2.96) and the highest perception score related to the bus companies having a professional appearance (3.29). The lowest gap score (-0.33) pertained to the attractiveness of the ticket office, while the largest gap score (-0.51) was in respect of the ticketing office having adequate resources and capacity.

Table 2: Tangibles

Item	Expectations Mean	Perceptions Mean	Gap
The ticketing office being attractive	3.31	2.98	-0.33
Being equipped with modern technology	3.48	3.09	-0.39
Ticketing office having adequate resources and capacity	3.47	2.96	-0.51
Having a professional appearance	3.69	3.29	-0.40
The dress of staff being neat and smart	3.69	3.25	-0.44

The Reliability Dimension

As far as the reliability dimension was concerned, the ease with which a ticket can be booked had the highest expectation score (3.93) with the lowest expectation score pertaining to the bus arriving on time at the destination (3.32). The highest perception score pertained to the ease with which a ticket can be booked (3.38), with the timeous arrival of buses at the destination scoring the lowest perception score (2.59). The lowest gap score (-0.35) pertained to the bus never breaking down *en route*, while the largest gap score (-0.73) was in respect of the bus always arriving at the destination on time. The results are reflected in Table 3.

Table 3: Reliability

Item	Expectations Mean	Perceptions Mean	Gap
Buses always arriving at the destination on time	3.32	2.59	-0.73
The bus never breaking down	3.30	2.95	-0.35
Customers easily booking a ticket	3.93	3.38	-0.55
Staff satisfying customer's requests right the first time	3.67	3.21	-0.46
The time table on the bus company's website being error free	3.33	2.84	-0.49

The Responsiveness Dimension

As indicated in Table 4, as far as expectations were concerned, the provision of timely and efficient service scored the highest (3.58), and always inform-

Table 4: Responsiveness

Items	Expectations Mean	Perceptions Mean	Gap
Informing passengers of change of timetable and prices in advance	3.36	2.67	-0.69
Providing timely and efficient service	3.58	3.05	-0.53
Clear and helpful communication with customers	3.55	3.32	-0.23

ming passengers of changes to timetables and prices in advance being scored the lowest (3.36). The highest perception score pertained to communication with customers being clear and helpful (3.32), while informing customers of change in timetable and pricing in advance had the lowest perception score (2.67). The lowest gap score (-0.23) pertained to communication with customers being clear and helpful, while the largest gap score (-0.69) was in respect of bus companies always informing passengers of changes to timetables and prices in advance.

The Assurance Dimension

It emerged, as indicated in Table 5, that as far as the assurance dimension was concerned, customers feeling safe in their transactions with ticket office staff had the highest expectation score (3.88) with the lowest expectation score pertaining to two items, viz. staff having an in-depth knowledge of their jobs, and the behaviour of staff instilling confidence in customers (3.56). The highest perception score pertained to customers feeling safe in their transactions with ticket office staff (3.68), with staff having an in-depth

Table 5: Assurance

Items	Expectations Mean	Perceptions Mean	Gap
Customers feeling safe in their transactions with ticketing office staff	3.88	3.68	-0.20
Customers feeling safe in their transactions with staff on the bus	3.67	3.26	-0.41
Politeness of staff	3.72	3.43	-0.29
Staff having an in-depth knowledge of their jobs	3.56	3.13	-0.43
Behaviour of staff instilling confidence in customers	3.56	3.14	-0.42

knowledge of their jobs scoring the lowest perception score (3.13). The lowest gap score (-0.20) pertained to customers feeling safe in their transactions with ticket office staff while the largest gap score (-0.43) was in respect of staff having an in-depth knowledge of their jobs.

The Empathy Dimension

The findings, as indicated in Table 6, revealed that for the empathy dimension, the lowest expectation score applied to bus companies having operating hours convenient to all customers (3.39) with the highest expectation score applying to two items, viz. ease of accessing ticket office, and staff providing individualised attention to help customers (3.60). The lowest perception score related to getting information about the facilities and services easily (2.52) and the highest perception score related to staff providing individualised attention to help customers (3.08). The lowest gap score (-0.52) pertained to staff providing individualised attention to help

Table 6: Empathy

Items	Expectations Mean	Perceptions Mean	Gap
Looking after the best interests of customers	3.44	2.89	-0.55
Having operating hours convenient to all customers	3.39	2.61	-0.78
Getting information about the facilities and services easily	3.48	2.52	-0.96
Ease of accessing ticket office	3.60	2.83	-0.77
Staff providing individualised attention to help customers	3.60	3.08	-0.52

customers, while the largest gap score (-0.96) was in respect of getting information about the facilities and services easily.

A Comparison of the Quality Dimensions

Table 7 provides an indication of the mean expectation and perception values as well as the gaps with regard to the five service quality dimensions. As far as expectation was concerned, it emerged that assurance was rated as the highest (3.69), with empathy being scored the lowest (3.49). On the issue of perception, responsiveness was rated as highest (3.52), with empathy being scored the lowest (2.80). An analysis of the gap scores reveals that empathy was considered to have the smallest gap (-0.69) with responsiveness being considered as having the lowest 'gap'. In fact, the indicated score (0.00) suggests that there was no perceived gap between expectation and perception as far as responsiveness was concerned.

Table 7: Comparison of the quality dimensions

Dimension	Expectation (Mean)	Perception (Mean)	Gap (P-E)
Tangibles	3.5125	3.1125	-0.4000
Reliability	3.5075	2.9700	-0.5375
Responsiveness	3.5200	3.5200	-0.0000
Assurance	3.6925	3.3175	-0.3750
Empathy	3.4900	2.8000	-0.6900

Relationships among the Dimensions of Service Quality

The results, as indicated in Table 8 suggest that as far as the expectation dimension was concerned, there was a strong correlation between tangibles and assurance (0.618), and a moderate correlation between tangibles and empathy (0.461). There was a moderate correlation between reliability and assurance (0.474) as well as between reliability and empathy (0.427).

The correlation between responsiveness and assurance was strong (0.640) and that between responsiveness and empathy, moderate (0.587).

Table 8: Intra-correlations of expectations

	Assurance	Empathy
Tangibles Pearson correlation	0.618	0.461
Significance	0.000	0.000
Reliability Pearson correlation	0.474	0.427
Significance	0.000	0.000
Responsiveness Pearson correlation	0.640	0.587
Significance	0.000	0.000

All of the aforementioned correlations were significant at the 0.01 level and were positive.

The results, as indicated in Table 9 suggest that as far as the perception dimension was concerned, there was a moderate correlation between tangibles and assurance (0.526), and a moderate correlation between tangibles and empathy (0.478). There was a moderate correlation between reliability and assurance (0.470) as well as between reliability and empathy (0.443). The correlation between responsiveness and assurance was moderate (0.428) and that between responsiveness and empathy, weak (0.239). All of the aforementioned correlations were significant at the 0.01 level and positive.

Table 9: Intra-correlations of perceptions

	Assurance	Empathy
Tangibles Pearson correlation	0.526	0.478
Significance	0.000	0.000
Reliability Pearson correlation	0.470	0.443
Significance	0.000	0.000
Responsiveness Pearson correlation	0.428	0.239
Significance	0.000	0.000

The Service Quality Dimensions and Biographic Variables

The statistical data, as presented in Table 10, constitute a comparison of means between the gender groups and expectation and perception of service quality. As far as expectation was concerned, it emerged that there was no significant difference between males and females with regard to responsiveness ($p = 0.273$) and assurance ($p = 0.112$). There was a significant difference between males and females on the dimensions of tangibles ($p = 0.000$), reliability ($p = 0.021$) and empathy ($p = 0.033$).

Table 10: Service quality dimensions and gender

	EXPECTATION		PERCEPTION	
	t	Sig.	t	Sig.
Tangibles	3.685	0.000	1.259	0.209
Reliability	2.320	0.021	2.177	0.030
Responsiveness	1.097	0.273	1.097	0.273
Assurance	1.595	0.112	2.217	0.027
Empathy	2.139	0.033	1.629	0.129

As far as perception was concerned, the results suggest that there was no significant difference between males and females with regard to tangibles ($p = 0.209$), responsiveness ($p = 0.273$) and empathy ($p = 0.129$). There existed a significant difference between males and females on the dimension of reliability ($p = 0.030$) and assurance ($p = 0.0129$).

Table 11 ANOVA: Service quality dimensions and age

	EXPECTATION		PERCEPTION	
	Mean Square	Sig.	Mean Square	Sig.
Tangibles	0.807	0.366	0.534	0.520
Reliability	0.897	0.198	0.490	0.438
Responsiveness	1.961	0.045	1.961	0.045
Assurance	1.557	0.097	1.357	0.151
Empathy	0.847	0.199	0.333	0.724

As indicated in Table 11, the ANOVA test results reveal a significant difference among the different age groups only for the responsiveness dimension ($p = 0.045$ for expectation as well as perception). There were no significant differences between the age groups with regard to expectation and perception of service quality on the dimensions of tangibles, reliability, assurance and empathy.

The ANOVA test results reveal that there were no significant differences among the regional groups with regard to expectation and perception of service quality on the dimensions of tangibles, reliability, responsiveness and assurance. There existed a significant difference among the regional groups only for the empathy dimension ($p = 0.0387$ for expectation and $p = 0.035$ for perception). The results are indicated in Table 12.

Table 12: Service quality dimensions and regional grouping

	EXPECTATION		PERCEPTION	
	Mean Square	Sig.	Mean Square	Sig.
Tangibles	1.290	0.166	0.309	0.727
Reliability	1.231	0.093	1.197	0.084
Responsiveness	0.837	0.330	0.837	0.330
Assurance	0.303	0.748	0.505	0.580
Empathy	1.527	0.038	2.149	0.035

Reliability Analysis

Cronbach’s Alpha was used as a test of internal consistency. According to Malhotra (2010: 319), in general, a coefficient of less than 0.6 suggests unsatisfactory internal consistency reliability. The results, as reflected in Table 13, suggest a high degree of internal consistency.

Table 13: Cronbach Alpha Test

N=400	Cronbach Alpha	No. of items
Expectation	0.930	25
Perception	0.924	25

Answers to the Research Questions

What are the levels of service quality on the basis of the dimensions that constitute service quality in the intercity bus transport industry in South Africa?

It emerged that the largest quality gap score (-0.69) pertained to the empathy dimension, and of all the 25 items, the three items showing the largest gap score pertained to the empathy dimension. These were:

- Getting information about the facilities and services easily (-0.96)
- Bus companies having operating hours convenient to all customers (-0.78)
- Ease of access to ticketing office (-0.77)

The reliability dimension achieved the second largest gap score (-0.54), with the following three items showing significant gaps:

- Buses arriving at the destination on time (-0.73)
- Customers easily booking a ticket (-0.55)
- The time table on the bus companies websites being error free (-0.49)

The assurance dimension achieved the third largest gap score (-0.38), with no items under this dimension having scores that suggested a significant gap. This was followed by the tangibles dimension (gap score = -0.40), which had one item that warranted attention viz. the ticketing office having adequate resources and capacity (-0.51). Interestingly, although the responsiveness dimension showed no overall gap, two items had significant gap scores viz:

- Informing passengers of changes in timetable and prices in advance (-0.69)
- Providing timely and efficient service (-0.53)

What are the relationships among the dimensions of service quality?

With regards to the expectation dimension, there was a strong correlation between tangibles and assurance, and a moderate correlation between

tangibles and empathy. There was a moderate correlation between reliability and assurance as well as between reliability and empathy. The correlation between responsiveness and assurance was strong and that between responsiveness and empathy, moderate.

As far as the perception dimension was concerned, there was a moderate correlation between tangibles and assurance, and a moderate correlation between tangibles and empathy. There was a moderate correlation between reliability and assurance as well as between reliability and empathy. The correlation between responsiveness and assurance was moderate and that between responsiveness and empathy, weak.

Are there significant relationships between selected demographic variables and expectations and perceptions of service quality in the intercity bus transport industry in South Africa?

With regard to expectations, it emerged that there was no significant difference between males and females with regard to responsiveness and assurance. There was a significant difference between males and females on the dimensions of tangibles, reliability and empathy.

As far as perception was concerned, there was no significant difference between males and females with regard to tangibles, responsiveness and empathy. There was a significant difference between males and females on the dimension of reliability and assurance.

There was significant difference among the different age groups only for the responsiveness dimension for expectation as well as perception. There were no significant differences between the age groups with regard to expectation and perception of service quality on the dimensions of tangibles, reliability, assurance and empathy.

There were no significant differences among the regional groups with regard to expectation and perception of service quality on the dimensions of tangibles, reliability, responsiveness and assurance. There existed a significant difference among the regional groups only for the empathy dimension.

Recommendations

Based on the research findings, the following recommendations are made:

- The intercity bus transportation system should use user-friendly printed material (e.g. area based timetables, posters and brochures) which customers can relate to. Electronic media should also be used to greater effect (e.g. electronic displays and a more comprehensively detailed website). This will address issues around empathy and tangibles in the industry.
- The ticketing system should be more accessible in terms of location as well as operating hours. To this end, geographic information regarding ticketing offices should be placed at strategic points (e.g. at tourism centres and in the media).
- An online reservation system should be developed considering the cost saving associated with an electronic medium. The system should connect with strategic partners (e.g. main chain stores).
- The reliability of the bus service should be improved in three ways: Firstly, a consistently aligned set of factors, processes and standards that can define timely routing should be developed. Secondly, there should be regular maintenance of the fleet as well as readily available spare equipment and parts. Thirdly, new technologies (e.g. Global Positioning) should be introduced to control routes and timings.
- Changes in time and prices should be communicated quickly to customers. To this end rapid electronic media should be used. These media should take into account the needs of persons with impairments (e.g. hearing and visual).
- There should be greater interaction with present as well as potential customers with a view to understanding their needs more clearly. Regular surveys should be conducted and customer complaints, fully analysed. Staff members need to be made aware of customer feedback as well as complaints so that the necessary actions can be taken.

- Detailed policies and procedures should be developed so that the variability in customer treatment is reduced. There should be formalised training in the area of customer service. Recruitment and selection should take cognizance of the element of customer service.
- There should be closer co-operation between the bus companies (operators) so that there can be a more synchronised approach to operations e.g. sharing passenger loads during conditions of under-capacity as well as excess capacity.

Conclusion

The study sought to assess the level of service quality in the intercity bus transport industry. A literature survey was undertaken in order to determine the theoretical underpinnings of service quality. The empirical study was conducted using the SERVQUAL model. Service quality was measured on the basis of the 25 items that constitute the five dimensions of service quality. The relationships among the dimensions of service quality were analysed. The relationship between selected biographical variables and expectations and perceptions of service quality was examined. Recommendations for improvement in service quality have been made.

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Perceptions of International Students on the Challenges of Diversity Management at a South African University

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Abstract

Between the years 2009 and 2010, an average of approximately 5400 applications were received at the University of KwaZulu-Natal from international students (Division of Management Information 2010). Knowledge of international students is essential to higher education institutions. It can be said that international students have become a vibrant part of the diversity in South Africa's education sector and provide immense benefits to our economy, educational institutions, local students and educators. However, there exists a paucity of research on the post-choice perceptions of international students. The purpose of the study was to assess the post-choice perceptions of international students at UKZN, with special references to diversity challenges. A cross-sectional/survey design using questionnaires, with both descriptive and analytical components was employed. The researcher randomly selected 300 students from an updated listing of the registered international students chosen by the generation of random numbers to achieve the objectives of the study. The researcher surveyed the 300 students which were easiest to get a hold of who were contacted via email and invited to participate in the study. The responses of 280 international students were received and analysed. All data was processed and analysed using the SPSS version 15.0 (SPSS Inc., Chicago,

Illinois, USA). For all statistical comparisons, the 5% significance level (two-tail) was used. Ethical clearance was obtained from the Human Research Ethics Committee (HREC) of the University of KwaZulu-Natal. The identified diversity challenges experienced by international students at higher education institutions were found to be: language and communication; social interaction across race/ethnicity; discrimination; Pedagogical approaches; finances; interracial conflict/tension; curriculum; assessment methods; lifestyle adjustment; campus services and facilities; classroom diversity; staff interaction and lastly, campus administration and policies. The results of this study established that financial issues (insufficient financial aid and part-time/casual jobs); a lack of platforms for social and interracial mixing; insufficient campus residency; and the unpreparedness of host families on arrival are the predominant diversity challenges experienced by international students at UKZN. Therefore, the writer attempted to provide recommendations from the results and findings to ensure a truly diverse and united university, some of which are prioritising racial cohesion and inter-racial activity at UKZN, and looking into providing opportunities/assistance to secure casual/part-time jobs at university for international students.

Keywords: International students, Higher Education, University, Culture, Diversity.

Introduction

International students represent an increasing emerging group of students at all major higher education institutions around the world. This can be attributed, in part, to the rapid globalisation trends over the past decade, and the growing desire of students to maximise the experience of their higher education and training. The growing appeal of international study is a now well documented phenomenon, and South Africa's place on the international map of possible destinations is still poorly understood. More importantly, there exists a paucity of information of the experiences and challenges of international students who have studied here or who are currently studying here.

Information on international students, their backgrounds, expectations, and perceptions is essential to higher education institutions.

Their expectations and perceptions are constantly changing as the environment, the demands of society and the economy evolve. Therefore, it is important for universities to keep abreast with international students to ensure that all expectations of international students are being met and that all the universities' goals relating to internationalization (i.e. redesigning the curricula, promoting internationalization and forging strategic partnerships) are achieved.

On a global scale, people, technology and ideas are moving steadily across borders at increasing rates. One of the most important changes is that international students are becoming more interested in learning new languages, participating in cross-cultural interactions and adapting their skills to various situations. However, the challenge is for higher education institutions to meet the expectations of international students faced in a globalised education market (educational and non-educational services) and to coordinate these multiple efforts so they have a better impact on all students, as well as the institution.

Being part of a widely diverse environment can assist international students' personal development and influence their campus involvements and activities. It was stated by Milem, Chang and Antonio (2005:5) that high levels of interracial interaction between students can be linked to a set of institutional practices and supportive campus climate which will in turn allow students to broaden their knowledge and acceptance of students from diverse cultures and backgrounds.

Therefore, this study aims to assess the post-choice perceptions of international students at UKZN, with special references to diversity challenges and to offer recommendations for an improved learning institution. The information gathered will be useful to higher education institutions in offering a conceptual plan of best practices that contribute to accommodating and maximizing benefits for international students with regards to diversity management.

International Students

The Institute of International Education (2004:7) suggests a possible definition of an international student is an individual who has relocated to another country mainly for study purposes- however it must be noted that

there are various kinds of international students which may include students undertaking distance learning programmes by an institution in another country or students registered in branch programmes facilitated by faculty from another country. Sekuler and Blake (2002) as cited by Mohammed (2009:7) note that studying and analyzing the background of people, how they perceive diversity and what they expect in terms of diversity helps in exploring their viewpoints about the multiplicity of cultures as well as the gain of unity. They further mention that studying perception can enable leaders to create strategies that ensure optimal perceptual outcomes.

South Africa is said to be emerging as one of the world's most popular study destinations. This is demonstrated in the rapidly increasing number of international students. According to the provisional Department of Education figures, as stated in the Higher Education South Africa booklet, since 1994, there has been a remarkable increase in international students from 12600 to over 64000 in 2008. This is almost 8% of a total of 800 000 students at the country's 23 public universities. Therefore, it is not unexpected that 71% of international students are from neighbouring SADC countries where English is commonly spoken – 45718 in 2008, along with 15% from the rest of Africa, and 11% from other continents.

Due to the use of English as the main language of instruction, the close proximity to most sub-Saharan African countries, reasonable fees and a lower cost of living, South Africa has become an exciting study destination. South Africa also boasts accessible and internationally recognized qualifications with a large higher education sector that is becoming a leader for high quality tertiary education relevant to the demands of a globalizing world (Yes-Asia Consultation 2001).

According to the University of KwaZulu-Natal Strategic Plan (2007-2016: 7) the university mission is as follows, 'A truly South African university that is academically excellent, innovative in research, and critically engaged with society'.

According to the UKZN Division of Management Information (2010), the number of international students has been consistent over the past five years until 2010 when it dropped to 5%.

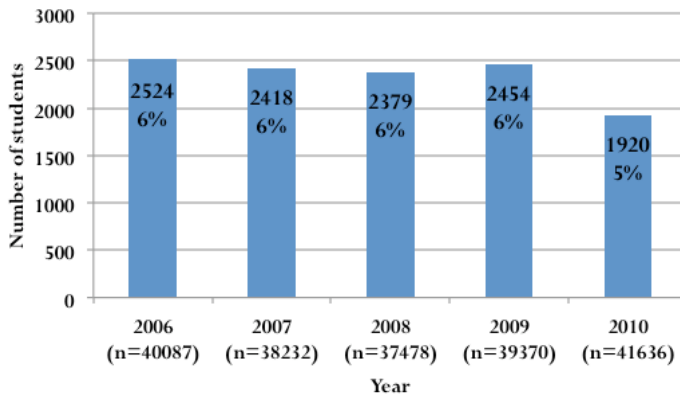


Figure 1: International Student Enrolments at the University of KwaZulu-Natal for 2006 – 2010 Source: Division of Management Information (2010)

According to the Division of Management Information (2010), international students attending UKZN represent over 100 countries worldwide and currently, only 640 out of 1 920 have English as their home language.

According to Arambewela and Hall (2009:12) some factors that affect the perceptions, choice of study destination and satisfaction of international students are:

- **Education:** The education construct highlights the fact that feedback from lecturers, good access to lecturers and quality of teaching are perceived to be the most important variables influencing student satisfaction.
- **Social:** The counselling services, social activities, close working relationships with other students and international orientation programs are considered most important variables within the social construct that influence student satisfaction.
- **Technology:** High expectations are formed by students, given the promises made by universities through their promotional material

and local agents or consultants in regard to the availability of basic facilities such as computer equipment.

- **Economic:** Variables such as casual jobs, migration opportunities, fees and the cost of living are considered within the economic construct.
- **Accommodation:** It was found that international students expect easily available student accommodation at a reasonable cost by universities or by private agencies which meet their minimum standards of comfort and conducive learning environments.
- **Safety:** International students expect universities to take sufficient safety and security precautions as potential students and their families are becoming more critical when choosing their educational institutions and lastly,
- **Prestige and image:** A high international image and the prestige of a university are attractive to students as it is expected that such image and prestige would create better career opportunities for them. These factors should be well addressed by a university as many challenges may arise for international students from these factors.

The following findings have been noted as challenges experienced by international students at higher education institutions:

- **Language and Communication-** Language limitations may make it difficult for international students to understand what is expected of them by lecturers and to participate in class discussions (Trigwell & Shale 2004:13). They go on to say that it is expected for instructors to deliver content by using use suitable language as the medium. It was said by Cross (2004:86) that the workload burden of foreign students could be indirectly increased by language difficulties. A key issue with language is the challenges that may arise by lecturers' language types and genres i.e. unfamiliar concepts, acronyms (Errey 1994 as cited in Ryan & Hellmundt 2003:11).
- **Social interaction across race/ethnicity-** It was said when forming social networks in a foreign country with diverse races and cultures, international students may feel helpless (Krause 2005). Ryan *et al.*

(2003:12) went on to say that establishing friendships in their new environment may be a challenge and that some tend to only socialize with other students from their home country.

- **Discrimination**

Kossek, Lobel and Brown (1996: 167) state that a common barrier to international students in a foreign institution is discrimination- this is another factor that may occur on various levels between students, staff, faculty etc i.e. gender, cultural, racial, sexual. Sadri and Tran (2002: 234) also state that this can cause high levels of alienation, dissatisfaction and exclusion.

- **Pedagogical Approaches**

According to the work of Errey (1994) as cited in Ryan *et al.* (2003:10) sources of difficulties posed for international students may be through the traditional question-answer conventions between teachers and students; the mismatch between the lecturer's teaching style and the student's learning style or the appropriateness of the curriculum to international students. Davis (1993:22) states that each individual looks at the world differently and the approaches in which each student learns may be influenced by the way their unique, individual personality perceives the world.

- **Finances**

Another major challenge facing international students is financial pressure, especially the students who do not receive financial aid and have costs such as living expenses, textbooks and tuitions (Veloutsou *et al.* 2004:27). They went on to state that the exchange rate between currencies could be high for certain international students coming from developing countries.

- **Interracial Conflict/Tension**

The racially and ethnically diverse institution can create tension, isolation, and negativity if not properly managed. By itself the diverse university cannot produce the positive results of which it is capable (Milem *et al.* 2005:22). A study was conducted in USA by Hurtado (1992). She states that the research literature suggests that instances of overt racial conflict should not be seen as isolated incidents or an abnormality but should be viewed as

an indicator of a more general difficulty of unsettled racial matters in universities and in society as a whole.

- **Curriculum**

Ryan *et al.* (2003:16) argues that a source of difficulty can be the appropriateness of the curriculum to international students. Schneider (1990:18) also states that in the presence of a diverse student body, disequilibrium as well as a climate of campus exclusion may be caused by a lack of diverse perspectives in the curriculum.

- **Assessment Methods**

Brown (2001:7) mentions that fairly assessing a diverse mix of students is integral in higher education. Feedback and assessment are both central components of learning and methods in both can pose problems for international students unfamiliar to the university system. Generally speaking, larger classes mean a more diverse and complex student mix. Spack (1997:9) states that, 'It is useful where possible to develop student skills and understanding related to the assessment requirements prior to their undertaking assessment tasks in order to lessen the marking workload associated with poor quality submissions'.

- **Lifestyle Adjustment**

Existing research has highlighted that the adjustment of international students is influenced by their assimilation of a country's culture which poses as a significant factor. Gordon (1964) as cited in Doble and Supriya (2011:27) asserts that, 'an immigrant is assimilated as soon as he has shown that he can get on in the country; that is, the immigrant has adapted to the lifestyle and cultural conditions of the host country. This includes the development of a basic proficiency in the language of the host country as well as a basic level of knowledge of native customs and values'.

- **Campus Services and Facilities**

The expectations of international students change as the economy and globalised requirements change. They often have basic expectations of facilities and campus services. A study done by Ward and Masgoret (2004:22) says that international students expect to have necessary services

and facilities available to them i.e. computing services, counseling, accommodation services, library services, international student office, student orientation services, sports and recreational facilities, health services, clubs and societies, financial advice services and student association to name a few.

- **Classroom Diversity**

It can be said that a diverse classroom of international students provides opportunities for learning about other cultures, values and viewpoints, and leads to a better democratic education. However, Brown and Dobbins (2004: 158) as cited in Morris (2004:31), find that ‘contexts in which stereotypes are salient may detrimentally affect the performance of students of colour as well as their expectations for their experience in the classroom’.

- **Staff Interaction**

In a tertiary institution, developing a suitable environment where students are able to interact with their lecturers is imperative. It is also useful to appoint volunteers from senior students to be hosts of the new international students who enter the university Hellsten and Prescott (2004:32). Gundara (2000:25) argues that lecturers are responsible for not only mentoring and teaching students from diverse cultural backgrounds but also have the responsibility to educate these students on how to live in a society of diverse cultures.

- **Campus Administration and Policies**

In the case of campus policies, Milem *et al.* (2005:17) said that an institution’s commitment to diversity should permeate policy in all areas of institutional life.

Campus administration should encompass well-organized processes and diversity enriched systems to assist the enrollment of international students as well as the transfer of course credits as it was stated by Cubillo, Sanchez and Cervino (2006:11) that these processes are the first impression students acquire of the institution which often influences their expectations and attitude towards the institution upon arrival. A generic model for campus diversity has been used in this study and is presented.

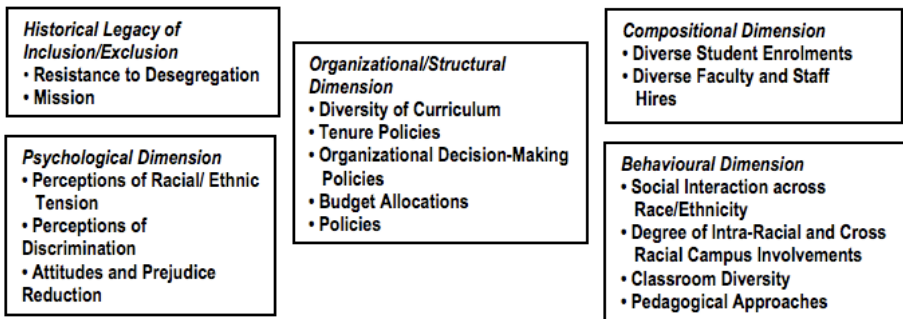


Figure 2: A Generic Campus Diversity Model for Universities. Source: Hurtado and colleagues (1998; 1999) as cited in Milem *et al.* (2005:16)

Diversity Management

South African universities are faced with a challenge of adapting educational and non-educational factors to the highly diverse population of international students. According to Cross (2004:392) in Higher Education settings diversity means, ‘Opening up the university to different people, all interested in studying at this university. It means that all staff should be able to meet the needs of each individual. It means accommodating as many people as possible with their differences. It means wishing to know about the other. It means different things to different institutions’.

Purposes of Managing Diversity in Higher Education

Managing diversity can be a multidimensional management approach achieved by understanding the perceptions of diversity. However, it is essential for the purpose of this study to understand why diversity is so important at university and what benefits it creates for the international student. Eight reasons are offered by Thompson and Cuseo (2009:4):

1. ‘Diversity *expands worldliness*’. It is said that campus may be the first time one has the opportunity to have proper interaction with a diverse group of people. In many cases, whether one tries or not, groups of people are often segregated from other groups, be it

churches, schools, residential areas etc. However, campus offers people the opportunity to connect with various groups of people

2. ‘Diversity *enhances social development*’. In the event that an individual is given the chance to interact with various groups of people, it offers the opportunity to broaden one’s social horizons by expanding the pool of people with whom one can associate and develop relationships. This also offers one stimulating and interesting conversations with people who are different to them
3. ‘Diversity *prepares students for future career success*’. According to Jayakumar (2008:618), major American businesses have made clear that the skills needed in today’s increasingly global market place can only be developed from college through exposure to widely diverse people, cultures, ideas and viewpoints. In other words, the importance of managing diversity is crucial in higher education in such a way that it prepares students for the workplace. A study by Bikson and Law (1994:19) shows that colleges in the US are failing to develop students who can work effectively with individuals whose norms, preferences, beliefs, styles and values are different from their own.
4. ‘Diversity *prepares students for work in a global society*’. It is a certainty that no matter what job one gets into, or what profession one enters, they will encounter working with clients, customers, coworkers, employees and employers from diverse backgrounds-worldwide. Jayakumar (2008:620) stated that racial and ethnic diversity is associated with ‘active thinking skills, intellectual engagement and motivation, and variety of academic skills’. In addition, many students support the fact that managing cultural diversity has a positive impact on intellectual and social skills, racial and ethnic diversity is also associated with growth in leadership skills, cultural awareness and cross-racial understanding (Astin 1993:189). Students believe that these benefits are gained when educated in a culturally diverse environment and promotes personal growth.

5. 'Interactions with people different from ourselves *increase our knowledge base*'. Experience and research have often indicated that people learn more from people who are different to them opposed to people who are similar. This can be thought of as- when a person encounters new knowledge or material, they 'think harder', therefore, they will do the same when they meet and interact with diverse people. Bikson and Law (1994:20) confirm this point by stating that the most is learnt from those whose experiences, beliefs, and perspectives are different from our own, and these lessons can be taught best in a richly diverse intellectual and social environment.
6. 'Diversity *promotes creative thinking*'. Having a multi-perspective mind has advantage. Diversity contributes to expanding one's capacity for viewing problems or issues from multiple angles and vantage points. 'These diverse vantage points work to your advantage when you encounter new problems in different contexts and situations. Rather than viewing the world through a single-focus lens, you are able to expand your views and consider multiple options when making decisions and weighing issues of, for example, morality and ethics' (Thompson & Cuseo 2009:23).
7. 'Diversity *enhances self-awareness*'. People with different experiences and backgrounds offer more to learn from and can sharpen one's self-insight and self-knowledge by comparing and contrasting their backgrounds and life experiences with the experiences of others. When one is more self-aware, they are more capable of making well thought out and informed decisions about their professional and academic future.
8. 'Diversity *enriches the multiple perspectives* developed by a liberal arts education'. It is known that people often become self-indulged and tend to move away from an afro-centric approach to life. However, the power of a general education is magnified by diversity by contributing to the liberation of people. When a person moves beyond themselves, they are able to gain a panoramic angle of the

surrounding world and a more complete view of where and how they fit in.

Diversity and Higher Education

‘Over the course of three and a half decades, the concept of diversity and its educational agenda have evolved to encompass a broad set of purposes, issues, and initiatives on college campuses’ (Milem *et al.* 2005:23). Higher Education should uphold a multifocal approach that incorporates the success of underrepresented students, a platform for change and climate, research and educational requirements that teaching all students from a diverse society involves, and lastly institutional viability and vitality. Some of the challenges of Diversity in Higher Education are outlined below.

Smith (1995:12) identified four distinct challenges of diversity in the context of Higher Education. Utilizing this framework, Table 1 depicts the problems and opportunities associated with each of the various challenges.

Representation focuses on the presence or absence of particular groups in the college campus and seeks ways to increase their number. This challenge is the outcome of the accumulated distortions of the past.

The second challenge, campus climate, identifies the fundamental connections between educational attainment and institutional environment, and aims to change those aspects of campus climate that prove inappropriate for a particular group of students. Here, the challenge is largely due to the common stereotypes and prejudices. Smith (1995:12) suggests that merely making provisions to accommodate disadvantaged students will not suffice and that diversity-positive initiatives should be considered for creating a supportive climate, giving disadvantaged students a feeling of empowerment and meaning.

The third challenge, educational mission, conveys the disparity in the performances of students from disadvantaged backgrounds who are under- or unprepared specifically with deplorable schooling. It was said by Smith (1995:13) that a realization of all students benefiting from an education that promotes the understanding and capability for a multi-perspective, multi-racial and multi-gendered world is a challenge.

The fourth challenge as stated by Smith (1995:14) is transformation and joins all other dimensions of diversity in a primary review of the university/ educational institutions organizing conjectures- educational, intellectual, institutional and societal. The dilemma of discrimination and widespread inequality needs to be solved with involvement of the community and social sensitive community for improved integration.

Table 1: A Framework for Management of Diversity Source: Smith (1995:14)

PROBLEMS	CHALLENGES	OPPORTUNITIES
Accumulated distortions of the past	Representation	Reservation Positive discrimination Quota
Prejudice and Stereotype	Campus climate	Diversity positive initiatives Warm and supportive Empowerment
Disparity in performance	Educational mission	Reform curriculum Remedial education Provide life skills
Inequality and discrimination	Transformation	Social sensitivity Involvement of community Integration

Diversity at the University of KwaZulu-Natal

South Africa has an extensive Higher Education sector of which UKZN is a member. It consists of, ‘21 Universities, 15 Universities of Technology, 50 Teacher Training Colleges and scores of Agricultural and Nursing Colleges’ (UKZNTOUCH 2010:5). In addition, there is a growing private tertiary sector, whose institutions range from Colleges to Universities. The research output generated by the 12 500 full time academics and a similar number of

researchers working for research councils, institutes and companies, is the biggest in Africa - competing with the best in many developed countries.

UKZN is ranked as one of the top ten universities in South Africa. An independent project known as the Google College Rankings ranks universities and colleges around the world using Google. According to the Google College Rankings (2010), the University of KwaZulu-Natal ranks seventh in the country. According to the UKZN website, the university is committed to academic excellence and advances knowledge through globally competitive teaching, learning, scholarship, research, innovation and academic freedom. UKZN has nearly 400 000 students and is a truly South African university that reflects the diverse society in which it is situated. UKZN embraces internationalisation and diversity as a vital element of its goals and values.

University Goals

According to the *University of KwaZulu-Natal Strategic Plan (2007-2016: 12)* the University will strive for African-Led Globalization by:

- **Redesigning the curricula**

‘Faculties and Schools will design their curricula to incorporate indigenous and local knowledge and knowledge systems as far as possible’.

- **Promoting internationalization**

‘The University will support carefully selected student exchange programmes that bring students from other countries to the University and further expand our students’ international opportunities, particularly exposure to Africa, to enrich the learning experience for all’.

- **Forging strategic partnerships**

‘Strategic partnerships at the continental and global levels are critical in placing UKZN’s African scholarship in the wider international arena and in taking on some of the challenges of producing African scholarship’.

Research Methodology

The objectives of this study is to identify the challenges regarding diversity experienced by international students at higher education institutions; assess

the perceptions of international students regarding which of these challenges are the most predominant at UKZN and lastly, make recommendations accordingly to improve the perceptions and experiences of international students regarding diversity at UKZN.

Study design and sampling: In this study, the questionnaire survey was used making it impractical to question all 1920 international students in the population. Therefore, it was necessary to draw a sample. The researcher distributed questionnaires to the International Students Office at each of the five campuses making up UKZN. The Division of Management Information provided the researcher with an updated listing of enrolled international students at UKZN. International students were randomly chosen by the generation of random numbers to achieve the objectives of the study. They were then emailed and invited to participate in the study by picking up and returning the questionnaire from the International Students Office.

Statistical analysis: All statistical analysis has been conducted using SPSS version 15.0 (SPSS Inc., Chicago, Illinois, USA). For all statistical comparisons, the 5% significance level has been used.

Results

A total of 300 questionnaires were distributed, with 280 completed questionnaires returned. All questionnaires were unspoilt and adequate for analysis. The response rates were consistently high across all campuses of the University (88 – 97%).

Table 2: Dispatched Questionnaires by Campus and Received Responses

Campus	Number distributed	Responses	%
Howard College	110	105	95
Edgewood	50	44	88

Westville	65	63	97
PMB	45	40	89
Medical School	30	28	93
Total	300	280	93

Table 3: Demographic profile of respondents

Characteristics	International Students	
	Count	%
Gender:		
Male	152	54.3%
Female	128	45.7%
Age in years:		
17-19	40	14.3%
20-25	157	56.1%
26-30	52	18.6%
31-35	21	7.5%
>35	10	3.6%
Race group:		
African	156	55.7%
Indian/Asian	30	10.7%
White	70	25%
Other	24	8.6%
Level of Study:		
Undergraduate	130	46.4%
Honours	74	26.4%
Masters	53	18.9%
Doctorate	17	6.1%
Post-doctorate	6	2.1%
Is English your native language?		
Yes	138	49.3%
No	142	50.7%

The results reflect 54.3% of the respondents were male and 45.7% of the respondents were female. The majority of the respondents were under the age of 25 (70.4%). The majority of the respondents were African (55.7%) followed by White (25%) which was followed by Indian (10.7%). Lastly, the smallest number of respondents was of ‘other’ unspecified race groups (8.6%). Nearly half (46.4%) of the international students were pursuing their undergraduate education. Just over half (50.7%) of students were not first language English speakers.

Table 4: Perceptions of international students on diversity challenges at UKZN (n=280).

Item	Disagree	Undecided	Agree
Unfamiliar language is used by lecturers	81.1%	1.4%	17.5%
Insufficient language courses available	61.8%	11.4%	26.8%
Assessment methods are unsuitable	64.3%	8.2%	27.5%
Group work is difficult	66%	4.3%	29.7%
Financial aid is not easily accessible	16.4%	25.7%	57.9%
University fees are less affordable than home	59.2%	5.5%	35.3%
Insufficient opportunities for casual work	6.7%	37.9%	55.4%
Hosts are inadequately prepared	16.1%	12.5%	71.4%
Insufficient accommodation available	27.5%	11.4%	61.1%
Residence is not a conducive learning environment	19.6%	50%	30.4%
Security is inadequate	69.7%	7.5%	22.8%
Computer laboratories are inadequate	75%	1.4%	23.6%

Limited opportunities for inter-racial activities	19%	10.3%	70.7%
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Discussion and Recommendations

The first objective of the study was to identify the challenges regarding diversity experienced by international students at higher education institutions, which was achieved earlier in the paper. The findings of this study help identify the perceptions of key challenges that students face at one of the largest universities in the country, as well highlights where these students are not dissatisfied. The anonymity of this survey, and the large number of international students in this study assisted in providing an accurate reflection of their experience. The second objective of the study was to assess the perceptions of international students regarding which of these challenges are the most predominant at UKZN. The predominant challenges identified by international students were:

- 1) Poor accessibility of financial aid
- 2) Difficulty in securing casual employment
- 3) The perceived unpreparedness of host families
- 4) Insufficiency of accommodation, and
- 5) The limited opportunity for inter-racial activities

Surprisingly, issues pertaining to language difficulties, teaching and assessment methods, and safety were not perceived as challenges by the majority of international students surveyed.

International students' debt can grow immensely due to increases in various education-related costs, higher tuition, and changes in the availability of financial aid. UKZN Central Students' Representative Council President (2009) Ms Bavelile Hlongwa as cited in the UKZNTOUCH Magazine by Maharaj (2010:22) believes Government should look at the possibility of freeing up funding from other State departments and diverting it to Higher Education Institutions. This is convergent with the results which indicate the majority of respondents agree that as an international student at UKZN, financial aid is not easily accessible.

Financial restrictions make it difficult for international students to earn money while studying and leave them with few feasible opportunities. According to Seow (2005:34) Australia allows international students to work up to 20 hours a week and almost all international students take advantage of this facility. Arambewela *et al.* (2009:11) found that a concern for students is the lack of opportunities to obtain a casual/ part-time job on campus. This study indicates a convergence as the majority of respondents agreed to there being insufficient opportunities to obtain part-time/casual jobs for international at UKZN.

Ward and Masgoret (2004:22) state that international students expect to have necessary services and facilities available to them such as accommodation. They go on to say that a clear expectation regarding campus residence should be created for these students as arriving in a foreign country with no accommodation is unacceptable. Further to this, Seow (2005:45) states that host families should receive training and prepare for international students as they play a vital role and influence in their lives. Failure to do so may result in low confidence levels of international students and may create the feeling of an unsupportive environment for them. The majority of international students at UKZN indicated insufficient accommodation and unpreparedness of host families as challenges at UKZN.

It was said when forming social networks in a foreign country with diverse races and cultures, international students may feel helpless (Kossek *et al.* 1996:123). Racial/ethnic student organizations provide students with opportunities for identity development, cross-cultural learning, and peer support. Social facilitates including unions and catering facilities, religious and sports clubs, and societies of special interest can accommodate international students from different cultures (Ward *et al.* 2004:12). It can be seen that 70.7% of respondents indicated limited opportunities for inter-racial interaction at UKZN.

The last objective of the study was to make recommendations accordingly to improve the perceptions and experiences of international students regarding diversity at UKZN which will now be addressed. The study is able to recommend that:

- Financial aid has been highlighted as a challenge to international students, especially to students from the SADC regions. While financial

resources remain scarce for all students of higher education in South Africa, the increasing appeal of the country as a site for higher education necessitates some investigation into possible methods of assisting foreign students financially. Existing policies should also be clear on what kind of financial assistance foreign students can expect, and the minimum financial resources they should be required to have in order to live and study in South Africa.

- The lack of opportunities for casual work may be viewed as symptomatic of the broader problem of unemployment and lack of employment opportunities facing South Africa at large. However, the unique financial vulnerabilities of international students does require that opportunities be created or that assistance be available to secure such opportunities. The possibility of extending graduate assistant opportunities to international students and of broadening casual employment at the university in a directed effort to help support these students must be pursued.
- One of the key reasons cited for the growing popularity of South Africa as an international student choice is the racial and cultural diversity of the country. It is therefore unacceptable that international students report dissatisfaction with the limited opportunity for inter-racial activities. In response to this, and in keeping with a broader socio-ethical imperative, universities must prioritize racial cohesion and inter-racial activity.
- Issues pertaining to the availability of sufficient accommodation may also allude to the general difficulty of provision of accommodation to university students. This can be addressed by advising international students on the availability of accommodation before they arrive in South Africa, or by clearly outlining a reasonable expectation regarding the provision or assistance in securing accommodation. In addition, where institutions are involved in the use of host families, there exists an obligation on such institutions to ensure the adequate training and education of these households. The use of an objective measure for the acceptability and preparedness of such families must be in place, and exit interviews from hosted students may be used a feedback mechanism.

While the study was limited to the University of KwaZulu-Natal, and findings may not be generalised to other institutions, the discussion and recommendations may serve to inform the international student offices of any higher education institution in the country. Further research could gainfully be directed towards exploring the perceptions of international students at other Higher Education Institutions around KwaZulu-Natal and in the rest of the country.

Conclusion

The investigation is exploratory and has attempted to identify the diversity challenges international students experience at higher education institutions, assess the perceptions of international students regarding which of these challenges are the most experienced at UKZN, and lastly, make recommendations accordingly to improve the perceptions and experiences of international students. The findings of this study corroborate that diversity management is essential to international students in higher education institutions. The main diversity challenges identified in this higher education institution were social interaction across race/ethnicity; finances; and lifestyle adjustment.

The information and recommendations of this study will be useful to UKZN on improving diversity management in certain areas that affect international students negatively. It will also be useful to all higher education institutions in accommodating and maximizing benefits for international students with regards to diversity management. The perceptions of international students at UKZN suggest that diversity is an important issue in contemporary management and that there is still much work to be done in the way of changing perceptions, attitudes and behaviours before diversity can be effectively managed.

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The Postgraduate Service Experience, Service Satisfaction and Service Quality: A South African Case Study

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Abstract

This paper presents the results of an exploratory study examining the relationship between the postgraduate (PG) students' perception of PG service quality, their service experience and satisfaction with the PG service, by surveying the 2011 cohort (816) of graduating master's and doctorate postgraduates of one of the top five research universities in South Africa using specially developed and validated PG service quality (PGSQUAL), PG service experience (SERVEXP), and a single item PG service satisfaction (SERVSAT) measuring instruments. By drawing heavily on the services marketing/quality literature, relationships were proposed among the aforementioned variables, which relationships were assessed using both correlation analysis and structural equation modeling. It became evident that there is a significant association between the students' perception of the overall SERVEXP and overall PGSQUAL, as well as between their perception of their overall SERVEXP and overall SERVSAT.

Keywords: postgraduate service encounter, postgraduate service quality, service experience, service satisfaction.

Introduction

Quality assurance of PG education is becoming increasingly important and worldwide there is a push to encourage universities to be more accountable for PG learning. Governments are also asking higher education institutions

(HEIs) to strengthen research, knowledge creation and uptake for our knowledge society, and to achieve this, universities need to ensure that they are providing high quality PG service. In addition to academic (external) audits, internal PG service experience and satisfaction surveys can serve as appropriate quality assurance processes.

Student experience and satisfaction are closely linked, and student satisfaction, which is associated with their perceptions of service quality, has become an extremely important issue for universities and their management. Whilst service quality of undergraduates has been extensively measured, postgraduate-based (PG) research, especially in South Africa has been negligible. Furthermore, the instruments used to assess service quality in education are in a state of development.

There has been considerable debate and discussion within the literature on the relationship between service quality and satisfaction. For instance, some researchers (Bolton & Drew 1991) argued that customer satisfaction is an antecedent of service quality, whilst others (Carillat, Jaramillo & Mulki 2009) assert that service quality leads to customer satisfaction and behavioural intentions. The service quality-service satisfaction-service performance relationship has also been the topic for many a research (Cronin & Taylor 1992). However, in addition to not recognizing the service experience, very little research has been conducted to examine the relationship among the aforementioned in the context of the PG research environment.

Considering that education is essentially a service industry, and that the concept of 'student as customer' is not new (Craford 1991; Yorke 1999 as cited by Douglas, McClelland & Davies 2008), its management practices are typically concerned with issues such as quality, which fall within the aegis of services marketing. Thus what is applicable to consumers (customers) generally should also, from this perspective, be applicable to PG students.

According to Angell, Heffernan and Megicks (2008), given that education is a service and the PG education environment becoming increasingly competitive, and whilst service quality of undergraduates has been extensively measured, postgraduate-based research, has been negligible.

By drawing heavily on the service quality literature, this paper presents an attempt to address the shortcomings alluded to above by presenting the findings of a survey conducted among a cohort of masters and doctorate graduates at a large research university in South Africa to:

- Determine the PG students' perception of the overall postgraduate service quality (PGSQUAL) and their overall service experience (SERVEXP).
- Ascertain the association between the PG students' perception of the postgraduate service quality (PGSQUAL), their overall service experience (SERVEXP) and their overall satisfaction with their PG service experiences (SERVSAT).

This paper is structured as follows: a discussion of the PG service encounter is followed by discussion of PG service and service quality as well as the measurement of higher education service quality. The research methodology, findings and discussion thereof is followed by the conclusions and limitations of the study and future research possibilities.

The Postgraduate Service Encounter, the Service Experience and Service Quality

Service delivery and customer satisfaction in an education environment are dependent on the personal interaction between students and staff. The personal interaction and labour intensive nature of this service translates into a potentially highly heterogeneous quality service experience (de Jager & Gbadamosi 2010: 253). These interactions which are known as service encounters, are recognized within the service quality research field as a key concept (Zeithaml & Bitner 2000; Dale 2003), since what happens during the encounter is important in understanding what affects the customers' perception of service quality. It has also been well articulated in the service quality literature that each encounter impacts on the service consumer's overall impression and evaluation of the service and ultimately on their perception of service quality.

Dann (2008: 335) cites several researchers (Zeithaml, Bitner & Gremler 2006; Stodnick & Rogers 2008) who frequently cite higher

education as a key example of a service with limited tangible outputs. However, while it may be true that higher education is classified as a service product with the primary outputs being the mental development, knowledge, skills and graduate outcomes rather than the ownership of an object such as a degree certificate that represents tangible evidence of the education service encounter, this only encompasses the ‘technical’ aspects. The other side of the story is the ‘psychological’ or subjective personal reactions and feelings experienced by consumers when they consume the service. This phenomenon has been called the service experience and has recently been found to be an important part of consumer evaluation of and satisfaction with services (Otto & Ritchie 1995: 167).

Perhaps the most straightforward manner by which to apply the services marketing perspective is to borrow general marketing measurement instruments directly from the field and apply them to PG education. Indeed most research of this nature has focused on the evaluation of service quality and more on the technical and functional aspects of service delivery (Ritchie & Otto 1995: 167).

According to Alridge and Rowley (1998: 198), work on approaches to the evaluation of the student experience can be divided into two loosely bound categories, namely, methods that focus on assessing teaching and learning and, methods that assess the total student experience. More recently there has been a wider acknowledgement that the totality of the student experience of an institution is a useful perspective to adopt in student satisfaction in marketing terms, since service quality is also connected to satisfaction with the overall performance of a service.

In view of the above, the purpose of this paper is to enhance our understanding of the PG service experience and service quality so that policies and strategies could be developed to facilitate the quality and quantity of postgraduates.

Service Experience, Service Satisfaction and Service Quality

As became evident from the brief literature review, there has also been considerable debate and discussion within the literature on the relationship between service quality and satisfaction. Some researchers (Bolton & Drew 1991) argued that customer satisfaction is an antecedent of service quality,

whilst others (Carillat, Jaramillo & Mulki 2009) assert that service quality leads to customer satisfaction and behavioural intentions.

On the basis of the literature reviewed above, and in order to further explore the relationships among service quality, service experience and service satisfaction in the context of PG research education, it is proposed that:

- P1: The SERVEXP as perceived by PG students is associated with their perception of PG service quality (PGSQUAL).
- P2: The PGSQUAL as perceived by PG students is associated with their overall satisfaction (SERVSAT) with the PG service.
- P3: The SERVEXP as perceived by PG students is associated with their SERVSAT.

Assessing Service Quality in Higher Education

While there has been sufficient consensus on the importance of service quality issues in HE, the identification and implementation of the right measurement instrument, however, remains a challenge that practitioners who aim to gain a better understanding of the quality issues with an impact on students' experiences face (Oliveira-Brochado & Marques 2007, as cited by de Jager & Gbadamosi 2010: 251). Oldfield and Baron (2000: 85) suggest that there are three underlying factors of HE service quality namely, requisite elements (encounters which are essential to enable students to fulfill their study obligations), acceptable elements and functional elements.

The conceptualization and measurement of service quality as a subject and service quality perceptions has been widespread (Brady 2001); however measuring service quality in HE has received limited attention (Firdaus 2006), and a review of the literature reveals that the most popular scale is SERVQUAL (Parasuraman Zeithaml & Berry 1988). Also known as the GAPS model since service quality is conceptualized as the gap between customer expectations and perceptions, the SERVQUAL instrument, presents the respondent with 22 service attributes grouped into five dimensions, namely tangibles, reliability, responsiveness, assurance and empathy, which they rate using a Likert-type scale response format (Ford Joseph & Joseph 1999: 172). According to Parasuraman *et al.* (1988),

quality evaluations as perceived by customers stem from a comparison of what customers feel that the organization should offer (that is their expectations) and their perceptions of the organization providing the service.

There has been a growing body of literature on the search for a general scale and instrument for the measurement of education service quality, and although there is substantial research evidence in the literature to support the use of the SERVQUAL, this instrument has not been without criticism (Cronin & Taylor 1992; Alridge & Rowley 1998: 200). Some of the criticisms (Alridge & Rowley 1998: 200) include the need to ask the same questions twice, and the fact that the instrument captures a snapshot of perceptions at one point in time. To overcome some of the criticisms, Alridge and Rowley (1998) opted to survey perceptions only and exclude expectations in their survey of student satisfaction. According to Hair (2006: 11), the work carried out so far using SERVQUAL in a higher education context would seem to suggest that the instrument can be used successfully, as long as the modifications are kept to a minimum. However, the author goes on to state that there is little or no research specifically using SERVQUAL on PhD students or on supervisors.

In their quest to develop better research instruments, which are also more appropriate to the nature of the service, some researchers (Drennan 2008) report on the PREQ (Postgraduate Research Questionnaire), which was introduced in Australia in 2002 against a background of increased attention on quality and accountability in the Australian higher education sector. PREQ is a multidimensional measure of graduate students' experience of research and research supervision and is based on the principle that student's perception of research supervision, infrastructural and other support, intellectual climate, goals and expectations will influence their evaluations of the outcomes achieved as a consequence of their research experience (ACER 2000 as cited by Drennan 2008: 490).

Other researchers such as Ginns, Marsh, Behnia, Cheng and Scalas (2009) further adapted PREQ to develop the SREQ (Student Research Experience Questionnaire) to investigate the PhD students' evaluations in which the focus was on the overall postgraduate experience at the broad level of university and disciplines (faculties and departments) within a university rather than at the effectiveness of the individual supervisor. Ginns, *et al.* (2009: 582) further emphasize that the SREQ's design applies

theory derived from studies of teaching and learning in higher education to the experiences of postgraduate research students. The purpose of the 28-item PREQ is to gather data concerning the experience of research degree (masters and doctorate) graduates with respect to broad aspects of their studies. The PREQ scale focuses on six areas of research higher degree experience, namely, supervision, climate, infrastructure, thesis/dissertation examination, goal clarity, and generic skill development. Ginns, *et al.* (2009: 580) cite Marsh, *et al.* (2002) who indicated that PREQ had a clear factor structure, and the scales had acceptable internal consistency estimates of reliability.

For the purpose of this study, the PGSQUAL (postgraduate service quality) instrument (Table 1) was developed primarily by adapting the SERVQUAL instrument (Table 1) which encapsulates the perceptions-expectations gap covering all five service quality dimensions (Parasuraman, *et al.* 1988), and incorporating certain elements from the PREQ and SREQ instruments, as was done in previous studies (Stodnick & Rogers 2008; Danny 2008; Drennan 2008). The final PGSQUAL instrument comprised 26 items resulting from the adaptations, which entailed making minor changes to the SERVQUAL statements to fit the context, combining expectations and perceptions into a single score (Govender 1998), and incorporating certain elements of the PREQ and SREQ.

With respect to the items reflected in Table 1, PG students were required, with respect to the overall service they received at the university, to indicate their rating to each item on the following continuum: 1= Worse than expected; 5= better than expected.

Table 1: Postgraduate Service Quality (PGSQUAL) Instrument

Items	Label	Criteria
Accuracy of PG student records	SQ1	Reliability
Ability of staff to understand PG students' needs	SQ2	Empathy
Willingness of staff to assist PG students	SQ3	Responsiveness
The courteousness of staff towards PG students	SQ4	Responsiveness

The promptness of the service offered to PG students	SQ5	Responsiveness
The convenience of operating hours for PG students	SQ6	Responsiveness
The personal attention given by staff to PG students	SQ7	Empathy
The confidentiality with which staff deal with PG issues	SQ8	Empathy
The ability of staff to answer PG students' queries	SQ9	Reliability
Delivering on promises to PG students do something by a certain time	SQ10	Reliability
Always having PG students' best interest at heart	SQ11	Empathy
Sincerity of staff in solving PG students' problems	SQ12	Responsiveness
Performing the PG service right the first time	SQ13	Reliability
The personal attention PG students receive	SQ14	Empathy
Never being too busy to respond to PG students' requests	SQ15	Responsiveness
Telling PG students exactly when the services will be performed	SQ16	Reliability
Financial support for PG research activities	SQ17	Tangibility
Honouring promises made to PG students	SQ18	Reliability
Research support services provided for PG students	SQ19	Reliability
Opportunities provided for social contact with other PG students	SQ20	Empathy
Research ambience in the department/ school	SQ21	Tangibility
Modernness of library resources and services	SQ22	Tangibility
Efforts made to ensure that PG students develop an understanding of the standard of work expected	SQ23	Empathy

Seminar programmes provided for PG students	SQ24	Assurance
Freedom allowed to PG students to discuss their research needs	SQ25	Assurance
Opportunities provided to PG students to become integrated into the broader department/school/university research culture	SQ26	Assurance

Postgraduate Students’ Overall Research Experience - SERVEXP

Since the overall PG student experience is also a useful perspective to adopt in student satisfaction in marketing terms, based on principles underlying the SREQ instrument, the 6-item SERVEXP questionnaire was developed. PG students were requested to refer to their overall PG experience at the particular university and, indicate their level of agreement with each statement reflected in Table 2, where 1= Strongly Disagree; 2= Disagree; 3= Neutral; 4= Agree; 5= Strongly Agree.

Table 2: SERVEXP Items

OE1	I further developed my problem solving skills	1	2	3	4	5
OE2	I shaped my analytical skills	1	2	3	4	5
OE3	I feel confident to tackle unfamiliar problems	1	2	3	4	5
OE4	I have learned how to write and confidently present a paper at a conference	1	2	3	4	5
OE5	I have learned to develop my ideas and present them in a logical and scientific way	1	2	3	4	5
OE6	I have learnt how to publish a paper in scientific journal	1	2	3	4	5

Postgraduate Students’ Overall Satisfaction

Considering that the intention was to get an overall (summary) measure of the level of overall service satisfaction, a single item 5-point Likert type

question was included, which required respondents to indicate their agreement with the following statement 'Overall, I was satisfied with the quality of my PG experience,' on a 5-point scale with the following points: Strongly Disagree, Disagree, Agree and Strongly Agree.

Methodology

816 masters and doctorates who graduated in 2011 comprised the population and the researchers targeted the entire population, rather than selecting a specific sample. The name list and e-mail contact details of the graduates was obtained from the graduation office. Two approaches were used to reach the sample. The electronic version of the questionnaire, using QuestionPro (www.QuestionPro.com 2010) was sent via e-mail to all graduates. This was supported by hardcopies of the questionnaire accompanied by an explanatory letter explaining the objectives of the survey and instructions on how to complete and return the questionnaire, which were distributed at the graduation venues in special envelopes together with the degree certificates. Graduates were asked to return the completed questionnaire or complete the survey within a month from the date of the graduation.

Empirical Findings

Response Rate

The survey was conducted over a month (April-May 2011), during which period, weekly e-mail reminders were sent encouraging the graduates to participate by completing the on-line questionnaire. Although 221 graduates viewed the questionnaire, 117 completed the questionnaire representing a response rate of 53%. Thus the results, which will be inferred from this study will be based on a sample of 221, since only those who viewed the questionnaire had been 'reached' or unintentionally targeted out of a population of 816.

Reliability and Validity of the Research Instruments

Since the PGSQUAL and SERVEXP instruments were newly constructed multi-item instruments, their validity and reliability was ascertained to

control for measurement errors (Hair, Bush and Ortinau, 2000). SERVSAT was measured using a single item question, thus not necessitating validation.

Postgraduate Service Quality: PGSQUAL

Factor analysis was carried out using the Principal Components Analysis method with varimax rotation. The outcome of this process reveals that the cumulative variance, which two factors explained was 72.180%. Furthermore these factors have Eigen values over 1. The table of the initial eigenvalues and cumulative variations of the factors is available upon request.

The rotated factor loadings table was examined to find out which questions were not loading at all on the factors and, could hence be eliminated from the data set and, then re-ran the factor analysis procedure. Although the literature suggests that a factor loading of 0.3 or greater can be considered to be significant (Kline 1994), given the large number of items in the PGSQUAL scale, it was advisable to adopt the principle that factor loadings of 0.4 or higher are considered to be significant, otherwise the number of items in the data set will not be reduced and the key reason/purpose of factor analysis, which is to reduce the number of items to a comprehensible set of items, will have been defeated.

From Table 3 it is further evident that all the items loaded onto the two factors with loadings exceeding 0.4. Factor 1 which comprised items (18 items) SQ1 – SQ16; SQ18; SQ23 was named SERVICE OFFERED TO STUDENTS and Factor 2 which comprised the remaining 8 items (SQ17; SQ19; SQ20-SQ22; SQ24-SQ26) was labelled as RESOURCES OFFERED TO STUDENTS.

Coakes and Steed (2003:140) state that there are a number of different reliability coefficients and one of the most commonly used is the Cronbach's alpha, which is based on the average correlation of items within a test if the items are standardised. The alpha values of the two factor PGSQUAL instrument, namely, SERVICE OFFERED TO STUDENTS (0.978) and RESOURCES OFFERED TO STUDENTS (0.910), showed that the PGSQUAL instrument had good internal consistency amongst the factors, since alpha values of 0.7 and above are generally regarded as acceptable (Coakes & Steed 2003).

Table 3: Rotated Component Matrix

		COMPONENT	
		1	2
Willingness of staff to assist PG students	SQ3	0.868	0.2
The courteousness of staff towards PG students	SQ4	0.861	0.178
Delivering on promises to PG students do something by a certain time	SQ10	0.833	0.28
The promptness of the service offered to PG students	SQ5	0.817	0.338
Performing the PG service right the first time	SQ13	0.813	0.398
Ability of staff to understand PG students' needs	SQ2	0.797	0.351
The personal attention PG students received	SQ14	0.794	0.442
The ability of staff to answer PG students' queries	SQ9	0.78	0.327
The personal attention given by staff to PG students	SQ7	0.768	0.427
Sincerity of staff in solving PG students' problems	SQ12	0.763	0.466
Telling PG students exactly when the services will be performed	SQ16	0.747	0.521
Never being too busy to respond to PG students' requests	SQ15	0.735	0.477
Always having PG students' best interest at heart	SQ11	0.689	0.539
The confidentiality with which staff deal with PG issues	SQ8	0.679	0.462
Efforts made to ensure that PG students develop an understanding of the standard of work expected	SQ23	0.663	0.5
Accuracy of PG student records	SQ1	0.656	0.352
Honouring promises made to PG students	SQ18	0.648	0.574
The convenience of operating hours for PG students	SQ6	0.634	0.39
Financial support for PG research activities	SQ17	0.263	0.798
Research support services provided for PG students	SQ19	0.407	0.796
Opportunities provided to PG students to become integrated into the broader department/school/university research culture	SQ26	0.29	0.795
Opportunities provided for social contact with other postgraduate students	SQ20	0.299	0.736
Modernness of library resources and services	SQ22	0.199	0.706
Freedom allowed to PG students to discuss their research needs	SQ25	0.52	0.699
Research ambience in the department/school/faculty	SQ21	0.43	0.688
Seminar programmes provided for PG students	SQ24	0.309	0.685

The Overall PG Service Experience: SERVEXP

The 6-item SERVEXP instrument produced a Cronbach's alpha of 0.867, which asserts that the SERVEXP instrument is valid. This was further interrogated since a common practice in asserting the validity of an instrument is to check the individual contribution of each of the item's reliability that make up an instrument (Cortina 1993). The procedure was conducted as follows; firstly the overall reliability of all the items was

calculated, and then if a question, which contributed towards the overall reliability is removed, then the overall reliability of the remaining items should decrease when compared to the overall reliability of all the items. However should the question not contribute to the overall reliability of the instrument and it is removed then the overall reliability of the remaining items will increase. From the results summarized in Table 5, which were developed on the basis of the aforementioned procedure, it can be inferred that the alpha values of all items decrease when compared to the overall reliability (0. 867), except for question OE 4 where there is a negligible increase in the alpha value (0.002). Hence we conclude that all the items are reliable, have good internal consistency and contribute towards the overall validity of the SERVEXP research instrument.

TABLE 4: SERVEXP Cronbach’s Alpha– Post Sequential Item Deletion

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
OE1	20.3878	14.941	.729	.834
OE2	20.3367	14.968	.752	.831
OE3	20.5000	15.242	.675	.843
OE4	20.7347	15.310	.533	.869
OE5	20.4388	15.465	.717	.838
OE6	21.1224	13.263	.661	.852

Factor analysis was not conducted to ascertain the validity of the SERVEXP instrument, since it comprised only 6 items, and any attempts to conduct this analysis would have been in violation of Coakes and Steed’s (2003) recommendation which states that for factor analysis a minimum of 10 items is required.

Descriptive Statistics

The sample comprised 58% black graduates, 23.2% white graduates followed by 16.1% of Indian graduates. The majority of the graduates

completed the course-work masters (35.1%) and a full research masters (37.7%) degree. The modal breakdown of the faculty from which the graduates were represented was HDSS (27.4%), Management Studies (17.1%) followed by Science and Agriculture (21.4%). The faculties that were least represented were Education (6%), Law (0.9%) and the Medical School (6.8%).

Perceptions of Postgraduate Service Quality

Postgraduate students were requested to indicate their assessment of the postgraduate service quality on a 5-point scale, where 1 = Worse than expected and 5= Better than expected. It is evident from Table 2 that with the exception to SQ17 and SQ20, for all other items, the respondents perceived the service quality as being neither worse nor better than expected.

Table 2: Mean, Median, Mode and Standard Deviation

PGSQUAL	Mean	Median	Mode	Std. Dev.
SQ1	3.837	4	4	1.080
SQ2	3.426	4	4	1.178
SQ3	3.667	4	4	1.107
SQ4	3.670	4	4	1.055
SQ5	3.471	4	4	1.183
SQ6	3.670	4	3	1.061
SQ7	3.529	4	4	1.158
SQ8	3.612	4	4	1.022
SQ9	3.466	4	4	1.178
SQ10	3.441	3.5	3	1.134
SQ11	3.272	3	3	1.222
SQ12	3.490	3.5	3	1.124
SQ13	3.456	3	3	1.083
SQ14	3.382	3	3	1.053
SQ15	3.353	3	3	1.191

SQ16	3.208	3	3	1.227
SQ17	2.789	3	3	1.327
SQ18	3.220	3	3	1.203
SQ19	3.029	3	3	1.246
SQ20	2.961	3	3	1.266
SQ21	3.294	3	3	1.182
SQ22	3.626	4	4	1.174
SQ23	3.641	4	4	1.083
SQ24	3.350	3	3	1.186
SQ25	3.392	3.5	4	1.212
SQ26	3.019	3	3	1.283

Considering the nature of the scale, the mean values for the PGSQUAL (above 3 and tending towards 4) show that for the majority of the questions, the respondents perceived the PG service quality to be ‘better than expected’. The one sample t-test was applied to further verify whether the mean PGSQUAL score was less than or equal to 3, and it was ascertained that at the 5% significance level, this is not true since the p-value is 0.000. Hence we conclude that the perceptions of the students with respect to the overall PG service quality are tending towards ‘expected’ or ‘better than expected’.

Perceptions of the Postgraduate Service Experience

Postgraduate students were requested to indicate their assessment of the postgraduate service experience on a 5-point scale, 1= Strongly Disagree; 2= Disagree; 3= Neutral; 4= Agree; 5= Strongly Agree. Table 3 shows that the respondents agreed that they had further developed their problem solving skills, shaped their analytical skills, feel confident to tackle unfamiliar problems, write and confidently present a paper at a conference, present their ideas in a logical and scientific way and have learned how to publish a paper in a journal.

Table 3: Descriptive Results of SERVEXP

SERVEXP	Mean	Median	Mode	Std. Deviation
OE1	4.2804	4.0000	5.00	.92954
OE2	4.3119	5.0000	5.00	.87873
OE3	4.1961	4.0000	5.00	.90148
OE4	3.9541	4.0000	4.00 ^a	1.03087
OE5	4.2500	4.0000	5.00	.82173
OE6	3.6389	4.0000	5.00	1.23393

The one sample t-test was also conducted to ascertain whether the mean SERVEXP score was in fact less than or equal to '3=neutral'. It was ascertained that at the 5% significance level, this is not true, implying that the mean SERVEXP score is greater than or equal to 3 since the p-value is 0.000. Hence it was concluded that the perceptions of the students with respect to their postgraduate service experience is positive since the responses are range from 'agree' to 'strongly agree'.

Perceptions of Overall Satisfaction

Postgraduate students were requested to indicate their overall level of satisfaction with the PG service on a 5-point scale, 1= Strongly Disagree; 2= Disagree; 3= Neutral; 4= Agree; 5= Strongly Agree. The results indicated that the respondents were neutral (mean score 3.0841), although the modal score of 4 revealed that the students were satisfied with the overall level of PG service quality.

The one sample t-test was also conducted to ascertain whether the mean SERVSAT score was in fact less than or equal to '3=neutral'. It was ascertained that at the 5% significance level, the mean SERVSAT score is less than or equal to 3 since the p-value is 0.496 which is greater than 0.05. The mean SERVSAT score of 3.0841 confirms this result.

Hence we find a positive perception of students towards the PGSQUAL and SERVEXP whilst a neutral perception is prevalent towards the overall service satisfaction level, SEVRSAT.

The Relationship between SERVSAT, PGSQUAL and SERVEXP

The relationship among the PGSQUAL, SERVEXP and SERVSAT was explored using Pearson’s correlation. The results are summarized in table 5 show a significant relationship between PGSQUAL and SERVEXP at the 5% level. The strength of the relationship is just below medium and this is a direct proportional relationship implying that, as the PG students’ SERVEXP improves, so will the perceptions of the PGSQUAL.

Table 5: Pearsons’ Correlation

		SERV-SAT	SERV-EXP	PGS-QUAL
SERVSAT	Pearson Correlation	1	-.028	.151
	Sig. (2-tailed)		.779	.120
SERVEXP	Pearson Correlation	-.028	1	.428**
	Sig. (2-tailed)	.779		.000
PGSQUAL	Pearson Correlation	.151	.428**	1
	Sig. (2-tailed)	.120	.000	

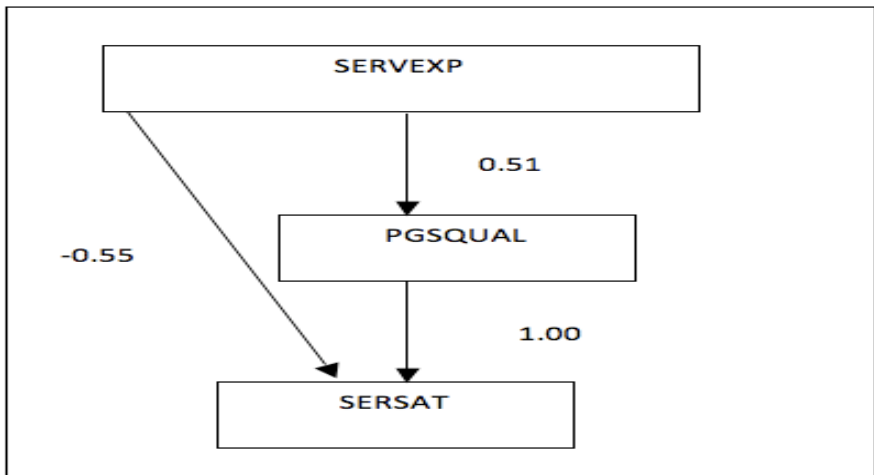
The relationship between the SERVEXP, PGSQUAL and SERVSAT was further explored using structural equation modelling to test the propositions (P1-P3). The proposed model was fitted to the data using AMOS Version 19 (2010) and the results are reflected in Table 6 and Figure 1.

Table 6: Results of SEM

	Esti-mate	S.E.	C.R.	P	Label
PGSQUAL<-- SERVEXP	.507	.101	4.991	.000	
SERVSAT<-- PGSQUAL	1.000				
SERVSAT<-- SERVEXP	-.545	.179	-3.041	.002	

Although it became apparent that the chi-square test statistic was 19.143 with a p-value of 0.000, which implied that the data does not fit the model well (Schumacker Lomax 2004; Byrne 2010), the parameter estimates reflected in Table 6 were considered. It was evident that there is a significant association between SERVEXP and PGSQUAL as well as SERVEXP and SERSAT. This result highlights the importance of the service experience of postgraduate students with respect to it influencing their overall satisfaction with the service quality. Thus P1 and P3 are supported and at the 5% significance level.

Figure 1: Results of Structural Equation Modelling



Discussion of Significant Findings

In addition to the development of two new reliable and valid research instruments, this study has confirmed the association between the PG service experience, PG service quality, and PG service satisfaction.

These findings thus confirm what other researchers (Aldridge & Rowley 1998; Carillat, Jaramillo & Mulki 2009) assert, but is in contrast with the view of Bolton and Drew (1991), who argued that customer satisfaction is an antecedent of service quality. On the basis of the present

study it may be possible to assert that with respect to PG students, the totality of the student experience is a useful perspective to adopt in student satisfaction in marketing terms.

However, no relationship was ascertained between the PG service experience and PG service satisfaction, although service quality is connected with the service satisfaction.

Conclusion

In summing up the PG experience, we must guard against falling into what Schneider and Bowen (1993:39-56) refer to as the 'human resources trap', emphasizing only the personal contact relative to exclusion of the non-personal. We therefore need to embrace a broader definition of the service encounter to refer to anytime students come into contact with any aspect, and use that contact as one basis for judging quality. The institution has to therefore manage 'all the evidence' so as to ensure a seamless service experience for the PG student. It must be emphasized that one reason for conducting this and similar research is 'improvement', which is sometimes referred to as 'closing the quality loop' since although many tertiary institutions around the world collect student feedback, the interconnection between the student feedback and actual institutional change is not always evident or addressed. The mere collection of student feedback using questionnaires does not in itself lead to improvement in teaching and learning; there should be evidence that such feedback is factored into inter-alia, institutional postgraduate policies.

Value of this Research

This exploratory study represents but one attempt to address the concern about the extant research on postgraduate students, and represents a step towards closing the 'gap' mentioned in the introduction, in that it resulted in the development and validation of two research instruments, namely PGSQUAL and SERVEXP, both of which could be used by researchers interested in higher education quality matters.

Furthermore, since student satisfaction and retention are closely linked, students' perception of the service quality has become an extremely

important issue for universities and their management. This importance of the association between PG student satisfaction and service quality was confirmed by this research. Managing this association is important since the aim is to try to maximize students' satisfaction with their education experience whilst they are at university and minimize dissatisfaction not only to retain students, but also to improve the institution's performance ratings and so aid recruitment of postgraduates.

Limitations and Opportunities for Future Research

Considering that the sample was 27% of the population and the response rate only 14% of the population, the results may need to be interpreted with some caution before generalizations can be made. Perhaps the findings could be treated as preliminary insights into the defined target population and future research should target a larger sample.

A common problem in using surveys of graduates' experience at the time of graduation as performance indicators is the lag between experience and report. This may be true for the current study as well. Research into the service experience should be as real and recent as possible: that is interviews should be done as close to consumption of an actual service as possible, so that evaluations remain fresh in the consumers' minds and so that experiential benefits are not forgotten or replaced with more cognitively accessible functional benefits.

While this research has enhanced our understanding of the PG service experience, it is somewhat static in nature and does not fully lend insights into the dynamics of the service encounter. For example it does not indicate how PG students might trade off their evaluations of different aspects of the service experience in arriving at overall satisfaction.

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The Social Impact of Information Systems at a Tertiary Institution

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Abstract

Tertiary educational institutes have had many Information Systems (IS) developed and implemented for the use of end-users. The problem is that more often than not, the impacts of IS on social communities of organisations have not been taken into account. This research explores the issues of the interface between IS and society, and addresses the social impact of these systems. A thorough investigation of the IS and users of those systems at the University of South Africa has been undertaken in this study. This research proposes a set of guidelines to help ensure that the social impacts of tertiary institutes' IS are taken into account in the design and implementation of these systems, thereby increasing the chance of success of those systems.

Keywords: Social informatics, socio-technical systems, social context, user involvement, Information Systems, Information Technology, user acceptance and technology adoption.

Introduction

A serviceable working conception of social informatics is that it identifies a body of research that examines the social aspects of computerisation (Kling, 2000). Kling notes that it is the interdisciplinary study of the design, uses and consequences of Information Systems (IS) that also takes into account their interaction with institutional and cultural contexts. Due to the IS implications of this study, this research is classified in the field of Social

Informatics. This research therefore explores the issue of the interface between IS and the community of users.

Problem Statement

The University of South Africa (UNISA) is one of the bigger distance learning universities in the world with over two hundred thousand (200 000) registered students for the 2007 academic year (UNISA 2007). This current and prospective community of users try to access information on the various websites of UNISA, struggling to find the relevant information. This may be because the system designed by the authorities, is not always user friendly. Also, to facilitate open distance learning, academics develop study material for students to access electronically on various UNISA sites (myUNISA, EDS & Osprey).

Students and staff members accessing or utilising these listed systems expressed concern during a pre-study mini-survey by e-mail about navigating the sites to get information or accessing services. Based on various complaints and queries by students and staff members as well as informal discussions, this mini-survey was conducted by the researcher requesting the respondents (these include lecturers and students) to search three elementary items on the relevant sites. More than half of the respondents indicated that it was not easy to find the information. They argue that they spent time searching for the information jumping from one page to the other without getting the information.

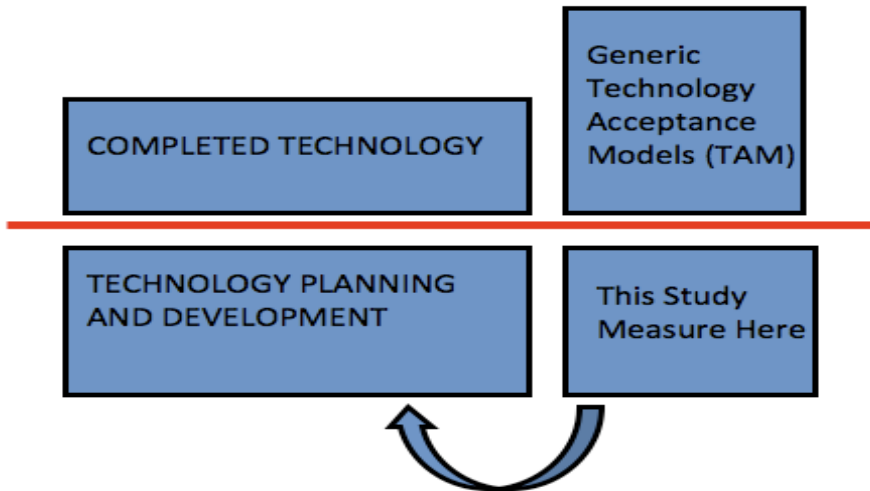
The observations made by the researchers were confirmed in the management meeting of the School of Computing held 23rd May 2007. Senior Professors of Computer Science and IS complained about the difficulty in accessing information from UNISA systems, and also how and why these systems were implemented without them being socially involved (School of Computing 2007). Specific issues of concern, which require investigation and verification on the UNISA's Information and Communication Technology (ICT) systems, were:

- The influence of community of users' involvement in the success of systems;
- Inclusion of all user requests; and
- The development of systems without consulting and involving users.

Delimitation of the Study

Only one institution of higher learning, UNISA, is investigated. The research study will however only focus on the social factors and specifically user perceptions and impact of UNISA systems. Figure 1 below defines the delineation of the study.

Figure 1. Diagrammatic Representation of what the study will focus on



Source: Lubbe and Klopper (2008)

Foundation of the Study

This study's context is the field of Social Informatics. There is speculation about the social impact when new ICT are to be planned and developed (Kling 2000). Questions about the consequences of new technologies are often posed in a very black and white manner. People expect a straightforward 'yes-or-no' answer. However, life is not that simple, and usually there are no clear-cut answers (Kling 2000). Therefore, the social changes that might occur because of the implementation of new and complex ICT need to be analytically and empirically researched (Kling 2000). This research explores issues of the interface between IS and the community of users at UNISA.

IS at Tertiary Institutes

Tertiary education institutes around the globe have had many IS developed and implemented for the use of students and lecturers/academic personnel (Hall 2006). He continues that the problem is that more often than not, the impacts of IS on social communities of organisations are not taken into account, and/or insufficient attention is paid to them. He also argues that, the social impacts of IS are rarely taken into account when systems are being designed or implemented, and as a result leads to many IS failures. King and Zmud (1981) suggests that factors such as the organisation, the environment, the task, personal and interpersonal characteristics, as well as Management Information Systems (MIS), staff characteristics and policies can influence the success of system implementation.

Technological innovations have allowed educational institutions the opportunity to expand enrolment and offer courses beyond the traditional classroom setting (Clow 1999). Distance learning delivery systems include television, interactive television, online computers and the Internet (Clow 1999). He argues that students are able to earn degrees without even setting a foot on an actual college campus. He argues that the impact of technologies on students is a concern.

Social Nature of IS

For the purpose of this research IS is defined as the various technologies used in the creation, acquisition, storage, organisation, dissemination, retrieval, processing, manipulation, interpretation, transmission of information to accumulate knowledge and expedite communication (Chan 2002; Moll 1983).

IS applications conceived from the perspective of rationalistic explanation of how IS used in an organisation exhibit Tayloristic work design. This work design focuses on the individual's task productivity while under-estimating the importance of the social context. This, according to Roode (2003), often leads to inappropriate application designs, difficulty of use and outright failure of many information technologies. Chaharbaghi and Willis (2000) argue that technology forms some sort of a paradox, which is that individual's survival depends on the technology, but their problems also derive from it.

Therefore, IS support and facilitate human and social processes and

contributes towards a meaningful work life for the users within an organisation. Roode (2003) concludes that IS are developed by people for people and are therefore, rooted within human nature, which is the social context.

The 'impact' that the introduction and use of IT may have on the organisation, on work and on the users in an organisation can either be of a technology nature, that are often explicitly known; or of a social nature, which are those that are usually not easily identifiable (Kling 2000). Hall (2006) argues that it is important that the technological and social factors should be managed. The focus of this study is on the social factors of IS.

Social Context

According to Horton *et al.* (2005) the introduction and utilisation of technology in organisational settings are more complex than technologically deterministic accounts. The social context in which IS function is specifically examined in social informatics research. This particular research can thus be considered as social informatics research. Kling (2000) describes social informatics as the body of research that examines the design, uses and consequences of ICT in ways that take into account their interaction institutional and cultural contexts. It can therefore be said that the IS social context is important when considering the areas of IS. Kling (1999) states that social context does not refer to some abstract 'cloud' that hovers above people and IS. Rather, it refers to a specific matrix of social relationships.

According to Lamb and Kling (2003) several organisations have stressed the need for a larger environmental scope when dealing with ICT use. They noted that the individual ICT use is influenced by organisational, cultural, and global contexts, as well as by the social context within the environment. Wood-Harper and Wood (2005) inform that defining an IS in action can be construed as a paradigm of assumptions, which in turn is socially constructed. They, and Horton *et al.* (2005), conclude that technological and social practices of organisations are inseparable.

Adoption, development and use of IS are shaped by the institutional environment that envelops the IS. Lamb and Kling (2003) argue that users of IS in organisations utilise multiple ICT applications as part of their effort to produce goods and/or services while interacting with a variety of other

people, and often in multiple social contexts. This implies that the social context within which IS operates play a role and therefore must be considered when designing and implementing these systems.

According to Rosenbaum and Sawyer (2000), IS take place within a social context and are influenced by a wide range of non-technical decisions and practices. These social issues are often overlooked even though they often bear directly on the success and failure of IS. Mansell (2005) states that the social context of IS is an important matter and is one of Rob Kling's statements. Rosenbaum and Sawyer (2000) support this by stating that that ICT and IS do not exist in social or technical isolation. Lamb and Kling (2003) also argue that people together with their technologies comprise social networks. Therefore the technical and social issues are inseparable and must both be considered when viewing IS.

Bostrom and Heinen (1977) categorise social systems analysis into four general areas as follows:

- Individual needs, characteristics, and abilities of people in the work system;
- Internal work system characteristics;
- External environment of the work system; and
- Support system for that work system.

This categorisation is still relevant and used in modern times. Moreover, the various areas of analysis need to be broadened to fully account for the social context of IS. Rosenbaum and Sawyer (2000) state that the social context of IS development and use plays a significant role in influencing the ways people use IS. Thus, the social context of IS influences people's consequences for work, organisations and other social relationships.

The idea of social context is inherent when considering the social informatics research area. Social informatics research pertains to IS use and social change in any sort of social setting, which may include societies, individuals and organisations (Kling 1999). The idea behind social informatics is that the social context of IS development and use plays a significant role in influencing the ways that people use information and technologies. Social informatics focuses on the social consequences of the design, implementation and use of IS over a wide range of social and organisational settings.

Kling (1999) states that social repercussions of new technologies are usually taken into account. These repercussions include: sponsorship of projects, training people to use new systems and controls over access to information. He goes on to suggest that these social repercussions are insufficient; and larger social context must be taken into account.

According to Kling and Star (1998), the idea of human centred systems promises that the knowledge of human users and social context in which systems are expected to operate, become integrated into the design and implementation of systems. When using human centred analysis, one must take into account the various social units that structure work, information, organisations and teams, and communities and their distinctive social processes and practices.

Amory (2003) suggests that the development or selection of appropriate systems need to take into account institutional and current user needs. This can only be done by taking the social context of the IS into account and carrying out a thorough analysis thereof.

Impact of IS on the Social Community within Institutions

In educational contexts, the changes brought by the introduction of IS have variously been perceived as either: a great good (Hill 1999), a virulent evil (Brabazon 2002), or neither (Shields 2000). Regardless of its relative value, all the above authors agree that IS has greatly impacted education activities, aims and aspirations. Yusuf (2005) also supported the above three in saying that the field of education has not been unaffected by the penetrating influence of ICT. Yusuf argues that ICT have impacted on the quality and quantity of teaching, learning, and research in traditional and distance education institutions.

As IS developed, it provided increasing opportunities, options and strategies for education (Hill 1999). Kroeker (2000) argues that the prevalence of IS generated an expectation that all education institutions will have a virtual as well as a physical location, and that students can access of the information they need via a web browser. This capacity of IS to modify traditional understanding of the location of education, suggests the need for a completely different set of social and institutional infrastructures with which learning can be facilitated (Shields 2000).

Dertouzos (1998) argues that the current reformation of IS impacts

education, since it mediates the way information is stored and transmitted; while Watson (2001) notes that IS brings about change in the way information is also learnt and taught. These changes of access, learning and teaching have particular bearing on education and impact social community within institutions.

While education has historically been centred on teaching and learning, Dunderstat (1999) argues that IS has affected changes to the aims of education. Education is therefore increasingly perceived as the process of creating, preserving, integrating, transmitting and applying knowledge. IS particularly impacts course content and teaching methodology and the recruitment and training of teaching staff (Hill 1999).

In considering the impact of IS, changes have been evident in the methods (Hill 1999; Shields 2000; Watson 2001), purpose (Dunderstat 1999; Hill & Shields 2000), and the perceived potential of education (Dunderstat 1999; Hill 1999; Kroeker 2000). While these authors have differed in their opinion of the degree, desirability and destiny of these changes, they all agree that change processes have certainly been underway which impact socially on the individual interacting with this technology.

For people trying to use these various technologies in a domestic setting for educational purposes, there are a range of potential problems and possibilities that are not simply attributes of the technologies per se, but arise from the relationship of the technologies with the social environment (Kirkwood 2000). Kirkwood (2000) argued that research with students and all other community of users is necessary in order to reveal the significance of the diversity of learners' experiences and contexts. This could mean their involvement in System Development and Planning.

Through IS more people are able to network and thereby ensure they contribute to the impact they can have on the systems they use (Mao 2002). They are also able to appreciate one another even though there are cases where there may be breakdown of trust due to increased networking (Levy 2005), which is another form of Social Impact. What one notes is that more people are able to understand where they can obtain specific types of information. Those who want to collaborate in research can also find each other more easily (Levy 2005). Theory of Reasoned Action is thus enhanced through IS because causal relations can easily be identified. The increased networking often improves attitudes of people with common interests. As a

result their intentions tend to become more positive, and their behaviours can be easily improved.

User Involvement and Participation Relation to IS Success

The domestication theory was founded by Silverstone and Haddon (1996) who view technologies as social, cultural, political and economic products which play a symbolic and aesthetic as well as material and functional role. It entails having to consult users regarding issues of relevance in their work and obtaining buy-in for own ideas. Pedersen (2003) distinguish between the first system development and/or planning decision, which refers to decision, and post-start decisional behaviour. They recommend that system development and/or planning be seen as a transition between stages of increasing consumer sophistication in the consumer life cycle rather than a specific event. Brown and Randell (2004) use the term 'dwelling' with technology to describe the study of technology system development and/or planning over a long period of time where the context in which technology is used may change.

The concept of domestication was derived from the British studies on consumption. It refers to the taming of a system development and/or planning by the individual and focuses on the process that integrates technology into everyday domestic life (Pedersen 2003). The domestication approach considers the following phases in the adoption process (Silverstone & Haddon 1996; Ling 2001; Habib 2003): Commodification - The way a technology is designed to give it an image with a number of functional, aesthetic and symbolic claims; Imagination - The way in which a system development and/or planning enters our consciousness; Appropriation - The actual production of the technology; Objectification - The phase in which the technology system development and/or planning is acceptable and familiar in the daily life of the consumer; Incorporation - Integrating the technology with daily use; Conversion - The technology becomes fitted into routines and is seen by others as part of the individual's identity.

The domestication approach considers system development and/or planning rather than mere use, and views adoption as a process rather than a specific event (Ling 2001; Haddon 2003). The domestication approach aims to discern the interaction between the innovation and the context in which it

is being placed. Therefore contexts are often contrasted, for example work versus leisure, private versus public, and contrasts between users in different demographic groups (Ling 2001).

Domestication studies do ex post facto examination of system development and/or planning to understand why a technology has been adopted and why not (Pedersen 2003). It is intended as a tool for observing adoption rather than a tool for the prognosis of an adoption (Ling 2001).

This paper views users as social entities, which is in accordance with the domestication approach. The acknowledgement of the importance of context and the post-adoption focus make the domestication approach relevant to understanding the factors that influence system development.

Critical Application of Literature

The development and planning of IS is a complex process that entails a mix of technological, social and organisational interactions (Gal & Berente 2008). It involves multiple stakeholder groups which have varying needs, interests and capabilities (Gal & Berente 2008). They suggest that different groups may have different interpretations and perceptions of the developed and planned technology and its purpose, hence their involvement in the initial stage of IS projects is necessary for the projects to be successful.

The key to the successful diffusion of advanced IS is whether new applications are responsive to the social, economic and cultural conditions within which people work and live (Crede' 1997). He argues that involvement of users at an early stage of development and planning allows early identification of key choices available to users and producers of IS.

The improved understanding on the part of users of their own requirements and the changes in the environment in which they operate is needed if advanced applications are to be incorporated successfully within commercial and consumer lifestyle (Crede' 1997). This suggests the need to move beyond awareness campaigns towards measures which enable users to learn and fully understand how IS can address their needs (Crede' 1997). This might mean users need to be involved in the development and planning of IS. Lastly how the designed and implemented IS at impact socially on the community of users is not directly or specifically addressed by literature and this research attempts to address.

Research Questions

The literature study addressed the history of the social impact of IS. Most of the issues have been addressed but the following still remain an issue:

- Does the social relationships of users during system development and/or planning impact on IS?
- To what degree are the users of the UNISA IT involved and participate in the development and/or implementation of these systems?
- How does user involvement and participation relate to IS success?
- What social factors influence the development and/or planning of IS?

Conclusion

IS are social systems rather than technical systems (Lamb & Kling 2003). Computer systems structure social relationships and not just information. It can therefore be said that IS's affect more than just the way that users perform tasks (Kling 1999). The development and planning of an IS is a social process involving users and systems analysts, carried out in an organisational setting, and therefore as a social process have social consequences (Lamb & Kling 2003).

Research Methodology

Since this research study aims to answer the research questions developed by surveying the attitudes of students and staff on UNISA's IS as well as to uncover the social impact of UNISA's IS on the social community within the institution (this research is descriptive and explanatory in nature), the questionnaire has been chosen as the data-gathering tool. This will allow the collection of quantifiable data and allow for the quantitative analysis of this data to determine patterns and relationships.

Developing the Questionnaire

Research questions can be considered as critical questions which are based on the research problems under investigation. The following are details of the research questions that formed the bases of this study and were used to

formulate the research tool, the questionnaire. The different questions of the questionnaire are specified under the research question/s that was used to formulate them:

1. What is the impact of UNISA IS within the institution?
 - Questions 1 – 6 and 23 – 26 in the questionnaire
2. In what ways does the social relationships of users during system development/or planning impact on IS?
 - Questions 18 – 20 and 23 – 26 in the questionnaire
3. To what degree are the users of UNISA IS involved and participate in the development and/or planning of these systems?
 - Questions 7 – 17 in the questionnaire
4. How does user involvement and participation relate to IS success?
 - Questions 7 – 17, 21 – 22 and 27 in the questionnaire
5. What social factors influence the development and/or planning of IS?
 - Questions 1 – 6 and 23 – 26 in the questionnaire

Questionnaire Validation and Finalisation

The questionnaire was tested by sending it to two friends and one academic person to read it and if their understanding is same of the authors. The people did not recommend any changes to the questionnaire. After receiving the responses and feedback from the pilot group, the questionnaire was updated. After discussing the second draft the questionnaire was finalised. The final questionnaire was then discussed with the supervisor. It was circulated through e-mail to the targeted population after necessary approvals from the Supervisor.

Population and Sample Size

The population consists of both academics and students who use the system for information. For classification purposes they will all be regarded as the same user for this study. In this study that subpopulation, or sample frame, consisted of staff and students who were around Pretoria during the time of the study. The research sample was selected from the sample frame. A sample of size 384 was selected for the results to be statistically significant.

The population consists of both academics and students who use the systems for information. For classification purposes they will all be regarded as the same user for this study. The sample consists of users of myUNISA, EDS and Osprey, which is the UNISA's principal IS. The sample size was 384, which was the required size according to Krejcie and Morgan (1970) for the results to be statistically significant.

Data Handling

No permission is required to run the survey. The questionnaire was administered through e-mail. According to Witmer *et al.* (1999) cited by Saunders *et al.* (2003), e-mail offers greater control as to who answers the questionnaire because most users read and respond to their own mail at their personal computer. Data analysis was done through Excel. A few minor consultations were made with statisticians in the University's Department of Statistics and the South African Revenue Services.

Data Analysis and Interpretation

Respondents Profiles

A total of 384 respondents answered the questionnaire. Some respondents were also temporary or permanent staff members of UNISA. The respondents consisted of 233 (60.7%) respondents that are only students and 151 (39.3%) who are also temporary or permanent staff members of the university. The respondents were all given an equal chance to be included in the study.

Nearly 40% of the respondents are between the ages 25 and 34 (the reason might be that they preferred to work first to pay their own study fees), between 18 and 24 are 26% of the respondents, and between the ages of 35 and 44 26% of the respondents. There were 28% respondents from Management studies and 72% from other colleges. It supports the fact that the College of Economic and Management Studies is the college with the largest number of student registrations at UNISA.

If Student, Year of Study

In this instance a total of 327 people responded. There were 94 first years,

50 second years, 88 third years, 25 honours, 57 master and 13 doctoral students. This shows that the sample included every level of study the university offers; hence the sample is representative in terms of level of study. Some respondents used more than one Internet access method. Therefore, the sum total of frequencies reflects a higher total than 384.

Figure 2: Primary internet access

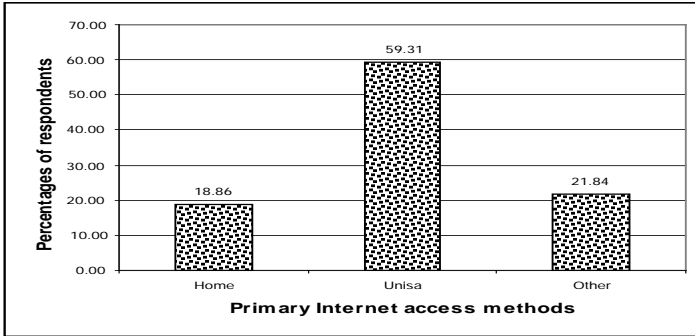


Figure 2 shows that UNISA provides the primary means of accessing the Internet to its students. The study indicates that 19% respondents had Internet access in their homes; 59% accessed the Internet at UNISA while 22% used other means of Internet access.

Some respondents were aware of more than one IS at UNISA. As a result, the total of frequencies also reflects a higher total than 384.

Table 1: Awareness about IS

Information System	UNISA Website	myUNISA	Osprey	EDS	Student system	E-mail
Awareness	246	302	69	88	113	238
Percentages	23.30	28.60	6.53	8.33	10.70	22.54

Most respondents know about myUNISA (303) and little less about the UNISA website (246) and e-mail (238). All the respondents should know about myUNISA, website and e-mail because it is advertised in all study

letters and used to deliver study material to the students. Few knew about Osprey and EDS because they are subject related and not many of the respondents study the courses. Respondents who know about Student System are those students who are also employed by UNISA, because this system is not accessible to students.

Comparing Level of Awareness of the IS

A chi-square test is performed to determine if some IS were known by the respondents. If there is no higher awareness for some, then identical awareness implies equal probability of awareness of the different IS.

Table 2: Chi- square test on IS awareness

IS	UNISA Website	myUNISA	Osprey	EDS	Student system	E-mail	Total (N)
O	246	302	69	88	113	238	1056
E	176	176	176	176	176	176	

$$\text{Thus, } \chi^2 = \sum \frac{(O - E)^2}{E} = \frac{(246 - 176)^2}{176} + \dots + \frac{(238 - 176)^2}{176} = 271.4886$$

Using the 5% significance level the critical region is

$$\{\chi^2 > 11.07\}$$

Since the calculated values of $\chi^2 = 271.4886$ falls in the rejection region, the suggestion that the respondents had awareness for all the IS cannot be accepted. Therefore, it is concluded that some IS at UNISA are known more than others.

IS Option you Used

This was a section where overlaps occurred. Some respondents used more than one IS. Thus, the total of frequencies obtained also reflects a higher total than 384. It was noted that a limited number of people are using myUNISA since this is the primary method of delivering study material. This is in agreement with Amory (2003). The large number is also assessing the UNISA website and is important since it means that they are using the site to search for information.

Correlation between Awareness and Use of an IS

There exists a statistically significant, strong, positive correlation between the two variables ($r = 0.9981$, $n = 384$, $p < 0.05$). In other words the more one is aware of the system the more one will tend to use the system. This relationship is excellent, and the regression linear equation resulting from the relationship can be used with 97% accuracy of results.

Comparing the Level of Use of the IS

A chi-square test was performed to determine if some IS were used by the respondents more than others. If there is no higher use of some IS than other, indistinguishable awareness implies that there are equal probabilities of use of the different IS (Hill 1999). Thus,

$$\chi^2 = \sum \frac{(O - E)^2}{E} = \frac{(214 - 153.33)^2}{153.33} + \dots + \frac{(63 - 153.33)^2}{153.33} = 214.324$$

Using the 5% significance level the critical region is $\{\chi^2 > 11.07\}$

Since the calculated values of $\chi^2 = 214.324$ falls in the rejection region, the suggestion that the respondents use the different IS equally cannot be accepted. The general perception is that students and staff should be using all the systems at UNISA but the stats prove the opposite.

Satisfaction with UNISA's IS

The respondents were requested to state if they were satisfied with the IS they used. They had to report the level of satisfaction or dissatisfaction on each IS they were using. Since the total number of respondents was affected by overlapping, this is inherited here. The extent of satisfaction or dissatisfaction was also required. Only six respondents indicated they were not happy with the systems available to them. This could be interpreted that the respondents are happy with the systems even though they were not involved. These results indicate that UNISA IS is reasonably successful as only 2% of users were not satisfied with the systems available to them.

Overall Perception of UNISA's IS Quality

The respondents were requested to make their own judgment on the quality

of the IS they used. They had to report whether they found it to be excellent, good, acceptable or poor. Again, the total number of respondents was affected by overlapping. The majority of respondents perceive UNISA IS of good quality, the reason might be that students are able to access the information required of them.

There exists a statistically significant positive correlation between perceived quality of a system and the satisfaction level from the system ($r = 0.5316$, $n = 384$, $p < 0.05$). This might mean that the more students use the system, the more the quality of the system become evident to them.

Involvement and Participation in Developing Systems

According to Lamb and Kling (2003), user involvement must be divided into user participation and user involvement. User participation refers to the actual physical involvement of the users in the development and/or implementation of the IS, whereas user involvement refers to the subjective psychological state reflecting the importance and personal relevance of a system to the user.

Lamb and Kling (2003) reveal one theme has been prominent, that is the fact that user involvement and participation in the development and/or implementation of a successful IS is vital. Over 80 % of respondents did not participate at all in the development and/or implementation of any of the specified UNISA IS. This indicates that there was a forced acceptance as the users have no choice but to use UNISA's IS.

The 76 respondents who indicated that they were involved in the development of the IS was invited to indicate the specific system in which they were involved. The respondents were involved only in the UNISA website, Osprey and myUNISA and no one was involved in EDS, e-mail and the student system. The extent of involvement as three (4.0%) respondents having participated in the development of the UNISA website, two (2.6%) having participated in the development of Osprey and 71 (93.4%) having participated in the development of myUNISA. This also supports the fact that systems were 'forced' on users.

Needs Considered During Development and/or Planning

More than 60% (66.7%) respondents believed that their needs were taken into account in the development and/or implementation of the UNISA's IS.

The reason for the unexpected student response could be that the students themselves do not fully understand their own needs.

The respondents needed to indicate if they were consulted about what they wanted/needed in the IS they were to use while working or studying at UNISA. This is in accordance with Clow (1999) that feedback on users of systems is important, if the IS is to be successful.

More than 90 (94) of the respondents indicated that they were consulted regarding what they needed in an IS for their work at UNISA, 277 indicated that they were not consulted and 13 did not tell whether they were consulted or not. These results are almost paradoxical, as fewer students were asked if they wanted or what they wanted from the system, but most students feel that their needs have been taken into account. The reason might be that best practices were applied in the development of these systems.

The question wanted the respondents to indicate if they were willing to be involved in the development of the IS used for studies and work at UNISA. Mckeen *et al.* (1994) stated that it is important to note the difference between voluntary versus forced acceptance. It goes to say that users involvement does not affect acceptance if there is forced acceptance, as the user has no choice but to use the IS, whereas users involvement does affect user acceptance if the acceptance is voluntary. Therefore it is necessary to have positive user involvement when acceptance of an IS is left up to the user. Users' involvement in the development and implementation of these IS, can be described as their willingness to participate in the development and improvement of the university's IS, and users view on the effect of their input on the quality of those systems (Mckeen *et al.* 1994).

The results reveal that 85% of users said that they would be willing to participate in the development of UNISA IS that is built for them. Hall (2006) argues that those users, who would not be willing to participate in the development, may do so because of the time and effort that would need to be expended or because they do not want to use and/or do not support the implementation of the proposed IS.

The results also reveal that 89% of respondents would be willing to participate in the improvement of these systems. This is in accordance with Kling (1999).

To determine if the respondents had confidence that their knowledge and/or opinions could be useful in improving the quality of the IS used in

UNISA. Another determining factor of user involvement is how valuable a user views their input into the development or implementation of IS built for them. Nearly 92% of the respondents feel that their participation would have improved UNISA' IS.

Use and Satisfaction with UNISA's Systems

The respondents were requested to indicate their extent of use and satisfaction regarding the three UNISA's Systems below. A higher percentage of respondents use myUNISA more often. This rate of use is logical because it is the system that is mainly advertised by the university, study material is delivered through this system assignments are also submitted through this system and tutorial letters are posted on this system by academic. This is in accordance with Yusuf (2005) that ICT provides access to more extensive and current information.

myUNISA is the system that was accessed at least once a week compared to other systems. Also, myUNISA is the system with the least rate for the systems that was never accessed. The reason is that myUNISA is primary to the distance learning mode of UNISA and should always be accessed by students for students to remain current. Only 2.11% of the respondents never accessed myUNISA.

ANOVA for Testing Frequencies of Access and IS

ANOVA is a technique for comparing sample means; but unlike the t- test, it can be used to compare more than two means. With ANOVA, because several sample means are usually being compared, once a null hypothesis has been rejected we need a follow-on, or post hoc, procedure. It is possible that some pairs of means may not be significantly different from one another. Thus the process is a bit like aerial photography. ANOVA gives a high-altitude picture, and the null hypothesis can be rejected.

Hypotheses tested are:

H_{or}: There are no differences in yield according to frequency of access

H_{oc}: There are no differences in yield according to IS accessed

The results were not significant for both rows and columns. It can be concluded that there is no evidence against the hypotheses that the yield is

not affected by the type of IS used or by the frequency of accessing an IS.

Dependency of Frequency of Access on the Kind of IS

A chi-square test is performed to determine if that dependence is not there, then independence would mean that $(\text{row total}) \times (\text{row total}) / (\text{grand total})$ would be close to the observed values. In this case the statistical hypotheses are:

H₀: Frequencies of access and IS types are independent vs.

H_a: The said variables are dependent

Thus,

$$\chi^2 = \sum \frac{(O - E)^2}{E} = \frac{(50 - 38.29)^2}{38.29} + \dots + \frac{(44 - 23.40)^2}{23.40} = 145.3774$$

Using the 5% significance level, $df = (3 - 1)(4 - 1) = 6$, the critical region is

$$\{\chi^2 > 12.59\}$$

Since the calculated values of $\chi^2 = 145.3374$ falls in the rejection region, the suggestion that the frequency of accessing and IS is independent of the kind of the system cannot be accepted. Thus, it can be concluded that the frequency of accessing an IS depends on the kind of system.

Viewing of assignments is the most popular task used with the systems (18.1% of the time) in the systems; followed by submitting/posting assignments (16.7%); that are closely followed by communication between students and lecturer (16.0%). It is logical because the tasked indicated are the most common in distance learning environment (Yusuf 2005).

Comparing the Level of Use of the IS on Various Tasks

A chi-square test is performed to determine if some IS were used by the respondents on certain tasks more than in other tasks. If there is no higher use of some IS than other, indistinguishable awareness implies that there are equal probabilities of use of the different IS.

$$H_0: p = \frac{1}{9} \quad \text{vs.} \quad H_1: p \neq \frac{1}{9}$$

$$O = \text{observed frequencies and } E = Np = 1806 \left(\frac{1}{9} \right) = 200.67$$

Thus,

$$\chi^2 = \sum \frac{(O - E)^2}{E} = \frac{(327 - 200.67)^2}{200.67} + \dots + \frac{(233 - 200.67)^2}{200.67} = 487.7143$$

Using the 5% significance level, $df = 9 - 1 = 8$, the critical region is

$$\{\chi^2 > 15.51\}$$

Since the calculated values of $\chi^2 = 487.7143$ falls in the rejection region, the suggestion that the different IS are used equally on the specific tasks listed cannot be accepted. Thus, it can be concluded that the respondents were using IS in some tasks more than in other tasks.

Miscellaneous Use of Systems

myUNISA is the system used most often for all the tasks, even though it differs in extent of use for the various tasks. Viewing assignments, submitting/posting assignments, library information, posting/reading notices, posting/viewing lecturer notes and lecturer/student communication, in the order from highest to lowest, are the most significant tasks for which myUNISA is used. These tasks are also higher than the highest rates of use of all significant uses of EDS and Osprey. This results are logical because the primary purpose of myUNISA was to facilitate the tasks as indicated and all students should be using myUNISA to do exactly those tasks. This is in agreement with Yusuf (2005) that IS has impacted on how teaching and learning is delivered in traditional and distance institutions.

EDS is used more than Osprey. The most significant uses of EDS, from highest to lowest, are lecturer/student communication; submit/post assignment; post/view lecturer notes; view assignments; post/read notices; and library information. This results shows that myUNISA is a popular Information System at UNISA.

The uses of Osprey, from highest to lowest, are lecture/student communication; and post/read notices. The reason is that Osprey is course specific system and not many student registrations in this field of study. This is also in accordance with Dertoulos (1998) that people use IS if perceived useful and has relevance to their task.

ANOVA for Testing Different Tasks and IS

Hypotheses tested are:

H_{or} : There are no differences in yield according to task

H_{oc} : There are no differences in yield according to IS

The results are not significant for both rows, but for the columns they are significant. It can be concluded that there are differences in yield due to the type of IS. Due to the fact that the effects of rows are not significant; there is no evidence that the type of task undertaken does not affect the yield.

Dependency of Use of Specific Tasks on the Kind of IS

A chi-square test was performed to determine if that dependence existed.

H_0 : IS types and use of certain tasks are independent

H_a : Use of IS on tasks and the IS are dependent

$$\chi^2 = \sum \frac{(O - E)^2}{E} = \frac{(69 - 91.26)^2}{91.26} + \dots + \frac{(13 - 23.61)^2}{23.61} = 156.2702$$

Using the 5% significance level, $df = (3 - 1)(9 - 1) = 16$, the critical region is

$$\{\chi^2 > 26.30\}$$

Since the calculated values of $\chi^2 = 156.2702$ falls in the rejection region, the suggestion that use of IS on specific tasks and the types of IS are independent of each other cannot be accepted. Therefore, it can be concluded that the use of IS depends on specific tasks and depend on the kind of the system used. Kling (1999) states that the consequences of IS depends on the context in which IS are developed and designed.

Use of IS in Courses

In using the different IS in the courses of UNISA, myUNISA was the IS used the most. Use of myUNISA in courses also exceeds the combined uses of EDS and Osprey. In the use in courses, Osprey is used more than EDS.

EDS is the least used in courses, but is not far exceeded by Osprey. This is expected as myUNISA is the main IS provided for the use of students and academics. This is also in accordance with Kling (1999) who states that the consequences of IS depends on the context in which IS are developed and designed.

Miscellaneous Impression about System

Another measure of a successful IS could be the number of problems experienced by users. Fifty percent of respondents reported that they had experienced problems with UNISA's IS. This is a relatively high rate of respondents that have experienced problems. This might mean that just over 50% of the students accessing UNISA's IS are frustrated by the systems. As indicated by Kling (1999) that this might be as a result of lack of user involvement in the design and planning of these systems.

Meeting usage needs, ease of use of IS and functionality are all determining factors of IS success. UNISA is successful in the IS it made available for its students and employees. Results reveals that, 76% of the respondents indicated that information content met their needs, 75% reveals that the Systems are easy to use, 77% indicated that the Systems are user friendly and 72% indicated that the necessary information was available. The results reveal that higher percentage of users is satisfied with UNISA's Systems. Slightly fewer respondents are not happy with the systems UNISA made available. Lamb and Kling (2003) find that user participation in the development of an IS, may not necessarily lead to user satisfaction, but it is still a necessary antecedent.

Since a higher percentage of users were not involved in the development and implementation of these systems, this might be the reason why 69% feels that the systems need modification where their inputs should be taken into account. The remaining 31% feels that what they have is good enough for them.

Level of Satisfaction with Use of System

The results indicate that UNISA IS are reasonably successful as no users were dissatisfied and completely dissatisfied with the systems available to them. This is in agreement with Amory (2003) who states that many people are not unhappy with systems.

myUNISA is the most preferred medium to receive study material. This is logical since myUNISA was developed to improve flow of academic information. Academic information comprises courseware, subject-related academic guidance, discussion groups, and recommended books. This also proves that most students are starting to accept these systems. This is in agreement with Kroeker (2000) who stated that IS affected education methodologies. It also support Dertouzos (1998) who states that IS mediate the way information is accessed, organised, stored and transmitted. Most of the respondents prefer e-mail to communicate. The reason might be that they want to establish a personal kind of a relationship which is non-existence in distance learning environment. A higher percentage of respondents prefer mail to communicate. The other reasons might be issues of integrity and privacy and also most people logon to their e-mail than other forms of IS available for them.

Preferred Form of Communicating with Peers for University Work

Regarding the form of communication among peers (i.e. from students to students and from lecturers to lecturers), about 57 (12.1%) respondents used EDS, 264 (55.9%) used e-mail, 19 (4.0%) used Osprey and 132 (28.0%) used myUNISA. The reason again may be the issues of integrity and privacy. Also people respond more quickly while using e-mail other than any form of communication. The other reason is the fact that most people have access to their e-mail wherever they are and can keep communication going. This is in agreement with Yusuf (2005) that IS provides opportunity for users to communicate with one another through e-mail, mailing lists, chat rooms and so on.

As a result the social relationships of users are affected by the IS that they use for communicating with their peers. The structures of those relationships are moulded around the IS that are used as a communication medium.

In testing the valued IS among EDS, myUNISA and Osprey, about 170 (23.5%) respondents valued EDS, 183 (25.3%) used Osprey, and 371 (51.2%) used myUNISA. This seems logical since myUNISA is the most advertised system. Respondents might value the system because they are only exposed to it, and forced to use it as it is the only system where

information pertaining to courses and study letters are posted and students have no choice but to use if they want to succeed in the courses they are registered for. This is in agreement with Clow (1999) that student perceptions of technology are important in the future of distance learning. Also authorities of the university have decided that as from 2009 access to myUNISA will be a registration requirement. In testing the valued IS that enhances studies, myUNISA was considered by (56.1%) as a system that makes their learning environment more conducive to study.

Involvement in Development

User involvement and participation in the development and/or implementation of a successful IS is important. Users' involvement in the development and implementation of these IS, can be described as their willingness to participate in the development and improvement of the university's IS, and users view on the effect of their input on the quality of those systems. Users said that they would be willing to participate in the development of UNISA IS that are built for them, whilst 50% would willing to only participate in the development of MyUNISA. The remaining 21% and 28.27% of users are willing to participate in development EDS and Osprey respectively. This is in accordance with Amory (2003) that user involved when s/he considers a system to be both important and personally relevant.

Quality of UNISA IS can be influenced to some extent by whether or not users were asked whether they wanted or needed any of the specified UNISA IS. It can therefore be said that, just by merely asking users whether they want or need the Information System can increase the success of that system. This is in agreement with Kling (1999). The question wanted to determine the IS wanted by the respondents. About 170 of the respondents wanted EDS, 132 wanted Osprey, and 327 wanted myUNISA.

Needs Taken into Account in Development

This is another question where overlaps occurred. Some respondents used more than one IS. Thus the total frequencies reflects a higher total than 384. The question wanted to determine if the respondents believed that their needs were considered in the development of specific IS. About 113 (21.2%) of the respondents believed that for EDS their needs was considered, 113

(21.2%) believed that for them, Osprey considered their needs, and 308 (57.7%) believed that development of myUNISA considered their needs. Those who feel that their needs have been taken into account perceive UNISA IS to be of good quality and the majority of those users who feel that their needs have not been taken into account; perceive UNISA IS to only be of acceptable quality. In all cases it showed that myUNISA forms the integral part of students' lives at UNISA. This is again in accordance with Bostrom and Harrion (1977) who stated that many people are not unhappy with systems.

Conclusion

This section provided an analysis of the data obtained from the empirical study. A description of how the results were calculated and interpreted was given. This was done to determine the Social Impact of Information Technology at UNISA. The IS investigated were myUNISA, EDS and Osprey.

The UNISA IS were explored from various uses. The study found that the dominant IS used by majority of users at UNISA is myUNISA. In addition, the research reveals in Section 5.4 that over 80% of users were not consulted in developing and implementing UNISA IS. However, users feel that their needs have been taken into account and they are also willing to participate in future development and implementation of UNISA IS. It can be concluded that UNISA IS is relatively successful in delivering in meeting the needs of community of users.

The success of a system is determined by the community of people who use it. Therefore it is imperative that UNISA considers social context of its users when designing and implementing Information System. In addition, since myUNISA is the most accessed Information System of the three, it will be more logical to consolidate the best functionality of the two systems EDS and Osprey.

Conclusion and Recommendation

The organisation that formed the basis of this Study is the University of South Africa (UNISA). Items that were investigated are, MyUNISA used to

facilitate learning at the institution, Electronic Delivery System (EDS) used to facilitate learning for students registered for the Master of Business Leadership (MBL) and Doctor of Business Leadership (DBL) through UNISA's School of Business Leadership (SBL) and Osprey used to facilitate learning by students registered for Computer Science and IS in the School of Computing.

The research was aimed at determining the level of impact UNISA's IT has on its community of users. To determine to what extent the user of UNISA's IS were involved and participated in the development and/or implementation of these systems. The research questions arrived at are as indicated previously.

This study analysed the effects of UNISA's IS from Social Informatics perspectives. It was noted that social impact of IS are rarely taken into account when systems are being developed and/or planned. A social impact of an IS are the users. Users play a role in the success of an IS, but the social implications that affect them are not fully accounted for by system designers\analysts and those implementing the system.

The study revealed that even though over 80% of respondents were not involved or participated in the development and implementation of UNISA's IS as indicated in the results, but the users are satisfied with the IS provide to them by UNISA.

Response to Research Questions

The main findings of this research in relation to each research question will now be discussed. Each question is followed by a discussion of the findings.

What is the social impact of UNISA IS within the institution?

From Kling (2000) it can be concluded that IS have an effect on the social relationships of users. The social relationships of users are affected by the IS that they use for communicating. The structures of those relationships are moulded around the IS that are used as communication medium.

Respondents (63%) indicated that they do not have access to the internet at their residences, and at the same time study material, notices and other form of information that can enhance learning. These are posted on these systems for students to access, of which the majority of students have

no access. The impact this have on the community of users is that these systems contribute to the inaccessibility of academic staff as students are always referred to this systems for more information which impact negatively on their academic progress.

Respondents view these systems of value and aid their learning. It can be concluded that the impact is two folded. The social relationship with academic staff is impacted negatively by these systems. UNISA is operating in the third world with the characteristics of first world and this on its own affects the entire social structure of community of users.

In what ways does the social relationships of users during systems development/planning impact on IS?

According to Kling (2000), the Internet, raises issues about changes in areas such as working at home, communication, entertainment, and other personal issues. IS have been used and relied upon and therefore social implications of IS for users have become prevalent. ICT are an integral part of some organisations and so shape identity and institutions (Lamb & Kling 2003). People routinely use computers, information products and other ICT's in their daily lives. These technologies shape who they are as organisational representatives, their relationship with other people in the organisation as well as their perceptions about themselves (Lamb & Kling 2003).

An example of a social consequence of IS's on users is given by Kling (1999). The development of an IS may reduce the amount of paper produced and used, systems designers may however may not realise that paper plays important roles in some places where one wouldn't think it would be used. This could have social consequences for users of the system. Rosenbaum and Sawyer (2000) suggest that the use of ICTs often lead to both intended and unintended consequences included in this are the social consequences for users. In summary IS's have social consequences and these consequences need to be considered when IS's are designed and implemented. The consequences of IS's depend on the context in which systems are developed, implemented, and used (Kling 2000). As indicated in the results show that traditional in-person or telephonic conversations is been replaced by this System for social chatting at UNISA.

To what degree are the users of the UNISA IS involved and participating in the development and/or planning of these systems?

User involvement is described as subjective psychological state reflecting the importance and personal relevance of a system to the user. User participation is described as set of behaviours or activities performed by users in the system development process (Kling 2000). The results show that 80% of the respondents did not participate at all in the development and/or implementation of any of the specified UNISA's IS. Users were not even asked if they wanted the implementation of the specified IS, or what they wanted in terms of their needs. User acceptance has a lot to do with the users' involvement in the development and/or implementation of an IS. According to Kling (2003), it is important to note the difference between voluntary versus forced acceptance.

It goes to say that users involvement does not affect acceptance if there is forced acceptance, as the user has no choice but to use the IS, whereas users involvement does affect user acceptance if the acceptance is voluntary. Therefore it is necessary to have positive user involvement when acceptance of an IS is left up to the user. UNISA's IS were forced on the users.

How does user involvement and participation relate to IS success?

It is indicated that 85 % of respondents are willing to be involved and participate in the development and implementation of UNISA's IS. If the success of an IS is measured by user satisfaction and user participation in systems development is related to user satisfaction, then user participation is essential for the success of an IS (Mansell 2005). In the article written by Mansell (2005) it was found that user participation in the development of an IS, may not necessarily lead to user satisfaction, but it is still a necessary antecedent for the success of IS.

It can also be argued that a successful IS would be one that users of that system are satisfied with, perceive the system to be of high quality, their needs are satisfied and the IS does what it was designed to do. Only 2%

users are not satisfied with UNISA's IS, hence UNISA's IS is reasonably successful.

What social factors should influence the development/ planning of IS?

According to Gal and Berente (2008) characteristics and attributes of the users of the system being developed are expected to influence the systems' success in a variety of ways. Each of these factors is described below.

Bias is defined by Dey (1993) as the users' 'willingness to change'. This includes the users' willingness to try new technological approaches to support the work system or changes to the business processes that make up the work system itself. It is generally accepted that most individuals have a natural tendency to resist change. This may impact a project's success by users insisting that the new system work the same way the old one did, e.g. that a printed report must be in the exact same format or that a printed report is required at all.

User commitment is defined by Crede (1997) as the level of importance the users being affected by the application place on the project's successful completion. This reflects their level of emotional or psychological obligation to the project. This construct is expected to be similar to team motivation and management commitment. The users' commitment to the project would be expected to impact on the project's success by influencing the time users are willing to dedicate to the project. Users that want the project to succeed will be more willing to provide documents, answer questions, and perform other development activities.

Users' communication skills were defined by Amory (2003) as the writing, speaking, and listening skills of the users participating in the IS Development project. The primary reason for user participation in systems development is to transfer their job knowledge. Without an adequate level of communication skills, the communication and interaction between the users and IS personnel may be difficult. Without adequate communication skills, the users' may be willing to provide the information needed for a successful project, but not able to express their requirements to the IS personnel, other users, or management.

Users' computer literacy is defined by Amory (2003) as the level of knowledge and understanding that the users' possess regarding computers, software, and technology in general. If users are more computer literate, communication between IS personnel and users may increase because the users can understand some of the computer jargon. Also, as computer literacy increases users may be more likely to accept new technology, this is the may display less bias. Also, if users tend to be computer savvy they may have more realistic expectations with regard to what can and cannot be accomplished using Information Technology as well as toward the amount of time and money needed to design, construct, and implement new software.

User ownership is defined by Amory (2003) as a psychological attachment to the system or business process for which a new system or software is being developed or implemented. Similar to user commitment, but focused on the business activities, user ownership may have a positive or negative impact on IS Development project success. If a user with a strong feeling of ownership believes that a new system will help the m perform their activities better or quicker, this may increase user commitment to the project and positively impact project success. However, if a user with a strong feeling of ownership to the business process sees the project as threatening the process, increasing their workload, or eliminating their job; this will decrease commitment and negatively impact project success.

User participation is defined by Amory (2003) as the active, substantive participation of the actual users of the application in the development process. This includes identifying the correct end users and their performance of specific tasks and activities during IS Development. The proper type and amount of user participation in IS Development is still a matter of debate within industry and the academic world. New techniques such as extreme programming, that minimises the user's participation, are being suggested as the most productive IS Development methods while at the same time the socio-technical approach is still popular and has many dedicated advocates. User participation in the IS Development process has had a great deal of attention and yet the effect of participation on project success is not well understood. It would seem likely that a contingency approach for user participation in IS Development based on the type of system, management goals, etc. is appropriate.

Users' understanding of the current system is defined by Amory (2003) as the level of knowledge that the users participating in the IS Development process have regarding current manual and computer based processes and procedures used to perform their duties. Users that have a high level of understanding of the current system should be able to point out specific problems and areas for improvement that can be incorporated into the new system. On the other hand, users that do not understand the current system or how it is related to other operations of the business may not be able to provide the details needed to automate processes and may resist efforts to streamline or eliminate redundant processes or system outputs.

The users' understanding of needs by Bostrom and Heinen (1977) is defined as the level of knowledge that the users who are participating in the development process have regarding the information required to perform their duties. This includes knowledge about the information outputs required and the processing and data required to produce this output. Again, the primary reason for the participation of users in the IS Development process is to determine the information requirements needed for the users to perform their job activities. For this transfer of knowledge to occur, the users must have some idea of what these information requirements are.

Managerial Guidelines

From the results of this study the following guidelines are given to tertiary institutions that already have, or are planning to develop/implement IS for the use of lecturers and students:

- Users needs should be taken into account whether or not they understand.
- IS affect the social aspects of users; therefore these impacts must be taken into consideration before implementing these systems.
- Most users want to participate and feel that they can add value to the development/implementation of IS built for them.
- Users must participate and be positively involved in IS development/implementation for it to be truly successful.
- Users' needs must be taken into account, using best practice isn't sufficient.

- University IS are reasonably successful, but are not as effective as they could be. By accounting for the social aspects of these systems, their successfulness and effectiveness can be optimised.
- IS have the potential to add value to and increase the effectiveness of educational practices, but also have the potential to impact immensely on the encompassing community. This must be considered before implementing any IS.

Conclusion

The different social impact of IS is important to their success and has a influence on these systems and their users. The study intended to investigate this social impact in the context of University IS, how they impact on the users of those systems and how those aspects affect the success of those systems.

It can be said that a broader view of users as social actors is needed for IS developers to fully understand the needs of users and the social impact of the IS. Users' perception of IS usefulness and ease of use has an impact on the users' view of the quality of the system. It can also be proposed that user participation and involvement is necessary for IS success, but having it does not necessarily guarantee IS success. Tertiary Institution IS do have an effect on social relationships, as they can change the structure of many of the relationships that user may have, be it relationships with fellow peers, students, lecturers or friends.

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The Social Impact of Information Systems ...

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The Impact of Information Quality on Information Research

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Abstract

This contribution analyses the impact of information quality on research. It presents a theoretical discussion of the concept ‘information quality’ and shows that good information quality entails good research. The discussion is relevant for both researchers and research users, because it shows that information quality is a critical determinant of research success, as measured by the creation of new knowledge. Thus, information quality fundamentally impacts research. Reasons for the existence of low quality information as well as proposed solutions to this problem are provided in the paper.

Keywords: Information, information accuracy, information attributes, Information timeliness, information cost, volume, information bias, information quality, information relevance, information reliability, Information timeliness, knowledge, research.

Introduction

This article presents a theoretical discussion of the impact that information quality has on research regarding management decision-making. It also discusses the problems experienced and the solution strategies used by managers and intermediaries during information acquisition, information search criteria, information attributes, information search processes,

information evaluation, and information transfer. Throughout the article, the Internet is mentioned as the primary information repository. Finally, information attributes such as information quality, relevance, reliability, trustworthiness, timeliness, cost, volume, bias, volatility, and accuracy are highlighted.

This article provides a theoretical discussion regarding the impact of information quality on research. It explains that the use of quality information is a critical determinant of success for an organisation; equally the use of quality information is a critical determinant of success for research. In research, information is both a production input and output, and good quality inputs are prerequisites for good quality outputs. The objective of this article is to present a theoretical discussion about the impact of information quality on research, using prior research as point of departure.

Literature Review

The literature reviewed is obtained from the World Wide Web. The same keywords are used in three separate search engines, namely *Google* and its scholarly version, *Google Scholar*, the *Association for Computing Machinery (ACM) digital library search engine*, and the *Association for Information Systems e-library search engine*.

Information Quality Definition, Attributes, and Importance

There is evidence that measurements of information quality can be used to predict organisational outcomes (Madnick *et al.* 2009). Data and information quality is acknowledged as playing a critical role in a data-intensive, knowledge-based economy. Data quality and information quality are often used interchangeably. However, there is tendency to use data quality to refer to technical issues and information quality to refer to non-technical issues (Madnick *et al.* 2009). Data can be regarded as a product that is produced by organisations through a data manufacturing process (Madnick *et al.* 2009). Information is said to consist of facts and data, which are organised for a particular purpose; information quality is a major criterion for measuring the success of an information system, and decision quality is a function of information quality (Jung 2004). There is a strong relationship between data

quality and decision quality. Data must be relevant, timely, complete, interpretable, easy to understand, represented concisely and consistently, appropriate, and accessible but secure (Jung 2004).

According to Tang *et al.*, 2003 the four semantic categories of information quality are:

1. **Intrinsic accuracy** (objectivity, credibility, and reputability);
2. **Contextual relevance** (valuableness, timeliness, completeness, information richness);
3. **Representational** (interpretable, understandable, conciseness, consistence); and
4. **Accessibility** (easily and securely obtained).

Information quality attributes can also be regarded to include both the objective and subjective elements of accuracy, reliability, validity, comprehensiveness, currency, credibility, expertise, trust, thoroughness, transparency, and an awareness of bias (Diakopoulos & Essa 2008).

In particular, accuracy can be stated as mistake free, error free, correct, conformity to truth, or exactness to a standard or model, and accuracy states that facts or the version of events presented have been corroborated by multiple reliable sources. Reliability can be defined as dependability or consistency. However, it is more practical to use dependability because consistency requires analysis over time. Credibility is closely linked to reliability through the idea of trustworthiness, and is a perceived, subjective quality of an information source; and trustworthiness is a measure of the truthfulness, fairness, lack of bias of a source or communication; and expertise is the perceived knowledge, skill, and experience of the source (Diakopoulos & Essa 2008).

In addition, comprehensiveness relates to the completeness of coverage of the information, this is equivalent to a principle of thoroughness, which involves methodical learning about the subject. Thoroughness indicates the degree of comprehensiveness of research performed by the information producer, which allows for informed information selections. Comprehensiveness also corresponds to the journalistic principles of fairness and balance that require the inclusion of diverse sources, perspectives, and opinions (Diakopoulos & Essa 2008).

Furthermore, transparency and bias are important attributes of information quality. Transparency entails disclosing and describing how sources know what they know, what biases they might have, and whether or not there are conflicting accounts. Bias also relates to sources, including aspects of the communicator's bias or his/ her relationship to sources and information users (Diakopoulos & Essa 2008).

Information quality is a relative not an absolute concept. Information is regarded as of high quality if it is fit for purpose, which can be judged by the consumer of the information only. What is high quality for one group of users may be considered being of poor quality by others (Embury *et al.* 2009). An example is a typical scenario found in both e-business and e-science where datasets are regarded to be of acceptable quality for the application for which they were initially designed, but are found to be of low quality when applied to a new application (Embury *et al.* 2009). In addition, no single definition of information quality exists. It is a multidimensional concept with various dimensions being of relevance for different applications. One study surveyed information professionals and resulted in dimensions including accuracy, completeness, believability, and interpretability (Embury *et al.* 2009).

The term 'information quality' implies a measure of excellence in communicating knowledge or intelligence. In news production the transference of quality information is vital (Diakopoulos & Essa 2008). Indeed, Journalism requires a practical or functional form of truth that endeavours to provide the reader with information of such a quality so that the reader can make his or her own decisions about the subject (Diakopoulos & Essa 2008). Information quality is critical for good understanding, especially good understanding of online media. Information quality relates to the accuracy and validity of claims and the reliability of information sources (Diakopoulos & Essa 2008). There are nine information quality criteria that are considered to be important to the context of news analysis: accuracy, source reliability, objectivity, depth, author credibility, readability, conciseness, grammatical correctness, and multiple viewpoints (Tang *et al.* 2003).

Information Quality Problems and Solutions

Information quality problems result in increased, estimated costs of between ten to twenty percent of revenue cover, for organisations that use the information for both operational and strategic decision making; these costs include reduced productivity due to time spent to recover from data errors; reduced customer satisfaction and loyalty resulting in reduced future business opportunities; reduced employee morale; and reduced ability to change business rules and policies (Embury *et al.* 2009).

Assessing and benchmarking information quality is a difficult and inexact activity, this necessitates a methodology to ensure that organisations develop quality information products and deliver quality information services to consumers, and benchmarks developed for a methodology can be used to compare information quality across organisations and baseline information quality (Kahn *et al.* 2002).

Organisations are often unsuccessful when they attempt to translate data into consequential insights that they can use to improve business processes, make smart decisions, and create strategic advantages; while organisations continue to increase investment into collecting, storing, and processing vast quantities of data (Madnick *et al.* 2009). The difficulties in translating data into information range from the technical, such as integration of data from disparate sources to the non-technical, such as lack of a cohesive strategy across an organization ensuring that the right stakeholders have the right information in the right format at the right place and time (Madnick *et al.* 2009).

The management of data and information quality starts with evaluating data and information quality in existing systems and processes, and there are many difficulties in obtaining accurate and cost-effective assessments of data and information quality due to the complexities of information systems and the information product manufacturing processes (Madnick *et al.* 2009). A problem exists where data and information quality in many data repositories is very inconsistent, however, the data can still be useful if the user is aware of the quality problems and can formulate workarounds (Embury *et al.* 2009). Data and information quality problems can result from missing or inaccurate data, and out-of-date or imprecise information that will propagate through queries to produce results that are

challenging to interpret, reducing the value of the information (Embury *et al.* 2009).

In the IS research environment, there is poor data, inadequate data preservation and reuse practices, and very little advanced data instrumentation; the IS research community must give data the attention, commitment, quality, availability and growth care that is required for valid research (Lyytinen 2009). Poor data results in poor theory and it has limited the scope and scale of IS research; poor data hinders organisational orientation and longitudinal research, obstructs integrated theory development with strong, generalisable results, and results in little or no digital repositories of validated primary data (Lyytinen 2009). One of the causes of this data poverty is IS research's tradition-bound internal norms and research practices. However, there are solutions that are starting to emerge, such as IS instrument sharing of Internet facilities, public data sources, new data mining techniques and sharable archival data sets, institutional data harvesting opportunities, and the digital footprint of Internet traffic (Lyytinen 2009).

In addition, the Internet has changed the information flows by increasing the unmanaged flows dramatically, and serious information quality problems have resulted for ad-hoc information generated from various sources, such as external Web sites and individual users' personal computing applications (Segev n.d.).

Information Acquisition, Analysis, and Transfer

A factor that has an effect on the information acquisition task is a user's literacy. In a study of how a user's literacy level affects the information acquisition task, it was found that low literacy users take eight times longer than high literacy users to complete an information search task and also were significantly less accurate than high literacy users. Low literacy users on average spent one-third more time on a web page than high literacy users, but did not seem to be informed by it. Low literacy users employed a much less focused information search strategy than high literacy users visiting eight times more web pages in total. Low literacy users back-tracked thirteen times more frequently than high literacy users and are four times more likely to re-visit web pages. Low literacy users are thirteen times more likely to

lose their way on web sites than high literacy users (Kodagoda & Wong 2008).

According to Kodagoda & Wong (2008) an information search originates from a specific task and the difficulty of that task has a direct effect on the quality of information sought. Four factors determine task difficulty:

1. Having multiple paths to reach its goal, each of which yielding its own outcomes and thus contributing differently to the end goal;
2. Conflicting interdependencies among these paths in reaching the end goal;
3. Doubts whether a given path would materialize into the end goal, and
4. Multiple possible goals

Therefore, an information search originates from a task, and it is influenced by the characteristics of the task, namely how the user approaches and retrieves information, the difficulty of the task, and the search strategy chosen (Kodagoda & Wong 2008).

Information quality analysis is a more complex task than just calculating a single measure. Separate items of evidence must be gathered for the analysis then decision procedures must be applied to the evidence gathered to assign specific quality scores to each information item being analysed. The evidence gathering task and the decision procedures will be different in scale and complexity for each application domain (Embury *et al.* 2009). Also, knowledge about data or information sources and the processes used to derive the data or information is important when users evaluate the data or information quality; and when users decide on the appropriate use of the data or information (Madnick *et al.* 2009).

The Internet as an Information Repository

The exponential growth of the Internet has fundamentally changed how information is generated, stored, manipulated, and consumed (Gates 2000, Madnick *et al.* 2009). Also, each Web user has individual knowledge, which results in varied predictions, expectations, and evaluations of information on

the web (Diakopoulos & Essa 2008). Further, information retrieval systems have been almost exclusively the domain of the librarian, but since the advent of the World Wide Web (WWW) this has changed and many people are now only familiar with information retrieval systems such as web search engines (Jung 2004). In the research environment, the Internet has changed the way research scientists produce knowledge; the Internet provides access to information on which scientific inquiry is now highly dependent (Ding *et al.* 2009).

The Internet is a massive social network that has emerged without central planning, the addition of pages and links to the Internet is a distributed, asynchronous, complex, and continual process, however the Internet has resulted in the vast majority of web pages having a small number of links and a few pages having huge numbers of links. Only the few pages with huge numbers of links benefit from high volume traffic, search engine indexing, good search engine ranking, good visibility, holding consumer attention, and experiencing the 'winners take all' phenomenon (Pennock *et al.* 2002). This phenomenon has implications for information searching on the Internet, especially via links.

Methodology

The methodology was decided upon after the researchers gained insights about the information quality during the literature review. Repeated searches regarding the nature of information quality, using the search terms given at the beginning of this article, incrementally brought to light relevant literature on the nature of information quality how to obtain and evaluate the quality of information. The literature review therefore created a basis for addressing the objectives of the paper. The methodology applied describes the process that is used to accomplish the aims of this paper. The methodology applied in this article is a systematic process, which increases the reliability and validity of the outcomes.

This article uses a document survey methodology. A non-probabilistic sampling technique is used, called purposive sampling (Oates 2006: 98). This sampling technique is used because the exact universe of relevant documents is unknown and choosing documents based on the search criteria will provide data suited for the purpose of this paper. The documents

are selected based on their relevance and ranking by the search engines. The number of documents selected is suited to the scale of this paper.

Qualitative data analysis is then performed on the documents found. A matrix was used to analyse the data. This was done by searching the literature for any of the following themes that are relevant to this paper: information quality definition, attributes, and importance; information quality problems and solutions; information acquisition, analysis, and transfer; and the Internet as an information repository.

The resulting themes emerging from the literature are extracted and presented in each theme category in the literature review. In the theory discussion chapter, the objective of the article is discussed as the theory, with reference to the article and the relevant parts of the literature review. Thereafter conclusions are drawn in the conclusions chapter of this paper.

The methodology applied demonstrates the process used by the authors to address the objective of the paper. The methodology applied is tailored to the scope and purpose of the paper, which is to provide a theory discussion by referring to similar themes found in the article and prior research. The methodology applied is valuable for assessing the approach adopted by the authors and the validity of the resulting theory discussion. The methodology provides a description of the method used to carry out the objective of this paper.

Theory Discussion

The theory discussion analyses the objective of the article by splitting it into its constituent themes, which are: information quality definition, attributes, and importance; information quality problems and solutions; information acquisition, analysis, and transfer; and the Internet as an information repository.

Information Quality Definition, Attributes, and Importance

The quality of a decision is determined by the quality of the information that it is based on, and that the correct use of timely information is critical to the success of an organisation. The article continues to state that decisions must be based on reliable and responsive information, and the information criteria

that must be tested are reliability, empathy, assurance, tangibility, and responsiveness.

The information used in research includes literature and empirical data, both provide evidence for the research. The information from the literature is used to determine how worthwhile the research topic is and to show that the research work will create new knowledge; and the empirical data gathered is the foundation of any research conclusions. Research is completely dependent on both these information aspects; the quality of these information aspects must be high in order for the quality of the resulting research to be high.

Information Quality Problems and Solutions

Information quality problems arise from broad definitions of information quality and the inability to define information quality so that it can be measured and managed (Kahn *et al.* 2002; Madnick *et al.* 2009). Another information quality problem is the validity of claims, referring to the well-groundedness, or logical correctness of a claim (Diakopoulos & Essa 2008). The Internet has also created information quality problems by dramatically increasing the unmanaged information flows, and from ad-hoc information generated from various sources (Segev n.d.).

Solutions to information quality problems include triangulation, corroboration of information sources, and developing a chain of evidence to support inferences (Diakopoulos & Essa 2008). Also, exact and measurable information quality definitions and information quality management programs are a solution to information quality problems (Kahn *et al.* 2002; Madnick *et al.* 2009). Indeed, information quality problems can be solved by implementing methodologies and benchmarks to develop and deliver quality information (Kahn *et al.* 2002).

Research is negatively impacted by low quality information due to poor data, inadequate data preservation and reuse practices, and very little advanced data instrumentation; solutions include increased data attention, commitment, quality, availability and growth care (Lyytinen 2009). Low research information quality causes poor theory, limited scope and scale; hindered organisational orientation and longitudinal research, and obstructed integrated theory development with strong, generalisable results (Lyytinen

2009). Solutions are IS instrument sharing Internet facilities, public data sources, new data mining techniques and sharable archival data sets, institutional data harvesting opportunities, and the digital footprint of Internet traffic (Lyytinen 2009).

Information Acquisition, Analysis, and Transfer

The article proposes that the information search task become a collaborative task performed by both information searchers and users. The article shows that the attention span of Internet searchers to web sites is very limited; searchers require leadership, motivation, adequate breaks, focus, and well define search requirements. The article exposes the costs of information searching, being time, effort, money, transmission costs, knowledge transferral costs, opportunity costs, and information filtering costs to ensure that information is trustworthy, unbiased, and usable; these costs must be managed carefully.

The article explains that deciding between delegating the information search task or self-acquisition is an important choice for information users, because delegation may affect the specificity of the information search and self-acquisition may be technically difficult and time consuming. Human knowledge transfer is critical between the information user and the information searcher, to ensure correct information acquisition. The article presents the information search task as a process that starts with a description of the search phenomenon followed by search phenomenon theory articulation and ending in an evaluation of the collected information. The article presents criteria for evaluating information before it is used for decision-making; these are author authority, comparability, stability, format appropriateness, software requirements, ease of scope determination, and ease of author identification, last update date, accuracy, and ease of use. In particular, the article indicates that Internet information evaluation criteria be content, credibility, critical thinking, copyright, citation, continuity, censorship, connectivity, comparability, and context.

The literature emphasized the effect of user literacy on the information acquisition task, both negative and positive for poor literacy and good literacy, respectively (Kodagoda & Wong 2008). In addition, the complexity of the need or task giving rise to the information search will

affect the difficulty of the information acquisition task and the search strategy employed (Kodagoda & Wong 2008). The information search process can consist of the following stages, initiation, selection, exploration, formulation, collection and presentation; and four information seeking models are presented, being the undirected viewing model, the conditioned viewing model, the informal search model, and the formal search model (Kodagoda & Wong 2008). Further, information search tasks can include building manual inclusion and exclusion rules with the disadvantages that they can be expensive to maintain (Tang *et al.* 2005).

The literature states that information quality evaluation is a complex task consisting of evidence gathering, application of decision procedures, and assignment of specific quality scores; the task will be different in scale and complexity for each application domain (Embury *et al.* 2009). Information quality evaluation can be performed empirically by counting hyperlinks or conducting advanced statistical models (Tang *et al.* 2003). Also, knowledge about information sources and the processes used to derive the information is important for evaluation of information quality (Madnick *et al.* 2009). In the health industry, health information evaluation has been done by health experts using manual assessment protocols of medical web site information quality, based on either scientific evidence or accountability criteria (Tang *et al.* 2005).

One can search for Research information in many and varied sources, including books, manuals, journals, conference and workshop proceedings, reports, newspapers, magazines, radio, television, art exhibition catalogues, multimedia literature, resource catalogues, the Internet, online databases, gateways, and people; and information and data can be generated through documents, observations, interviews, and questionnaires (Oates 2006). All searches must follow a well-defined systematic process that directly addresses the research objectives; this is the basis for the acquisition of high quality information. Research information quality evaluation is a vital task and includes an assessment of the author, publisher, editor, reviewing peers, citations and references, environment and date published or produced, intended purpose, the intended audience, appropriateness, production process and method, flaws and omissions, conclusion justifications and generalisations, limitations, format, relevance, reliability, validity, and bias (Oates 2006).

The Internet as an Information Repository

The article reiterates that Internet information searchers require motivation and good search definitions in order to successfully provide for the information needs. Searching on the WWW is characterised by the 'rich get richer' phenomenon, where a relatively small number of sites receive a large proportion of hyperlink references and traffic; this may limit a searchers search landscape and prevent access to infrequently accessed but high quality information. Internet information must be treated with caution because there is a great deal of grey information on the Internet, which is low quality and biased information presented as high quality information. In addition, Internet sites that provide evaluation of other sites may also be subjective and biased. WWW information is rarely neutral, it usually represents a certain point of view, it frequently cannot be verified, so the truthfulness of WWW is questionable; these aspects contribute to making WWW information difficult to trust.

The Internet has had a profound effect on the research community, changing the way scientists produce knowledge and creating a dependency on the Internet for information (Ding *et al.* 2009; Oates 2006). Researchers must critically evaluate Internet information before it is used as evidence for new knowledge because of the unregulated nature of information on the Internet; of particular research concern is the transitory nature of information on the Internet, ethical considerations, and copyright laws and practices (Oates 2006). Nevertheless, the Internet has also presented new and efficient opportunities for researchers to search for information, use information, and gather data and information.

Conclusions

The article provided the salient topics emphasised in the article, and explained how research is impacted by information quality in a similar way that decision makers are impacted by information quality. The article stated its objective, which is to present a theory discussion about the impact of information quality on research, using the article as a basis, and prior research as a supporting reference. The article then set out the prior research that related to the objective of the paper. The article also explained the

process used to accomplish its objective, and thereafter a detailed theory discussion was written.

The article shows that information quality is a critical determinant of research success, as measured by the creation of new knowledge. Thus, information quality fundamentally impacts research. Low quality information will guarantee low quality research. Even though it is known that information quality has a huge impact on research, the literature explains that low quality information is evident in the research community. Reasons for the existence of low quality information as well as proposed solutions to this problem were provided. It is an imperative for researchers to develop information acquisition and evaluation methods to systematically ensure high information quality, both for the integrity of the research itself and ethically for the users of the research. The Internet is a particularly important aspect of information quality because it is so widely and extensively used as an information repository; the quality of information obtained from the Internet has a significant impact on research quality.

The article is valuable to all information users, including decision makers and organisational management who rely on information to affect reality for their purposes and objectives. The article is directed toward the research community, which uses information comprehensively as a production input. The quality of this production input, being information quality, has a direct effect on the quality of the research output, being the quality of new knowledge created.

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Strategic Planning for Digital Convergence in South African Businesses

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Abstract

Findings generated from a study that looked at the benefits and barriers that organisations anticipate, experience and plan for when considering a strategic implementation of convergence initiatives are presented. The study focused on the strategic planning aspects of convergence in South African organisations and analysed the sophistication of these plans. The paper presents a discussion of three phases within the process: The first phase interrogates the planning process and reveals that the organisations under study did not adopt a formal approach to planning, and at best relied on a semi-formal approach. The second phase investigates the planning steps for convergence, which show that the majority of organisations do follow a step-by-step approach and make deliberate attempts to identify the benefits of and barriers to their convergence initiatives. An expanded model incorporating these planning steps is proposed with additional steps extrapolated from the research findings and the literature review. Lastly an investigation of the benefits and barriers anticipated and experienced reveals that the benefits anticipated from a convergence initiative show a clear expectation of lower management and service costs.

Keywords: Digital Convergence, Strategic Planning.

Introduction

There has been much written about convergence in the past few decades, so much so that it has become increasingly difficult to separate hype from

reality. Convergence is not a single homogenous process, but a range of processes comprised of a series of discrete developments in technologies, networks, content, gateways, retail marketing strategies, services and markets, as well as the changing relationships between all of these distinct areas. A clear definition of the concept of convergence does not exist (Kaluza, Blecker & Bischof 1999). Convergence has the ability to impact an organisations' strategic capability (Chaterjee & Byun 2002) and also has the potential to impact on the delivery of government services. But convergence has not progressed at the speed at which it was previously thought, largely due to a number of technological, market regulatory and consumer barriers (Gillwald 2003), with lingering concerns holding some firms back from deployment (Economist Intelligence Unit 2004). The management of technological transition have always been difficult for organisations, and those that approach convergence tactically rather than strategically will rebuild their network several times at multiple times the cost of a well-planned network (Srivastava & Finger 2006).

Problem Statement and Objectives of the Study

A review of the literature reveals that while extensive research has been conducted into the technological aspects of convergence, there is a lack of research into the planning aspects, especially the extent to which organisations are strategically planning for convergence. Even if planning is taking place, there is little or no evidence as to the sophistication of those plans. Additionally the literature points to many organisation's having a narrow view of convergence and its potential benefits, with many confining convergence to the realm of Voice over IP solutions (Gartner 2002). Similarly little is know about the barriers that organisations encounter in their endeavour to deploy a converged infrastructure or indeed what steps are being taken or what methods are available to overcome these barriers.

Given the problem outlined above, this study focused on the strategic planning aspects of digital convergence in South African organisations. Specifically this study sought to contribute to the literature by providing insight into the extent of the planning process for convergence that organisations are undertaking, and investigating the sophistication of these plans with respect to established planning process dimensions. Additionally

the study aimed to identify the benefits and barriers, both anticipated and experienced.

Importance of the Research

Competition in an environment marked by convergence is assumed to lead to faster-paced innovation and improved products and services for consumers at lower costs. The resulting networked economy will facilitate national economic growth and participation in the global information or knowledge society (Wild 2006). The South African government continues to emphasise the importance of ICT's and their contribution to the country's economic growth, specifically in the broad framework for economic policy as set out in the Accelerated and Shared Growth Initiative of South Africa (ASGISA). In the current version, the action plan includes the goal to bring down the cost of ICT by developing high-speed national and international broadband capacity. However, South Africa continues, despite the overall growth of the ICT sector, to lag behind the international community, and while the incremental movements down international scales are not dramatic, they certainly indicate an inability by the country to harness the potential of ICT for economic growth and development as articulated in various national policies and strategies. The World Economic Forum (2008) which measures a country's ICT capability through its 'networked readiness index' (NRI), currently ranks South Africa 52nd in its 2008-2009 report, out a possible 134 countries. South Africa has fallen from 51st in 2007-2008.

The results from this study will assist organisations reflect on their planning process; it will enable organisations understand weaknesses and strengths within their planning process for convergence, thereby assisting in the realignment of the planning process to better meet the demands of convergence planning. Moreover this study will identify and compare benefits and barriers, both anticipated and experienced. It will enable organisations to benchmark against the benefits being experienced in the wider industry and also gain a better understanding of the barriers to convergence being faced by organisations.

Literature Review

Convergence

Information has increasingly become a commodity in its own right and now

ranks as one of the natural resources of an economy along with human, natural and financial resources. It has been argued that society at large is now entering a new type of information-driven economy or even a completely new form of 'information society' and 'information economy' (Webster 1994). The International Telecommunications Union (ITU 2007) defines this information society as the digital revolution in information and communication technologies that have created a platform for a free flow of information, ideas and knowledge across the globe; while Katz (1987) describes the information society as socio-economic systems that exhibit high employment of information-related occupations and wide diffusion of information technologies.

The diffusion of new technology is perceived as a major feature of the information society (European Commission 1996; Melody *et al.* 2005), with convergence in particular being hailed by many as the catalyst for the information revolution (Hassan 2000; Braman 1993). Rosenberg (1963) notes that the term convergence was first used to describe 'convergent technologies' in the US machine tool industry. Since then several scholars have adopted the concept for various industries. The common theme in respect of a definition of convergence indicates a moving towards or meeting at some common point or tending towards the same result, i.e. merging. Primarily what is being conceived as merged relates to technology, i.e. the integration of communications, broadcasting, telecommunications and computers, but in a secondary sense a number of other areas come into play: services; markets; industry alliances and mergers and policy and regulation (Bohlin 2000).

While the literature is littered with definitions of convergence, the most frequently quoted source for a definition of convergence comes from the Green Paper on Convergence issued by the European Commission in 1997 which defines convergence as 'the ability of different network platforms to carry essentially similar kinds of services' or 'the coming together of consumer devices such as the telephone, television and personal computer'. For the purposes of this study convergence is defined at its most general level as the increasing interrelationship and level of integration, between the disciplines of telecommunications, broadcasting media, and information technology.

The Strategic Nature of Convergence

Competition in an environment marked by convergence is assumed to lead to faster-paced innovation and improved products and services for consumers at lower costs (Wild 2006). Kaluza *et al.* (1999) cite the example of Siemens AG, which stated that besides deregulation and privatisation, the main driver for the organisations planned restructure had been the convergence of technologies. Convergence can also shape the delivery of government services, redefine the way businesses operate and provide individuals with as yet unimagined information and communication services. Converged services may offer many people in developing countries a better value proposition and lower priced access to basic voice communications and will also provide new opportunities for extending network access to many rural areas in an economically sustainable manner.

Convergence: Legislation and Research

With its relatively well developed and diverse infrastructure, South Africa is taking a leading role in the region in respect of convergence of telecommunications and information technologies with the media and entertainment sector (Budde 2008), as envisaged in the Electronic Communications Act (ECA), that encompasses legislation relating to convergence. The stated intention of the ECA is to lower costs of access to ICT and increase efficiency of telecommunications provisioning in South Africa (ECA 2005).

Various industry-based surveys that provide evidence of the strategic nature and of the importance with which organisations view convergence have been undertaken. The Economist Intelligence Unit (2004) survey found that over two-thirds of companies surveyed were expected to shift to converged networks throughout most or all of their organizations. A Yankee Group (2003) survey found that 80% of operators believe deployment of converged services will boost profit margins.

The Planning Process for Convergence

Gottschalk (1999) writes that barriers to the implementation of strategic plans may have roots in the planning process, and may include the fact that the plan was not sufficiently useful and it did not fit the organisation. An extensive analysis of Strategic Information Systems Planning (SISP) reveals

six emergent process dimensions that are robust (Segars, Grover & Teng 1998), and which can be used to investigate the strategic planning process for convergence.

Research Question 1

What is the extent of planning for digital convergence in South African organisations with respect to the following planning process dimensions?

Formalisation: refers to the existence of structures, techniques, written procedures, and policies that guide the planning process (Lederer & Sethi 1996).

Consistency: is concerned with the frequency of planning activities and the frequency of evaluation and revision of strategic plans (Sabherwal & King 1995 as cited in Segars *et al.* 1998).

Planning Flow: refers to the locus of authority or devolution of responsibilities for strategic planning; in other words, the roles played by corporate and divisional managers in the initiation of the planning process (Segars & Grover 1999).

Focus: refers to the balance between creativity and control that exist within the strategic planning process (Chakravarthy 1987).

Participation: captures the breadth of involvement in strategic planning by examining the number of planners involved and representation from various functional areas in the planning process (Lederer & Sethi 1996; Sabherwal & King 1995).

Comprehensiveness: Segars *et al.* (1998) define comprehensiveness as ‘the extent to which an organisation attempts to be exhaustive or inclusive in making and integrating strategic decisions’.

Planning Steps for Convergence

Various commentators (Chatterjee & Byun 2002; Hukill *et al.* 2000) propose questions that must be posed when undertaking a strategic planning

process for convergence. Green (2001) proposes a model that begins with a complete understanding of the business plans and organisational objectives. Problems the organisation is experiencing are analysed. Once the problems and objectives are well understood, the next step is to develop alternatives. The alternatives are tested against the objectives to determine how they will meet the mandatory features. Then a feasibility process is used to determine which alternatives offer the best economic and technical performance. The literature suggests that there appears to be no adequate planning model for convergence initiatives. There are many models for strategic planning, but none that specifically target infrastructure convergence initiatives and none that take into account the nuances that may make a convergence infrastructure project unique.

Research Question 2

2a -What are the relevant steps for convergence planning?

2b -Do the planning steps specifically identify the implementation issues with regards to these initiatives?

Benefits of, and Barriers to Convergence

In an opening address at the National Colloquium on Convergence Policy (NCCP 2003), held and hosted by the South African Department of Communications in July 2003, the then Minister of Communication affirmed that convergence will lead to numerous economic and social benefits, but that there are many challenges as well (MoC 2003). Organisations need to have a clear understanding of what benefits they anticipate from convergence before they invest in it. The value proposition for convergence embraces service providers, enterprises, individual business users and residential users (Chatterjee & Byun 2002). Many organisations have a narrow view of convergence and its potential benefits with many having considered convergence simply as the transmission of voice traffic over alternate technologies without fully planning for the value-added services that can be leveraged off of a converged network. While the uptake of convergence seems inevitable, Gillwald (2003) notes that convergence has not progressed at the speed at which it was previously thought, largely due to a number of technological, market regulatory and consumer barriers, with

one of the major challenges being the actual concept and definition of convergence.

Research Question 3

3a -To what extent are benefits and barriers that are anticipated during the planning stage for convergence being experienced post implementation?

3b -Do the planning steps specifically identify the benefits of, and barriers to convergence?

Research Methodology

This study was exploratory in nature with the intention to look for patterns and to gain familiarity with the area of strategic planning for convergence, and to identify areas for a more rigorous investigation at a later stage. A primarily qualitative design was selected which allows for in-depth probing of issues and greater detail in responses (Denzin & Lincoln 1994). The study also included some quantitative data collection and analysis using a priori methods, with the analysis taking the form of frequency counts and descriptive statistics.

This study adopted a multiple case study approach considered appropriate to an exploratory study (Galliers 1991; Hussey & Hussey 1997), based on a series of semi-structured in-depth interviews (Martin 2003; Denzin & Lincoln 1994). The unit of analysis were organisations that had implemented, or were in the process of implementing, a converged infrastructure. The population for this study were medium to large organisations as defined by the National Small Business act of 1996, (NSBA 1996) with more than 50 employees and annual turnover of over R10m.

The organisations were based in Gauteng, South Africa. In total eleven participants from eight organisations contributed to this research and all were interviewed individually in their role as a representative of a particular company. Three of the eight organisations provided two respondents, while the remaining five provided one respondent. Where organisations provided two interviewees, these multiple interviews were treated as confirmatory interviews. Divergent views were reconciled by contacting these interviewees with a view to reaching consensus. An interview schedule was developed that contained all the questions required

to elicit the required information. Both a pre-test and a pilot test were conducted prior to the initial data collection phase. The eleven interviews were held in person in the second half of 2008 and took approximately one hour each.

In this research the quantitative questions produced responses that could be easily counted and summarised. The qualitative questions were subject to content analysis or interpretive analysis (Martin 2003). This involved coding the qualitative data which entailed mapping the interview transcripts and notes made during the interview. Codes were allocated to pre-existing categories developed as part of an a priori design and also to the categories that emerged from the data. The process planning dimensions, Research Question One, provided a convenient and appropriate high-level coding scheme with the process dimensions being allocated codes D1-D6. Multiple-choice questions provided natural categories that only needed to be allocated appropriate codes. Research Question two did not require a category construction but integrated the relevant steps described by the respondents to derive the planning model.

Presentation and Interpretation of Findings

The respondents were senior personnel responsible for the planning and deployment of converged solutions; they had insight into the reason why organisations opt for a converged infrastructure and were able to highlight the benefits and barriers anticipated and experienced. Four of the interviewees were in executive IT positions. The specific responsibility included new business development, ICT process optimisation and general IT management. One respondent was the managing director of the company and another was the chief enterprise architect. The industry sectors represented by the organisations in the sample were telecommunications, information technology, transportation and system integrators. The average experience in 'IT planning and administration' across all organisations was approximately 12 years. The average experience in 'network planning and administration' across all organisations was approximately five years. The average experience in 'telecommunications, media and broadcasting planning across all organisations was approximately four years.

Research Question One: Discussion and Interpretation of Findings

Analysis of the process dimensions reveals distinct profiles in planning within organisations (Chakravarthy 1987). Figure 3.1 has been adapted from Segars & Grover (1999) and profiles the sample under study with respect to the six dimensions for the planning process. Even though the Segars & Grover model was used to illustrate the analysis of quantitative data, the model is still a convenient way of profile the planning process for this exploratory study.

The position of the dimension in Figure 3.1 is an indication of where the majority of responses occurred. The horizontal line indicates a mid-point i.e. an even split in responses. Rational planning systems display high levels of comprehensiveness, formalisation and a focus on integration while planning systems with high adaptability display wide participation and high levels of planning consistency (Segars *et al.* 1998). This profile of the study is split on rationality and adaptability and exhibits relatively informal and non-comprehensive planning with a medium magnitude of control, but with a high top-down orientation and high levels of participation and consistency.

In practice the formalisation of the planning process generally has a weak focus in the sample with only two organisations emphatically indicating a formal process. This has important implications for the choices that are apparent to organisations. Formal planning systems and processes will lead to better choices, more informed evaluation of alternatives and ultimately better levels of organisational performance. Organisations that exhibit a low degree of formality may find it difficult to facilitate 'out of the box' thinking, and the planning process may not be particularly effective (Segars & Grover 1999).

Both of the organisations that indicated a formal strategic planning process were system integrators, and were subsidiaries of larger international organisations. Respondents from both organisations alluded to a strong influence from the parent company and also, parent organisations that were process dependent. The inference of this is that South African organisations, which made up the remainder of the sample, have to pay more attention to their operational processes, all of which may relate to the 'maturity' of organisations. While the degree of formalisation of the strategic planning process for convergence was generally low there was an overall intention to

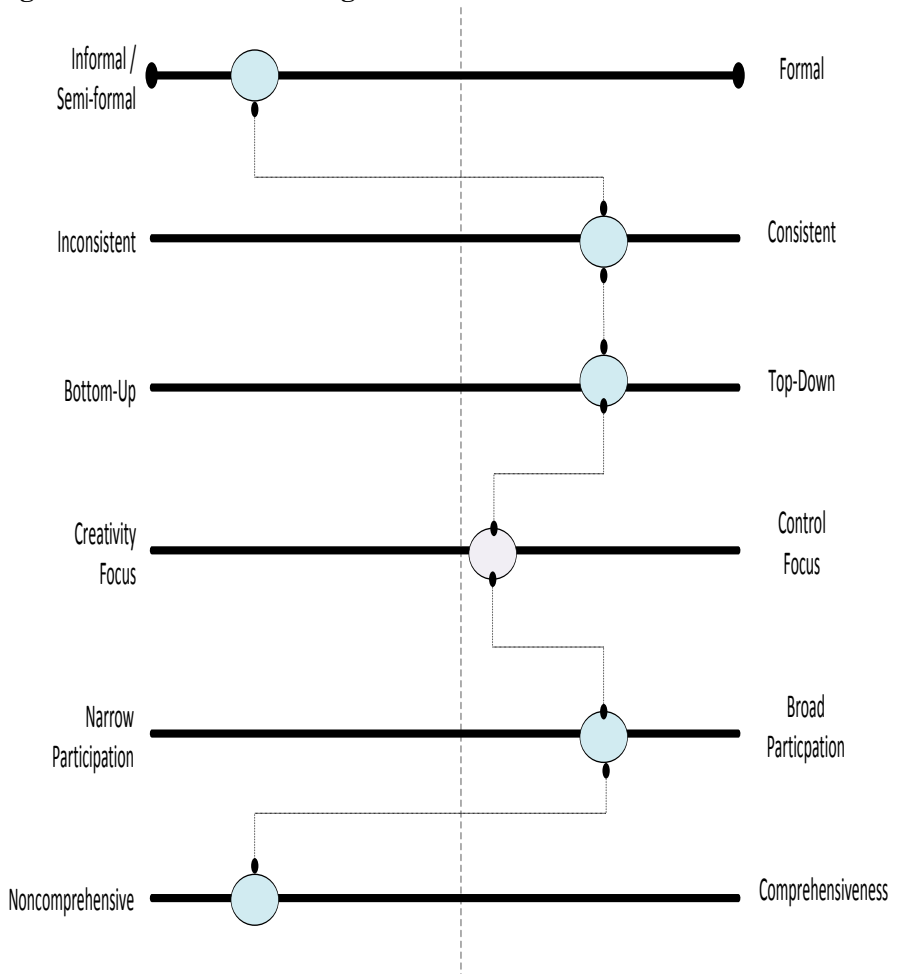
change this situation - all organisations were in the process of creating formalised structures and techniques to initiate and guide the planning process, which are characteristics of formal systems (Segars *et al.* 1998).

Formal planning systems create efficiency for both the receipt and processing of information and increases organisational ability to consider a greater number of issues, a view that was supported by the majority of the sample. Mintzberg (1994) in describing what he calls the 'fallacy of formalisation' voices a contrasting view, which says that while formalisation implies a rational process from analysis to eventual action planning is also a learning process that can proceed in the opposite direction as well.

In this study the sample displayed a high-level of consistency, characterised by a planning process that is part of a continuous planning cycle. A continuous planning process improves decision speed, which may be necessary for organisations that are required to adapt to unexpected changes in both internal and external environments (Sabherwal & King 1995). Inconsistent planning systems, on the other hand, generally have strategic plans with longer time frames, an approach that may be warranted when strategic issues are relatively few and stable. The organisations in the study sample all work in the IT, telecommunications or transportation sector, which are considered fast-changing environments, in which organisations have to react quickly and display organisational agility. Highly consistency would be an imperative for this. In South African companies information technology is viewed as essential for executing strategies and therefore 'ad-hoc, incremental and disconnected approaches to information systems (IS) strategy formulation are simply not good enough' (Cohen 2003). While the strategic plan analyses the longer-range view, normally three to seven years into the future, some companies attempt to look even further into the future. But the longer the planning the more likely something will render it invalid especially in a fluid environment e.g. the rapid growth of the Internet and e-commerce took many organisations by surprise (Green 2001).

This study revealed a 'top-down' planning flow that is characterised by limited participation of lower level managers in the initiation of the strategic planning process. Wilson (1991) supports this approach and contends that strategy must be corporate in character and must be initiated at board level. The role of functional or business unit managers in a top-down planning system is limited to strategy implementation. In essence higher

Figure 1: Profile of Planning



levels of management assume the responsibility for formulating all new strategic moves. Top management participation has been associated with more successful strategic information system planning (Lederer & Salmela 1996). Enns & Huff (n.d.) believe that the ability of the CIO to obtain the cooperation and commitment in the organisation is critical to the successful IS strategy implementation.

The scope of Strategic Information System Planning (SISP) efforts is broad and includes the development of organisational-wide information requirements and plans for the general direction the company. These plans lack detail and look at issues like market share, opportunities, threats, and competitive position (Green 2001). The perspective of SISP is that of the highest levels of management and the highest level of an organisation's planning hierarchy. This implies a 'top-down' flow, where authority resides with top management, and indicates a responsibility from top management for the strategic planning process and implementation of strategic plans. Simpson (1998) in contrast states that the governance model based the premise that senior people should work on strategy is flawed because usually people at the top of an organisations are too disconnected from the business to do a good job of developing strategy on their own.

The sample showed a very small bias towards a control focus i.e. an integrative approach that is closely tied to the regular accounting and budgetary systems of the organisation (Chakravarthy 1987). These two somewhat opposed orientations of control and creativity must be balanced in order to enhance the effectiveness of a planning system; an excessive emphasis on either of these is apt to be a dysfunctional planning system (Ramanujam *et al.* 1986). The innovative approach, which nurtures creativity through a continuous and systematic search for opportunities and/or threats in the competitive environment (Segars & Grover 1999), was also favoured by many of the organisations in the sample. This duality of purpose is a source of further research and can be attributed to the current market conditions that may have forced organisations to re-look at their strategic purpose and reducing costs may be the more prudent option at present. Innovation and the search for innovation carry a financial burden; more sources of information would have to be consulted and this is possibly a financial outlay that organisations are not prepared to make at present. The stimuli for innovative solutions are often opportunities e.g. reaching new customers or introducing new products, and are often based on expectations and projections without hard evidence (Boonstra 2003). Simpson (1998) believes that strategy development is a creative process and does not flourish when there are routines imposed and contends that 'routines processes produce routine results' while Mintzberg (1978) states that strategy development is as much art as science and is crafted rather than engineered.

The research was conducted during a time of extreme world-wide economic crisis, with many organisations and countries facing extremely tough trading conditions. While the research did have a long-term view in mind, it is possible that some responses were tinged with a pre-occupation with the economic conditions, which may have favoured a more integrative approach to planning.

With respect to participation there was a wide breadth of involvement across all organisations. All organisations involved the IT management staff in the strategic planning process for convergence, with the majority of organisations indicating some involvement of senior IT management. There was an intention amongst organisations to increase the level of participation from non-IT management. Lederer and Salmela (1996) contend that participation by members of the user community and information system managers can greatly facilitate the planning process as long as they have the necessary skills and experience. Systems with a narrow participation generally foster an isolated approach to planning (Segars *et al.* 1998) and this study highlighted a contradiction in that although there was a high degree of participation, there was still an isolated approach to strategic planning for convergence. One explanation is that while the breadth of participation is broad, it is broad across the IT function within the organisation and therefore relatively isolated from other sections of the organisation; if this scenario of narrow ownership is true, then it may result in planning that is sterile (Grundy & King 1992). Godet (2000) writes that the complexity of strategic problems means using methods that are as 'rigorous and participatory' as possible to find acceptable solution.

The study showed a low-level of comprehensiveness with the majority of organisations not being exhaustive in information gathering or in evaluation of alternatives. This in turn negatively affects an organisations ability to: thoroughly canvass a wide range of alternatives; survey a full range of objectives; carefully weigh up the costs and risks of various consequences; search for information to evaluate alternative actions; objectively evaluating information regarding alternative actions; re-examining the consequences of all known alternatives and make detailed plans – all of which are indicators of comprehensiveness (Janis & Mann 1977).

In general, organisations must balance the benefits of consistency and integration associated with thorough decision analysis with the costs of inaction, managerial time and financial resources. This study indicated a low degree of comprehensiveness as there was no attempt to be exhaustive in information gathering and also no inclination to searching for the best solution. In some competitive contexts it may be more appropriate to 'satisfice' rather than optimise (Sabherwal & King 1995). This may be particularly true of this study sample that all operate in fast-changing environments. Boonstra (2003) identified decision-making patterns of simple 'impasse', where a ready-made solution is available, or 'basic search' where the search is for the best available ready-made solutions, as part of the 'satisficing' approach.

Research Question Two: Discussion and Interpretation of Findings

A suitable model from the literature (Green 2001) was presented to and served the purpose of framing the respondents' responses. This model represents what is currently being used and was chosen as a convenient benchmark and does not represent an authoritative or definitive view on what planning steps should be included. Based on the findings an extension of Green's model, illustrated in Figure 3.2 below, is presented. The model attempts to specify planning steps as articulated by the respondents and from the literature.

The first step identified by respondents entailed the identification of either a problem within the organisation that required a solution or a potential opportunity. This step was also referred to as a 'feasibility study', 'project mandate' or 'identification of a need'. The second step identified was given the label 'approval' and as the name implies, it is the step that either approves or rejects the initiative. The next two steps involved the analysis of the initiative, with step three given the name 'financial analysis' and step four given the label 'technical analysis'. The next step was the labelled 'choose plan', which as the name implies involved choosing from the alternatives available. Surprisingly not all organisations indicated a specific step to evaluate alternate solutions. Green (2001) states that while solutions may be obvious when problems and objectives are clearly stated, when there is no obvious solution in sight, alternatives must be developed. Step six,

‘detailed planning’ expanded on the alternatives that were accepted in the approval step and received three mentions. Step seven was responsible for ‘implementation’; it received five mentions and was also termed ‘rollout’ or ‘implementation analysis’. This step implemented the solution in a working environment. The ‘post-implementation’ issues were part of step eight.

In summary the initial steps of the extended model differ from Green’s model; the analysis steps remain similar while the post-analysis steps differ. The additional steps at the beginning were the ‘SWOT’ analysis, development of a business case and project definition and mandate. The steps added at the end included a proof of concept, testing, implementation and post-implementation. The need for improved implementation of strategic IS plans has been emphasised in both empirical and prescriptive studies. The poor implementation of strategic plans has been cited as one of the causes of lack of investment in IS (Gottschalk 1999).

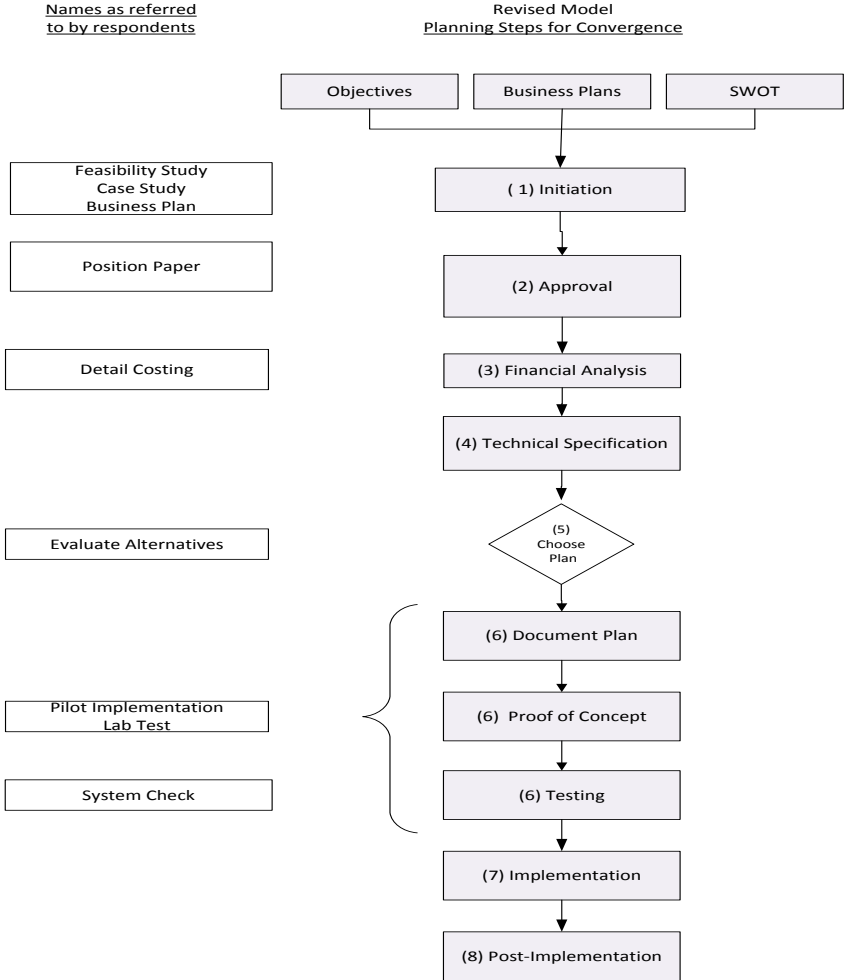
Consideration of implementation issues is particularly important in a converged initiative where there is a lack of understanding and consensus around the definitions and benefits that can be leveraged, or indeed the barriers that may be encountered. Fuller & Swanson (1992) warn that especially when new technology is involved, implementation is likely to be problematic. Therefore any consideration of implementation during the planning process must be a positive factor in the eventual implementation of these strategic plans.

A close look at the anticipated benefits of convergence shows a focus on the costs and management of the network. It was not surprisingly to find an emphasis on costs saving that could be leveraged from a converged infrastructure. Reducing network management costs and lower operational costs were some of the benefits anticipated by organisations (Yankee Group 2003; Wild 2006). Other benefits anticipated included ‘better customer service’ and ‘new applications’.

There is no single convergence benefit that was experienced widely across organisations with the highest-ranking benefits being selected by most, three organisations. This was an unexpected finding as there was an expectation that at least some of the benefits identified would be experienced by a greater number of organisations. Another surprising finding was that the ‘lower cost of network management’ was not being experienced by the majority of organisations, nor was the possibility of

‘easier network management’. The evidence for this point to the fact that the people intimately involved with convergence initiatives have a more pragmatic understanding of the benefits that can be leveraged.

Figure 2: Extension of the planning model for convergence

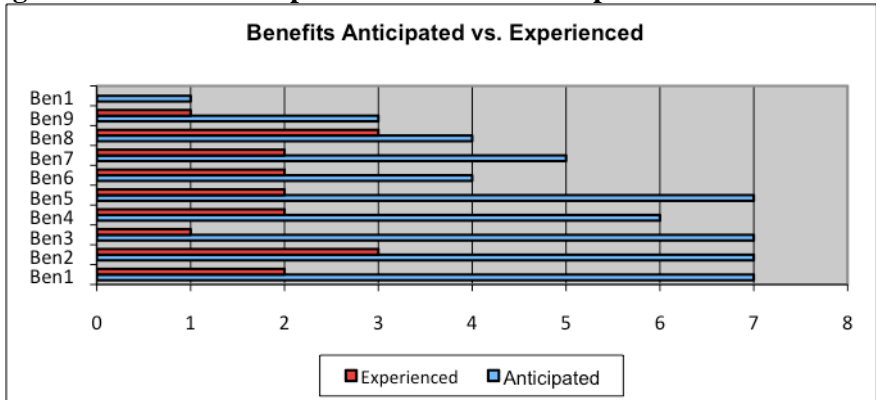


Research Question Three: Discussion and Interpretation of Findings

Benefits Anticipated vs. Benefits Experienced

This section presents the findings with respect to the benefits anticipated and benefits experienced.

Figure 3: Benefits anticipated versus Benefits experienced



Legend

- (Ben1) Lower-cost network management
- (Ben2) Reduced network tariffs / service costs
- (Ben3) Easier network management
- (Ben4) Better customer service
- (Ben5) Better quality of communications
- (Ben6) Increased employee productivity
- (Ben7) New applications e.g. video training
- (Ben8) Centralisation of telephony services / reductions in PBX's
- (Ben9) Improved teamwork
- (Ben10) Deployment costs

There is a wide disparity between the benefits anticipated and those that were actually experienced with none of the benefits anticipated being experienced to the same extent upon implementation. The expectation that converged networks would be easier to manage and would provide some

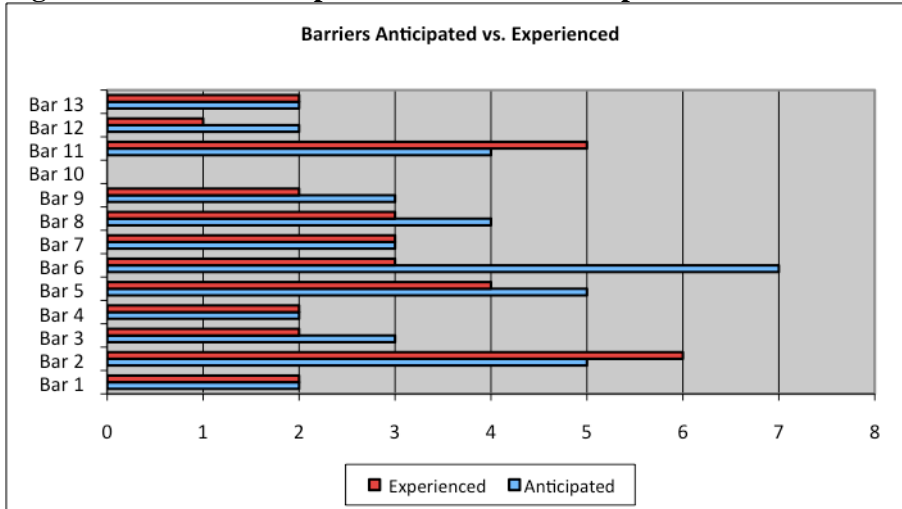
cost savings did not materialise. This expectation is consistent with the literature with the Yankee Group (2003) stating that organisations implementing converged infrastructures generally expect lower operational costs. The benefits of 'improved teamwork' and 'increased productivity' were also only realised in one organisation although they were planned for in three and four organisations respectively. It is possible that current planning systems are focused on traditional IT planning which may not be in sync with what is needed for convergence initiatives. Kaluza *et al.* (1999) writes that convergence significantly alters the way business is done making traditional concepts of strategic management obsolete; rather it requires innovative approaches in order to gain and sustain competitive advantage in the increasing fluid environment of converging industries.

The main barriers anticipated dealt with the financial implications of rolling out convergence infrastructure and the biggest barrier, which was selected by seven organisations, was 'price of equipment/technology'. The next biggest anticipated barriers were 'implementation costs' and 'awareness and understanding'. It is not surprising to see 'awareness and understanding' listed as a barrier as this is supported by the literature which highlights the lack of definition and understanding of convergence (Kaluza *et al.* 1992). One surprising findings was that the barrier 'regulatory landscape' received only one selection. It was expected that this would be most pertinent to organisations than indicated. Concerns over privacy' received no mentions.

This was also a surprising finding. The discussion around the right to privacy is in the public domain, even more so since the adoption of many laws post 9/11. It is possible that even while rights to privacy are very much on people's mind the connection between convergence (which has only recently permeated the broader media) and rights to privacy has not been made.

The barrier which was most experienced by the sample under study, and which received six mentions was 'implementation costs'. At present the costs of converged infrastructure is not competitive and this will probably prevent large-scale adoption until costs drop (Economist Intelligence Unit 2004). The next most experienced barrier was the 'disruption to business' during the deployment phase, which was experienced by five organisations.

Figure 4: Barriers anticipated versus Barriers experienced



Legend

- (Bar 1) Doubts about security
- (Bar 2) Implementation costs
- (Bar 3) Lack of a compelling business case
- (Bar 4) Concern over quality of voice communications
- (Bar 5) Awareness and understanding
- (Bar 6) Price of equipment / technology
- (Bar 7) Lack of consensus within organisation
- (Bar 8) Concern over implications of single network ‘putting eggs in 1 basket’
- (Bar 9) Timescales for Return on Investment
- (Bar 10) Concerns over privacy
- (Bar 11) Disruption of business while converting
- (Bar 12) Satisfaction with present system
- (Bar 13) Regulatory landscape

‘Awareness and understanding’ was selected as a barrier experienced by four organisations. There is much confusion and a lack of awareness over convergence exacerbated by the different definitions assigned to convergence by different authors; a clear definition of

convergence that satisfies all industry sectors does not exist with actors in the media sector viewing convergence differently from actors in the telecommunications sector (Kaluza *et al.* 1992). This lack of understanding is a major barrier to achieving convergence. The allied barriers of 'lack of consensus within organisation' and 'lack of a compelling business case' allude to problems with the objectives (or lack thereof) that are being planned for convergence projects. It could also relate to a lack of communication within the organisation or even to a deeper planning malaise. If the convergence initiatives do not have consensus within the organisation it could be that either the initiative has not been thought through properly – no exhaustive investigation into current situation and future objectives, or it could be that the objectives have not been communicated effectively from higher-level planning hierarchies.

There was a more equitable match between barriers anticipated and those actually experienced. Barriers to the implementation of strategic plans may have roots in the planning process and may include the fact that the plan was not sufficiently useful and it did not fit the organisation. Some barriers were experienced to a greater extent than anticipated e.g. 'implementation costs' and 'disruption of business while converting'. The cost of implementation was a barrier that was anticipated by five organisations and experienced by six organisations. This shows that organisations have a good idea of the high cost currently involved in convergence projects. Some barriers were anticipated to a greater extent than experienced including 'lack of a compelling business case' and 'awareness and understanding'. The 'awareness and understanding' of convergence was anticipated by five organisations and experienced by four. Steinmuller (2000) and Stieglitz (2003) write that it is vitally important to have a clear definition of convergence with many commentators indicating the lack of a clear definition of convergence (Kaluza *et al.* 1999). Some barriers were anticipated and expected to the same extent. Voice quality and security concerns were still very important to organisations when considering deploying converged infrastructures (Economist Intelligence Unit 2004). The 'lack of consensus within organisation' and the allied barrier of 'lack of a compelling business case' can be addressed by the planning process and the planning steps for convergence.

‘Regulatory landscape’ received one mention, which is surprising in light of the literature. Convergence has not progressed at the speed at which it was previously thought, largely due to a number of technological, market regulatory and consumer barriers. For the potential of convergence to be realised and the backbone of an effective digital economy to be developed an entirely new approach will need to be adopted – one that is more reflective of the information era and which will enable the development of the information infrastructure needed to underpin a modern network economy (Gillwald 2003). Addressing convergence through appropriate ICT policy and regulatory mechanisms is therefore important as part of the broader strategy to promote growth and position countries within regional and global information environments. Current restrictions regarding what types of services can be carried on different infrastructures could make it difficult for operators to formulate unified strategies and may also prevent economies of scale being optimised.

Contribution of the Study

The most important conceptual implications of this research relates to the identification of a planning profile for the sample frame. The profile gives an indication of current planning systems for convergence and highlights areas of weakness and areas of strengths within these systems. The study created a basis for further study into the relevance of the planning dimensions used for this study for convergence planning. Closely aligned to this is the identification of the actual steps of the strategic plan and the extension of current models. This study contributed to the understanding of how strategic planning for convergence differs from these other planning models and provides a basis for developing a comprehensive strategic planning model for convergence.

Delegates to the International Federation for Information Processing conference held in 1998 agreed that qualitative approaches to information systems research was finally gaining acceptance (Avison *et al.* 1999) This study presents a methodological approach through the use of primarily qualitative methods, combined with some quantitative methods.

The practical side of the study relates to the increase in understanding of the planning process and the dimensions involved. It

elucidates the dimensions and the types of questions that practitioners must address when planning strategically for convergence. The steps identified give a basis for practitioners to use in their own planning systems. Organisations must look at their current strategic planning processes objectively and decide if their planning system is adequate. This ongoing process of evaluation and refinement is called meta-planning and results in systems of planning that emerge through constant iteration. The meta-planning process is characterised by three inter-dependent processes of analysis, design and evaluation. Analysis is the process of assessing both the organisational and environmental context to determine the 'fit' of the existing planning system with competitive planning needs. Design is the process of structuring the desired system of planning and formulating strategies for conversion of the existing planning system. Evaluation is the process of assessing the performance of the planning system.

Conclusion

The research set out to answer three questions. With respect to the planning process the research revealed that the organisations under study did not adopt a formal approach to planning, and at best relied on a semi-formal approach. Most planning took place as part of a continuing planning cycle and there was a wide breadth of involvement at all management levels in the strategic management process with most organisations indicating active involvement from their senior IT management. The primary focus of strategic planning for convergence was the controlling of costs through the diffusion of assets across the organisation. The planning process for convergence followed a 'top-down' approach with senior management responsible for endorsing and initiating the strategic planning process and lower-level managers responsible for the implementation of these plans. The majority of organisations did not delay the planning process until all decisions had been evaluated but rather were content to 'satisfice' – i.e. choosing a solution that works rather than optimising the evaluation process. The planning profile of the organisations investigated can be summarised as: relatively informal and non-comprehensive planning with a medium magnitude of control, but with a high top-down orientation and high levels of participation and consistency.

The planning steps for convergence revealed that the majority of organisations do follow a step-by-step approach. All organisations made deliberate attempts to identify the benefits of and barriers to their convergence initiatives. The majority of organisations do consider implementation issues during their strategic planning steps with a high proportion taking into account the allocation of resources. An expansion of a current model was proposed with additional steps extrapolated from the research findings and the literature review.

The investigation into the benefits and barriers anticipated and experienced revealed a disparity between what was anticipated and what was eventually experienced. This disparity was more profound with regards to the benefits, with the barriers showing a better correlation between what was anticipated and what was actually experienced. There was a clear expectation of reduction in costs that were not necessarily realised within the sample frame under study. The barriers that were anticipated also related to costs in respect of equipment and implementation. This study has offered:

- An assessment of the state of the convergence planning process in South African organisations
- An enhanced model for convergence planning
- An understanding of the benefits and barriers of convergence initiatives both anticipated and experienced.

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Using Mobile Technologies for eBusiness Infrastructure in Kenyan Rural Micro and Small Enterprises: Hype or Opportunity?

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Abstract

The number of mobile telephone subscribers has grown steadily (CCK 2009) since the liberalization of the Kenyan telecommunications sub-sector through the 1997 Communications Act (KCA 2008). This has seen increased Mobile technologies penetration in the rural areas. Mobile telephones are the first telecommunications infrastructure in most Kenyan rural enterprises. As has been seen in the case of Bangladesh (Lawson C & N Meyenn 2000), this has contributed to development through employment creation, access to services and increased access to information. With such a massive acceptance, mobile technologies create opportunities for Micro and Small Enterprises (MSEs) in rural areas to deploy an eBusiness infrastructure. These technologies also present a unique opportunity for Medium and Small Enterprises (MSEs) to overcome their institutional impediments to Internet access and e-payments by providing new services and technical capabilities such as effective and highly available voice communication, Internet access and e-payments transactions. Availability of these technologies is only an enabling factor. To positively impact an organization's performance, mobile technologies must appropriately match its eBusiness infrastructure requirements. However, appropriateness alone does not guarantee use. User acceptance is critical to successful implementation of any new technology. This study extends Task-Technology Fit (TTF) theory to incorporate acceptance as a factor that could influence the use of Wireless eBusiness

infrastructure. The proposed model was empirically tested using questionnaire responses from MSEs in the rural town of Nanyuki. The findings from the study suggest that appropriateness and acceptance do influence the use of wireless technologies to implement eBusiness infrastructure and that using wireless technologies to implement eBusiness infrastructure positively and significantly influences an organization's performance. It also found that affordability and risk factors have a moderating effect on the use of wireless eBusiness infrastructure. Consequently, the final modified model referred to as the 'Suitability of Wireless eBusiness Infrastructure' (SWeBI) model has the power to explain use of wireless technologies to implement eBusiness infrastructure and could help practitioners to take efficient measures to improve its use in Kenyan rural MSEs.

Keywords: Wireless Technologies, eBusiness, Task-Technology Fit, Micro and Small Enterprises, user acceptance.

Introduction

There is no doubt that the explosive growth of cellular networks has an enormous impact on the livelihood of many Kenyans. Mobile telephones represent the first telecommunications infrastructure in most Kenyan rural homes and enterprises. Statistics show that mobile network coverage is predominantly urban with data from the Communications Commission of Kenya (CCK 2009) indicating that cellular networks have a national coverage of about 84% of the population but only about 33% of geographic coverage. This may require government intervention in expansion of the cellular networks to underserved areas that are usually regarded as not commercially profitable by service providers. Kenya is predominantly an agricultural country. The efficiency of the economy will be enhanced should farmers being able to efficiently communicate with their prospective buyers. Availing cellular networks to the farmers could easily transform the way they market their agricultural produce.

While mobile telephones traditionally mainly offer just voice communication the introduction of value added services such as mobile payments, mobile banking, Internet and data access could enhance the way

business is conducted and at the same time create new business opportunities. Mobile telephones and related services have created new livelihoods through creation of professional and non-professional jobs.

Problem Statement, Objectives and Research Questions

Most of the Kenyan population live in rural and remote areas and only a small fraction of these had access to telephones before the cellular network coverage was expanded there. Today, most rural areas have mobile telephone networks which come with a number of developmental benefits in terms of employment creation, access to services and increased access to information, hence contributing significantly to economic growth. This research has been motivated by the significant benefits mobile telephones have brought to disparate and geographically remote population in Kenya and seeks to explore how this expanding mobile phone infrastructure can be harnessed to support an enterprise-wide eBusiness infrastructure and benefit MSEs by facilitating use of eBusiness applications. The aim of this study is to determine the appropriateness of wireless technologies for implementing an eBusiness infrastructure in MSEs by evaluating whether the wireless technologies meet MSEs' eBusiness infrastructure requirements. The following research questions guided the study:

1. Does the extended Task-Technology Fit describe the utilisation of wireless technologies in implementing an eBusiness infrastructure?
2. Does utilisation of wireless technology in implementing an eBusiness infrastructure result in higher MSE performance?
3. What are the drivers and barriers to utilising wireless technologies to implement an eBusiness infrastructure in Kenyan MSEs?

Literature Review

The literature review covers three components of this study. The first section presents the scope of mobile technologies in the study, the second section presents a discussion on the theories applied in this study while the final section gives an overview of MSEs in Kenya and a review of the direction the research in use of Information and Communications Technologies (ICTs) in Kenyan MSEs has taken over the last few years.

Wireless Technologies

Mobile telephones are mostly used for voice communications, short message services and personal information management using calendars, reminders, scheduling, etc. The capacity to offer additional advanced services such as money transfers, accessing bank accounts, and paying bills, receiving special promotions and stock quotes, Internet access as well as initiating purchase or sales transactions has increased the level of mobile telephone usage over the last few years.

M-Payment is the transfer of money using mobile devices such as a mobile telephone to make payments for goods and services. The services of mobile payments are offered through Safaricom's (M-Pesa 2009) M-Pesa services and Zain's (Zap 2009) Zap services. Wireless Local Area Networks (WLANs) allow users to transmit and receive data within a range of 30-50 meters. Most organizations are using WLAN due to its flexibility, convenience and increased reliability. With the absence of cables, there is increased mobility, reduced installation time and cost savings when performing installation in difficult-to-wire areas. Bluetooth is also used to connect devices autonomously in a relatively small area within a radius of ten meters within personal workspaces. WLAN and Bluetooth allow enterprise information to be quickly accessed and transmitted within the enterprises hence increased productivity.

Wireless Metropolitan Networks (WMANs) provide mobile broadband wireless access network that meets the needs of business within a city. In Kenya the use of Worldwide Interoperability for Microwave Access (WiMAX) technology to provide ubiquitous broadband access for wireless data, voice and video services is now common in major towns and cities. The wireless network is accessed through mobile devices such as telephones and PDAs, and desktop systems connected to a wireless Internet access device such as a fixed wireless desktop telephone or a wireless data modem.

There is also use of mobile technologies such as the HealthTrack! (2009), and Open Data Kit (2009) in the Kenyan health services for data collection purposes. Such tools could be useful to the MSEs' traders as they distribute their products in the rural areas to collect and manage data pertaining to their sales, deliveries and future orders while monitoring their stocks back at their stores.

Task-Technology Fit

As with any choice and implementation of technology, the question of choosing the right technology at the right time is always pertinent. The main aim of the Task-Technology Fit model by Goodhue and Thompson (1995) is to match the capabilities of the technology to the demands of the particular task. It is the degree to which features of a technology match the requirements of the task and the abilities of the individuals involved with the task. Goodhue and Thompson (1995) specified the TTF construct as consisting of the following variables: data quality, locatability of data, authorization to access data, data compatibility between systems, training and ease of use, production timeliness, systems reliability, and information systems relationship with the user.

Task Technology Fit is the relationship between task requirements, technology functionality, technology experiences and task knowledge (Benford & Hunton 2000). Benslimane, Plaisant & Bernard (2002) validated TTF on web-based procurement from corporate buyers from organisations operating in various industries in Canada. They concluded that a better fit between the tasks required during the procurement process and Internet websites' functionalities leads to a higher level of web usage, which then leads to an improved performance for users. Gagnon *et al.*, (2004) validated TTF and found reasonably good fit between the task and individuals utilizing the administrative support systems in a university setting. D'Ambra and Wilson (2004) introduced an uncertainty factor in the TTF to investigate the adoption of the World Wide Web for international travel. Staples and Seddon (2004) found out that TTF could explain performance in both mandatory and voluntary use. Norzaidi and Intan Salwani (2008) carried out a study to test whether TTF predicts Intranet usage in Malaysia and found that TTF could significantly predict usage if task and technology were matched.

This study aims to test the fit between wireless technologies and eBusiness infrastructure within MSEs. To the knowledge of the researcher TTF has not been validated in the context of IT adoption in Kenya and proposes that the model may be suitable for investigating the appropriateness of wireless technologies in implementing an eBusiness infrastructure in Kenyan MSEs.

Technology Acceptance

The Unified Theory of Acceptance and use of Technology (UTAUT) proposed by Venkatesh, Morris, Davis and Davis (2003) consolidates constructs from eight user acceptance models. Unlike other user acceptance models UTAUT takes into consideration the fact that some systems are mandatory and others are voluntary. UTAUT has four constructs. These are Performance Expectancy, Effort Expectancy, Social influence, and Facilitating conditions. The four constructs are independent variables influencing the dependent variables behavioural intention to use and usage. Gender, age, experience with the system and voluntariness of the system have indirect influence on the dependent variables through the four core constructs hence they have a moderating effect. UTAUT has an accuracy of 70% in predicting user acceptance of information technology innovations, Venkatesh *et al.*, (2003), which all the previous models were not able to successfully do. This is why UTAUT is regarded a superior model. This paper extends the TTF model with UTAUT constructs.

MSEs in Kenya

In Kenya, MSEs are defined as those non-primary enterprises (excluding agricultural production, animal husbandry, fishing, hunting, gathering and forestry), whether in the formal or informal sector which employ 1-50 people (ICED 1999). Micro-enterprises are those that employ 10 or fewer workers and small enterprises are those that employ 11-50 workers. The business activities of MSEs include manufacturing, trade and service provision. The National Baseline Survey (ICEG 1999) revealed that there were 1.3 million MSEs in Kenya by 1999 compared to 910,000 in 1993, reflecting a 7% increase per year. The survey also revealed that: 66% of the enterprises are located in rural areas. In terms of operations, the survey established that 13.4% of the enterprises are in manufacturing; 64.3% of the enterprises are engaged in trade while 14.8% of the enterprises are in services provision. In 1999, MSEs employed 2.4 million people (ICEG 1999) compared to 7.9 million people in 2008 (Republic of Kenya 2009) are presented in figure 1 below. The 1999 MSEs contributed 18% to GDP (ICEG 1999) while the Economic Survey of 2003 (Republic of Kenya 2003) shows that the MSEs contributed 18.4% in the year 2002. This implies that,

with the help of appropriate technologies and technical support services, MSEs can contribute immensely to the growth of the Kenyan economy.

MSEs and Information and Communications Technology Research

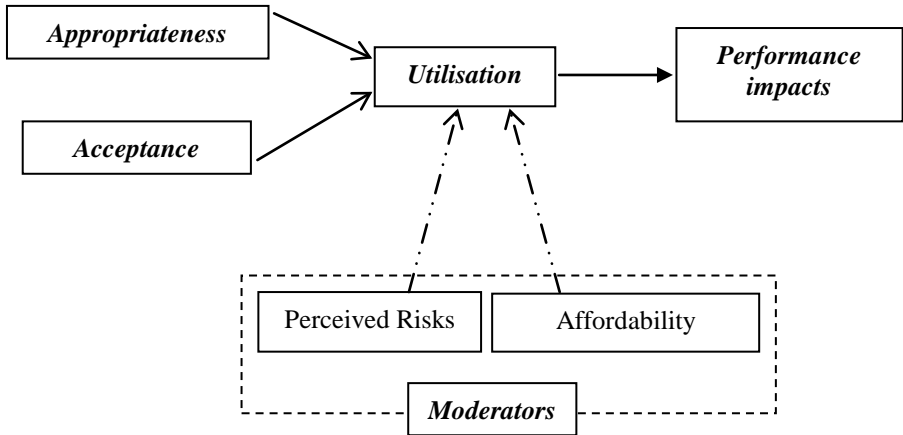
Research on mobile telephone use in MSEs includes a study on changes to social and business networks (Donner 2007). The status of e-commerce in Kenya has been studied by Mureithi (2000), Mulli (2004) and Kiiru (2002). The Kenya country e-preparedness report (Atac 2003) also highlights ICT access issues between late nineteen ninety's and the year 2003. A further review of published literature on MSEs shows that, to date, a number of studies conducted on MSEs focus on the sector's contribution to the economy in terms of employment, income, and gross domestic product such as the National Baseline Survey (ICEG 1999). Other studies focus on access to credit (Aketon 2007), and government policy and strategy frameworks (ACEG 2006; Ronge *et al.* 2002). Most of the current research focuses on ICT access and usage. There has been no known research, to the knowledge of the researcher, which has studied the use and impact of wireless networks on e-business usage in Kenya. This study seeks to address this research gap.

Research Methodology

The research model used to guide the study is shown in figure 1. This model is grounded in the streams of research focusing on Task-Technology Fit and Technology Acceptance drawn from a literature review to provide a richer understanding of the appropriateness, acceptance utilisation and performance impacts of using wireless technologies in implementing an eBusiness infrastructure in Kenyan rural MSEs. This model was designed to incorporate the essential measures to test appropriateness and user acceptance as well as moderating variables from the preliminary study. Venkatesh, Morris, Davis and Davis (2003) adapted the measures of appropriateness from the Task-Technology Fit model by Goodhue and Thompson (1995) while the measures for User Acceptance are from the Unified Theory of Acceptance and use of Technology (UTAUT) proposed. Utilization measures are usage of voice calls, text messages, m-payments, m-banking, data networks, Internet access and information management using

calendars and reminders. From the preliminary study, affordability and perceived risks had a moderating effect on use of mobile technologies. Performance impacts were measured through improved productivity, improved communication and coordination, reduced coordination costs and faster transactions.

Figure 1: Research model



Each item in the model had a corresponding set of questions. The questionnaire was composed of thirty-five unambiguous questions that were easy for respondents to complete. Each item on the questionnaire was measured on a five-point Likert scale whose end points were ‘strongly agree’ (5) and ‘strongly disagree’ (1). A list is presented here as table 1.

To test the research model, a survey was conducted using a questionnaire to gather the necessary information from Nanyuki town. Nanyuki town was purposely selected for this study because it has all the characteristics of a Kenyan rural town. Nanyuki is a town lying on the equator and North West of Mount Kenya. Climbers and backpackers often visit it on their way to or from Mount Kenya. Mount Kenya is the highest mountain in Kenya and the second highest in Africa (after Mount Kilimanjaro). Economic activities in the Nanyuki consist mainly of tourism, trade and agriculture (particularly in the horticulture and ranching). Other

economic activities include small-scale industries in textile and food processing.

Table 1: Constructs and their measures

Model Construct (Items)	Measures	Adapted from
Appropriateness (10)	Quality of data, locatability of data, Ease of use, Training, Timeliness, System reliability, Relationship with users	TTF (Goodhue and Thompson 1995)
	Mobility: employees can access same services from any where	Use context (preliminary study)
Acceptance (7)	Perceived usefulness, Social influence (Enabling Business Environment)	UTAUT (Venkatesh <i>et al.</i> 2003)
Moderators (7)	Risk factors, Cost factors (Affordable prices) of using wireless eBusiness infrastructure	Barriers to use (preliminary study)
Utilization (4)	Use and frequency of using wireless technologies	TTF (Goodhue and Thompson 1995)
Performance impacts (4)	Improved productivity and efficiency, reduced operation costs, improved communication and coordination, improve effectiveness	TTF (Goodhue and Thompson 1995)

Data Collection and Analysis

The survey results were analysed using SPSS 15.0 for Windows® and Microsoft Excel 2003®. MSEs in Kenya operate under similar conditions and have uniform characteristics. The questionnaire was administered to 60 enterprises in Nanyuki town. 54 responses were received. After eliminating incomplete responses, 50 usable responses were selected as the sample, an

overall response rate of 83.33%. Such a good response rate was attributed to the ample response time given to the respondents to complete the questionnaire and the follow-up telephone calls made to the respondents in order to encourage their participation. Another contributing factor could be that most of the respondents are the owners or the managers of these enterprises.

The following table gives the demographic breakdown of respondents by gender, age, education and the roles of the respondents within the enterprises.

Table 2: Demographic characteristics

Overview of respondents		Frequency	Percentage
Gender	Male	32	69.57
	Female	14	30.43
Age	18-24	14	30.43
	25-34	20	43.48
	35-44	6	13.04
	45-54	6	13.04
Education Level	High School	2	4.35
	Diploma	12	26.09
	Professional Course such as CPA	6	13.04
	College certificate	8	17.39
	Undergraduate degree	16	34.78
	Postgraduate degree	2	4.35
Role of the respondents	Managers	36	72
	Computer systems support staff	8	16
	Sales	2	4
	Accountants	4	8

Using mobile payments and mobile banking makes it easier to conduct business, and almost all enterprises in the study have used it. The number of enterprises using eBusiness applications is also relatively high, implying that the uptake of eBusiness applications in the rural Kenya is gaining acceptance. This could also be attributed to adequate infrastructure provided by wireless technologies, which has proved to be highly beneficial

to the enterprises. Table 3 gives an overview of the use of mobile technologies in MSEs in Nanyuki as at 2009.

Internal consistency is used to assess the consistency of results across items within a test. Cronbach’s Alpha is one of the most widely used diagnostic measures of internal consistency. Cronbach’s Alpha was calculated for the six core constructs and the results are presented in table 4. All the constructs exhibited a Cronbach’s alpha above the 0.7 acceptable levels as reported by Hair *et al.* (1998). The results show that the questionnaire was a reliable measurement instrument.

Table 3: Use of wireless technologies

Mobile phone to	Make calls and send messages (SMS)	100%
	Checking and paying utility bills such as Water and Electricity bills	42%
	M-banking (checking account balance, Bank SMS alerts and notifications)	38%
	Receive SMS advertisements and promotional materials	100%
	Send SMS advertisements and promotional materials	10%
	Checking stock prices, alerts and quotations	74%
	Business information management using calendars, reminders, contacts and schedules	96%
	Make mobile payments (M-Pesa or Zap)	64%
	Access internet	22%
Wireless desktop phones to access the Internet (Telkom - CDMA)		16%
Wireless Modem to access internet		48%
Wireless Broadband Internet Access – Safaricom 3G, Orange 3G+ technologies		12%
Wi-Fi for Wireless Local Area Network		8%
Bluetooth to connect devices		2%

Table 4 shows that the research instrument was reliable, with each of the constructs achieving a Cronbach alpha measure greater than 0.8.

Table 4: Reliability analysis

Construct	Reliability (Cronbach's α)	Mean**	St. Deviation
Appropriateness	0.924	4.08	0.944
User Acceptance	0.939	3.68	0.741
Utilisation	0.812	4.36	0.563
Affordability	0.953	3.62	1.107
Perceived Risks	0.895	3.44	1.195
Performance Impacts	0.952	4.24	0.657

Answers to Research Questions

The primary purpose of this study was to investigate the extent to which wireless technologies meet the eBusiness infrastructure requirements of Kenyan rural MSEs. The outcome of the study highlights that appropriateness and user acceptance directly influences utilization of wireless eBusiness infrastructure while utilization has a huge positive impact on performance of MSEs in rural areas. Wireless technologies consist of data networks, cellular Internet and mobile payments. This provides the necessary infrastructure for eBusiness applications usage by allowing Internet access, mobile payments and ease access to enterprise data. The potential of wireless technologies to facilitate internal business process automation, procurement and supply chain management, marketing and sales processes management and e-commerce and customer relationship management, all, which require faster access to current and up-to-date information, is significant. The cost of using and maintaining the systems seems to be a key aspect of choosing to use wireless technologies to implement eBusiness infrastructure.

The entrepreneurs also consider after-sales support as a major factor affecting the decision to continue using a particular vender's service. When a new provider emerges and offers the same services at a better price, greater quality coupled with efficient support and a faster response to down time, this provider wins over all the existing users. The entrepreneurs seem to be using the word of mouth to share their experiences in using a particular wireless technology and eventually influencing other users' decision to use the technology.

Another major issue that seems to determine the use of wireless technology is access to information. There is lack of awareness on all the benefits of using wireless technology in implementing eBusiness infrastructure in some MSEs. Most entrepreneurs depend on corporate marketers to get information about the available wireless technology services. This leads to use of technology on bases of first (sales person) come, first served or on who is convincing well enough. These marketers do not necessarily assess the technological and organisational issues necessary in acceptance and usage of their products before recommending the application of a particular technology. Their main catch is on costs and not the quality of their services as they are familiar with the limited budget and resource allocation for information technology related investments within MSEs. This creates a need to have the government subsidise infrastructure rollout in areas regarded as not being commercially profitable by most service providers.

Some MSEs considered affordability (cost of installation and daily usage) to moderate their use of wireless technologies while security and privacy risks are considered a priority while using wireless technologies.

Conclusion

The findings of the study demonstrate the suitability of wireless technologies to implement an eBusiness infrastructure in Kenyan Rural MSEs. MSEs in Kenyan rural areas are today using wireless technologies to implement eBusiness infrastructure leading to the existence of Smart MSEs. Smart MSEs manage their customer relationships, supply chains and core business operations using wireless technologies, making them more efficient, enhancing their productivity and improving on their internal and external communications.

Efficiency due to mobility, reduced installation cost and time, increase in employee's productivity and customer satisfaction are some of the benefits MSEs are enjoying as a result of implementing eBusiness using wireless technologies. Also reduced connection costs, ease of installation and maintenance make wireless technologies an ideal choice in implementing eBusiness infrastructure for most rural MSEs. All these benefits have a positive direct effect on MSEs' profitability and performance.

Using the research model developed in this study, the entrepreneurs can test any technology availed to them and decide on what bases to use the technology or not and establish which technology is suitable to be the enterprise's IT infrastructure. Wireless technologies faithful usage increases user's task performance when the technologies fit the required tasks and the user is sufficiently competent to use the technology. Wireless eBusiness infrastructure has increased competitiveness in most MSEs as they seek to improve how they operate in terms of quality of service, faster and cheaper transactions and efficiency. Wireless technologies have proved to be highly beneficial and have led to better organisational performance, hence they are not just hype but an opportunity for Kenyan rural MSEs to implement their eBusiness infrastructure

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Why are there not More Grounded Theories in Information Systems Research?

Hans Lehmann
Rosemary Quilling

Abstract

Theories indigenous to the information systems discipline are scarce. The Grounded Theory method is specifically aimed at creating ‘grounded theories’ in domains where no prior ones are. However, although its use in information systems research increased over the last two decades, the number of grounded theories created did not. This could be because either the Grounded Theory method is not ‘right’ for the information systems discipline or that it is not ‘done right’. The paper investigates both options and concludes firstly that the method is ‘right’. As a general method, capable of accepting any kind of data, Grounded Theory works well with information systems, which are viewed as actor networks of technology and people. There is, however, often a misunderstanding about what the Grounded Theory’s core tenets are and how to apply them. It is shown that the coding regime used is not unique to Grounded Theory. Its two core tenets are defined as the maxims of data collection jointly with analysis and that of theoretical sampling until saturation. The Grounded Theory method’s paradigmatic position (or, more accurately, its lack of one) is discussed. It is concluded that Grounded Theory, is only ‘right’ for Information Systems if it’s done ‘right’.

Keywords: Grounded Theory, Qualitative Research methods, Triangulation.

Introduction

Theories, together with the methods and skills to build them, still seem scarce in the Information Systems (IS) discipline. A decade ago Bob Zmud (1998), then Editor-in-Chief of MISQ, issued a call for more ‘pure-theory’ contributions to the journal. Ron Weber (2003) had to repeat his predecessor’s call because there had still been ‘much more ... written about theory testing than theory building’. He pointed out that too many theories in IS research are ‘borrowed and adapted from other disciplines – perhaps a manifestation of our need to build theories in domains where no prior theories exist’, a sign that ‘as members of a discipline, we [information systems researchers] still need to improve our theory building skills’ (Weber 2003). Whilst there are many ways to build theory, in ‘domains where no prior theories exist’ qualitative, and initially inductive, theory creation methods seem intuitively a natural fit. One of those, the Grounded Theory Method (GTM) is specifically geared to ‘discover’ social theory from empirical data sourced in a wide range of contexts and activities.

Why is GTM not Successful in Generating IS Specific Theories?

There could be two possible explanations for this: Firstly, GTM is not ‘right’ for IS, with its mix of technological and social phenomena; and/or secondly; GTM is not done ‘right’. Already in the mid-1990s misuse of GTM was commented on (e.g. Bryman & Burgess 1994 and Locke 1996). A recently updated analysis (Lehmann, Urquhart & Myers) of a decade of IS research papers that profess to have used GTM confirms this.

In order to generate good theory, the essentials of the GTM process need to be first understood and then followed. If they are not, then the outcomes will be conceptually weak, theoretically inconclusive or, in extremis, just plainly meaningless.

In order to explore these questions further it is necessary to first provide a brief overview of the GTM. It is then necessary to consider if the GTM is ‘right’ for IS, and to explore how one is expected to perform GTM ‘right’. Only then can we debate the real issue confronting IS researchers: If GTM is intended as a tool for theory development, why do the majority of studies fail to produce this outcome?

A Brief Overview of GTM

There are various definitions of the grounded theory method, this from the creators themselves:

‘[GTM is] the discovery of theory from data – systematically obtained and analysed in social research’ (Glaser & Strauss 1967:1).

The Grounded Theory method described in the ‘Discovery of Grounded Theory’ (Glaser & Strauss 1967) was the first synthesis of the two opposing worldviews in social science: Glaser, who came from Columbia with a heritage of ‘scientific’ thinking in sociology, complemented Strauss’s Chicago-style emphasis on understanding and explaining of social phenomena. The outcome was an ‘inductive technique, grounded in the data to an extent that would convince ‘hard-nosed’ quantitative researchers of the soundness of the approach’ (Gibbs 2002:165).

As more researchers started to use GTM, it soon became evident that many found the required high degree of creative conceptualising difficult. Then Strauss, with one of his students, published a detailed, procedural ‘how-to guide’ to GTM (Strauss & Corbin 1990). Glaser, however, virulently opposed their heavily procedurised method critiquing it as restrictive to the point that it actually inhibits the emergence of a ‘theory’ (Glaser 1992). With two versions of GTM available (labelled ‘Glaser’ and ‘Strauss’), its use spread fast and wide. By 1994 influential opinion considered it to be ‘probably the most widely employed interpretive strategy in the social sciences today’ (Denzin & Lincoln 2000:382).

This qualification of GTM as a ‘social research’ method, however, raises the question: How suitable is GTM for researching information systems, when the identity of IS as a social discipline (among other issues) is still being debated?

‘Right’ for Information Systems Research?

Numerous definitions of an information system have been postulated. Kroenke (2008:6) proposes an updated actor-network (AN) model involving hardware, software, data, processes and people; with an interdependency between the technical and organisational elements of the ‘package’.

An analysis of 177 articles published between 1990 and 2000 in Information Systems Research (Orlikowski & Iacono 2001), however, found that this notion of information technology as an organic fusion of technology

and organisation had not been reflected in reported IS research. Instead, five isolated ‘views of the IT artefact’ seemed to guide IS research. Figure 1 places the ‘views of the IT artefact’ into the contexts of the AN model.

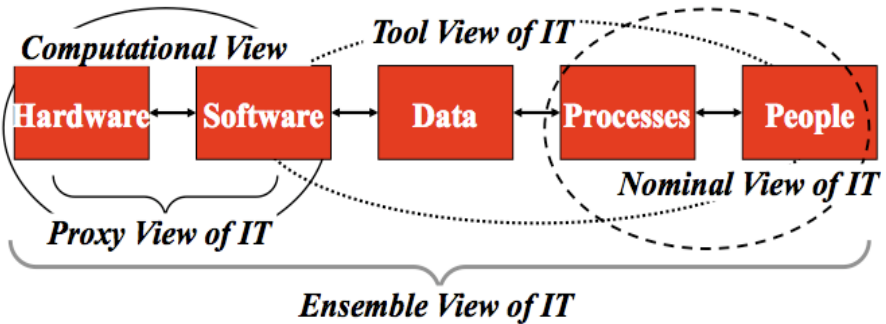


Figure 1: Views of the Technology, Processes and People in the Information Technology Artefact (following Orlikowski & Iacono 2001; and Kroenke 2007)

The ‘nominal’ and ‘computational’ views both treat the technology or the organisational applications as a ‘black box’. These accounted for about half of the research investigated. Researching how technology facilitates (‘tool’ view) or influences organisational goals (‘proxy’ view) makes up two fifths of the papers. Research into how all components of an IS function together, the ‘ensemble’ view, was only attempted by 12% of the studies – and only 4% were about ‘Technology as Embedded System’ where all parts of the AN were given equal research focus.

The analysis did not cover why and how this came about. It is plausible, though, to postulate that the restrictions imposed by specific methodologies had something to do with it: the realist approaches used in the investigations of the ‘computational’ and ‘proxy’ views are not very suitable for the organisation-oriented views. Conversely, the interpretivist/constructionist methods used there were not a useful fit for technology-focused research. In contrast, in an analysis of recent studies that purport to have used GTM (Urquhart), it was found that more than half had attempted to build theories within the ‘embedded’ version of the ‘Ensemble’ view of information technology. This may well be attributed to the fact that GTM is

a ‘general method’ (Glaser 1998), where the ‘slices of data’ gathered can be about any actant in the IS-AN under investigation, and can refer to any relationship in the theoretical constructs ‘discovered’.

A domain neutral method such as GTM could thus well answer the challenge for ‘more work to be done from an ensemble view [in two directions]: developing conceptualisations and theories of IT artefacts; and incorporating [them] expressly into our studies ... [irrespective] of any particular perspective or methodology’ (Orlikowski & Iacono 2001:130). Such extensions to the original method are, however, legitimate only if they preserve the essence of GTM.

The ‘Right’ GTM?

When it was developed GTM’s major difference to other qualitative methods was its rigour – the key to ensure that emerging theories are as close a fit to the data as possible and that they work to understand, explain and predict the phenomena under investigation. But much of what is seen to characterise GTM is not unique: If we can sift out those elements common to other qualitative methods then we can highlight the underpinning of the rigour inherent in the method.

There are two common characteristics in social science research methods, namely: the three-step research sequence and the coding of text. Firstly, GTM follows the traditional three-step research sequence of any social science method, as described by Stoller: ‘I ‘gathered data’ and once the data was arranged in ‘neat piles’, I ‘wrote them up’. (Stoller & Olkes 1987:227). While this may be challenged by some researchers, the basic sequence seems to be an immutable axiom for most conclusion-oriented investigative activities. Secondly, the ‘coding’ of the data - which can be any ‘text’ - happens at the exact same three levels of depth as in all social research. Miles and Huberman (1994:57) label them as follows:

- initially, commonalities in the data are captured in ‘descriptive’ codes to clearer capture the essential aspects of the phenomenon;
- next, as more data and codes are available, ‘interpretive’ codes are abstracted from the concrete incidents to help understand what is going on ‘behind’ the data;

- lastly, inferential ‘pattern’ codes, now abstract of space and time, are conceptualised that are explanatory and often predictive.

The nomenclature of GTM is different: Glaser and Strauss (1967) talk of ‘categories’ and their ‘properties’ instead of ‘codes’, but also recognise their development in ‘open’ coding first, then in ‘theoretical’ coding, followed by ‘selective’ coding to reduce the number of concepts that make up the final theory. Strauss and Corbin, as well as Charmaz have their own labels, as well as some interim steps, but these are only immaterially different from the three universal coding levels (see Table 1 for a comparison).

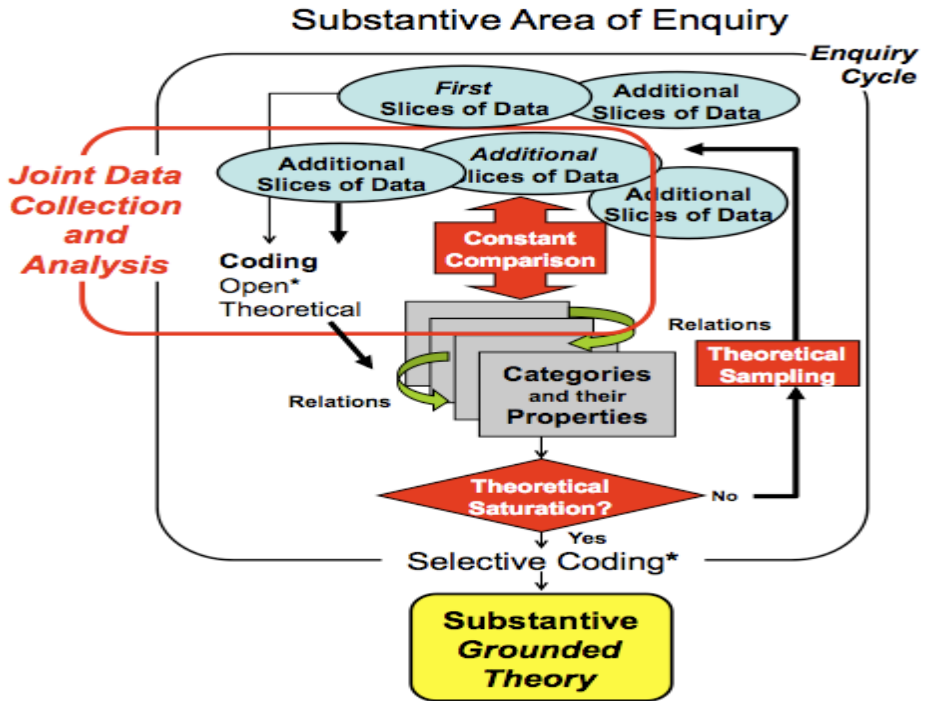
Generic ‘Coding’ Levels	Glaser & Strauss (1967)	Strauss & Corbin (1990)	Charmaz (2006)
<i>Descriptive</i>	Open Coding	Open Coding	Open Coding Focused Coding Axial Coding
<i>Interpretive</i>	Theoretical Coding	Axial Coding	Theoretical Coding
<i>Pattern</i>	Selective Coding	Selective Coding	

Table 1: Relation of different GTM coding classifications schools to levels of abstraction in generic coding levels of qualitative data analysis (after Miles & Huberman 1994)

The use of these generic methods of social research clearly does not set GTM apart from other qualitative social research. So what does?

GTM incorporates a ‘constant comparative method of joint data collection and analysis’ (Glaser & Strauss 1965). This has two stringent rules: Firstly, data gathering and data analysis are undertaken together, not sequentially; and secondly, this analysis is a constant comparison of every new slice of data with the conceptual content of every other slice of data, with the intent to generate new abstract categories or to enhance the properties of existing ones.

In the ‘Discovery’, two years later, the method was completed by stipulating how to collect the next slice of data – and when to stop collecting: After each round of analysis the ‘next slices of data’ are selected using theoretical sampling, i.e. the nature of the conceptual constructs in hand (e.g. clarity, completeness, scope) determines what next slice of data is required to enhance (clarify, extend, or densify) the present constructs; and lastly, but most importantly, the cyclical iterations only end when new slices of data cannot enhance the conceptual constructs any further, i.e. when they are theoretically saturated. Figure 2 illustrates the sequence of activities in the GTM cycle and highlights the parts that are specific and unique to the method.



* Here ‘Strauss’ and Charmaz vary from ‘Glaser’

Figure 2. Sequence of activities in the GTM

This approach to sampling is fundamentally different from many other social research methods. Furthermore, and most importantly, there is no pre-set sample size - data gathering only stops when there is nothing more new to be learned about the categories and their relations, i.e. the nascent theory.

There are thus really only two essential characteristics that define GTM, namely,

1. The constant comparison of all existing conceptual constructs with every instance of new data, jointly with their collection;
2. Theoretical sampling for new slices of data until, and always until, theoretical saturation of the nascent theory is reached.

Both these 'core analytic tenets' must be met otherwise it is impossible to 'reasonably assess how the data were used to generate key conceptual categories' and the research should not profess to use the GTM (Suddaby 2006:640).

But is the use of GTM possible for researchers who follow different paradigms – does GTM have a paradigmatic bias? The next section endeavours to get to the bottom of these considerations.

Paradigmatic Comments

Because GTM use is not contingent on any specific view of 'the world' it is fully compatible with (post)positivist and interpretivist stances, be they objectivist, constructivist, or critical (when such knowledge is deemed instrumental for social emancipation and justice) or participatory (which adds a practical dimension to the critical stance). GTM's core tenets simply prescribe a way of developing a theory that has the closest possible relationship to the data it 'emerged' from. The method is entirely independent of the nature of the data or the nature of the abstractions incumbent researchers assign to them. GTM neither prescribes a specific ontology or epistemology, nor does it limit the researcher's freedom to choose whether they consider data to be naively or critically real or a subjective, transactional and/or a relativistic construction.

The original ignition point for the discussions about GTM's paradigmatic classification was the role of induction versus deduction in the

method. In the first instance GTM is an inductive method and has been named that by its founders from the very beginning. Because induction is often (and myopically) equated with interpretivist paradigms GTM has been labelled that, too. On the other hand, it has been argued that GTM's distinction between empirical base and derived abstractions may be dualist, which eo ipso characterizes GTM as (post)positivist (Annells 1996). As a positivist method, however, GTM would be strongly (and equally myopically) associated with the deductive development and verification of hypotheses – which is *toto orbe* from GTM, and vehemently so (Glaser & Strauss 1967:2).

The resolution of the argument is that GTM does both. The cycle alternates between inductive and deductive logic as the research proceeds. The initial abstracting of concepts from the data is inductive, but deductive work is used to derive from induced codes the clues and directions for where to go next in the theoretical sampling stage. This fusion of approaches is termed 'abduction'. Its definition is 'The process of forming an explanatory hypothesis. It is the only logical operation which introduces any new idea Deduction proves something that must be, Induction shows that something actually is operative, Abduction merely suggests that something may be' (Peirce 1903:216). Kathy Charmaz, an original student of both Glaser and Strauss, (Charmaz 2000) in a detailed investigation eventually reconciled the long-running objectivist/constructionist schism among grounded theorists and set out a guide on how to discover grounded theory for either paradigm family (Charmaz 2006).

GTM is thus a neutral research procedure and inherently multi-paradigmatic. This insight should be emancipatory; allowing researchers to develop theories from within their methodological paradigm(s). While this is the case, the challenge of the GTM is inherently the creative demands it places on the researcher. The process of exploring the data on hand, and determining the successive iterations of data to collect, is inherently challenging as it depends on the ability of the researcher to create meaning from the data. It is at the level of exploring links between codes (nodes or categories) that this is most difficult. Being inherently multi-paradigmatic it does not exist in 'conflict' with another paradigm, but is able to be teamed in a complementary fashion, to provide more clarity in the process. To complete the discussion of GTM as a tool for theory development in IS, it thus becomes necessary to consider the use of triangulation (mixed or

multiple method research) as a catalyst to further enabling theory development.

Bridging the Creative Divide

Accepting the hybrid view of IS as mixed-actant ANs is one thing. Using GTM in IS, however, requires an extension of the method. ‘Glaser’ and ‘Strauss’ methods were explicitly grounded in research about the interactions between individual human actors in predominantly non-business sociological settings. Researching the IS ‘Ensemble’ needs a wider focus on interactions between groups of people and technology, all embedded in organisations. Practically, the fact that an IS researcher needs to consider such a wide focus, requires a pragmatic research approach: A mixed or multiple method approach may be most conducive to theory development with GTM, with its neutral paradigm, being complemented by another research method.

The triangulation of findings from different research approaches allows the situation to be viewed, and studied, through different analytical lenses. Triangulation can involve four distinct planes of interest, namely: the theoretical approach chosen, the research methods, the data source, and participating or referenced researchers (Fielding & Schreier 2001; Hilton 1999; Kleining & Witt 2001). The distinct form a particular triangulated study takes depends on how the researcher chooses to combine the planes of interest, and the choices available within each plane (Kelle 2001; Quilling & Blewett 2003).

Triangulation has been represented in different ways, but central to this discussion is the fact that triangulation focuses on the integration of different perspectives to produce a more complete picture. ‘Triangulation is less a strategy for validating results and procedures than an alternative to validation ... which increases scope, depth and consistency in methodological proceedings’ (Flick 1998 as discussed in Kelle 2001). He stresses though, that in this understanding of the term, each method on its own should be able to provide an explanation of the phenomenon. As such the term ‘triangulation’ should be considered to be a metaphor for the methodological process rather than a specific approach (Cupchik 2001; Kelle 2001; Knox 2004; Steiner 2002; Zinn 2002).

The value of triangulation is that it suggests the use of alternative ways of exploring phenomena: When facing a creative chasm while applying the GTM a researcher may feel there is little guidance available in terms of determining the next data to be collected or patterns emerging. Self-doubt can be a challenge and clarity may seem elusive: Is the data really saying that? By referring to another methodological stance it may be possible to gain a new perspective of a potential ‘next step’ in the research process.

IS contexts, located within organisations, are typically investigated using a case study methodology. One way of achieving an ensemble approach using GTM (Lehmann 2005:166-167) starts with conceptualising all the individual slices of data (technical and organisational) within one organisation and then amalgamating them into one contiguous narrative (the ‘case history’). This then forms a second-order ‘text’ from where further conceptualisations now progress. Theoretical sampling thus first ranges within-case to maximise the theoretical depth and density of the case story. The resulting theorems of what ‘happens in the case’ are then applied to theoretical sampling between-cases to move the overall theory - of what ‘happens in the substantive area’ - forward. A combination of a case study and GTM can provide insight into how the data can be explored for meaning, and theory developed.

In areas where little is known about the subject it may be useful to supplement traditional qualitative data (such as focus group interviews) with data received from surveys, as a part of the model building process. This approach was employed in a study considering the impact of the disciplinary culture of individual team members on the workings of a multidisciplinary student team (Quilling 2008). Initial theory development was based on the perspective provided by 13 IS project development teams’ members (4-5 students per team). Findings from the analysis of a survey of 108 individuals who constituted the same class; thus incorporating a significant number of the students who would already have been represented in the focus group interviews, were added as further data.

While it is important to consider the philosophical underpinning of methodologies, which are to be used together, it has already been shown that GTM lends itself to this form of research due to its neutral position. In addition, the additional insights the researcher may gain from changing methodological perspective may greatly enhance the creativity they bring to the data, by providing alternative ways to ‘see’ the data.

Conclusion

This paper has explored the relevance of GTM as an appropriate research methodology for application in the IS discipline. It has underlined the fact that GTM's main point is the rigour with which it anchors conceptual conjecture in data to give it legitimacy as a theory. GTM's proven applicability to divergent disciplines rests on its generality – data can come from any source. This makes it the right choice for fundamental research in IS, which is an actor network of technical and people actants. Right choice is one thing – doing GTM the right way is another: It was then necessary to clarify that the essential elements of GTM are joint data gathering and constant comparison on the one hand and theoretical sampling and saturation on the other. This has helped to correct the common misconception that coding in a specific way constitutes GTM – it does not, whatever fancy name the different coding levels may have been given – coding is common to other social science methods as well. The second quality that makes GTM useful for IS is its paradigmatic neutrality – researchers of the technology part of the IS can apply a positivist approach and investigations where people and organisational aspects are in the foreground may use a constructivist lens, but both would use the same basic process of grounding their concepts in the data. The discussion of paradigmatic neutrality concluded that abduction logic best describes the GTM approach to distilling meaning from phenomena. This straddles most of the paradigmatic stances represented in social science. Finally, it is this neutrality, which allows it to be teamed with other research approaches in a mixed- or multiple- method study (triangulated study). Two examples are provided to illustrate how this may aid in bridging the creative gap – that space where the researcher only has themselves to rely on - when trying to interpret what the analysis may be suggesting.

Concluding: GTM is a useful method to create theory in domains where few exist. It is, however, not formulaic – it requires creativity. It is not easy – it requires knowledge of the field and method skills. It takes you where no-one has been before – this makes it risky. Yet like with everything high risk - occasionally there can be high reward.

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The Partial Approach to Grounded Theory Integrated with Activity Theory: A Generic Framework, Illustrated by a Base Study in an e-Learning Context

**Mc Donald van der Merwe
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Abstract

Published studies frequently emphasize research situations and data collection methods at the expense of discussions of analysis (Eisenhardt 1989). This results in a gap between data and conclusions. Grounded Theory research, in particular, is prone to misconceptions and technical fixes that increase the gap. The principal objective of this meta-research study is to propose, articulate, and motivate an integrated generic research framework that combines elements of the Grounded Theory Method and Activity Theory in a Partial Grounded Theory approach. The integrated research design was synthesized during a base study on forum interactions in an e-learning context. Pertinent aspects of this qualitative base study are described to illustrate the framework, after which the full framework and its phases are presented.

Keywords: Grounded theory, partial grounded theory, activity theory, meta-research, mathematics education, e-learning, online discussions.

Introduction and Background

Grounded Theory originated with the seminal publication, ‘The Discovery

of Grounded Theory' by Glaser and Strauss (1967). Grounded theory (GT) is a popular method for the collection and analysis of qualitative data in situations where there are few theoretical explanations regarding a topic. Using the Grounded Theory Method (GTM), conceptual properties and categories are either discovered or generated from qualitative data which leads to the development of new or emerging theory. It is claimed to be the most widely used qualitative research method in the social sciences (Locke 2001). A probable reason for its popularity is that it contains a number of guidelines and procedures, thereby providing a useful template that serves as a 'comfort factor' when conducting qualitative research (Hughes & Howcroft 2000).

Grounded Theory is traditionally aligned with objectivism, but has also been used in constructivist contexts (Mills, Bonner & Francis 2006). This change in stance led to different rules for conducting GT research, sparking a long-standing debate between the initial authors over the 'correct' method and strategies for collecting and analyzing data (see Glaser 1978, 1992) versus Strauss and Corbin (1990; 1998)). The major divergence relates to the methodological rather than ontological and epistemological aspects, with researchers typically choosing the approach they find most appropriate for their particular research and that provides them with a clearer picture of how to apply Grounded Theory contextually. These tactics have resulted in many 'technical fixes' to GTM over the years (Barbour 2001).

Whereas the original intended use of the GTM requires a longitudinal interplay between data gathering and analysis in a cyclic fashion, Parry (1998) notes that this approach is seldom implemented, with scientists loosely employing the term 'Grounded Theory' to indicate that theory was derived from data. Strauss and Corbin (1990) distinguish between a *Full Grounded Theory* approach, which is iterative, and a *Partial Approach*, whereby the data is simply theorized upon, not necessarily in an iterative manner. They furthermore state that there are two main shortfalls in the partial method that reduce its efficacy as sound scientific research. The first is the absence of an explainable analytical process by which concepts are built up to higher levels of abstraction. The second relates to failure to determine (or at least, explain) the nature of relationships between categories or concepts. The result is that some GT methods fail to meet the precision and criteria for good scientific research (Strauss & Corbin 1990).

To circumvent these criticisms, Charmaz (2006), who is acknowledged as a leading theorist and exponent of GTM, recently repositioned Grounded Theory as a *flexible approach* and *not a strict methodology*, thereby inviting researchers from other standpoints to use it in innovative ways. Seaman (2008) elaborates on various ways in which traditional GTM can be extended to new directions by following different methodological guidelines, in particular, using the vantage point of Cultural-Historical Activity Theory as a test case. In exploring the use of GTM within another existing theoretical framework, namely Activity Theory, he addresses issues faced by many GT researchers starting from an existing theoretical stance, namely: how to determine an appropriate role for Grounded Theory, and how to adapt its methods and strategies in the light of different methodological guidelines, whilst yet maintaining its original intent (Seaman 2008).

Similarly, this article seeks to contribute to the repositioning of Grounded Theory from a methodology with positivist underpinnings to a partial and flexible approach for use within different theoretical frameworks. As with Seaman (2008), the framework of choice is Activity Theory (AT).

Objective

The principal objective of this meta-research study is to propose, articulate, and motivate an *integrated research framework* that combines Activity Theory and the Partial Grounded Theory Method. In articulating the steps of the methodology, this paper addresses Strauss and Corbin's (1990) shortfalls of the partial method, i.e. the absence of an explainable analytic process and/or the failure to determine the nature of relationships between categories/concepts. We illustrate use of the framework by describing a recent study by van der Merwe and van der Merwe (2008), relating to use of an online discussion forum by two distinct groups of mathematics teachers. This study is referred to as the base study and the integrated phase-by-phase framework was initially generated to meet its particular requirements. The objective of the base study was to gain a deep understanding of the data from two case studies within specific contexts, through the application of selected and adapted Grounded Theory techniques, illuminated by Activity Theory.

The article explains the essential foundations of the theories and methods applied, highlighting the techniques and procedures that were adopted and adapted for the researchers' purposes. This is a similar effort to that of Locke (2001:95) to 'capture the complexities of the context in which the action unfolded ...'. Furthermore, we overview and present examples that illustrate the analytical processes. The purpose of this present article is to explicate and advocate this innovative research approach.

First, a review is provided of the essential foundations of Grounded Theory and Activity Theory. A research method is a strategy of inquiry that moves from the underlying philosophical assumptions to research design and data collection (Myers 2007). To this end, we then overview the base study, explaining the selection of its research methods and philosophical perspective, followed by an outlining of the data collection and analytical processes. Finally, the article consolidates the approach and its contributions by suggesting a generic integrated framework that can be applied by researchers in other contexts. The reason for presenting the base study prior to the introduction of the framework is to lead the reader toward the main proposal of this study by using an example.

Grounded Theory

Grounded Theory was outlined in the Introduction and is elaborated in this section. The defining characteristic is its use to generate substantive as well as formal theories through induction from data and comparative analysis, either by well-codified sets of properties or in running theoretical discussions (Glaser & Strauss 1967). Martin and Turner (1986:141) define GT as an 'inductive theory-discovery methodology that allows the researcher to develop a theoretical account of general features of the topic, while simultaneously grounding the account in empirical observations of data'.

There are two key beliefs in the classic GT of Glaser and Strauss:

1. Initially, no theory exists to be proven, disproved or extended, and
2. Grounded Theory is discovered through constant comparison between incidents and properties of a category.

GT is thus appropriate when little is known about a topic and where there are few existing theories to explain a phenomenon (Hutchinson 1988).

Babchuck (1997) identified research that employed the GTM in educational environments, including studies on: teacher burn-out and stress (Blase 1982); middle school students' perceptions of factors facilitating the learning of science (Spector & Gibson 1991); adaptive strategies of expert teachers (Conrad 1987); life in an adult basic education classroom (Courtney, Jha & Babchuk 1994); group socialization of secondary school teachers (Gehrke 1982); and instructional innovation in higher education (Kozma 1985). Other GMT research identified by the primary author of the present article includes: attitudes, needs and professional development of science teachers (Klieger, Ben-Hur & Bar-Yossef 2009); web-based learning environments (Zimmerman, 2002); academic change (Conrad 1978); and self-efficacy beliefs in academic settings (Pajares 1996).

The GT-method is also well suited to IS-research (de Villiers 2005). Some of the more prominent studies advocating a GT methodology in IS include Orlikowski (1993), Walsham (1995), Fitzgerald (1997), Hughes *et al.* (2003) and Hansen *et al.* (2005).

One of the major criticisms of studies employing the GTM relates to the lack of actual theory generation. For example, Locke (1996) criticizes an 'anything goes' approach by some researchers; Bryman and Burgess (1994) express concern about the use of Grounded Theory as 'an approving bumper sticker' to imply academic respectability in the absence of a helpful description of the analysis strategy used; Melia (1997) suggests that most researchers use a pragmatic approach in an effort to achieve 'added value' by identifying new themes from the data alongside those that could have been anticipated from the outset; and Barbour (2001) charges that in the absence of analytical, in-depth analysis, many researchers produce 'artificially neat and tidy' descriptive accounts. The result is that many papers claim to be Grounded Theory when they do not give full attention to the systematic yet flexible procedures it offers, or fail to offer or elaborate on the exact procedures employed.

The four core GTM steps used in the analysis of data are open coding, axial coding, selective coding, and theoretical sampling until theoretical saturation is reached.

Open Coding

The three basic elements of the GTM are concepts, categories and propositions (Pandit 1996). Incidents or activities are analysed as potential indicators of phenomena and are given *conceptual* labels in order to accumulate basic units for theory generation. *Categories* are higher level abstractions of these concepts and provide the means whereby theory can be integrated. *Propositions* indicate general relationships between a category and its concepts, and between discrete categories. GT frequently involves analysis of texts, systematically searching for terms, statements and phrases in the content and classifying them with explanatory labels (Hansen *et al.* 2005), so as to identify, name, categorize and describe phenomena (Glaser *et al.* 1967).

Theoretical sensitivity, a cornerstone of GT, is defined by Glaser (1978) as the personal insight with which a researcher approaches a research situation. Such insight should be conceptual rather than concrete. It represents the creative aspect of the GTM, and through such theoretical sensitivity, the researcher becomes able to recognise important data, and to filter it from the particular to the more general or abstract. Recognizing and continually challenging his or her personal theories and biases against the data (known as GT's constant comparison method) provides a way to consolidate, but also to manage, theoretical sensitivity.

Open coding employs theoretical sensitivity and is hermeneutic, i.e. an interpretive act by the researcher. During initial analytical reading, first-attempt labels are assigned to sections of text. The process of constant comparison and re-reading results in certain labels being renamed, others being refined, and 'in-vivo' re-structuring whereby duplicates are eliminated and text fragments with the same meaning are assigned the same label. Such thematic analysis involves the search for, and identification of, common threads that extend throughout the data.

Axial Coding

The purpose of axial coding is a further pass through the data to discover categories into which the concepts can be classified, i.e. the data is reconstructed in different ways. The meanings behind concepts and categories are then compared in order to explain the material and relationships between concepts (Hansen *et al.* 2005). Axial coding is a

cornerstone of Strauss and Corbin's (1998) approach, but is regarded by Charmaz (2006) as highly structured and optional. The ability to perceive variables and relationships is also part of the researcher's theoretical sensitivity and can be enhanced by the use of appropriate techniques (Strauss *et al.* 1990), including automated tools for qualitative analysis.

In iterative comparison, it may be necessary to shuttle between open and axial coding and to move between levels of abstraction to make adjustments. This ensures that important data is not unintentionally discarded, and also assists in making sense of the data. Glaser and Strauss (1977) warn that meaningless data should not be fitted to concepts or categories, but should be disqualified.

Selective Coding

Selective coding is the process of choosing one category as the core category, and relating all other categories to it (Strauss *et al.* 1990). This category is intended to act as a guide for further data collection and analysis in order to build the theoretical framework (Glaser, 1978). The essential idea is to develop a single storyline around which all else is draped. Such a core category almost always exists (Strauss *et al.* 1990) and is typically identified as the category that is mentioned with highest frequency and is well connected to other categories. In a full GTM, one would typically cease coding text that does not relate to the core category and would collect more data on it, as well as on its connected categories and properties en route to building a theory.

Theoretical Sampling

Theoretical sampling is the process of literal and theoretical replication. New cases are selected and the process is repeated until theoretical saturation occurs. The purpose is to confirm, extend and sharpen the theoretical framework (Yin 1994). The process ends when improvements are marginal.

Activity Theory

Activity Theory (Vygotsky 1978; Leontjev 1978, 1981; Engeström 1987; Cole & Engeström 1994) is a particularly suitable theoretical framework

when context is central to the research. Kuutti (1995) discusses the potential of AT for research into human-computer interaction (HCI), proposing it as a framework for HCI research and design. In AT, the basic unit of analysis is human activity (work). In simple terms, an activity is defined as the engagement of a subject toward a certain goal or objective. An activity is undertaken by a human agent (subject) who is motivated toward the solution of a problem or purpose (object), and mediated by tools (artifacts) in collaboration (roles) with others (community). The structure of the activity is constrained by contextual cultural factors including conventions (rules) and social strata (division of labour) (Ryder 1999).

Each activity performed by the subject is analyzed as part of the collective Activity System and within the social-cultural context of both the individual and the collective. In order to make sense of the system, a shared understanding is required of: the character and history of the subject; the object that the individual is trying to attain; characteristics of the community; and the tools available to the subject. In the process of the object changing, all the other components adopt new perspectives, and a new Activity System is born. The components of such systems are not static components existing in isolation. They interact reciprocally and, in this way, are reciprocally constituted through mutual interactions within the Activity System. Figure 1 shows this tri-stratal representation of social activity.

An examination of any phenomenon must consider the dynamics between its components. Data analysis should therefore be conducted within the context of the tri-stratal framework to ensure understanding of the activities, actions and operations performed by the subjects, and reveal their motives, goals and instrumental conditions.

It is important to note that AT is a broad conceptual framework and not a theory in the strict sense. It consists of a set of basic principles which constitute a general conceptual system that can be integrated with more specific theories, such as GT. One of Engeström's (1987) original motivations for using GT was to allow researchers to identify the inner contradictions that impose tensions and instability on participants' settings and help them change the nature of an activity to overcome those tensions. The identification of tensions provides an indication of the stability or instability of the Activity System. If there are no tensions, there are no contradictions and the nature of an activity need not change.

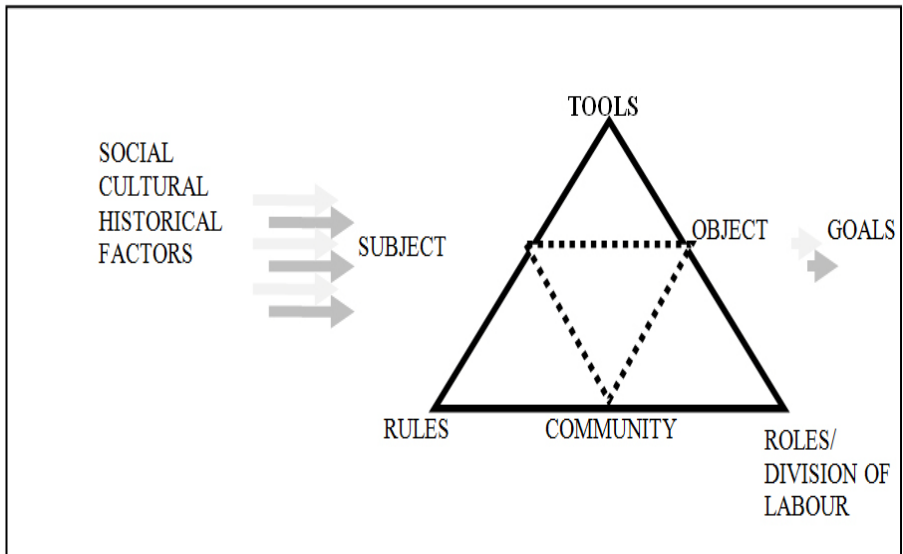


Figure 1: The tri-stratal framework of Activity Theory (Ryder 1999)

Having introduced the essential foundations, we now focus on reconstructing how we arrived at the exact analytic processes followed in the base study, with specific reference to our adapted GTM steps and the use of AT to determine the nature of relationships between categories/ concepts.

Overview of the Base Study

Purpose and Context

In reconceptualising Continuous Professional Development (CPD) for school teachers, Smiley and Conyers (1991), call for a paradigm shift from learning separately and learning through replication (static learning) to learning together and practicing (interactive learning). Teachers are often isolated from peers in their discipline, whereas they could benefit from mutual engagement in inquiry and reflection (Barnett 1998; Clandinin & Connelly 1995; Stein, Smith & Silver 1999). Interactive communication with colleagues and the exchange of knowledge and ideas is the conceptual backbone of this paradigm shift, and one very common research route focuses on the use of online discussion forums to create virtual communities of practice.

The van der Merwe *et al.* (2008) study aimed to discover personal and situational factors (or *tensions*) that impact on the value and practical use of a mathematics-friendly online discussion forum environment (ODEM) as a reflective tool in pursuit of the CPD of Grade 5-7 mathematics teachers in the South African context of disparities. Participating teachers came from both a (previously) disadvantaged group and a (previously) advantaged group. The primary foci of this base study were to discover tensions that occurred and impacted on the use of the ODEM in the CPD educational process of the two different sub-communities, and to understand the differences (if any) between the groups. Findings would serve to ensure that future on-line CPD strategies are more directed and purposeful. The base study therefore lies in the *application area of mathematics education*, with a *focus area of e-learning*, due to the use of an online discussion forum as a communication tool.

To support the study, personal computers (PC's) and home Internet connections were provided to both groups of disadvantaged and advantaged teachers. The selected teachers were already active participants in cluster meetings, and therefore intrinsically motivated towards CPD opportunities. Twenty teachers (ten from each group) were tasked to visit the ODEM on a regular basis and to reflect and share on their classroom practises within separate discussion forums, thereby providing opportunities for collegial interaction and the exchange of knowledge and ideas. Prior to this venture, few teachers and schools – particularly from disadvantaged communities – owned or had access to PC's and the Internet. The cost associated with the provision of hardware and access necessitated small samples, which also hindered replication of datasets and use of the full GTM.

Of the twenty teachers, only sixteen were successfully connected and able to participate. In order to effect a meaningful investigation, a fitting research design and associated methodology was required. The research approach, which was based on particular philosophical stances, dictated the design and methodology adopted. These are outlined in the next section.

Philosophical Perspective

It was clear from the outset that context was important. The focus of the research was on human activities within the context-specific settings of advantaged and disadvantaged communities, and how these actions were

influenced by their settings. Human activity should be studied in its real-life situation (Marshall & Rossman 2006), and the study therefore adopted the *qualitative* research paradigm.

Since the study aimed to understand the context of implementation of a computing system and the processes whereby its use and value were influenced by said context, an *interpretive perspective* was selected as the philosophical foundation. The philosophical basis of interpretive research is hermeneutics and phenomenology (Boland 1985), which neatly tied the selected philosophical approach to the qualitative ethos of the study.

The next chronological decision was the selection of appropriate research method(s) to employ.

Research Design and Methods

Following on the preceding theoretical overviews of Grounded Theory and Activity Theory, this section outlines their application in the base study. The actual implementation and adaptation of the techniques is addressed in more detail in the section on data collection and analysis.

Various qualitative and interpretive research methods were investigated, using a framework proposed by Van der Merwe (not the present author), Kotze and Cronje (2005), which matches the research questions of a study against the key elements of qualitative research paradigms. In the case of the base study, these questions related to identifying tensions in each group of participants and contrasting these differences. The study was found to fall within the ambit of Grounded Theory- (GT), Activity Theory- (AT), or Case Study methods and it was decided to use aspects of all three. The next subsection describe the role of AT and a partial GT approach (Strauss & Corbin 1990), as applied to the particular cases in the base study.

Case studies involve examination of specific phenomena (such as programmes, events, processes, institutions or groups) in their real-world contexts, by presenting detailed information about the phenomena, frequently including accounts by the subject/s themselves (Merriam 1988; Yin 1984; 1988). Tellis (1997) advocates that the researcher should personally work with the situation in each case. In the base study, there were two distinct types of case, polar types, presented by the advantaged and disadvantaged groups, respectively, with sampling-logic rather than

replication defining the cases. The study followed Yin's (2002) interpretive, revelatory single-case approach in each of the two distinct communities. To identify the tensions in each, a detailed within-case, write-up approach was followed, in order to become 'intimately familiar with each case as a stand-alone entity' (Eisenhardt 1989:540) before generalization of patterns could occur across the two cases.

Grounded Theory and Activity Theory, as Used in the Base Study

Previous sections introduced essential foundations of GTM and AT. This section describes their joint use in the context of the cases in the base study. We have mentioned applications of GT in educational research, and a strong motive for pursuing GTM in this study is its suitability for research in adult education which, according to Babchuk (1996), is characterized by a strong commitment to the real world of practice but lacks well-developed theoretical foundations. Furthermore, Preece, Rogers and Sharpe (2007 citing Sarker 2001), describe the application of GT as a research approach for analysing an interactive discussion forum

The selection of a single repeated-case approach in two distinct communities offered little potential for theory building. As Eisenhardt (1989) posits, with fewer than four cases, the empirical grounding is likely to be unconvincing – unless a case contains several subcases, which may offer an even deeper understanding of processes and outcomes and a sound picture of locally grounded causality (Miles & Huberman 1994). In order to arrive at convincing theoretical concepts, the identification of embedded subcases was a necessary objective. This is elaborated in the data analysis section, where it is shown how Activity Systems were used to define contextual units of analysis (or Activity Systems) in the base study.

The base study centred on the properties of units – where the units were: a disadvantaged group; an advantaged group; the tensions within each group as it uses the ODEM; and the value they obtain from the ODEM. As Glaser (1978) points out, *properties of a unit* are more relevant to descriptive qualitative studies, while *properties of a process* are more relevant to studies aiming at theoretical conceptualization. This meant that the GT-method used here, is similar to that in Chow's (1998) qualitative descriptive study, which had GT overtones by its employment of GT-techniques but without theory generation.

The use of selected GT techniques only, thus seemed an appropriate choice for investigating and analysing data. In particular, Strauss and Corbin's (1990) 'partial' GMT approach is relevant, whereby emerging theory is not induced in an iterative manner. Although Strauss and Corbin (1990) acknowledge shortfalls in the partial approach, this paper suggests ways of using the GTM in line with Charmaz's (2006) flexible, rather than strict methodological, approach.

Barab, Schatz and Scheckler (2004) make the point that, while it is common for educational-technology researchers to publish studies reporting the nature of systems in terms of a unitary, coherent, and refined entity, the same researchers fail to portray and acknowledge the complex human and other dynamics that characterise the development and usage of a system. In their classic work on qualitative data analysis, Miles and Huberman (1994) suggest that the methods they present should not be applied scrupulously. Instead, the creation, testing and revision of simple, practical and effective analysis methods remain the highest priority for qualitative researchers.

Mindful of the criticism levelled at partial GT-methods and the limitations of single case study designs, it was necessary to maximise the context-analytic possibilities inherent in the base study and to do so by *data triangulation*, which means using different sources of data.

In concurring with these viewpoints, the study applied selected techniques of both partial GTM and AT in a case study context, but structured and adapted to effect credible results. A further way in which theoretical credibility can be achieved, is through interactions between elements of GT and AT, leading to *theoretical triangulation*, which, in its simplest terms, means analyzing the same set of data from multiple perspectives. Annels (2006) notes that different research approaches can be creatively and successfully used in one study if there has been adequate consideration of vital factors that determine whether there is a good 'fit' of the approaches, not only with the research problems and questions, but also with each other, while maintaining the integrity of techniques. The use in this study of Activity Theory within a partial GT methodology attempts not only to address shortcomings, but also to fill gaps created by the use of selected GT-techniques only.

Finally, Thorne, Reimer Kirkham and O'Flynn-Magee (2004) describe *interpretive description* as a coherent conceptual description that taps thematic patterns and commonalities which characterize the

phenomenon under investigation and that also accounts for the inevitable individual variations. This description accurately fits the research focus of the base study. The base study thus adopted a *revelatory, interpretive and descriptive* approach to the two single cases under investigation. The next section summarizes the data collection phase, followed by a detailed report of the exact analytical processes followed.

Data Collection and Analysis

Having motivated the methods selected and adapted, the subsections on data collection and data analysis provide a walk-through of how the methods were used, thereby presenting a situated introduction to the framework presented at the end of this paper.

Data Collection

Data was collected from semi-structured interviews, forum posts, server logs, teacher journals, the primary author's own research journal and a focus questionnaire, thereby providing multiple perspectives and ensuring triangulation of data (Glaser *et al.* 1967; Orlikowski 1993; Pandit 1996).

Primary data sources in the first phase of analysis were interview data and journals kept by teachers and the researcher. Forum posts and server-logs data were used to confirm or deny concepts and tensions discovered. GTM-type memos were kept throughout the analysis, as subsequent data collection.

Parry (1998) advises the use of computer software to maintain and analyse data in scientific grounded theory research. With the exception of server logs, all the data was transcribed and fed into the *Atlas-ti* software package, which is a powerful workbench for qualitative analysis of large bodies of textual data (see <http://www.atlasti.com>). It contains tools for accomplishing various tasks associated with systematic approaches to 'soft data'. After hermeneutic units had been created, including all the data from the two groups, respectively, formal data analysis commenced.

Open Coding

In order to identify emerging concepts from the data, the GT technique of open coding was employed. Within the *Atlas-ti* environment, the transcribed

texts were analysed manually, line by line, searching for different words in the statements and classifying part-statements with labels to explain the meanings of the different parts (Hansen *et al.* 2005). This process was concerned with identifying, naming, categorizing and describing phenomena in the text (Glaser *et al.* 1967). As in all GTM research, the research results were emergent that is no preconceived theory existed about possible tensions. An open strategy (Creswell 1998) was followed. During initial reading, first-attempt labels were assigned to sections of text. In a process of constant comparison, texts were re-read several times, leading to re-naming of some labels, refinement of others, and assignment of the same label to texts that had very similar meanings.

Cole and Knowles (2001) posit that the analytical process required in contextual research is not one of dissection but one of immersion, rationality and intuition. They suggest that: ‘We become surrounded and washed by the material, we bathe in it, live it, and breathe it. Like getting to know a good friend, because we have spent so much time together and come to know so much about her, eventually we begin to think, just a little, like her’ (Cole & Knowles 2001:106).

This accurately portrayed the base study, as concepts or themes rose to the surface from deep inside the data (Neuman 2003). For example, it became apparent that some of the labels could be categorized into a concept termed ‘Township-¹related problems’. This related to the unique kind of problems experienced by disadvantaged teachers as a direct consequence of the crowded township environment they work and live in, and which in instances negatively impacted on their participation in the ODEM.

On completion of the open coding phase, focused questionnaires were used to confirm certain themes that emerged and to supplement incomplete information. Several concepts were discovered in this manner, initiating the next step in data analysis – the GTM-technique of axial coding.

¹ Townships are sub-urban residential areas established in the apartheid area on the periphery of white towns and cities – close enough to work in white areas but distant enough to ensure separate development.

Axial Coding

In a further pass through the data, categories were discovered and concepts were classified. This supported the researcher in better understanding the information and identifying relationships between concepts.

The *Network View Manager* in *Atlas-ti* was used to develop preliminary categories by grouping concepts with similar meanings. Once again, the researcher's theoretical sensitivity was employed. Figure 2 combines three screenshots from the *Network View Manager* that visually represent the open and axial coding processes of the disadvantaged group at a certain stage.

The text segment marked **A** comprises two lines of text from a transcribed interview. It was initially labelled differently, but was renamed 'township problems' when a concept termed 'problems related to township life' emerged from the data.

B represents a screenshot of an extract from a drop-down list containing links to all the transcribed text that was related to the concept 'township problems'. **C** shows this concept, 'Township problems', grouped along with several other concepts such as 'no study', 'transport problems', 'busy family life', etc. These were placed in a category called 'Preventative issues' (**D**), to contain issues that hindered teachers from optimal participation in the ODEM. Moving from **A** through to **D** therefore presents increasingly abstract representations of the data collected. Several other categories were discovered in this way. **E** shows a screen shot of the 'Positive participation effects' category and its concepts.

Grounded theorists seldom return to earlier text to code newly discovered categories. However, in the process of discovering new categories, the researcher became more sensitized to the emerging view, and revisited the original data regularly to check whether the initial coding was too narrow or too broad. Glaser and Strauss (1977) caution that meaningless data should not be refitted to concepts or categories, but should be disqualified. In this manner, from a total of 870 codes initially generated for the two cases together, 441 were used and the rest discarded.

Atlas-ti's Network Manager simplifies forwards-and-backwards mobility between various levels of abstraction to make adjustments where necessary. For example, clicking on any concept **C** opens the associated drop-down list **B**, and clicking any of the text lines in **B** transports one directly to the original transcribed and labelled text **A**. Such constant shutt-

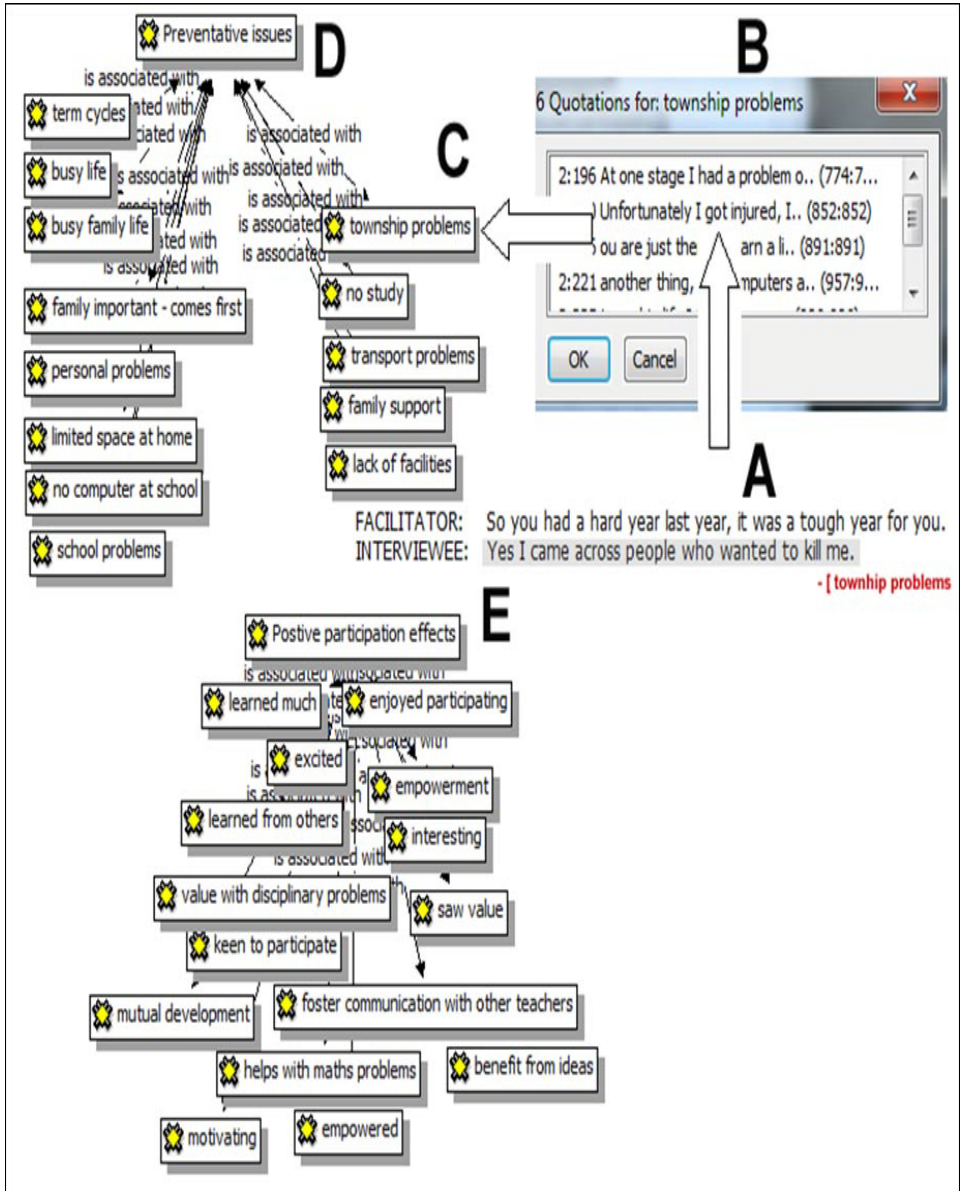


Figure 2: Open- and axial-coding: Atlas-ti Network View Manager Snapshots

ling between open and axial coding ensures that important data is not unintentionally discarded, and also assists in making sense of the data. For example, the text, ‘Yes, I came across people who wanted to kill me’ in A should not be viewed in isolation from the preceding or following text in the hermeneutic unit. The respondent simply meant that some bad guys were after him – not necessarily to kill him. The shuttling process is time consuming but, as the foundation of data analysis, it cannot be otherwise.

Selective Coding

The next chronological step in GTM is selective coding, in which a single category is chosen as the core category, and all other categories are related to it (Strauss *et al.* 1990). At this point, researchers would cease coding text that does not relate to the core. For the purpose of theory building, they would collect more data on the core, as well as on its related categories and properties. Due to the Partial GT approach and the single cases in the base study, this was not possible and, at this point, we moved towards Activity Theory. Rather than choosing one category as the core category, the technique of selective coding was adapted by forming new ‘super-categories’ to serve as containers (or classes) for related categories. Table 1 provides a condensed view of the disadvantaged group classes (underlined in the table) and their related categories, as they emerged from the open, axial and adapted selective coding processes.

The class Connecting to the ODEM was created from categories related to the provision of and access to an Internet-ready computer, as well as the ability to successfully connect to the ODEM in order to participate². The class Using the ODEM was created from categories that are self-descriptive, such as Preventative factors, Negative participation effects, Motivation for participation, and so forth³. Some category concepts fitted in both these classes, and were thus placed in a Shared class. The Asked class existed because of specific questions that were posed during the semi-structured interviews and the focus questionnaire.

² For various reasons, the disadvantaged teachers experienced a variety of problems in connecting to the Internet and the ODEM.

³ These impacted on the use of the ODEM by teachers

Table 1: Category and Class view of disadvantaged data

<u>CLASSES</u>	<u>CATEGORIES</u>
<u>Connecting to the ODEM</u>	Connecting to ODEM (8:23)
<u>Shared</u>	Support required (5:19) Financial factors (3:13)
<u>Using the ODEM</u>	Preventative factors (11:46) Negative participation effects (9:25) Positive participation effects 14:(36) Suggestions (11:13) Training (4:17) Value of ODEM (5:25) Personal characteristics (7:15) Ease of use (7:15) Other use of PC than for ODEM (3:11) Motivation for participation (4:5)
<u>Asked</u>	Point of access 4:7) ODEM vs. Cluster (3:10) Subject Advisor required (9:16) Content vs. reflection (7:11) PC literacy (7:25) Cross-cultural (3:7)

Key: Figures in brackets (the number of concepts associated with the category: total number of codes associated with the concepts in that category)

For example, teachers were asked whether they preferred access to the ODEM from home or from school. The category *Point of Access* was in fact not discovered during open coding, but was nevertheless labelled to assist the interpretation phase. The classes identified can be viewed as subcases. Two classes are explicit: Connecting to the ODEM and Using the ODEM. The Shared and Asked classes, in this instance, provide supporting evidence.

The shift away from the pure GT technique of selective coding is significant in the context of this paper, since it firmly positions the research

approach as a Partial GTM. In the next sections, some shortfalls of the partial GTM are addressed, namely the: (i) absence of an explainable analytic process by which concepts are built up to higher levels of abstraction, and (ii) the failure to determine the nature of relationships between categories/concepts.

As a starting point, the two explicit classes identified in Table 4 can be viewed as subcases, or, from an Activity Theory perspective, ‘Activity Systems’.

Subcases as Activity Systems

Figure 3 represents a specific instance of the generic diagram in Figure 1. It graphically depicts the subcase Connecting to the ODEM for the Disadvantaged group as an *Activity System*.

Consider the act of a teacher wanting to participate in the ODEM. Connecting to the ODEM via the Internet can be considered an Activity System, where the *subject* is a mathematics teacher; the *object* is an Internet connection with the goal of participation in the ODEM; and the *community* is disadvantaged. The *tool* is an Internet-ready personal computer; *rules* are that teachers must connect to the Internet and visit their respective forums to reflect on their practise and respond to other teachers’ reflections. The *roles* may be the telephone provider who should supply a clear and working telephone line; an Internet Service Provider to ensure Internet access; the researcher who must prepare Internet-ready computers, transfer funds for Internet-connection fees to teachers’ bank accounts, and provide support and training on the ODEM; the teacher who must pay connection fees and who must perform the activities defined in the *rules*. If the object is connecting to the ODEM but the Internet connection fees were not paid, no connection is possible and the object of the Activity System then becomes paying the fees, with the subsequent goal of a successful connection. In the process of the object changing, all the other components adopt new perspectives, allowing analysis in context.

Accordingly, two Activity Systems existed:

- Disadvantaged Activity System 1 (**DAS1**): Connecting to the ODEM; and
- Disadvantaged Activity System 2 (**DAS2**): Using the ODEM.

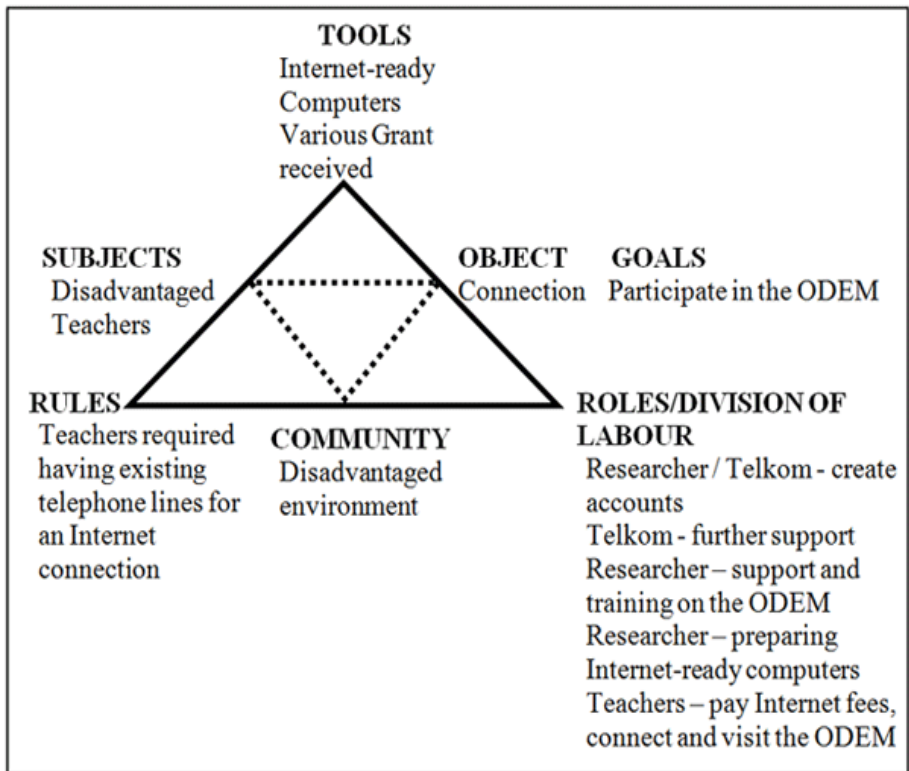


Figure 3: The class Connecting to the ODEM represented as an Activity System

Further analysis took place within each Activity System – ensuring context and understanding of the activities, actions and operations performed by the subjects, revealing their motives, goals and instrumental conditions. *How* further analysis was done was achieved through a process which can be called ‘Decomposition of Activity Systems phase’.

Decomposition of Activity Systems Phase

Decomposition, also not part of conventional GTM, occurred within the Activity Theory framework of *subjects, rules, community, division of labour* and the *objects* and *goals* by way of a chronological report in narrative format.

As a first step, the collected (transcribed and not-transcribed, such as server logs) data was interpreted by identifying and describing the Activity System's components and possible tensions that existed in and between components. It required going back to the original transcribed text via the Activity System and its identified categories and concepts, using the demonstrated functionality of *Atlas-ti Network Manager*. This process is particularly suited to a storyline approach, where all the original data is put back together again in thick, rich descriptions that explicate the conceptual journey followed.

To illustrate this process, it is appropriate to present an example. Consider the following two (compacted) rich descriptions. They relate to the *community*, but supported a *subject* tension labelled **T3|DAS2: Lack of Fervour** (or Tension 3 in Disadvantaged Activity System 2, to indicate teachers' lack of enthusiasm, eagerness and commitment, which impacted on the depth and level of their forum contributions):

The townships schools are very difficult and you find that there are people who ... during breaks and during the lessons ... are selling these drugs to the learners. Most of the learners are coming late, especially for the first periods the problem which causes this I think is the government, because the government officials used to stand in front of the national TV and tell the learners there is nothing the teacher can do to you. So even if the siren is ringing ... they are just strolling.

Teacher 4

Then the other issue that I am afraid that needs to be addressed is the morale of the teachers, it's very, very low, they don't feel good they feel they are more or less powerless. In terms of discipline there is a big void that has come in between the learner and the teacher ... what is the boundary of the teacher? What is the boundary of the learner? Discipline is the problem. It's not the content itself.

Teacher 1

Content analysis and classification of postings on the forum, shown in Table 2(a) also lend themselves to rich qualitative study and the development of themes and patterns, which is strongly in line with GT. This

is also the case with initiation and response tallies (another data source), illustrated by Table 2(b).

Relationships discovered in the qualitative data were strengthened by the parallel use of such data. For example, the tension **T3|DAS2: Lack of Fervour** is strengthened with evidence from Tables 2(a) and 2(b), while another tension, **T4|DAS2: Lack of Reflective Practises** was partially confirmed with the evidence from Table 2(a).

Decomposition was a revelatory process. As each additional category was decomposed, more insight was gained into previously decomposed categories. In this process, the author also made extensive use of the GT-technique of memo writing (on ideas that formed when processing the data). These memos became data for subsequent phases.

These insights, in turn, forced regular revisits to the raw data in order to confirm and/or expand the evolving perceptions. Throughout the decomposition phase, tensions emerged which either explained or exaggerated previous tensions. The process ended when saturation was achieved, i.e. when all the apparent tensions within the data had been identified.

In the pure GTM, a basic theoretical framework would have existed at this stage, to be followed by theoretical sampling, with the purpose of confirming, extending and sharpening the theoretical framework. In that activity, there is literal and theoretical replication of the cases until theoretical saturation is reached. Given that this study had no explicit intention to develop grounded theory, these GTM activities were replaced by an interpretation phase using various perspectives, or data views.

Table 2(a): Nature of posts by classification

Nature of post	Number of	Total	Percent
Question – for clarification	6	29	26%
Question – for support	18		
Question – for a solution	5		
Response – agreeing	6	49	43%
Response – affirming	8		
Response – offering	28		
Response – correcting	6		

Response – no solution	1		
Positive statement	10	12	11%
Negative statement	2		
ODEM support	3	3	3%
Descriptive reflection	4	20	18%
Dialogic reflection	11		
Critical reflection	5		
Totals	113	113	100%

Table 2(b): Post and response patterns

Participant	Started thread	Own thread reply	Response to other	Total posts
Teacher1	4	3	16	23
Teacher2	0	0	2	2
Teacher3	4	1	2	7
Teacher4	2	1	4	7
Teacher5	1	1	21	23
Teacher6	3	0	7	10
Teacher7	8	1	5	14
Teacher8	0	0	0	0
Teacher9	0	0	1	1
Totals	22	7	58	87

Interpretation Phase

In the interpretation phase, the data and findings were reviewed from alternative perspectives. Cognisance was taken of the warning by Miles and Huberman (1994) that humans are not powerful processors of large amounts of information, and that they have a cognitive tendency to reduce complex information into selective and simplified configurations. The way in which information is displayed, plays an important role in the way it is extracted. Figure 4 shows their model representing interactions between data collection, reduction, display and conclusions.

This model proposes that, after data collection, the analyst should shuttle between reduction, display and drawing of conclusions, thereby preventing simplified and selective conclusions.

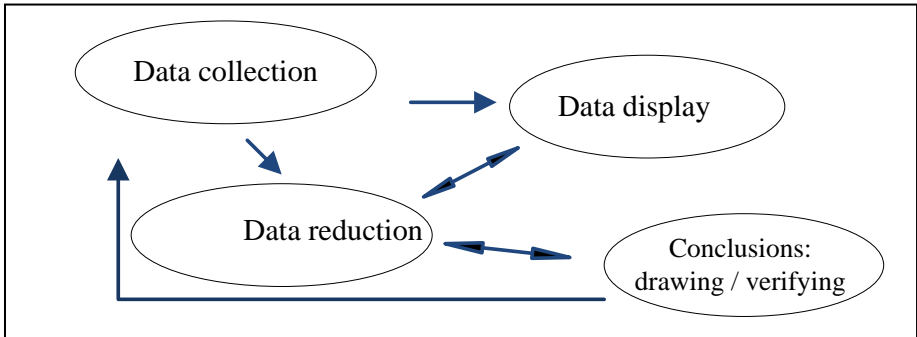


Figure 4: Components of Data Analysis: Interactive Model.
(Miles and Huberman, 1994)

In Table 3 the columns relate to the base study's research questions (with some shared), and the rows to the Activity System components. This data view offered a refreshingly new perspective of the tensions in the disadvantaged group that had not been evident in the decomposition phase. Interpretation of this data view led to discovery of the core tension, **T12|DAS2: Leader required**. It was core in that if this tension could be resolved, then most of the other tensions would be resolved too. This step is notably similar to the GT-technique of selective coding, the difference being 'core tensions' in the base study, as opposed to 'core categories' in the GTM.

These processes were repeated for the advantaged group, whereafter comparisons were made between the two groups. The goal, as described by Eisenhardt (1989), is to become intimately familiar with each case as a stand-alone entity (in-case), which allows its unique patterns to emerge before attempting to generalize patterns across cases. Moreover, it gives investigators a rich familiarity with the data from each case which, in turn, accelerates cross-case comparison. If the processes described here, were repeated with another disadvantaged group, then the research would have leaned towards a full GT method.

Table 3: An Activity Theory and Research Questions Perspective of Disadvantaged Tensions

Activity System Components	ODEM-related tensions			Non-ODEM related tensions		
	Personal	Shared	Situational	Personal	Shared	Situational
	Rules	T3 DAS2: Lack of Fervour T4 DAS2: Lack of Reflective Practises T10 DAS2: Lack of Motivation				T11 DAS2: Point of Access
Subjects	T1 DAS2: What to Post T8 DAS2: Quality of Participation T2 DAS2: Irregular Contributions			T6 DAS2: A Busy Life		
Community					T5 DAS2: Financial Factors	T7 DAS2: School/Township Related Issues
Tools		T9 DAS2: Training Required	T1 DAS1: Creating Internet Accounts T2 DAS1: Connection Problems			
Division of labour			T12 DAS2: Leader Required T3 DAS1: Lack of Suitable Support Structures			

Table 4 provides a second data view example. It is based on Riel and Levin’s (1990) schematic framework for describing network communities, which was also used to develop the interview questionnaire. This view isolated features that correlated with successful patterns of network interaction, in- and between-case.

Other frameworks were employed to create further views, allowing rich, contextual cross-case comparisons.

Table 4: Features and tensions comparison

Structure	Disadvantaged Group	Advantaged Group
Organization of Network		
<i>Size of groups</i>	9 teachers, 8 active participants	7 teachers, 5 active participants
<i>Physical location of active teachers</i>	7 teachers from Mamelodi Township (middle to lower class) 1 teacher from Ladium, an Indian community (higher to middle class) 1 teacher from Pretoria Central (middle to lower class)	3 from Pretoria East (higher class) 2 from Pretoria North (higher to middle class) 1 from Pretoria Southwest (higher to middle class)
<i>Level of Education</i>	7 Diplomas, 1 Degree	1 Diploma, 4 Degrees
<i>Common experience</i>	All active Cluster Meetings participants Grade 7-9 phase math teachers	All active Cluster Meetings participants Grade 7-9 phase math teachers
<i>Level of PC/Internet Literacy</i>	T9 DAS2: Training Required 1 literate 7 illiterate	4 literate 1 illiterate
<i>Relationship to one another</i>	Horizontal	Horizontal
Network Task Organization (Activity)	Reflect, exchange information, share ideas T4 DAS2: Lack of Reflective Practices T1 DAS2: What to Post T2 DAS2: Irregular Contributions	Reflect, exchange information, share ideas T2 AAS1: Lack of Reflective Practices T1 AAS1: Starting Threads

<p>Response Opportunities</p>	<p>T1 DAS1: Creating Internet Accounts T6 DAS2: A Busy Life T2 DAS1: Connection Problems T3 DAS1: Lack of Suitable Support Structures T5 DAS2: Financial Factors T7 DAS2: School/Township Related Issues T11 DAS2: Point of Access</p>	<p>T3 AAS1: Slow Connections T4 AAS1: A busy life</p>
<p>Response Obligations</p>	<p>T8 DAS2: Quality of Participation T10 DAS2: Lack of Motivation T3 DAS2: Lack of Fervour T9 DAS2: Training Required</p>	<p>T5 AAS1: Quality of participation T7 AAS1: Substance required</p>
<p>Coordination and evaluation</p>	<p>T12 DAS2: Leader Required</p>	<p>T6 AAS1: Subject Advisor required</p>

Literature Comparison Phase

In a full GT approach, an integral feature of theory building is comparison of the emergent concepts, theory, or hypotheses with the extant literature. This involves reflection on what it is similar to, what it contradicts, and why. A key to this process is to consider a broad range of literature only when the new theory begins to emerge and not beforehand (Glaser 1992; de Villiers 2005). In this manner the literature becomes an additional and equal source of data, as opposed to a constraint that may influence the coding and memoing processes.

In the base study, the intention of this phase was to locate, confirm and/or disconfirm the evidence in the light of relevant literature.

Outcome of the Base Study

The previous phases, combining selected aspects of Grounded Theory and Activity Theory and applied in the *particular context* of the base study, provided a theoretical foundation of constructs that supported the

development of a model to direct future online CPD-strategies for teachers (van der Merwe, van der Merwe & Venter 2010).

In the present study, it furthermore supports the generation of a substantive *generic conceptual framework* that can be applied to data collection and analysis in other research studies in the South African context of disparities.

A Framework to Integrate Partial Grounded Theory with Activity Theory

In the introduction section, two main criticisms of a Partial Grounded Theory were noted, namely: the absence of an explainable analytic process by which concepts are built up to higher levels of abstraction, and a failure to determine the nature of relationships between categories or concepts. We attempted to address these criticisms by way of a detailed explanation that moved from the underlying philosophical assumptions, through research design, then on to data collection, followed by data analysis and the process of constructing relationships – the latter by using elements of GT within the theoretical framework of AT.

Figure 5 summarizes these steps in a newly-synthesized generic framework that provides a roadmap of the analytical processes followed. The figure depicts the series of phases by blocks – some being blocks within container blocks – linked by connectors to indicate the progression.

Input to the framework comes in the form of a *hermeneutic unit* containing raw data in textual format, which emanates from multiple data sources. The purpose of the first two phases – the standard GT-techniques of open- and axial coding, respectively – is to *open the data* in each case. In phase 1, open coding is employed to *identify concepts*, while in phase 2, axial coding is used to *discover categories* from similar concepts.

In phase 3, with the data now opened, we move away from GT-techniques to favour AT-techniques that allow us to *reconstruct* the opened data, i.e. put it together in new ways in order to make sense of it. Hence, in phase 3, instead of using the GT-technique of selective coding to identify the core category, related categories are *grouped into classes*. These classes can be viewed as subcases.

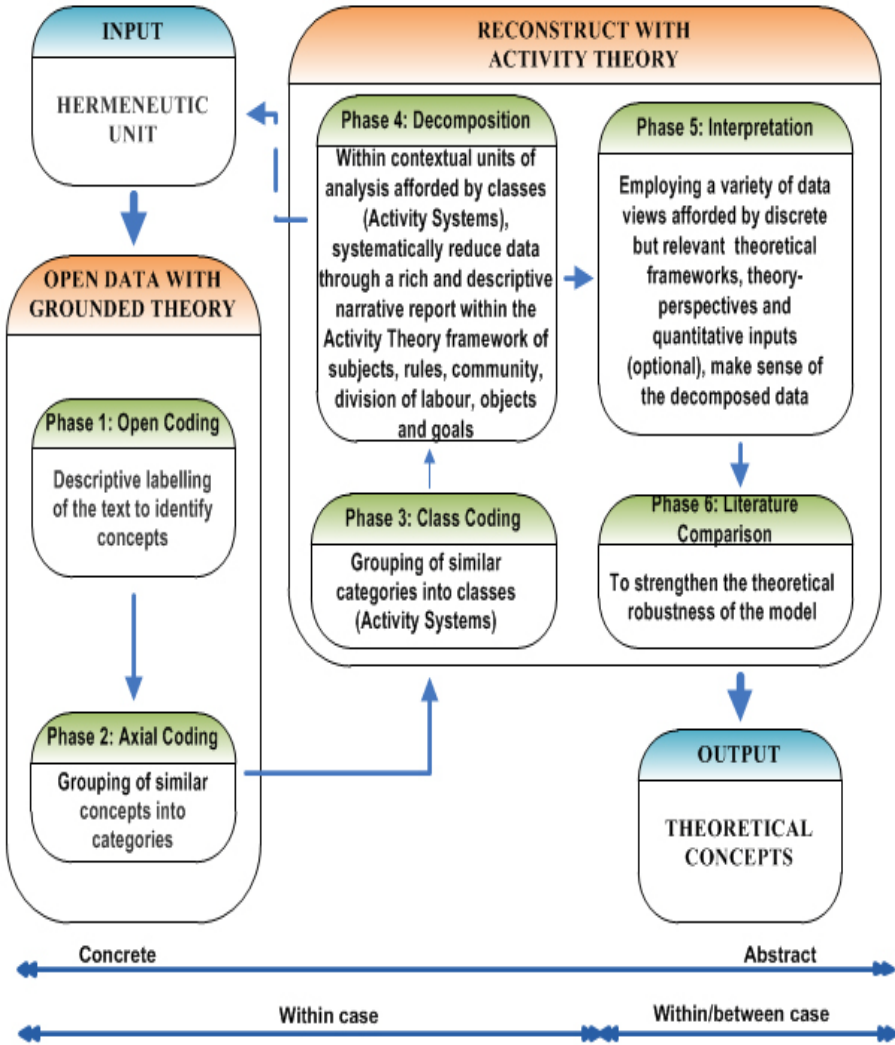


Figure 5. A Framework to Integrate Grounded Theory and Activity Theory in Qualitative, Contextual Studies

In phase 4, these subcases offer contextual units of analysis, or Activity Systems, in which the opened *data is reduced (or decomposed)* by way of a rich narrative report. The classic AT framework of subjects, rules, community, division of labour, objects and goals, provides the necessary

scaffolding to decompose data in context. As indicated by the broken line connector from the 4th phase back to the 1st phase, the process is repeated for each additional polar case.

In phase 5 – continuing with the AT-driven reconstruction (or modelling) process – decomposed and within-case data is *interpreted* and put together in new data views by *mapping it to relevant theoretical frameworks*, theory-perspectives and/or quantitative inputs. Where appropriate, new data views are constructed between-case to complement within-case views. These discrete perspectives aim to make sense of it all by maximizing the investigator's access to the evidence. The products (or findings) that emerge are *theoretical constructs*.

In concluding and consolidating the reconstruction process, a 6th phase, namely, *literature comparison*, is incorporated to strengthen the theoretical grounding of the findings. A secondary, but important, purpose of this phase is to avoid an over-emphasis on inductive reasoning, whereby theoretical sensitivity could be ignored in favour of 'creativity' that leads to 'retroduction' or immersion into 'alternative shaping of observation and explanation, rather than an ex post facto discovery of explanatory ideas' (Katz 1983: 133-134). It serves as a potential counter against premature closure and under-analysis of data associated with the Partial GTM. It allows the researcher to 'lift' ideas from the data and explain them theoretically, thus giving meaning to descriptions of the behaviour (Skodol-Wilson & Ambler-Hutchinson 1996). Literature comparison is a recognised GT-technique which, in this study, is incorporated with the reconstruction phases because it provides additional data sources within the AT focus.

Following the reconstruction phases, the output in the form of *theoretical concepts* that emerge from the integration of GT and AT, may be one or more of the following:

- Themes or patterns that characterizes the activities within a particular domain;
- Models of good practise in the domain;
- New theoretical constructs;
- Notable facts and relationships; and
- Tentative predictions.

The framework closely relates to what Yin (1984) refers to as embedded design, or multiple levels of analysis in a single study afforded by more than one unit of analysis. While this is a Partial GTM approach, it adheres to several essential standard GTM principles:

- *The use of multiple data sources*: These sources converge on the same phenomenon, and have been termed ‘slices of data’ (Glaser *et al.* 1967). As a multifaceted approach, there are no limits to the techniques of data collection, the way they are used, nor the type of data collected (Pandit 1996). Furthermore, the use of multiple data sources enhances construct validity and reliability (Yin 1989).
- *Triangulation across various data collection techniques*: This is particularly beneficial in theory generation, since it provides multiple perspectives, supplies more information on emerging concepts, allows for cross-checking, and yields stronger substantiation of constructs (Orlikowski 1993).
- *The (optional) use of quantitative data*: Supplementary quantitative data provides a synergistic view of evidence (Pandit 1996).

The framework presented in Figure 5 does not claim to generate ‘theory’ in its truest sense. However, the activity of collapsing a single case into several distinct classes provides subcases that, when viewed and interpreted from the perspective of Activity Theory (via Activity Systems), offer a deeper understanding of processes and outcomes of individual cases and a good picture of locally grounded causes, effect and especially context. In addition, the insight gained from combining various data views is accentuated by using different theoretical frameworks to create such views.

To conclude it is apt to cite Van Maanen (1988), who states that qualitative authors desire to tell ‘tales of the field’ that convey:

... their methodological rigor, but also methodological flexibility; their intimacy with - while maintaining their distance from - their subjects and data; and, their fidelity to the tenets of objective inquiry, but also their feeling for the persons and events they observed. In this endeavour, qualitative writers want their reports to be as true as science is commonly held to be, and yet as evocative as art is supposed to be (Van Maanen 1988:xviii).

In the Introduction and earlier in this section, we refer to Strauss and Corbin's (1990) criticisms of partial approaches to GT. Our proposed framework overcomes the shortfalls in that, first, a systematic and explainable process is presented by which concepts are constructed on various levels of abstraction and, second, relationships between categories are explicated and emphasized. We suggest that the framework provides a Partial GT-approach, yet with methodological rigour and flexibility. This, in turn, is synergistically enhanced by integration with the lens of AT intimacy that produces a level of theoretical credibility not normally associated with either the partial GTM or single case studies.

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Using Matrix Analysis to Achieve Traction, Coherence, Progression and Closure in Problem-Solution Oriented Research

Rembrandt Klopper
Sam Lubbe

Abstract

In this contribution we propose the use of two types of matrices as conceptual scaffolding at the beginning of a problem-solution oriented research project when solutions to problems under investigation are finite while ignorance about them is more or less infinite. 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 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 stitching together a patchwork quilt of references, or the unilateral cherry picking of references that supports a preferred point of view. Finally, we would like to point out that the concept-centric approach to literature review that we propose is firmly rooted in epistemological research philosophy.

Keywords: Concept, concept matrix, epistemology, knowledge, literature review, matrix analysis, problem-based research, problem-solution oriented research, problem statement, research question.

Introductory Remarks

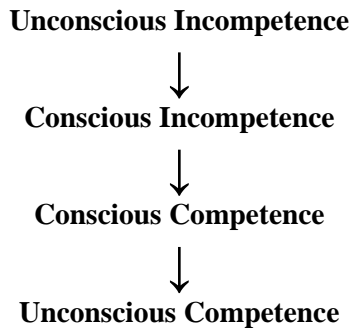
Matrix analysis of one sort or another has for the past century been used in a

variety of disciplines to summarise complex aspects of knowledge generation and to provide an eagle’s eye perspective of them. Examples are formal probability theory (Popper 1959), linguistics (Chomsky & Halle 1968; Quirk *et al.* 1974; Chen & Wang 1975; Lass 1984), psychology (Fox *et al.* 2001) and in communication science (Rugbeer 2004; Reddy 2004). The focus of this article, *the matrix method of literature review*, was popularised as a research tool in the health sciences by Garrard (1999), later reprinted as Garrard (2004). We have adapted Garrard’s method somewhat to extend it to other disciplines and to make it more flexible from an epistemological point of view.

The matrix method of literary review protects the reviewer against ignorant assumptions about the research theme at a stage that s/he is the most vulnerable due to lack of knowledge about the topic under investigation. This of course relates to the conceptual domain of knowledge known as epistemology.

From an epistemological vantage point it is self evident that research mostly begins at a stage of total ignorance about the topic under investigation, progressing to a realisation of the extent of one’s ignorance, to a stage of limited knowledge about it, and if one persists, to a stage of expert knowledge of the topic. All problem-based research therefore begins with ignorance, because conducting research about known subjects would be like reinventing the wheel. We propose the following four-phase knowledge competency continuum:

Figure 1: Levels of competence when completing a conceptual task



- *Unconscious incompetence*: being unaware of something, its relationship to other things, and how it can be used in conjunction with other things.
- *Conscious incompetence*: becoming aware that one does not know what can be known.
- *Conscious competence*: beginning to surmise, envisage and hypothesise the nature of something, its relationship to other things, how it can be used, but not yet being able to use it as intended.
- *Unconscious competence*: achieving an expert level of knowledge of something and its relationship to other things, how it can be used, and having achieved such a level of command of using it, that one can conceptualise it as forming part of newly understood events, and being able to utilise it without consciously focussing one's attention on it, so that one can focus one's attention on the general interrelationship and interaction potentials between that thing and other things.

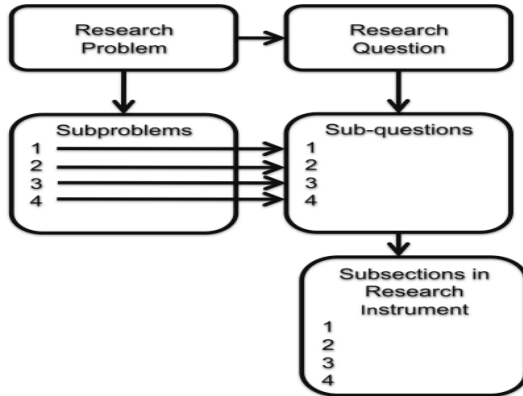
The matrix method of literature review is a powerful and practical research tool that forms the initial scaffolding to help researchers sharpen the focus of their research and to enable them to rapidly progress from the initial state of conscious incompetence to the stage of unconscious competence as outlined above.

Aligning Research Problems, Aims and Research Questions

In the authors' capacities as postgraduate supervisors, external examiners and peer reviewers they regularly encounter research designs in which general problems and research questions are either absent or misaligned. In a well-designed research project the researcher has a clear conceptualisation of what the general problem is that should be solved and the questions one should answer through one's own research to solve the problem.

Once the researcher understands the general problem and research question, s/he has to expound them in greater detail into more specific subproblems and sub-questions as in Figure 2 below:

Figure 2: Flowchart demonstrating the alignment of a general problem and research question, and reconceptualising them in greater detail as properly aligned subproblems and research questions disseminated as Klopper (2009)



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In a well designed research project the researcher will extract a specific number of subproblems from the general problem, as well as the same number of sub-questions from the general research question in such a way that sub-questions and subproblems are properly aligned. If this is done systematically, the answer to a specific research sub-question will provide the solution to its associated subproblem.

Finally, in empirical research the sub-questions of the research design phase will be restated in greater detail in the research instrument – the questionnaire in the case of quantitative research, or the interview schedule in the case of qualitative research.

The Problem-Research Question Alignment Matrix

The flowchart in Figure 2 above shows the alignment of research problems, subproblems and research questions in flowchart format. Figure 3 below presents a table that demonstrates the alignment of an actual general problem and sub-problems with research questions regarding solving problems with plagiarism in present-day academic research:

Figure 3: The problem-research question alignment matrix for solving the problem of plagiarism, adapted from Klopper (2009)

General Problem	Subproblems	Research Questions
The research community does not know which sources and resources plagiarisers use on the Internet, or the methods of analysis that beyond doubt could establish the likelihood of plagiarism.	1. The <i>sources</i> of plagiarised academic material have not yet been identified.	1. <i>Where</i> on the Internet do plagiarists obtain plagiarised sources?
	2. The <i>resources</i> for tracking and eliminating plagiarism have not yet been identified.	2. <i>What resources</i> can be used to track and eliminate plagiarism?
	3. It has not yet been determined how <i>methods of text analysis</i> could serve as forensic tools to assess the quality of ethical academic writing.	3. <i>What methods of text analysis</i> could serve as forensic tools to identify plagiarism on linguistic grounds?
	4. It is not yet known what the <i>criteria</i> for forensic evidence should be to establish plagiarism beyond doubt.	4. What forensic criteria exist to identify plagiarism beyond legal doubt, in order to distinguish between breaches of copyright and true authorship?

The above matrix can be further extended to align the research questions and the questionnaire questions. The approach would allow the researcher to demonstrate that s/he has proved that all processes have been thought through.

Figure 4: The research-question questionnaire alignment matrix for ensuring data collected help solve the research questions

Research Questions	Research Instrument Questions	Variables	Statistical tests
1. How do plagiarists obtain unacknowledged sources from the Internet?	1. Do you copy sources from the Internet via search engines without acknowledging their authors?	Yes/ no	Single group tests like the single group t test, or the z proportions test and the X ² test.
	2. Do you copy sources from electronic resources like Science Direct or Ebsco Host without acknowledging their authors?	Yes/ no	Single group tests like the single group t test, or the z proportions test and the X ² test.
	3. How often do you copy un- acknowledged sources from the Internet?	Never----Always	Any member of the X ² family or correlation tests, e.g., Phi coefficient, the contingency coefficient and Cramer's V, or the lambda coefficient or the uncertainty coefficient (U).

Building a Concept Matrix

How a matrix is to be constructed is a process that relates more to the personal creativity, proficiency and originality of the researcher than to rules and principles. Miles and Huberman 1994: (240-241) state that there are no *correct* matrices, only *functional* matrices. Researchers should keep in mind that they will have to modify earlier versions of literature survey matrices as their understanding of their research topic grows.

A Word Processor Based (or Pen-and-Paper Based) Concept Matrix

Figure 4 below provides a sample word processor based concept matrix that focuses on the research theme of e-Readiness, how ready members of particular communities are to adopt electronic resources for every-day use:

Figure 5: A typical concept matrix showing which concepts are discussed in references for a literature review on e-Readiness

References	Concepts											
	E-Education Policy	E-Learning	Access To ICT Services	E-Schools	E-Strategies	Community Development	Digital Inclusiveness	Institutional Development	Innovation	Readiness Evaluation	Networked World	Economic Development
Barabash et al. (2003)		1										
Bridges. Org (2005)												
Brown et al. (2004)												
Buckner and Stoner (1999)	1					1						
Cette et al. (2001)												1
Chasia (2002)		1	1	1	1			1	1			
De Villiers (2005)		1										
Finlay (2005)			1							1		1
Gilwald (2004)	1			1								
Govindsamy (2002)				1				1	1			
Hiralal (2005)	1				1						1	
Hoffman and Novak (1998)			1									
Jacobs and Herselman (2002)					1							1
Jiamton and Sillis (2005)									1			
Kelly (2004)	1						1					
Markle Foundation (2001)						1		1				1
Matthew (2003)			1						1			1
Mbarika et al. (2005)												1
Melody et al. (2003)						1				1		

As can be seen above, the layout of the concept matrix is straightforward. In the leftmost column the references to be reviewed are listed in abbreviated Harvard style. The head of each column displays a concept that was extracted from the problem statement of the research project. If a relevant concept is discussed in a particular reference a 1 (one) is placed in the appropriate cell.

In order to determine the relevance of a source the researcher does not have to waste time by reading the whole article. It is sufficient to scan the abstract (where the content of the reference is summarised prospectively) and the summary/ conclusions section (where the content of the reference is summarised retrospectively) to determine the relevance of the reference.

This approach enables the researcher to conduct a critical comparative literature review of all references listed under each concept. This approach emancipates the reviewer from the tyranny of being trapped within a particular reference, and from merely providing general paraphrases of references. It also enables supervisors to establish at a glance that only relevant literature is being reviewed and captured in the bibliography because *references that do not appear on the concept matrix may not form part of the literature review and should therefore not be included in the bibliography.*

Although the understanding of these concepts is central to the attention of researchers the literature may not contain some examples of the historical analysis of this type. It should be noted that epistemological classifications could be included in the matrix just after the reference to address this. This should be done to show how important this article is epistemologically in terms of the topic being researched.

A Spreadsheet Based Concept Matrix

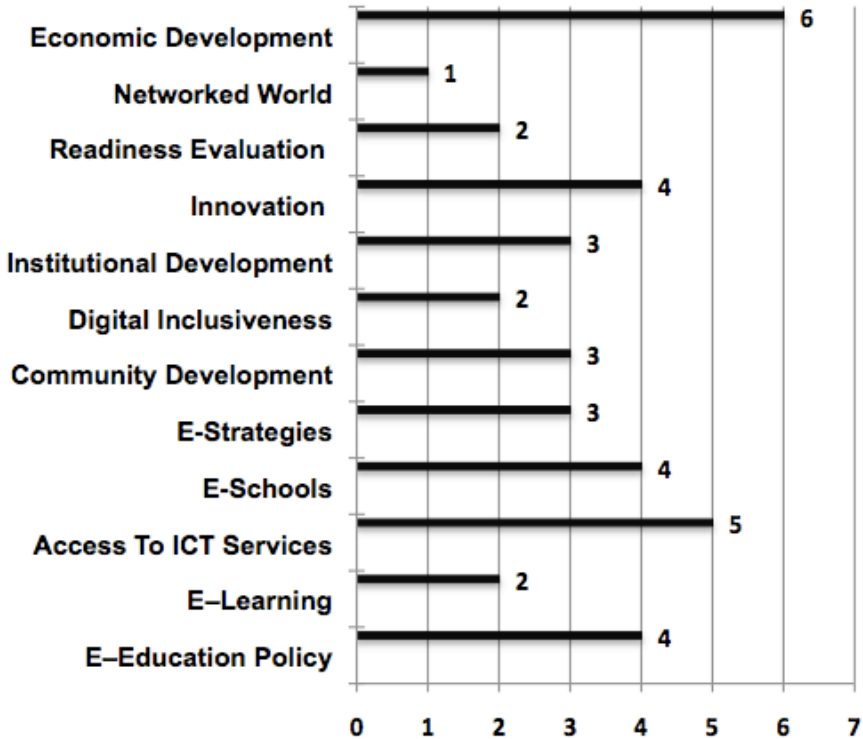
The concept matrix can also be created as an electronic spreadsheet, allowing the researcher to easily keep track of how many references deal with more than one concept in the overall theme under investigation as well as how many sources deal with a particular concept. This allows the researcher to differentiate between core references that deal with multiple aspects of the research theme, and references of a more peripheral nature, and with well researched and less well researched concepts as shown in Figure 6 below:

Figure 6: A typical concept matrix in electronic spreadsheet format, with an added row indicating the total number of sources per concept as well as the total number of relevant concepts per source for a literature review that focuses on e-Readiness

Concepts	Total relevant concepts per source	E-Education Policy	E-Learning	Access To ICT Services	E-Schools	E-Strategies	Community Development	Digital Inclusiveness	Institutional Development	Innovation	Readiness Evaluation	Networked World	Economic Development
References													
Total sources per concept		4	2	5	4	3	3	2	3	4	2	1	6
Barabash <i>et al.</i> (2003)	1		1										
Bridges. Org (2005)	3			1				1			1		
Brown <i>et al.</i> (2004)	1				1								
Buckner & Stoner (1999)	2	1					1						
Cette <i>et al.</i> (2001)	2				1								1
Chasia (2002)	5			1	1	1			1	1			
De Villiers (2005)	1		1										
Finlay (2005)	3			1							1		1
Gilwald (2004)	1	1											
Govindsamy (2002)	3				1				1	1			
Hiralal (2005)	3	1				1						1	
Hoffman & Novak (1998)	1			1									
Jacobs & Herselman (2002)	2					1							1
Jiamton and Sills (2005)	1									1			
Kelly (2004)	2	1						1					
Markle Foundation (2001)	3						1		1				1
Matthew (2003)	3			1						1			1
Mbarika <i>et al.</i> (2005)	1												1
Melody <i>et al.</i> (2003)	1						1						

One of the benefits of the electronic concept matrix is that it visually references in summary format the number of sources per concept, or how many different relevant concepts a particular reference covers, enabling the researcher to distinguish between primary and secondary references, or between major and minor concepts as is the case of Figure 7 below:

Figure 7: Bar graph showing the number of sources per concept on the concept matrix for a literature review that focuses on e-Readiness, generated from the electronic spread sheet that was used to create the concept matrix shown in Figure 6



From the above graph one can conclude that ‘economic development’ (6 references) and ‘access to ICT services’ (5 references) are the two most researched concepts on the *theme* of e-Readiness, followed by the concepts ‘innovation’, ‘e-Schools’ and ‘E-Education Policy’ (with 4 references each). By contrast, ‘Readiness Evaluation’, ‘Digital Inclusiveness’, ‘E-Learning’ (at 2 references each), and ‘Networked World’ (with only 1 reference) were not heavily researched aspects of the E-Readiness theme.

Discussion and Conclusion

In this paper we have proposed the use of two types of matrices to achieve traction, coherence, progression and closure in research, namely the *problem-research question alignment matrix* that is used to ensure that the sub-problems that are identified in problem statements are properly aligned with the research questions that the researcher poses to ensure viable empirical results, and the *concept matrix* used to present a concept-centric rather than an author-centric literature review.

The problem-research question alignment matrix ensures that the whole research process is problem-solution oriented by taking the problem statement as point of departure. This firstly is done by extracting subproblems from the general problem statement and aligning research questions with each of the subproblems. The alignment and cohesion of the research design is enhanced by basing the array of research instrument questions on the questions of the problem-research question alignment matrix. Closure is achieved at the end of the research process if the researcher demonstrates to what extent s/he is able to answer the research questions by means of her/ his own empirical results, on the principle that the extent to which one is able to answer one's research questions, is the extent to which one has succeeded in solving the problems that prompted the research in the first place.

The concept matrix ensures that the researcher conducts a concept-centric problem-solution oriented literature review provided that the search terms for the review are extracted from one's problem statement. Furthermore, the literature review essentially is a qualitative content analysis of available information already published on the problem under investigated. It can be a study of the research object alone, with the aim of collecting information about its structure, process and relationships, increasing the familiarity of the researcher with the research object and establishing the credibility of the project. In addition, it can consider previous research, attempting to link it with the study currently planned. It may also be geared towards a historical or comparative analysis of the issue in question so the current study can be placed in a historical context. Finally, it may review a theory of methods and techniques most suitable for the study, simply by looking at the ways other researchers have approached the topic, and by evaluating their suitability and effectiveness (Sarantakos 1998: 129).

Punch (1994: 93) writes that without adequate training and supervision, the neophyte researcher can unwittingly become an unguarded projectile bringing turbulence to the field, fostering personal trauma (for researcher and researched), and even causing damage to the discipline. There are many cases where students have attempted to conduct a literature review (see some previous section) but many failed and their studies therefore failed as well. O'Neill in Wellington *et al.* (2005: 89) states that conducting a literature review is a bit like climbing your way up a pyramid, where the total area at any particular point in the climb represents the search area for the review at that particular moment in time. You start in the largest area at the bottom and slowly move upwards, all the time refining and narrowing your searches, as you move from incompetence to competence.

Wellington *et al.* (2005: 87) state that reviewing the literature involves searching, collecting, prioritising, reading with a purpose and seeking out key issues and themes, and then presenting and discussing these critically. The aims of a literature review are:

- To establish which of the problems identified for solution by means of empirical research have been solved by other researchers so that they can be removed from the research equation
- To give readers a clear idea of the nature and context of one's research
- To convince the reader of one's knowledge of the field
- To build a case for the empirical part of one's study

If one looks at the way novice researchers attempt to survey literature, it seems that the supervisor has failed to acquaint the student with the different phases for conducting a proper literature review. The first phase is where many students get stuck and remain – they cast about collecting data with no defined problem statement from which they extract keywords to serve as filter for the identification of relevant literature. They read each reference in detail rather than using abstracts and summaries to establish relevance, and they start summarising the literature with no plan in mind, and end up with a document without a proper layout, showing no coherence and progression, and in many cases ending up perpetrating intentional or unintentional plagiarism because they have not kept track of the sources of

the ideas that they jotted down so that, even if they wanted to, they cannot properly acknowledge their sources. This is the first and probably the worst case scenario. In our view it reflects a mindstate of unconscious incompetence.

The next phase is when students begin to appreciate how little they do know of the topic, but they set out without a plan and write unsystematically without knowing where they must stop creating pages upon pages of copious notes. They rely on the supervisor to tell them what they must leave out. We call this phase conscious incompetence. The next phase is conscious competence. In this phase the student becomes aware of the fact that s/he is coming to grips with the major references that relate to the problems under investigation. Due to the student's newfound confidence is sometimes difficult for the supervisor to properly advise the student what to, leading to disagreements about what should be included in the literature review and what should be left out and often leading to unfounded mistrust on the side of the student.

The final phase is where the student has become a true researcher. This stage we refer to as *unconscious competence*. The student creates a proper problem statement and extracts key concepts from it that s/he then uses to search for refereed literature to be used in the literature review. By using key concepts derived from the problem statement, the *problem statement itself becomes the filter* that ensures that only literature relevant to the problems under investigation forms part of the review. This method also enables the researcher to determine to what extent problems that s/he has identified have been solved by other researchers, enabling the researcher to remove solved problems and *reformulate the original problem statement, the research objectives and the research questions*, the latter which forms the basis of particular more detailed questions posed to respondents in research instruments like questionnaires and interview schedules.

The researcher generates content for the concept matrix by surveying *only the abstracts and summaries of references*. Once the appropriate literature to review has been identified the researcher commences with the literature survey proper, which entails a critical analysis of each reference to identify potential solutions to the problems under investigation. The critical analysis of individual references should be followed by a *critical comparative analysis* of all references that are listed

under a particular concept, to establish differences of opinion, converging opinions and consensus among experts under review.

In this approach to literature review the researcher systematically reads each article, considers the validity of what is being read, and thereafter classifies the reference thematically. The importance of using this method is that the student must realise that s/he cannot use everything in an article but should instead concentrate on those aspects that relate to the problems under investigation.

The key concepts on the matrix therefore become the key concepts embedded in the headings in the literature review. The concept matrix enables the researcher to subject all literature to critical comparative analysis. The references that have been ticked in a particular column of the concept matrix are subjected to critical comparative analysis in the thesis. The concept matrix also enables the researcher to establish at a glance whether s/he has identified enough references under each concept. The researcher can order each column of the matrix in different ways to foreground different aspects of the knowledge contained in it. The matrix can be reorganised according to:

- Publication date, demonstrating longitudinal aspects of the topic (*time-ordered matrix*)
- Table rows containing verbal information about the view of role occupants on a specific issue of the project (*role-ordered matrix*)
- Integrated data on a summative index or scale, thus organising several components of a single, coherent variable (checklist matrix)
- A central theme (*conceptually clustered matrix*)
- Outcomes and dependent variables (*effects matrix*)
- Present forces that are at work in particular contexts showing processes and outcomes (*site dynamics matrix*)
- A series of events displayed in any possible order (*event listing*)
- A field of interrelationships between dependent and independent variables, describing causal connections between them (*causal network*) (Sarantakos 1998: 360).

Wellington *et al.* (2005: 83) state that in writing about the literature, one is adding to it, by creating links, drawing attention to particular issues

and contributing one's construction of the 'story' to told in existing research.

It is a long and 'rigorous' road for a researcher to progress from unconscious incompetence to unconscious competence. The supervisor will have to be patient and has to ensure that the student keeps a proper record (the matrix) of the process. The matrix should be added as an appendix into the dissertation. The student cannot move directly from unconscious incompetence to unconscious competence but has to follow each stage the sequence of understanding shown in Figure 1.

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‘New Zealand’s Darkest Day’¹: The Representation of National Grief in the Media: The Case of the Christchurch Earthquake

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Abstract

On 22 February 2011 a powerful earthquake² struck the city of Christchurch, New Zealand. Buildings had collapsed, businesses were disrupted, and many lives were lost. As the death toll rose and the realities of the destruction set in, a nation moved from initial shock to anger and depression—not unlike the stages of grieving. This paper discusses the stages of grieving and the mourning process as they were reflected in national media. It explores how national identity and national consciousness are related to national mourning by a review of the literature and a thematic analysis of selected media content.

The authors found that emotion is not only evident in reporting but it is necessary and expected when disaster is reported, challenging traditional

¹ ‘We may be witnessing New Zealand’s darkest day’, Prime Minister John Key told TVNZ, after arriving in the quake-struck city within hours of the tremor. The comment was widely reported in national and international media (see, for example, <http://world.globaltimes.cn/asia-pacific/2011-02/626105.html>; <http://www.theage.com.au/world/nation-confronts-fear-and-despair-20110222-1b46q.html>.)

² Civil Defence Emergency Management and other government departments refer to the Canterbury earthquake. The general public and the majority of the media refer to the Christchurch earthquake.

views of ‘quality’ journalism that favour rationalism and objectivity over emotion in reporting.

This research contributes to scholarly debate concerning the reporting of national disasters and how it impacts on its national identity.

Keywords: media, disaster, emotion, grieving, national consciousness, national identity.

Introduction

The 6.3 magnitude earthquake that struck New Zealand’s second most populated city of Christchurch in Canterbury, New Zealand, on the 22nd of February 2011 made international news. Compared to other global disasters the numbers of fatalities were relatively small, but to a nation of four million people the loss of nearly 200 people in one single disaster affected all New Zealanders. No-one remained untouched by the grief that followed the earthquake. Many had friends or relatives living in Christchurch who were directly affected; others knew those who had friends and family there. The media played a crucial part not only in reporting the events but providing an avenue for those moved to express their shock, despair and even anger about the disaster and its subsequent impact. What was seen in the media was a cumulative and shared process of grieving for what was lost: people, livelihoods, identity, and, as the ripple effects were reported upon, lost opportunities.

When discussing the media as a conduit for national mourning, it is important to remember that journalists are part of the community and of a nation³. While there is an expectation that journalists must remain objective, they are in fact participant observers, and sometimes, observing participants. As Pantti and Wahl-Jorgenson (2011) argue, journalists are doing more than reporting events: they have become active participants in political and social processes, and particularly when there is a social crisis such as a disaster.

³ As journalist Karl du Fresne points out, ‘one of the difficulties in being a journalist in a small and intimate society such as New Zealand is that you’re likely to know many of the people you write about’. <http://karldufresne.blogspot.com/2010/10/two-degrees-of-separation.html>.

Thus, journalists cannot remain objective or emotionally detached, and their audience would not expect them to be. A poignant example where emotions spilled over into the reporting took place during the morning show *TVNZ Breakfast*. Covering the Canterbury earthquake in Christchurch, the reporter found himself overwhelmed by his experiences, and at the end of an interview with a volunteer group he choked as he referred to the ‘fantastic well of human spirit’ (De Jong 2011). It may be argued that ‘the media appropriates a social role to transform tragic events into platforms for global communion’ (Ibrahim 2010:123) while emotive images of collective expressions of grief and empathy are naturally newsworthy (Pantti 2010).

In her discussion about the affective impact of media coverage of the 2009 bushfire in Australia, Yell (2010:118) points out that the ‘public sharing of private emotion has become orthodox and mainstream’. Pantti and Wahl-Jorgenson (2011) concur, suggesting that since the 1980s there is a shift towards personalised expression of emotion in media coverage of national disasters. The images shown of natural disasters such as the Australian bushfire have become much more intimate and emotive than they were when the media reported on the 1939 and 1983 bushfires, proving that a change in reporting has taken place (Yell 2010). In fact, Pantti (2010) suggests that contemporary journalists believe that emotional images allow the truth or real story to emerge. As a result of such emotive images, the recipient becomes more intimately engaged with the victims (Yell 2010).

The Process of Grieving

As Bhowmik, Basu and Mitra (2010) have shown, emotions are often evoked among recipients of news reporting. While the use of emotion in news reporting remains controversial, the process of grieving is well-recorded in psychology and sociology. As humans we construct our world symbolically, create meaning and invest in relationships. When these relationships or the meanings we have shaped are lost or disrupted, we experience bereavement (Love 2007), or, as Hutchinson (2010) suggests, ‘trauma’, signifying shock, vulnerability and confusion.

Though the terms ‘grief’, ‘mourning’ and ‘bereavement’ are often used interchangeably, there are distinct differences between them. Grief refers to the response to loss, while mourning is the expression of that grief

(Buglass 2010). Thus national grief in this context refers to the loss that affects a nation, and national mourning the collective expression of grief by that nation. Bereavement, on the other hand, is a state of ‘having experienced a loss’ and refers to the ‘period after loss during which grief and mourning occur’ (Buglass 2010:44). National bereavement continues after the event; affording a place to it in its collective memory—part of the sense-making process necessary to achieve acceptance.

Grief is a normal reaction to loss, and feelings of despair or loss usually decrease in intensity and frequency as time passes (Love 2007), but as Hutchinson (2010) suggests, the after-effects of traumatic events can linger and shape future social (and political) landscapes. Although the emotions associated with grief and mourning are no longer news, feelings associated are likely to be renewed annually when associated events are described. For example, in a report on a shoot-out, the headline tellingly read *Shot man an earthquake refugee* (Donnell 2011), re-igniting memories of the trauma in Christchurch.

How intense the grief is and how complex the grieving process is determined by how the death (or loss) occurs (Anderson 2010). In his exploration why we mourn for people unknown to us, Brennan (2008:3) argues that we mourn the loss of meaning that ‘comes from the predictability of every day life; from taken for granted routines’. We do not expect people to die while going about their daily business, and indeed, stories reported in the media about victims going about their daily lives were particularly poignant: workers taking the bus or staying in the office to finish work during lunch time, couples having lunch in cafés, family members catching up over a cup of coffee. ‘The world we thought was safe is not’ (Anderson 2010:128). Stories such about ordinary people dying under extraordinary and unexpected circumstances intensifies the mourning for those affected, the loss of meaning and certainty of things we take for granted. *The Press* summed this up in their tribute to the victims of the Canterbury earthquake:

February 22, 2011. Just another ordinary day in Christchurch. Workers on their lunch break leave the office to grab a bite. Shoppers go about their daily business. Tourists at ChristChurch Cathedral—the majestic 19th-century beauty that came to symbolise a city—enjoy the view from the spire. Just another day, no different from the one before. Then, at 12.51pm, it hit.

The 6.3 magnitude earthquake that brought a city to its knees and broke a nation's heart. Our darkest day. A disaster beyond comprehension that has left hundreds missing, scores dead and ruined countless lives. Hopes have faded and dreams have crumbled, much like that once-mighty cathedral. So many lives, so much loss, the sorrow is almost too much to bear. The little boy who never made it to his six-month birthday. The brother who was due to give his sister away at her wedding. The father who left home to get groceries, never to return to his wife and their children.

The girl in the rubble who texted her father in China to tell him she was trapped. The little sister whose loving brother just wants her to come home. These are the victims, these are their stories. And we will remember them (The Press 2011b, online).

The description is filled with emotive language and imagery, highlighting how one traumatic event changed ordinary lives. It reinforces the notion of 'nation' and its unity by focusing on similarities rather than differences. Although it can be argued that the media exploited the 'sentiment of compassion' (Ibrahim 2010:131), it can equally be argued that such emotions and imagery allowed media consumers who were 'outside' the stricken area to identify with those directly affected, and provided an opportunity for all New Zealanders (and those following from outside New Zealand) to become part of the national mourning process. Trauma, by its very nature, is solitary but as it is shared by others through the media, social meaning is given to individual pain, and it enters into the national consciousness, encouraging us to re-evaluate how we are connected to the world as a nation (Hutchinson 2010).

National Identity and National Consciousness

Benedict Anderson, well known for his work on the origins of nationalism, argues that modern nations are always to some degree *imagined communities*, because 'in the minds of each lives the image of their communion' (Anderson 2006:6). Importantly here, he acknowledges the significant role of media in these imaginings as 'creating unified fields of exchange' (Anderson 2006 cited in Guibernau & Rex 2010: 62). Not only is

national consciousness reflected in the media, but the media plays a significant role in recreating it in times of crisis (Avraham & First 2006). We might speculate that in present times that this role has increased exponentially as a result of the ubiquity of social media.

Anderson suggests that 'nationalism' or 'nation-ness' are 'cultural artefacts of a particular kind' (2006:4). He posits that 'comradeship' and 'fraternity' and 'solidarity' exist as features of culture that have first a history and then a structure that emerges from that history in the form of nationalism. Regardless of actual inequalities in the modern nation state, 'it is always conceived as a deep, horizontal comradeship' (Anderson 2006:7).

Social solidarity and community (Jobst 2005) is reflected in the widespread reporting of activities by New Zealanders such as fundraising and donations to assist Canterburyans to rebuild Christchurch and their livelihoods after the earthquake. A national sense of social solidarity, reflected in the belief of 'two degrees of separation' due to New Zealand's relatively small population of four million people, was often reflected in media reporting⁴. The removal of over 200,000 tonnes of liquefaction silt by Canterbury University's 'Student Volunteer Army', Federated Farmers'

⁴ Many New Zealanders subscribe to the idea of 'two degrees of separation'. This is manifested in internet blogs and television programmes. Mobile phone provider Two Degrees Mobile capitalises on the idea in a series of television commercials with the line 'Everyone knows someone who knows someone who knows them'. According to Internet commentator David Farrar this belief can be traced back to 1979 Erebus disaster when people in New Zealand 'knew someone, or knew someone who knew someone' involved in some way (Stuff 2008). There have been many voices linking the two degrees of separation specifically to the Christchurch earthquake (cf. relevant websites). In a Mayoral media release pledging Auckland support for Christchurch, Councillor Michael Goudie, chairperson of the Civil Defence and Emergency Management Committee, says 'New Zealand has always been known for two degrees of separation and this is more evident than ever before'. While this belief may be more emotionally imagined than real, research by Statistics New Zealand has found that there are approximately four degrees of separation among members of the New Zealand workforce (MacGibbon 2008: 3).

'Farmy Army' and the 'Rangiora Earthquake Express' provision of over 250 tonnes of water, medical supplies, and food, from the nearby town of Rangiora by helicopter and truck, featured prominently. Patriotism in the form of this type of activity alongside emotional restraint, and its related cousin 'resilience', have long characterised reporting on disasters (Pantti & Wahl-Jorgenson 2011) but as suggested earlier, more recently the emotion and vulnerability of those reporting traumatic events has become more commonplace (Furedi 2007).

A nation and national consciousness is not necessarily delineated by geographical boundaries, and face to face contact is not required for people to identify with large social groups (such as a nation). Indeed, only the subjective knowing (*Wissen*) and a feeling of belonging (*Zugehörigkeit*) are sufficient to create a national identity and build a nation (Jobst 2005). 'Information technology has increased our awareness of suffering anywhere in the world' (Anderson 2010:129) and enables audiences to participate in the discourse surrounding events, thus constructing private and public memory (Ibrahim 2010).

That this national consciousness was not limited to geographical boundaries was reflected in the media by messages of support and sympathy from people outside New Zealand who had either visited Christchurch or lived there for a period of time. These people identified with Christchurch and New Zealand, and therefore become part of the national consciousness of mourning alongside those who were living in New Zealand. On the *New Zealand Herald* website, an interactive world map showed how many messages of support were received from various countries. For example, 343 messages were received from the United States of America, 293 from the United Kingdom and 209 from Australia (nzherald.co.nz 2011c). As the news spread, messages of condolences continued pouring in from all over the world:

I was there for the first one but seeing the devastation this one has caused is hard to take in, I miss Christchurch more then ever and my heart goes out to all New Zealanders, I wish I was back home to give everyone I know a hug. I wish I could get in contact with the people I know. (expat kiwi in Beijing)—phebz88 (China) 08:52AM Wednesday, 23 Feb 2011 (nzherald.co.nz, 2011b, online).

The next two messages of support clearly show how identification with a nation crosses geographic boundaries, pointing towards the connection that is built through tourism and national image:

Dear Friends in Christchurch! As a German ‘Kiwi’ I feel with you and my thoughts are also with you! I hope you all are well and your families as well. I feel very sorry for all those lives which got lost. Big hug to all of you!—Jen (Germany) 12:20AM Wednesday, 23 Feb 2011 (nzherald.co.nz, 2011b, online).

I spent my honeymoon in New Zealand, we arrived in the morning to Christchurch, we loved the people, we moved the city, walked around the streets and gardens. I have only great memories of your country and you. This morning I heard this horrible news, I give you a big hug and many tears. From Spain, from the world.—Àngel (Spain) 12:51AM Wednesday, 23 Feb 2011. (nzherald.co.nz, 2011b, online).

By providing the facilities for expression of messages, publishing them and encouraging further messages of support, the media draws in the audiences’ compassion and acts as a conduit and mediator for national mourning and the expression of grief.

Media as a Conduit for National Mourning

The news coverage following a natural disaster does not only provide information but ‘represents and elicits strong emotion’ (Yell 2010:110). Emotions shared collectively are typically used to reaffirm social bonds, and the reporting on these disasters result in these becoming ‘integrative events, moments of national consensus and unity born out of mourning together’ (Pantti & Wieten 2005:301). This is similar to Linenthal's (2001:111) description of the construction of an imagined nationwide bereaved community through ‘popular, mediated mournings’.

Representing national mourning and grief is inherently emotional, and while emotions are embedded in our society (Pantti & Wahl-Jorgenson 2011), the use of emotions in journalism is a topic of debate, and journalism

has been soundly and repeatedly criticised for relying on emotion in reporting. It has been put that emotions have no place in quality journalism (cf, for example, Williams 1978; Protesse *et al.* 2011; Corcoran 2006).

Perhaps more realistically, others suggest emotion in reporting is required to aid in creating understanding. Meijer (2001:189), for example, advocates incorporating ‘emotions’, ‘everyday life’ and a ‘relative sense of self’ into a more inclusive concept of public quality, media and citizenship. Pantti and Wahl-Jorgenson (2011) argue that emotions are integral to the reporting of disaster. Hutchinson (2010:70) points out, ‘one may speak ... speak and write of trauma yet words fail to convey the perceptual intensity of feelings, either physical or emotional ones’. Emotionally, the bereaved will experience a range of feelings, including sadness, anger, guilt and anxiety, and by encoding these often unarticulated experiences within social symbols and linguistic patterns of the contemporary mass media allows the unspoken aspects of trauma to gather social meaning (Hutchinson 2010). It is ultimately through this meaning that sense can be made of a traumatic event such as a natural disaster, allowing it to be absorbed into the national consciousness.

The expectation of how emotion should be and will be expressed, depends on so-called ‘feeling rules’ (Furedi 2007). These are defined by a cultural script that determines the norms or rules about how emotions should be expressed and what these emotions should mean. Therefore they influence (or guide) the collective sense-making of a national disaster. They also determine how and when emotion is expressed in media, because—like all members of society—journalists, too, have to adhere to these norms.

Mourning and the subsequent sense-making activity are unlikely to take place without an element of anger, conflict and frustration, and these too are subject to feeling rules. Anger is not perceived as a unifying value (Pantti & Wieten 2005), and although reported in the media, is generally not as widely recounted as more positive values, such as resilience and community spirit. Pantti and Wahl-Jorgenson (2011) suggest that the most powerful emotions linked to national disaster is anger but this anger needs a focal point for expression, and in the case of a national disaster it has to be someone who can be held responsible, such as industry or political authorities (Pantti & Wahl-Jorgenson 2011). In the case of the Christchurch earthquake, questions were raised why some newer buildings collapsed, why

not all buildings were ‘earthquake-proofed’, and the speed of the recovery effort. Typically, however, these issues are reported upon as coming from the victims, their families and external sources, distancing the journalists from such negative emotions, such as happened in the reporting of a group of frustrated business owners who ignored the barrier surrounding the stricken city centre of Christchurch and crossed it in protest to having been prevented access to their business premises. While their anger was evident and their actions widely reported as ‘storming a cordon’ (Stuff.co.nz 2011a, online), by all standards their behaviour remained in the realm of civil disobedience rather than violent expression of anger, reaffirming the nation’s tolerance for peaceful protest.

It remains undisputable that no society can re-establish its identity without questioning where it has been, where it is and where it is going. Anger allows the community to raise ‘*structural* questions of *collective* significance’ (Pantti & Wahl-Jorgenson 2011:119), and therefore anger as an emotional dimension of grief is crucial in the sense-making stage of the mourning process. But in the case of the media, this dimension is reflected rather than mediated.

A key argument in the debate surrounding the expression of emotion in media reporting relies on the distinction between a private and a public sphere. If we are to assume that there is indeed such a patent distinction, then ‘private emotions are presented for public consumption’ (Yell 2010:117) and ‘pain and suffering become tools to conjoin private and public memory’ (Ibrahim 2010:131). When shown in the media through headlines, visuals and stories, these emotions evoke affective responses among the audiences who no longer remain detached. Rather, they enter into what Yell (2010) calls a parasocial relation with the friends and families of the victims, sharing their shock and fear (Hutchinson 2010) as is expressed in the following message on the *New Zealand Herald* website:

We feel so helpless watching the devastation of the earthquake. We send all our thoughts and prayers to you all at this time. We are with you in spirit.—JANET m (New South Wales) 12:20AM Wednesday, 23 Feb 2011.

This parasocial element can act as a conduit for community building and the creation of identity, and is not limited to national borders (Ibrahim 2010). In this sense, the media can

... unify a group of people whose members do not know one another and turn them into a community whose members share, at least on an imagined level, one social world. As a carrier of symbols and shared messages to groups and people of different backgrounds, the media assist in the development of social integration processes (Avraham & First 2006:73).

Thus, in the vein of this argument, reporting on disasters such as the Christchurch earthquake can build national identity and consciousness, and contribute to nation building. Sharing feelings of sympathy and shock, and mourning alongside the victims, solidarity is created and communal connections are solidified (Hutchinson 2010). The media takes on an authoritarian role by assuming the role to speak for a society as a whole—whether it be global, national or local—interpreting the events and establishing its place in the memory of a nation (Riegiert & Olssen 2007), and thus satisfying the emotional dimension of grief.

The second dimension of grief is cognitive, and this includes preoccupation with the deceased (or, in this case, the disaster itself), rumination, fantasising and confusion (Love 2007). The cognitive dimension is satisfied by the media's focus on the earthquake and the events surrounding it—typical of reporting during a disaster occurrence. Fantasy, Brennan (2008:9) suggests, manifests itself in the 'symbolic domain of language and the imagination' where the inner world meets the outer world. According to him messages of support often contain such manifestations.

The third dimension of grief is physical, and includes reported aspects of lowered immune functions and somatic complaints, e.g. aches and pains (Love 2007). This dimension is seldom—if ever—reported on in the media. One might speculate that it is indeed perceived as too private to place into the public domain, and perhaps, not as newsworthy as the emotional and behavioural dimensions. Regardless, victims of a disaster are likely to experience physical aspects of grief.

The fourth dimension is behavioural, and includes actions such as crying, agitation and searching for loved ones (Love 2007). This dimension has been widely reflected in the media because of its obvious news values and potential to be shown visually in, for example, video clips and photojournalism. It is often interlinked with the emotional dimension, and because of poignancy is likely to move audiences to express their grief.

But, it is the fifth dimension of grief, namely its existential dimension that can be perceived as having the greatest impact on nation building and reaffirmation of its identity and consciousness. 'Disruptions such as death ... can precipitate searching for meaning in death and the questioning of spiritual beliefs and values, often resulting in a re-evaluation of core beliefs' (Love 2007:75). A nation's identity, and thus its consciousness, is shaped through its beliefs, values and its attitudes. The media's reporting of the Christchurch earthquake and its aftermath did not only involve audiences emotionally but allowed them to metaphysically mourn alongside those who were directly affected by the quake. It opened the way for the New Zealand nation to re-evaluate (or re-confirm) its core values and beliefs, such as preservation of heritage, community support and resilience (a 'can do' attitude).

Reports that point towards a re-evaluation or confirmation of values are wide and varied. For example, reports in the media of Earthquake Recovery Minister Gerry Brownlee's suggestion that he would tear down the heritage buildings as the 'old buildings killed people when they toppled during the earthquake' (nzherald.co.nz 2011a, online) caused outrage, and reaffirmed New Zealanders' views on the preservation of their heritage. It also impacted on the political landscape, resulting in Brownlee backtracking on his suggestion that he planned to bulldoze heritage buildings (The Press 2011a, online). A month later a Canterbury University student and victim of the earthquake made headlines by handing in her thesis, pointing towards the underlying discourse of resilience and pride in overcoming adversity. Her supervisor was quoted as saying she had '... shown remarkable stoicism and resilience and we can all be proud of her achievement' (Stuff.co.nz 2011b, online).

Finally, some form of acceptance is achieved when a new identity is created, changes to lifestyle and plans for the future are made (Love 2007). Although emotional ties will always remain and the disaster will never be

forgotten, the bereaved will start looking towards the future. ‘Life will probably never be the same again, and it is important to acknowledge that’ (Love 2007:82). The media can help move a nation towards acceptance by reporting on expressions of support from the nation, and key figures, such as the Prime Minister John Key. Love (2007:81) suggests that a ‘bereaved person needs to interact with others who are empathetic and understanding of their suffering’. It is therefore important that the media becomes a nation’s voice, not only showing the victims’ suffering to the world so others can understand the impact of the disaster but also allowing a nation to express their affections and support through donations and offers of help. Such support must be given and must be palpable (Love 2007). With offers of support and donations posted on various media sites and reported through national radio and TV channels the media became a conduit for generating aid—not unlike Ibrahim’s (2010) assertion that mediated trauma does not only elicit strong emotion but also a humanitarian reaction from individuals and the community. Expressions of support posted onto media websites, such as *The Breeze*, *New Zealand Herald Online* and *Trade Me* websites were akin to public condolence books, which Brennan (2008) describes as a public forum that enable the outward expression of inner speech. While many of these condolence books were in the form of messages of support online, the Hutt City Council initiated a physical condolence book to be handed to the Christchurch City Council (Hutt City Council 2011). In doing so, they not only displayed their support but recognised that the earthquake would become part of their counterpart’s heritage, and provided an opportunity for those who had witnessed the disaster through the media to express their feelings and support.

Public expression of condolences have become a ritual or as Anderson (2010) describes them, ‘rituals of lament’:

Rituals of lament foster hope by calling evil, injustice, violence and irrational suffering by their proper names. Such honesty in our rituals after public tragedy helps us to restore a belief that the world is still safe (Anderson 2010:129).

Rituals help restore social order (Romanoff & Terenzio 1998) and therefore a nation’s identity. This includes the media’s own response to a

disaster through interruption of normal broadcasting, which have become taken-for-granted. According to Romanoff and Terenzio (1998) such rituals provide a vehicle for expressing and controlling powerful emotions, such as those experienced as a result of grief. Goren (2007) suggests that societies that have experienced considerable loss of life through war or other catastrophes allow death to figure broadly in their self-image or rituals. While she does not identify New Zealand *per se*, losses through earthquake and other disasters are not a new phenomenon to this country. In the early 20th century, for example, the city of Napier was all but destroyed by an earthquake, resulting in rebuilding the city centre and re-establishing a new identity as an art deco city as a result.

But before restoration can begin, the loss and its irreversibility has to be absorbed (Love 2007). This is likely to take time because grieving is rarely a linear process. We move through all or some stages of grief, and we move back and forth until we reach acceptance. This lack of linearity is reflected in the media coverage, such as recovery of bodies and the lack of power and sanitation while showing emotional visuals of funerals and grief-stricken disaster victims. When Prime Minister John Key announced that as many as 10,000 houses might have to be demolished and whole neighbourhoods relocated, an affected resident was reported as saying:

They need to name the areas now – please tell usWe are just struggling with day-to-day living and we don't need somebody to come and say our suburb won't exist anymore. If that is the case, we'd like to be told quickly. Our lives are on hold. It's not a nice feeling; it's not a nice feeling at all (Migone 2011, online).

While the statement reflects a patent need to move forward (typical of a community that values resilience), the emotional impact of dealing simultaneously with the loss and the subsequent practicalities is evident. This moving between emotions and practicalities in media reporting, reflects the dual process model of coping with bereavement as discussed by Buglass (2010) where those who are in the process of grieving move between dealing with emotional issues and practical issues (Love 2007).

The dual process model, encompassing restoration-oriented and loss-oriented processes, suggests that loss-oriented processes are about

emotional issues such as grief, the intrusion of grief, denial or avoidance of changes that the restoration process brings and breaking bonds or ties with what has been lost. These aspects have been widely reported on in the media coverage of Prime Minister John Key's speech on the occasion of the national Christchurch memorial service:

It is only natural that you want things to simply go back the way they were. That is a very human desire - to feel the familiar again. To be angry that your loved one will never return. To long to hear again the sounds of joy and excitement that once filled your homes and your hearts. Most of all I know this is a time of great uncertainty. And I know that such uncertainty makes recovery from this earthquake slow, painful and difficult. But today I also want to talk not only of loss, but also of hope, and healing Thank you for caring. That makes you part of the story of rebuilding Christchurch (Scoop Independent News 2011b, online).

Key told mourners and families of those who died that the quake 'had left scars that will never be erased from our land and our hearts' and it was time to remember those who had been lost, and to express grief and sorrow. 'Let us remember them – they are the faces of a Christchurch that will never be as it was again' So today we remember Christchurch as it was, and we treasure that memory.' It was a time of great uncertainty and the recovery would be slow, painful and difficult, but it was also a time to celebrate the power of community ...' (Dominion Post 2011, A5).

Restoration-oriented processes are about practical issues, such as attending to life-style changes, distraction from grief, doing new things and establishing new roles, identities or relationships (Buglass 2010). Such processes are reflected in reportage on the current discussions around how the devastated Christchurch Central Business District (CBD) should be rebuilt, and are necessary in reaching acceptance, the final stage in the grieving process. Architect Ian Athfield was quoted as saying 'through an unfortunate set of circumstances, we have a great chance to make an even better city' (Stuff. co.nz, 2011c, online). Not only did his statement reflect the restoration-oriented processes but it reflected the resilience that is part of the New Zealand nation's identity and consciousness. By reporting on

attempts to recover as well as the devastation itself, a nation is guided towards recovery.

In many ways, such reporting might be likened to keeping a collective journal, which Love (2007) suggests is a practical step in moving towards acceptance. He puts forward that a person affected by grief can help clarify and integrate the experiences arising from that loss by keeping a journal. In the case of the Christchurch earthquake, the media effectively becomes a national journal that reports on the disaster and its aftermath, attempting to make sense of it all. By allowing audiences to identify with the events through emotive stories and explanations ranging from the scientific to the pseudo-scientific, the sense-making activity is continued (see Zembylas, 2009), and the audience's understanding and knowledge of the disaster is improved (Pantti 2010).

Conclusion

The grief that inevitably follows a national disaster forces a nation to re-evaluate and re-establish its identity and key values. The media fulfils a mediating role in this process through its reporting on such disaster. Although often criticised for exploiting these events for its emotional news value, reportage that encompass raw emotion, graphic images and harsh realities unites a nation in its grief. It allows those who were not at the scene of the disaster to bear witness and grieve with the victims of the disaster. At the same time, the media reflects the national mourning of identity, livelihoods and lives lost during disasters, and indirectly can aide in the process of mourning for those who have been affected. Had the media not reported the events as it did, its victims would have might have felt unsupported and uncared for by their community and fellow nationals.

Reporting also elicits financial and physical help from those who identify with the affected, and aides in the recovery process and acceptance of loss. Without this support and help, normal grief may lead to what Love (2007) describes as 'complicated grief'. In such a case a nation would be unable to move through a natural process of mourning and could struggle to recover from the disaster. Such a nation would suffer damage to its consciousness, which may potentially lead to social instability. Journalists' role is indispensable in managing a nation's emotions and re-establishing

social and identity during a time of grief (Pantti & Wieten 2005). But while the New Zealand nation mourned publicly through the media, acceptance is unlikely to be achieved in the time frame reported here, and reconstruction of livelihoods and re-establishing of identity will be a long-term project.

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