

**The knowledge continuum as an enabler for
growth and sustainability in the South African
basic education system**

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ABSTRACT

The poor state and failure of the basic education system in South Africa gave rise to this research. The wave of knowledge loss experienced in the last two decades is expected to carry on and will continue to deplete the basic education system's knowledge base, severely affecting the already poor quality of education as well as the future economic growth and sustainability in South Africa.

The main research objective was to establish whether future growth and sustainability in the basic education system in South Africa is achievable; which factors it is influenced by; and how knowledge continuity could impact on future growth and sustainability. A multidisciplinary approach focusing on organisational performance, knowledge management, individual and organisational behaviour and organisational development was followed.

The nature of growth and sustainability and knowledge continuity in organisations was explored by following a contextualisation theory-building process.

The main objective of the empirical research study was to determine by means of quantitative research the degree to which the influencing factors would enhance or impede growth and sustainability in an organisation. A quantitative survey method was followed. A questionnaire was developed and the survey was performed in 6 primary and secondary schools of the basic education system in South Africa. The questionnaire was found to be reliable with a Cronbach's alpha of .8060.

In the descriptive factor analysis process, principal component factor analysis was conducted, which described the five constructs that would influence growth and sustainability. These constructs' dimensions produced significant intercorrelations which indicate that the dimensions are for the most part intercorrelated with each other in contributing to growth and sustainability.

The multiple regression analysis indicated that knowledge loss would have an exceptionally strong impact on knowledge; and that knowledge, information and performance would significantly predict growth and sustainability.

Organisations should change the focus for growth from physical assets to the development of intellectual capital, and knowledge continuity should form part of an organisations' business strategy and mission. Knowledge continuity will only be successful if a culture conducive of trust and knowledge sharing and transfer exist, and are supported by effective and appropriate human resource practices and incentives.

A structural equation model development strategy produced a knowledge continuity model aimed at enabling future growth and sustainability, based on the constructs confirmed in the factor analysis. The model indicated that there is a direct causal relationship between knowledge, information and performance with growth and sustainability. The regression analysis showed that most of the intercorrelations are significant, thus confirming the theory.

The newly developed questionnaire and structural equation model should enable organisations to measure the degree to which the enhancing individual and organisational behavioural factors of growth and sustainability are in place and provide the measurement outcomes that would identify the factors that need to be focused on to improve and enable future growth and sustainability in an organisation.

KEY TERMS

Knowledge continuity; future growth and sustainability; knowledge; organisational knowledge, knowledge management; intellectual capital; continuity management; knowledge loss; knowledge retention; knowledge sharing and transfer; knowledge trust; organisational learning; information; information technology; productivity; total quality management; shared vision; vision, mission and values; commitment; aligned commitment; organisational culture; culture and change; performance strengthening; performance management; rewards and recognition; job satisfaction; engagement; capacity building; talent management; employee engagement; employee empowerment; organisational behaviour; individual behaviour; organisational learning; multidisciplinary approach; basic education system; enable; business strategy; leadership; people; resources; relationships; policies and procedures.

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CHAPTER 1

NATURE AND SCOPE OF THE STUDY

1.1 INTRODUCTION

Society has recognised the value of knowledge for centuries. Intellectual reflection on knowledge has been pursued for as long as records of human activities are available. It has been studied by philosophers and has been practiced for centuries (Chong, 2005:1).

Education is where it all begins. It is seen as the foundation, incubator and cultivator for knowledge. Organisations across the globe engage in knowledge developments to sustain and build their organisations' future and competitive advantage in response to constant changes in their environment (Silvius, 2008:1). According to Silvius (2008:1), the ability to organise and manage change effectively and efficiently is a key success factor for future business agility, growth and sustainability.

Knowledge is the foundation in the quality of learning attained for effective and lifelong growth, development and well-being. Basic education should be used as the vehicle for creating an enabling environment for effective teaching and learning so that all citizens are empowered to participate effectively in society and the economy (Department of Basic Education, 2011:11).

It is in this context that it is necessary to understand the factors that have given rise to this research; the consequences of losing knowledge; and the significance of knowledge continuity.

1.2 BACKGROUND AND RATIONALE FOR THE STUDY

Knowledge continuity impacts every organisation; only, it affects the basic education system all the more. All organisations face the risk of losing knowledge, which could severely affect their ability to continue into the future as a growing and sustaining entity.

Because education is first and foremost the vehicle through which societies reproduce themselves, both the inputs and the outputs in an education system may more rightly be thought of as a set of ideas about how a society should be structured in future in order to grow and create a sustainable future (Modisaotsile, 2012:5).

Economies have been transformed by globalisation, privatisation, digitisation, and technological advances; the result is a system of hyper-competitive enterprises in which organisations are pressurised to do things faster, better and cheaper (Thamhain, 2007:2057).

Since democracy in South Africa in 1994, the basic education system has been pressured to do just that: doing bigger things; faster, better and cheaper. Growth and sustainability in basic education has hence been an ever increasing concern in South Africa for the past few decades, with devastating consequences.

The South African basic education system has been earmarked by:

- a) Strike action, sometimes unofficial, impacting on the time spent by teachers in classrooms
- b) On-going changes and amendments to curricula and initiation of new curriculums that were unsuccessful,
- c) Unsatisfactory/poor type of teacher training, and unskilled teachers,
- d) Inadequate support for teachers, and the poor support for learners,
- e) Absenteeism of teachers, and teaching time compared to other activities,
- f) Shortages of resources in education:
 - (1) Unavailability of learning and teaching materials such as textbooks,
 - (2) Circumstances under which some schools have to operate (under trees, in mud buildings, without tables and chairs, no water and/or electricity)
- g) Government lay off of education personnel,
- h) The output rate has not improved: of the number of learners enrolled in grade 1, only half make it to grade 12, and only 64% of those in Grade 11 in 2007 went on to take their senior certificates in 2008,
- i) Poor matriculation pass rates,
- j) The poor quality of education,
- k) Overcrowded classrooms,

- l) The dropout rate is very high,
- m) Literacy and numeracy levels are very low,
- n) Lack of commitment to teach by teachers,
- o) Blame shifting for accountability, and
- p) Misappropriation of funds and corruption.

(Department of Basic Education, 2011:4; National planning commission, 2011:1; Cosatu, 2012:1; Sedibe, 2011:129; Arends & Arends, 2011:1; Mundy, 2011:1; Madia, 2012:1)

The above are but some of the factors that have all led to shambles and disgrace in the basic education system which have severely affected the standard and quality of basic education. The reality remains that regardless of who is to blame, the basic education system continues to produce the opposite of future growth and sustainability.

South Africa spends 18, 5% of its annual budget on education, yet the education system remains largely in a poor state of affairs (Modisaotsile, 2012:1). In fact, over the past five years the country has seen a doubling of the education budget to R165,1 billion, but still the system has failed to reverse unacceptably low exam results or to improve the standard of teaching (Bloomberg, 2010:2).

The annual national assessments for grade 3 to grade 6 learners found furthermore that only 35% of learners can read (Bloch, 2011a:1). Bloch (2011b:1) further commented that without secure foundations of literacy and numeracy, our learners will never obtain the high level skills needed by a nation to address poverty and inequality for development and growth.

Chrisholm (2004:4) indicate that violence and abuse, often by teachers, has been a marked feature of the schooling experience of many boys and girls. He concluded that sexual abuse, pregnancy and poverty are factors increasing the drop-out rate in secondary schooling.

Between 18 000 and 22 000 teachers leave the teaching profession every year, either voluntarily or forcibly. Assuming that these teachers need to be replaced by an equal number of teachers poses a serious problem, as only an estimated output of 6 000 to

10 000 new teachers graduate annually from higher education institutions (Arends & Arends, 2011:1).

A study conducted by the Human Sciences Research Council (HSRC) (Arends & Arends, 2011:1; Mundy, 2011:1) found that:

- a) Almost 20% of teachers are absent on Mondays and Fridays.
- b) Absentee rates increase to one-third at month end.
- c) Teachers in black schools teach an average of 3,5 hours a day, compared to 6,5 hours a day in former white schools, this amounts to a difference of three years' schooling in total.

Mathew Prew (in Mundy, 2011:1) of the Centre for education policy development (CEPD) pointed to the closure in the mid -1990's of the country's teaching colleges, saying that we have not had a teacher development system, empowering teachers to use their techniques; and further explained that the move to close the teaching colleges followed a government decision that university training could provide a better standard of teaching. However, universities have proved unable to produce teachers in sufficient numbers, and too few teaching graduates are willing to move to impoverished rural communities.

There is strong evidence suggesting that some poorly resourced schools nevertheless achieve good results because of strong leadership given by principles who insist that teachers come to school punctually, teach when they should teach, and remain sober. This disciplined environment has proven to be conducive to good teaching and learning (Saunders, 2011:1). Good school performance is linked to the participation and commitment of all stakeholders in basic education (Modisaotsile, 2012:3).

The department of basic education (2011:3) describes their vision is of a South Africa in which all our people will have access to lifelong learning, education and training opportunities which will, in turn, contribute towards improving the quality of life and the building of a peaceful, prosperous and democratic South Africa. The department of basic education (2011:3) developed a strategic plan for 2011 – 2014 with the over-arching goal of improving the quality of learning and learner achievement. This medium-to long-term plan identifies key interventions to improve the quality of learning, improve

education management and administration, and allow for the monitoring of progress against a set of measurable indicators covering all aspects of basic education.

Concerning productivity in the classroom it is clear that in many schools the way teaching occurs must change. As part of the 2011 – 2014 strategy, government adopted the slogan: *Teachers are to be in class, on time, teaching and making use of textbooks* (Department of Basic Education, 2011:13). This slogan is, to a very large extent, self-explanatory of some of the problems in the basic education system that has contributed to the currently unacceptable state of basic education in South Africa.

The only researcher, who has focused on the issue of lost knowledge extensively, is DeLong (2004:1). He proposes that effective knowledge retention efforts require a holistic approach that integrates elements of human resource infrastructure and culture, the most appropriate transfer practices depending on the types of knowledge involved, and supporting information technology applications (DeLong, 2004:6). It seems that this research may prove to be extremely useful in this research.

In Tobin and Volavsek's (2006:96) exploration of the status of knowledge management in South African organisations, it was mentioned that considerable international research into knowledge management models and measures exists, with some progress being made towards deriving knowledge management standards. However, there has been minimal research in South Africa in this regard. Tobin and Volavsek (2006:114) found that in 53 South African organisations, only 18% of these actually have some knowledge management metrics, and of these, only 10% align knowledge management initiatives with their vision, objectives and strategy. Tobin and Volavsek (2006:115) researched the knowledge management models and metrics used in South African organisations, focusing on work by the British Standard Institute (BSI). They found exploratory evidence that only a few South African organisations made use of some form of knowledge management, and concluded that none of the many models in the literature adequately accommodates all aspects of knowledge management measurement, suggesting that a more holistic knowledge management and intellectual capital measurement model should be developed (Tobin & Volavsek 2006:115). The focus of their study was purely on the status of knowledge management in South African organisations and not on knowledge continuity as such.

Various approaches towards knowledge retention were suggested by different authors. The only studies that give perspectives of different approaches were those conducted by the American Productivity and Quality Centre in 2002 and David DeLong in 2004. No indication could be found in the preliminary literature review of the type of knowledge retention strategies and the extent to which knowledge retention approaches to knowledge continuity have been implemented in South African organisations. Not a single study was found that focused specifically on the factors that impact on knowledge continuity, from both a knowledge management and organisational behavioural perspective, which indicated that it is an area for possible research.

1.3 PROBLEM STATEMENT

In the South African context of high unemployment coupled with a widely recognised skills shortfall, a better educational start in life will reduce poverty whilst at the same time increase the future development of the country (Department of Basic Education, 2011:11).

While the traditional three factors of production: Land, Labour and Capital, have become easier to manage in the 21st century, a fourth factor has increasingly become a hurdle for institutions to grow. This factor is knowledge; which is at the heart of today's global economy (Carbaugh, 2007:7). Intellectual capital has become the most valuable resource for a sustainable future (Auer, 2004:1).

Many organisations, including the department of basic education, are so fixated on mediating immediate issues at hand that they seem to be in denial about knowledge loss. In addition, the leaders in these organisations do not acknowledge the threat and impact of lost knowledge, not only on their organisation's future sustainability and growth, but also on society and the economy as a whole (Salopek, 2005:23; Foster, 2005:28).

Education is an essential tool for achieving sustainability (Mckeown *et al.*, 2006:9). However, if knowledge is lost and not retained, organisations will not be able to transfer the knowledge to the next generation, unless appropriate knowledge resides within the organisation and is easily accessible to the right people to enable them to do their jobs (Du Plessis, 2003:94).

Despite its already grim immediate outlook, it would however seem that basic education in South Africa will be facing a further wave of knowledge loss in the next 5 to 10 years, or, to put it in other words: it could literally run out of its own knowledge. The rate at which intellectual capital and knowledge leaves the education system cannot keep up with the rate that it is acquired or replaced. This will continue to severely affect not only the quality of education, but also productivity and future economic growth and sustainability.

Too many teaching professionals leave the basic education system at an alarming rate, and the more critical part is that their knowledge is not transferred nor retained before their departure. Without knowledge, basic education will not be able to fulfill its purpose, and will fail as a key success factor in building a sustainable future.

Some organisations find that attracting, developing and retaining a knowledgeable workforce is a major issue, but many are unaware of the magnitude of the problem, or potential solutions (APQC, 2002:6).

In the 2010 State of the nation address, the President referred to the vital role of the basic education system in improving productivity and competitiveness in the economy. He furthermore commented that without substantial improvements in learning outcomes, the future of the country will be seriously compromised (Department of Basic Education, 2011:11).

Therefore, the problem statement can be summarised as follows:

It has become clear that the basic education system in South Africa is failing to achieve the intended quality and standard of education required for its vital role in creating an enabling environment for empowered participation by all in the economy. This resulted in failure to produce learners with the required high level skills needed by our nation to address poverty and inequality, which is seriously affecting the future growth and sustainability of the country. The knowledge that have been lost in the basic education system due to the departure of educators through resignations, retrenchments, lay-offs or retirements, is unlikely to be replaced within the next 5 to 10 years, as the supply of 6 000 to 10 000 new teaching graduates annually cannot meet the demand for teachers, let alone the replacement of the 18 000 to 22 000 that annually leave the

teaching profession. It has become critical to understand how future growth and sustainability in the basic education system can be enabled; as well as what specific impact and role knowledge has in the future growth and sustainability of basic education in our country.

1.4 PURPOSE OF THE STUDY

The intention of this research study is to establish from an academic and theoretical perspective whether future growth and sustainability in education is achievable; which factors has an impact on it; and if and how it can be measured. The research further attempts to investigate the specific impact of knowledge continuity on future growth and sustainability.

The purpose of the study is to determine a detailed understanding of the concept of knowledge continuity in organisations, and how it can enable future growth and sustainability.

Furthermore, the purpose of the study is to identify the individual and organisational factors and behaviour that might influence growth and sustainability such as the culture of the organisation, the workforce, technology, strategic goals and objectives, change, training and development, management, leadership, vision, commitment and so forth.

Based on the findings, a knowledge continuity model for growth and sustainability will be developed that organisations could use to determine the extent to which they are managing toward future growth and sustainability.

1.5 RESEARCH OBJECTIVES OF THE STUDY

The objectives of the study are separated into primary and secondary objectives.

1.5.1 Primary objective

The primary objective of the study was to establish, from an academic and theoretical perspective, whether future growth and sustainability in the basic education system is

achievable; if and how it can be measured; and how knowledge continuity could impact on future growth and sustainability.

1.5.2 Secondary objectives

To achieve the primary objective of the study, the secondary objectives, based on both theoretical and empirical research were as follows:

1.5.2.1 Theoretical evaluation:

In terms of the literature study, the problem statement can be addressed by answering the following questions:

- (1) What is understood under the concept of future growth and sustainability?
- (2) Is growth and sustainability measurable, and how?
- (3) What is understood under the concept of knowledge continuity?
- (4) What are the individual and organisational behavioural factors that could enhance or impede future growth and sustainability?
- (5) How can the individual and organisational factors be integrated to develop a theoretical knowledge continuity model aimed at enabling growth and sustainability?

1.5.2.2 Empirical research:

In terms of the empirical study, the following specific research questions can be addressed:

- (1) To what extent is growth and sustainability influenced by certain behavioural and organisational factors in the basic education system in South Africa?
- (2) What empirically derived factors have an impact on growth and sustainability?
- (3) What is the empirically derived specific impact of knowledge continuity on growth and sustainability?
- (4) Can a model be developed to verify the theoretical model?

1.6 SCOPE OF THE STUDY

From an academic and theoretical perspective, the scope of this research is limited to what is understood under the terms "future growth and sustainability", and "knowledge continuity"; focusing specifically on how growth and sustainability could be achieved; and on the knowledge in the minds of individuals and what it means in organisations. The focus is not purely on explicit or tacit knowledge, nor on a pure information technology perspective, but on a holistic approach including the humanistic, behavioural and socialistic view of the concepts of growth and sustainability and knowledge continuity.

Individuals in an organisation operate at 3 levels: individual, group and organisational level, which means that there is a risk of losing critical and valuable organisational knowledge which is captured in the minds of the individuals at all three the levels. The focus is on an academic and theoretical study of knowledge continuity, since everyone leaves an organisation at some point in time.

From an empirical perspective, the scope of this research is on determining how growth and sustainability in the education system can be achieved; the impact of knowledge loss and discontinuation on the education system; as well as the extent to which knowledge in an organisation can enable future growth and sustainability.

1.7 LIMITATIONS OF THE STUDY

The researcher had to rely on the honesty of the participants in the study in an empirical research study. This may prove to be problematic however, as not many individuals may be comfortable disclosing details about their habits during working hours. Furthermore, due to there being very little empirical material available on this topic, the researcher had to rely on her interpretation and understanding of the findings based on the questionnaire feedback and literature study.

The research study is limited to the primary resources of information gained from the basic education system with specific reference to the six primary and secondary schools in the Sedibeng district which participated in the study. Secondary sources were limited to generally available literature sources and information available on the internet.

The empirical study will focus on the six primary and secondary schools in the Sedibeng district, where the scope includes all principles, educators and administrative employees.

Because the findings presented in the study are based on a small number of participants, the reader should treat findings with caution. This limitation may affect the validity and reliability of the study. The study have largely explored an attempt to build a foundation on which to base further investigations in future that is more comprehensive with larger participation samples.

1.8 SIGNIFICANCE OF THE STUDY

The value of this study is that it could contribute in general to a multidisciplinary and holistic approach to knowledge continuity in the basic education system, focusing on knowledge, individual and organisational behaviour, and future growth and sustainability in the basic education system. From an academic and theoretical perspective, the significance of this study is that it will provide an understanding of what growth and sustainability and knowledge continuity means, how it manifests in the behaviour of individuals in an organisation, and how it could impact on future growth and sustainability. This study should provide clarity on organisational and individual behavioural factors that could enhance or impede knowledge continuity in an organisation, and that could influence future growth and sustainability.

The value of the empirical study lies in the development of a questionnaire that could be used in organisations to determine which organisational and individual behavioural factors exist in their organisations which could enhance or impede growth and sustainability. The empirical model that will be developed could offer a clear understanding of the dimensions that explains future growth and sustainability from a knowledge continuity perspective.

Furthermore, there is no one-size-fits-all solution when it comes to knowledge retention; and organisations differ in terms of strategic goals and objectives. No one is ready to claim they know what the best practices are when confronted with the threat of losing knowledge that is critical to organisational performance (De Long & Davenport, 2003:51).

The study could shed light on a holistic approach that could be followed to enable future growth and sustainability within the basic education system, based on knowledge continuity, individual and organisational behavioural factors. The empirical model that will be developed could be used as an indicator of the behaviour and factors that could enable future growth and sustainability.

1.9 RESEARCH DESIGN

The research design comprises of the planning of the manner in which the research will be conducted in terms of data gathering, analysis and interpretation in a way that is relevant to the purpose of the research.

The approach for the study is a quantitative research approach using the survey method. A quantitative approach to researching knowledge continuity and growth and sustainability emphasis its quantifiable nature and is concerned with identifying its predictive power (Brewerton & Millward, 2001:12).

The use of this research will be to contribute to basic theoretical knowledge (Neuman, 2000:25) and apply and tailor the knowledge obtained to address a specific practical issue namely the enablement of future growth and sustainability in organisations. The design of this study is a combination of descriptive and exploratory research.

Bak (2004:25) endorses the combination of a literature study and empirical work, and this method appears to be a suitable method of obtaining answers to the problem statement questions.

The survey method will be used in the study, as it will enable the researcher to collect data on opinions, attitudes and behaviour (Booyesen, 2003:127).

Cross-sectional research will be conducted collecting the data at one point in time to take a snapshot of the conditions prevailing at that particular moment in time in the organisation (Neuman, 2000:30). The data will enable the researcher to conduct statistical analysis to provide insight into the factors that influence future growth and sustainability in the basic education system in South Africa.

1.10 RESEARCH METHODOLOGY

The research methodology explains how the study will be conducted (Mouton, 2001:49). The following approaches were adopted in the literature and empirical studies to describe the problem statement and collect, analyse and interpret the data:

1.10.1 Literature study

In the literature review the intention is to do an in-depth study on growth and sustainability and knowledge, and they are described from a knowledge management, individual and organisational behavioural perspectives drawing from literature in these fields of study.

Factors that influence growth and sustainability as well as knowledge continuity will be derived from the literature review.

Although many approaches to enable future growth and sustainability will be included in the discussions, there is not a one-size-fits-all solution which implies that the specific theoretical solution for the basic education system would be one that addresses the research problem statement and main objective of the study.

A theoretical model based on the literature study will be developed and tested in the empirical study through structural equation modeling.

1.10.2 Empirical study

The empirical study design involves the planning and structuring of circumstances for conceptualising the concepts, collecting and analysing the data in a way that is relevant to the nature of the research.

In this study, the purpose of the empirical research is to analyse, on the basis of the findings of the empirical study, the specific model that was chosen and adapted in the literature.

Based on the adapted model from the literature study, a measuring instrument was designed in the form of a questionnaire; therefore a quantitative approach will be used. The questionnaire will be developed to survey educators on their experiences, perceptions, expectations and behaviour.

1.11 LAYOUT OF THE STUDY

The research study is divided into four chapters of which each chapter's focus areas differ. The chapter division is as follows:

Chapter 1: Nature and scope of the study

The aim of chapter one is to set the context and background for the proposed research study, and to formulate and confirm the problem statement which forms the basis for conducting this research. The primary and secondary research objectives, research design and methods, as well as the limitations and significance of the study are discussed.

Chapter 2: Literature review

Chapter two consists of an in-depth literature study on future growth and sustainability, and knowledge continuity. The literature study provides a comprehensive understanding of the concepts by outlining the nature of growth and sustainability and knowledge continuity. All the various components of the suggested measurement model are also researched in-depth from literature.

Chapter 3: Empirical research design and methodology

Chapter three outlines the methodology used during the empirical study and the results obtained from the empirical study. The design of the questionnaire, sample and data collection is discussed as well as the processes of analysis and evaluation of the statistical analysis. The empirical research results are presented in relation to the literature study and discussed.

Chapter 4: Conclusions, limitations and recommendations

Chapter four consists of conclusions that are drawn from the empirical research study results from chapter 3, limitations of the research, and final recommendations that are made to enable future growth and sustainability in the basic education system. The chapter concludes with identifying opportunities for future research.

1.12 CHAPTER SUMMARY

The aim of chapter one was to provide a background and holistic overview of the proposed research. Some of the factors that gave rise to the problem statement regarding the future growth and sustainability in the basic education system in South Africa were discussed. The research objectives, framework, methodology and layout of the study were outlined. Theoretical and empirical aims to address the research problem statement were formulated. The issue of knowledge continuity as an enabler for future growth and sustainability is approached from an interdisciplinary and holistic perspective drawing from the fields of knowledge, individual and organisational behaviour, and organisational learning, development and other factors. The empirical study design is a quantitative study which uses the survey method to collect data, and the methodology was discussed. Finally the layout of the study was described.

In the following chapter; the results and findings of the literature study are discussed.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

In an effort to provide a framework for enabling future growth and sustainability in the basic education system, I articulate in this chapter that future growth and sustainability is achievable through aligned commitment, and measurable in terms of organisational performance. The measurement of growth and sustainability will be done using an adapted aligned commitment model based on the aligned commitment model developed by Coetsee (2002:30).

This theory draws upon key concepts from a diverse body of literature based on each of the multiple components of the aligned commitment model. The components and aspects that will be investigated in order to establish a better understanding of the holistic approach to future growth and sustainability includes:

- Growth and sustainability
- Organisational commitment
- Knowledge
- Information technology
- Employee empowerment
- Performance strengthening
- Shared vision

The above mentioned factors are all concepts that relate to aligned commitment, and can be described as the influencing or contributing factors to achieving future growth and sustainability within an organisation.

Although each aspect is important for future success, it is essential to note that the specific impact of knowledge continuity in an organisation is of critical importance to the future economic development of the country, in order to create an enabling environment for empowered participation in society.

2.2 GROWTH AND SUSTAINABILITY IN EDUCATION

Growth and sustainability is a complex issue affecting business, education, health, government, ecosystems, and all areas of life. Depending on the level of analysis or category of sustainability, the concept of sustainability has a different connotation, meaning, and application.

Achieving growth and sustainability requires the understanding of actions, consequences, encouraging commitment and relationships at local, regional, and global scales. Mckeown *et al.* (2006:9) contend that education is an essential tool for achieving sustainability.

Education provides a critical methodology to further this understanding, yet many traditional models of education are inadequate for dealing with the emerging challenges of sustainability and growth (Sterling, 2001:4).

Chambers Concise dictionary explains growth as the development from a lower or simpler to a higher or more complex form; evolution; and that the result of growth is referred to as a product. In terms of education the result of growth will be measured in terms of the quality of the product: education.

Chambers Concise dictionary explains sustainability from the verb to sustain meaning: committed to hold up; to bear; to support; to provide for; to maintain; to sanction; to keep going; to keep up; to prolong; to support the life of.

Sustainability also implies durability or survivability (Filho, 2000:11). Since the beginning of life on the planet, sustainability has been an important issue. All organisms are biologically driven to forward their species and continue the evolution and continuation of life (Wackernagel & Rees, 1962:16).

Sterling (2001:12) asserts that learning is the key to creating a more sustainable and peaceful world. Hence, education is an essential component for the transformation to a society and culture that not only understands and values the issues, but also acquires commitment and the skills necessary to find solutions and take actions leading to a more sustainable future.

However, Orr (1992:83) reminds us that sustainability is about the terms and conditions of human survival, and yet we still educate at all levels as if no such crisis existed. Education, like ecosystems, economic systems, culture and society is a living system, requiring an understanding of how parts and wholes are interrelated and interactive (Senge *et al.*, 2004:5; Sterling, 2004:44).

This study seeks to understand how knowledge continuity can enable growth and sustainability within education, as well as if, and how, growth and sustainability can be measured. Furthermore, the study also seeks to investigate specific interest in the impact of knowledge on growth and sustainability in the education system.

Education can be viewed as an instrument to accomplish a predetermined goal (Sauve *et al.*, 2007:33; Smyth, 2002:6), such as employment, civil society, and even sustainability, and is inherently value-laden (Jickling, 2003:22). Educators give clear messages through what they teach (the implicit curriculum), through their choice of language and values, and also through what they omit from their instruction (the null curriculum) (Jickling, 2003:25). Perhaps methods of teaching are just as important as what is taught (Moore, 2005:542).

Many traditional educators inadvertently promote the status quo through the use of pedagogies that neglect addressing trans-disciplinary sustainability issues and development of critical thinking skills. Becoming a more sustainable institution will require new ways of thinking, as well as re-evaluation of our priorities and educational approaches (Huckle & Sterling, 1996:41; Sterling, 2001:62; Wheeler & Bijur, 2000:6). Change is needed in both the form and methods in which teaching occurs.

Managers do not have the capability to understand sustainable development based on their lack of training in sustainability in business schools. Sustainability requires managers to learn how to innovate in new ways (Hall & Vredenburg, 2003:62).

Rogers (1962:12) defines innovation as an idea, practice, or object that is perceived as new by an individual or other unit of adoption. Rogers says that this newness does not need to be solely in terms of knowledge, but that it can also be in terms of persuasion, or a decision to adopt a new strategy, idea, or policy. Hall and Vredenburg (2003:64) related innovation to sustainable development issues, such as stakeholder engagement

and commitment, by coining the phrase *sustainable development innovation*. Hall and Vredenburg (2003:136) describe sustainable development innovation as the competencies that individuals or organisations apply to manage complex and often ambiguous, context specific variables.

Seeing the knowledge gaps. There is a close relationship between capabilities and knowledge. Sveiby (1997:37) defines knowledge as a capacity to act. The definitions of the terms *capability*, *capacity*, and *competency* overlap and are often incorrectly used interchangeably. When an organisation experiences a gap in its knowledge or capability, there is often a need to fill that gap. A capability gap occurs when strategic knowledge or expertise is not available within the organisation. When this occurs, there is a need for that organisation to either develop the needed competencies within that organisation, seek the expertise outside the organisation, or both (Leonard-Barton, 1995:14).

Gilding *et al.* (2002:4) popularised the concept of the single-bottom line of sustainability, describing sustainability as being part of an organisation's business strategy. An organisation that adheres to the single-bottom line must have sustainability as the core of its business strategy, processes, and structures.

In order to incorporate sustainable growth and development-related innovations into organisations, vastly different knowledge management is required, including organisational, administrative, and infrastructure (Hall & Vredenburg, 2003:107). Every organisation needs to find ways of leaping forward in order to remain competitive and be sustainable (Pachauri, 2004:38).

To implement sustainability change, researchers submit different factors to execute this change. In general, Burke (2008:136) suggest that leadership, a mission or a strategy, organisational culture, policies and procedures, organisational commitment, and motivating factors are needed for all types of organisational change. Sustainability change, specifically, requires top management support, environmental training, employee empowerment, teamwork, and rewards (Daily & Huang, 2001:1539). Additional factors are needed to embed sustainability within organisations, including: recruiting people with a sustainability-orientation to champion projects, benchmarking sustainability performance against other organisations, fostering commitment from the

top down, and creating systems to share sustainability stories both internally and externally (Bertels, *et al.*, 2011:12).

The sustainability literature expands into organisational culture concepts. According to Linnenluecke and Griffiths (2010:357), organisational culture themes have become popular within sustainability literature. These studies frequently cite Schein's three-level typology of culture, which includes:

- 1) observable organisational structures and processes, which include the organisation's language, products and/or creations, technology, and myths and stories (artifacts);
- 2) strategies, goals and philosophies that guide the organisation's actions and behaviours (espoused beliefs and values); and
- 3) unconscious, taken-for-granted beliefs, perceptions, thoughts and feelings, which become basic, strongly held assumptions within a group and which constitute the essence of culture within an organisation (Linnenruecke & Griffiths, 2010:363; Schein, 2004:26).

Researchers, however, present different theories as to how organisations change their culture to become more sustainability-oriented. Borland (2009:558) suggests that sustainability-seeking organisations must make fundamental paradigm shifts away from the current linear, cradle-to-grave operational models toward a more integrative, eco-effective model. Linnenluecke and Griffiths (2010:357) support Borland, contending that a shift to knowledge management requires organisations to undergo significant knowledge management and transformation.

Quinn (1996:3) refers to this transformational change as deep change, which requires new ways of thinking and behaving. It is change that is major in scope, discontinuous with the past and generally irreversible. The deep change effort distorts existing patterns of action and involves taking risks (Dunphy *et al.*, 2007:264).

Harris and Crane (2002:215) however, refute these claims. Their research suggests that cultural change has been largely limited to modest behavioural change and, at best, the incorporation of environmental responsibility into existing cultural certainties. Similarly, Dunphy *et al.* (2007:262) find that for companies with strong health, welfare, and

environmental policies, progress towards full sustainability can be a process of unspectacular but systematic and sustained development of awareness, policies and practices. This incremental change includes the development of, or revision to, processes and procedures, measurement and tracking systems, and reward systems (Dunphy *et al.*, 2007:269; Epstein & Buhovac, 2010:306).

Researchers have also identified different methods to operationalise sustainability within organisations (Linnenluecke & Griffiths, 2010:353). Mirvis and Manga (2010:36) have identified two models used to develop and integrate citizenship into organisations:

- 1) the top-down approach; and
- 2) the catalytic, middle management approach.

The top-down approach is a comprehensive, long-term commitment approach to organisational change in which leaders build momentum for change and promote coordinated and committed movement on multiple fronts throughout the organisation (Mirvis & Manga, 2010:36). Through this approach, leadership creates a clear definition of organisational citizenship and/or sustainability values, which is consistently communicated and reinforced throughout the entity. This unified view of sustainability represents an integration perspective of culture within an organisation (Linnenluecke & Griffiths, 2010:373).

The catalytic approach is also known as leading from the middle (Mirvis & Manga, 2010:87). In this approach, citizenship and sustainability initiatives are introduced and implemented by middle managers whose tacit knowledge of their operations' day-to-day activities and social and environmental challenges enables them to identify and react; or pro-act, to opportunities for change. These middle managers often operate within different functional areas or subcultures of the organisation and develop their own values and beliefs towards citizenship and sustainability based on their education and enculturation into their subculture (Linnenluecke & Griffiths, 2010:372). As a result, managers within a given subculture are expected to behave similarly to sustainability opportunities and challenges, while managers in differing subcultures are expected to behave differently. Martin (1992:2) refers to this emergence of different sustainability viewpoints as a differentiation perspective of culture.

Prahalad (2005:454) predicts the core competencies in pursuit for sustainable future growth in the new economy will be a combination of:

- 1) multiple technologies such as software and hardware that will require working with a new logic; for example knowledge streams in electronics in a traditional chemical firm;
- 2) collective learning such as multilevel and multifunctional composition of teams, for example, globalisation requiring teams from multiple cultures that learn together; and
- 3) the capacity to share across business and geographic boundaries, for example, collaboration and transfer of knowledge across multiple business units

People are identified as a key driver of future growth and an integrative approach is required to ensure sustainable development. Commitment throughout the organisation is required to achieve future growth and ensure sustainable development. People are seen as key to sustainable development and for results to different stakeholders such as shareholders, but also clients, employees, suppliers and communities (Conradie, 2010:54).

Several factors must be in place to achieve sustainable development. Aspects such as the organisation structure, health and safety, communication, development, performance management and remuneration must be managed through an integrative management system to achieve business results (Conradie, 2010:55).

Organisational diagnosis draws on concepts, models, and methods to examine an organisation's current state and assists in determining ways to solve problems or enhance organisational effectiveness (Burke, 1982:172; Harrison & Shirom, 1999:67).

The models described in Table 2.1 include several of the leading models for organisational strategy and sustainability, and have an emphasis on growth and sustainability. These models have also helped organisations to consider their needs in terms of economics and organisational effectiveness.

Table 2.1: Organisational diagnosis models

Model Name	Type of Model	Source	Model Components
Competing Values Framework: Effectiveness	Organisational Effectiveness	(Quin, 2001:61)	Adaptability–Readiness, Growth-Resource Acquisition–External Support, Productivity–Efficiency, Planning–Goal Setting, Stability–Control, Information Management – Communication, Cohesion–Morale (Commitment), Value of Human Resources Training
Creating Sustainable Value	Shareholder Value and Strategic Planning	(Hart & Milstein, 2003:56)	Innovation, Risk Reduction, Reputation, Growth Path, Drivers, Internal & External Strategy, Short- and Long-Term Strategy
Eco-Advantage Strategy	Strategy for Sustainability	(Esty & Winston, 2006:4)	Tracking, Culture, Risk, Players/Stakeholder, Barriers, Value/Benefits
High-Performance Model Based on the Linkage Model	Organisational Performance	(Rucci, <i>et al.</i> , 1998:84)	Leadership Practices (Customer Orientation, Quality Emphasis, Employee Training, Involvement/ Empowerment), Employee Results (Information/ Knowledge, Teamwork/Cooperation, Overall Satisfaction, Employee Retention), Customer Results (Responsive Service, Product Quality, Overall Satisfaction, Customer Retention), Organisational Commitment, Business Performance (Sales Growth, Market Share, Productivity, Long-Term Profitability)

Model Name	Type of Model	Source	Model Components
Performance Improvement Model	Organisational Performance	(Swanson, 1994:122)	Analyse, Design, Develop, Implement, Evaluate, Inputs, Outputs, Organisation (Mission and Strategy, Organisational Structure, Technology, and Human Resources), Environment (Economic Forces, Political Forces, and Cultural Forces)
Sustainability Operating System (SOS)	Building a Sustainable Organisation	(Blackburn, 2007:109)	Drivers, Efficient Enabler, Pathway, Evaluators
The Balanced Scorecard	Strategic Performance	(Kaplan & Norton, 1996:11)	Financial, Internal Business Process, Learning and Growth, Customer, Vision, Strategy. (Note: within each of the first four components are Objectives, Measures, Targets, and Initiatives) Requires organisational commitment to succeed.
The Aligned Commitment model	Organisational Performance	(Coetsee, 2002:30)	Knowledge, information management and resources, Shared vision mission and values, Performance strengthening, Empowerment
Waves of Sustainability	Six Phases of Transformation in Becoming Sustainable	(Dunphy et al., 2007:239)	Rejection, Non-responsiveness, Compliance, Efficiency, Strategic Proactivity, The Sustaining Corporation

2.3 ORGANISATIONAL COMMITMENT

Organisational commitment to the employer constitutes an intangible resource, as its value has its roots in a complex network of social relationships between individuals

reflected in performance management, recognition, compensation practices or communication programmes, which are not easy to identify and which have developed over a period of years (Roca-Puig *et al.*, 2005:2079).

Organisational commitment has been integral to organisational research for over 25 years (Gautam *et al.*, 2004:301). As a construct, organisational commitment is a fundamental aspect of the employer–employee relationship (Mohammed *et al.*, 2006:512).

The concept of organisational commitment has played an important role in the field of organisational behaviours ever since it was first proposed by Whyte (1956:6).

Organisational commitment has been researched in various contexts, including:

- a) transformational leadership (Nguni *et al.*, 2006:145),
- b) organisational citizenship behaviours (Gautam *et al.*, 2005:301),
- c) quality of work life (Huang *et al.*, 2007:735),
- d) job stressors (Oi-ling, 2003:337),
- e) role ambiguity (Pousette *et al.*, 2003:245),
- f) perceived external prestige (Fuller *et al.*, 2006:327), and
- g) procedural justice (Bagdadli *et al.*, 2006:83).

According to Yousef (2003:134), the most frequently-used definition of organisational commitment is that of Porter *et al.* (1974:164) who defined it as a strong belief in and acceptance of the organisation goals and values, a willingness to exert considerable effort on behalf of the organisation and a definite desire to maintain organisational membership.

Organisational commitment has been described as the degree of an individual's identification with, and devotion to, a specific organisation, including:

1. Value commitment: the strong belief in, and the acceptance of the organisational objectives and values;
2. Effort commitment: the willingness to dedicate greater effort to benefit the organisation; and

3. Retention commitment: the willingness to remain as a member of an organisation (Lambert *et al.*, 2006:59).

Organisational commitment represent an individual's emotional attachment to an organisation, including identification with, and acceptance of, organisational objectives and values; mental devotion to, and concentration on a job role; and loyalty to, and affection for, the organisation (Dee *et al.*, 2006:609).

Organisational commitment refers to a sense of emotional identification with organisational objectives and values, relevant professional roles, and an organisation and group, with the characteristics of identification, devotion, and loyalty. Organisational commitment further embraces the following employee aspects:

1. desire to strive to the fullest in order to represent an organisation;
2. desire to remain with an organisation;
3. feelings of belonging and loyalty to an organisation;
4. acceptance of major organisational goals and values; and
5. positive evaluation of an organisation.

(Huang *et al.*, 2007:735; Dee *et al.*, 2006:609; Gautam *et al.*, 2005:301).

Coetsee (2002:28) defined organisational commitment as shared vision, ownership, or full identification, being part of, also being passionately attached to and co-creating, and further define alignment to commitment as aligned-commitment, which implies that all members of the work team are in line in their commitment. This definition of commitment by Coetsee is the one that is considered primarily in this study. Coetsee (2002:30) describes successful aligned-commitment of employees as effectiveness of capacity in the form of the following equation:

Aligned-Commitment = Knowledge x Information x Empowerment x Performance Strengthening (Rewards & Recognition) x Shared Vision (Shared Goals & Values)

It is important to note that the aligned-commitment formula is a multiplication (x) equation and not an addition (+) equation. This indicates that if one element (e.g. Information) is not present, the product will be zero (0). All five elements must therefore be present (Coetsee, 2002:30).

For the purposes of this research, the aligned commitment model of Coetsee (2002:30) will be used as the theoretical model to be adopted through the literature study and empirical research in an attempt to meet the research objectives.

The following sections concentrate on the five elements of Coetsee's aligned commitment model, namely: knowledge, information, empowerment, performance strengthening and shared vision. These elements are researched in depth in order to obtain a comprehensive understanding of each element, their components, and their impact in organisations.

2.4 KNOWLEDGE

2.4.1 Organisational knowledge; intellectual capital

Nonaka and Takeuchi (1995:3) define organisational knowledge as what is commonly known in a group of people associated with an organisation. Another definition of organisational knowledge is the accumulated know-how, expertise, and ways of working identified with a particular organisation that becomes so embedded in the physical and social systems that the knowledge essentially remains accessible to the organisation, even if key individuals leave (Allee, 2003:265). Quintas (2002:12) concurs with the statement that organisational knowledge outlasts the employment of individuals, suggesting that it is greater than the sum of the currently employed individuals' expertise.

However, Allee (2003:143) asserts that no organisation can be aware of, mobilise and exploit all the knowledge possessed by all employees, and that knowledge is not static because employees are constantly on a journey of storytelling (conversation), sense making and creation. Knowledge is reshaped to fit new circumstances and the same knowledge is never experienced twice.

Organisational knowledge includes captured and embedded organisational routines, processes, systems, products, customers, cultures and competitive environments (Cummings & Worley, 2005:505; Quintas, 2002:12). This knowledge may be explicit and codified in documents, manuals or databases, or it may be tacit in the form of

employees' skills, memories and intuitions (Cummings & Worley, 2005:505; Droege & Hoobler, 2003:52).

Organisational knowledge is the key outcome of organisational learning processes and it also contributes to organisational performance to the extent that it is relevant and applied effectively to the organisation's competitive strategy. The link between the learning processes and organisational performance generates knowledge capabilities that have been referred to as core competencies; invisible assets; and intellectual capital. These terms suggest the contribution of organisational knowledge to organisational performance (Cummings & Worley, 2005:505).

Organisational memory is the collection of historical corporate knowledge that is employed for current use through appropriate methods of gathering, organising, refining, and disseminating the stored information and knowledge. The focus of organisational memory research is generally on information technology-based organisational memory systems that make recorded knowledge retrievable and provide vehicles for employees (knowledge workers) to share knowledge (Nilakanta *et al.*, 2006:85).

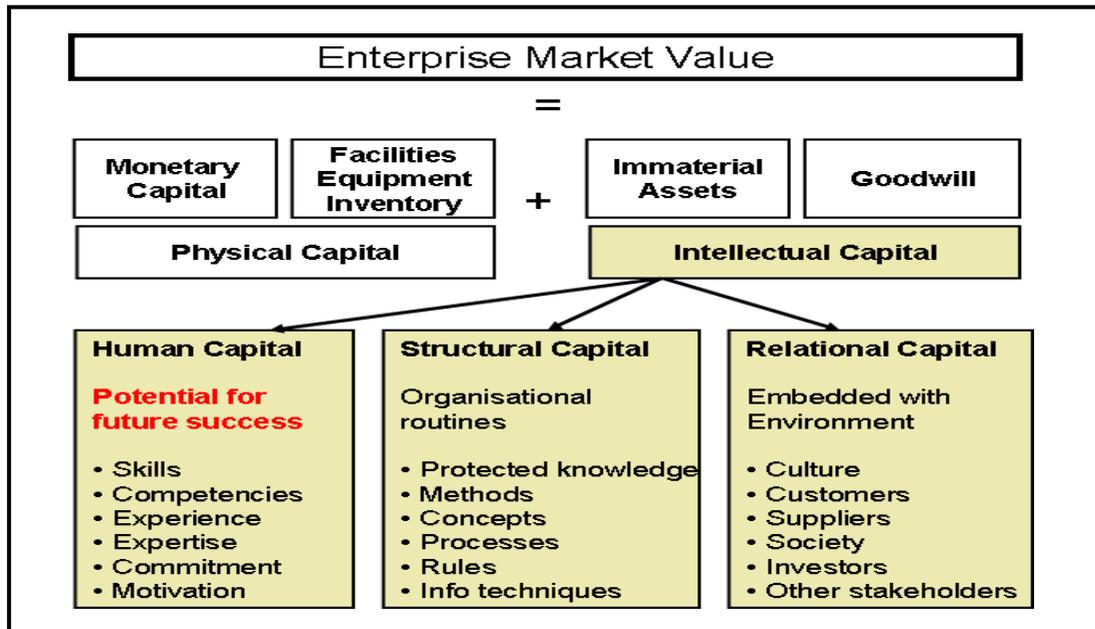
Organisational knowledge can also refer to intellectual capital and can be described as the difference between the market and the book value of an enterprise. It is not what you have; it is what you know (Auer, 2004:2).

Enterprise market value consists of both physical and intellectual capital. Intellectual capital can be split into human, structural and relational capital. This is summarised in Figure 2.1.

The potential for future competitiveness and business success is dependent on the value of human capital which includes skills, know-how, experience and expertise of employees.

The three components of intellectual capital as displayed in Figure 2.1 are interdependent as human capital raises the structural capital and both of these together generate relational capital (Auer, 2004:2).

Figure 2.1: Importance of intellectual capital for future success



Source: Auer (2004:2)

Companies must identify its intellectual capital assets and pro-actively manage these. Companies need to invest in knowledge and manage this like any other critical resource. Knowledge resources must be strategically managed (Van den Berg & Snyman, 2003:2).

Human capital management remains to be the implementation process of putting the right people in the right positions at the right time, and the management of all intangible assets created by the employees of the organisations (including knowledge, skills, abilities, information, patents), and the protection of these intangible assets from being copied, plagiarised, and infringed (Fitz-enz & Davidson, 2002:189; Becker *et al.*, 2001:24).

Grossman (2006:46) further defines the modern human capital management process as a management and planning system that incorporate human resources strategy at the highest levels, and a talent-development system to guide assessment and development on a global level.

Table 2.2, as proposed by Bassi (2001:49), is for organisations to elicit employees' responses that would reveal how effectively managers perform core leadership and management functions. Bassi states that this type of diagnostic services can help

correlate human resource practices or organisational climate with business performance; and that organisations should customise questions based on the 23 subcategories under the five broad categories of leadership practices, employee engagement, knowledge accessibility, workforce optimisation, and learning capacity.

Table 2.2: Human capital factors and corresponding indices

Human Capital Factors and Corresponding Indices				
Leadership Practices	Employee Engagement	Knowledge Accessibility	Workforce Optimisation	Learning Capacity
• Communication	• Job Design	• Availability	• Processes	• Innovation
• Inclusiveness	• Commitment to Employees	• Collaboration & Teamwork	• Conditions	• Training
• Supervisory Skills	• Time	• Information Sharing	• Accountability	• Development
• Executive Skills	• Systems	• Systems	• Hiring Decisions	• Value & Support
• Systems			• Systems	• Systems

Source: Bassi (2001:49)

Jackson *et al.* (2003:339) states that many of the key determinants of competitive advantage in the future will depend solely on effective human capital management, while Greengard (1999:4) takes one step further to suggest an aggressive adoption of technological methodology like an enterprise resource planning system by human resource management practitioners, so that these practitioners can concentrate on developing an organisation's unique human component while the employees remain fully engaged in their work.

Competitive advantage now rests in a company's people and its ability to organise its human capital rather than compete on the basis of tangible resources. Human capital management practices, such as talent management and training programs, supports a good place to work, while reward systems do produce superior results (Huselid, 1995:635: Lawler & Worley, 2006:237).

Organisational capabilities must be created so that change is the key to success. This can be accomplished through a partnership of human resources and organisational

development with the organisation building the appropriate structure and configuring the appropriate talent management initiatives and rewards (Lawler & Worley, 2006:264).

2.4.2 Knowledge and knowledge management

While information can be transferred by technology, knowledge has the human dimension of understanding (Denning, 2006:11).

The Oxford English dictionary uses verb forms of knowledge, such as acknowledging; recognising; inquiring; being aware; understanding; cognisance; intelligence; information acquired through study; and learning that shows how knowledge is a result of a varied set of processes. These processes also describe the active nature of knowledge.

Knowledge originates in the mind of an individual and builds on information that is transformed and enriched by personal experience, beliefs and values with decision and action-relevant meaning. It is information interpreted by the individual and applied to the purpose for which it is needed. Knowledge is the mental state of ideas, facts, concepts, data and techniques, recorded in an individual's memory (Bender and Fish, 2000:126).

Knowledge is defined as a conclusion or analysis derived from data and information. Data are facts, statistics, and specifics, while information is the context in which data is placed (Ivancevich *et al.*, 2005:393).

Knowledge is the use of information. If you can get your staff to use information, you have created knowledge. If this knowledge is codified or captured, you have created an appreciating, intangible asset for your organisation that, when used, will enhance organisational performance (Kermally, 2002:47).

According to Von Krogh (2003:372), knowledge is justified true belief. An individual justifies the truthfulness of his or her beliefs based on observations of the world; these observations, in turn, depend on a unique viewpoint, personal sensibility, and individual experience. Therefore, when somebody creates knowledge, he or she makes sense out of a new situation by holding justified beliefs and committing to them. Under this definition, knowledge is a construction of reality rather than something that is true in any

abstract or universal way. The creating of knowledge is not simply a compilation of facts but a uniquely human process that cannot be reduced or easily replicated. It can involve feelings and belief systems of which one may not even be conscious.

Knowledge consists of truths and beliefs, perspectives and concepts, judgements and expectations, methodologies and know-how; and knowledge originate and prosper in the minds of experts (Al-Alawi *et al.*, 2007:24).

Davenport and Prusak (2000:5) refers to knowledge as a fluid mix of framed experiences, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information. It originates in and is applied in the minds of the knowers. In organisations, it often becomes embedded not only in documents or repositories but also in organisational routines, processes, practices, and norms.

From a quantifiable point of view, according to Kivowitz and Curley (2001:21), knowledge can be presented in a mathematical formula as:

Knowledge = Information + Know-How.

The knowledge management literature distinguishes among various types of knowledge so that it can be managed well. The most common types of knowledge include tacit knowledge, explicit knowledge, and implicit knowledge (Srikantaiah & Koenig, 2000:78; Nonaka, 1994:14; Nonaka & Konno, 1998:47; Cavusgil *et al.*, 2003:9).

Knowledge and specifically tacit knowledge is a prerequisite for sustainability and growth. Explicit knowledge can be acquired, but people with experience or tacit knowledge are very scarce and need to be nurtured (Conradie, 2010:44).

Although 90% of knowledge in an organisation is in the heads of people; tacit knowledge, management typically spends 75% of their time on knowledge that is written down; explicit knowledge (Buckman, 2007:40).

Kivowitz and Curley (2001:22) classify knowledge into three categories:

1. Expressed knowledge is long-term and static knowledge, which is knowledge generated from a unique and personal understanding. A car owner's manual is an example of expressed knowledge, since it includes practical information related to the maintenance and use of the vehicle.
2. Expressible knowledge is organisational knowledge that employees find difficult to refer to organisational documentation or process sources. This type of knowledge is knowledge passed down from generation to generation, for example knowledge of a family recipe for a special cake, which might not have a written recipe, but is passed down from one generation to the next. In mathematical form, expressible knowledge may be expressed as: *Know what + know how*.
3. Inexpressible knowledge is knowledge that exists in the minds of specialists and is not easy to convey to others. It represents the personal talents and experience of professionals. An example of inexpressible knowledge would be the knowledge of a baker.

From the organisational perspective, knowledge management is seen as the process of critically managing knowledge to meet existing needs, to identify and exploit existing and acquired knowledge assets and artefacts in developing new knowledge in order to take advantage of new opportunities and challenges (Nunes *et al.*, 2005:2).

Knowledge management means exactly that: management of knowledge. It therefore consists of the processes required to effectively manage knowledge. The globalisation of business, the shift from production-based to a knowledge-based economy, the growth of information communications technology, the strive to become learning organisations and the emergence of the needs for knowledge workers have made knowledge management practice a must today across all types and levels of firms (Chong, 2005:1).

The American Productivity and Quality Center (APQC) define knowledge management as the systematic approaches to help information and knowledge emerge and flow to the right people at the right time to create value (APQC 2003:48).

Gloet and Berrill (2003:78) describe knowledge management as the formalisation and access to experience, knowledge, and expertise that create new capabilities, enable superior performance, encourage innovation, and enhance customer value.

Sveiby defines knowledge management as the art of creating commercial value from intangible assets (Sveiby, 1986:1; Sveiby, 1997:61).

Professor Michael Stankosky describes knowledge management as leveraging relevant knowledge assets to improve efficiency, effectiveness and innovation (Stankosky, 2002:3).

Knowledge management consists of critical enablers such as employee training, employee involvement, teamwork, employee empowerment, top management leadership and commitment, organisational constraints, information system infrastructure, performance measurement, egalitarian culture, benchmarking, and knowledge structure that are critical to the success of a knowledge-based organisation (Chong, 2005:1).

Dr. Charles Bixler, Vice President of BAE Systems views knowledge management as managing the leadership, organisation, technology and learning aspects of internal and external intellectual assets through retention and collaborative sharing of knowledge for the purpose of improving performance and inspiring innovation throughout an enterprise (Bixler, 2002:2).

Knowledge management includes capturing, creating, sharing and using know-how. That know-how includes explicit and tacit knowledge. It is not about books of wisdom and best practices, it's more about the communities that keep know-how of a topic alive by sharing what they know, building on it and adapting it to their own use. Knowledge management can be defined as performance through learning; shared knowledge; or simply working smarter (IFAD report, 2007:4). Knowledge management includes the codification of explicit knowledge and the management of tacit knowledge (Van Beek, 2008:25).

Knowledge management must be embedded in the company's mission, and knowledge is a core component of the company's strategic intent (Buckman, 2006a:6).

The value of knowledge management will depend on the active participation of all employees. The culture must be embedded to share knowledge and employees must make a habit to contribute their ideas and knowledge for reuse (Kok, 2004:7).

Our economic well-being and competitive advantage are dependent on knowledge resources – our knowledge, experience, education, training, professional networks, collaborative and innovative skills. These knowledge assets are the prime factors and resources of production in a knowledge-based economy. Additional category names for these resources are known as knowledge assets, intellectual capital, human capital, structural capital, customer capital, and market capital (Stankosky, 2005:2).

Knowledge management has come of age in the last decade (O'Dell, 2004:4). Two important myths have been dispelled. The first is that culture change is more often a consequence of knowledge sharing than an antecedent to it. Knowledge management implementation efforts, with the support and sponsorship of business leadership, have the influence to cultivate a knowledge-sharing culture, and that this can occur throughout the stages of implementation; while executive involvement lends credibility and motivates progress.

The second myth that knowledge management cannot be measured, has also been dispelled. While knowledge by itself is intangible and hard to measure, the impact of knowledge management is easier to gauge when aligning with the organisation's expected business outcomes and working backwards to correlate the organisation's progress with knowledge management deliverables (O'Dell, 2004:5).

Knowledge management involves all aspects of an organisation; social, technological, and human. To implement successful knowledge management processes, the commitment of the executive leadership team, a healthy and change-conducive culture, and knowledge management expertise are essential (Bennis & Nanus, 2003:1).

Davenport and Prusak (2000:2) pointed out that in addition to making knowledge management visible and building knowledge infrastructure, increasing knowledge intensity and addressing cultural change are the most challenging issues in the knowledge management process.

The characteristics of true knowledge organisations include: top performance, customer driven, improvement-driven, high rates of learning, innovation, excellence-driven, committedness, flexibility and adaptiveness, high levels of expertise and knowledge, self-directed, proactive, valued expertise and shared knowledge. Organisational culture is the most significant obstacle to effective knowledge management (Liebowitz, 1999:211; Maravelias, 2003:547; Northouse, 2004:129).

Knowledge management plays an important role in government, as the ability to enhance a government's service depends greatly on knowledge sharing across the government organisational spectrum. In particular, one of the key challenges that governments face is knowledge preservation and diffusion as it relates to improving public services (Sinclair, 2006:162).

Sinclair (2006:162) also emphasises the following four observations regarding knowledge management and government:

1. While globally governments understand the necessity of administering their knowledge foundation, most see that necessity as capturing the knowledge of retiring employees before they leave the organisation.
2. The majority of governments have made serious attempts to recognise knowledge management as a strategic requirement, but have failed to link it to an operational strategic plan.
3. Knowledge management can play an important role in E-government as it facilitates the provision of services to beneficiaries.
4. It is important to avoid enterprise-scale projects or plans with the goal of unifying the government processes and procedures. An alternative recommendation is to provide business owners and middle managers with sufficient resources to fund knowledge management activities. It is necessary for the scale of knowledge management projects to be manageable and planned in such a way that they can be tied to an organisation's objectives. In addition, a system to measure the effectiveness of knowledge management actions should also be in place.

Knowledge management is a sub category of information management. The management of knowledge has become vital for companies' competitiveness within a rapid changing business environment (Kok, 2004:2). Effective knowledge management

The four pillars of knowledge management as displayed in Figure 2.2 are defined by Dr. Stankosky (2005:338) as the DNA for knowledge management critical elements, and include: (1) leadership, (2) organisational, (3) technological, and (4) learning. Each pillar can be explained as follows:

- (1) *Leadership*. Leadership develops the business strategies that keep the organisation competitive and successful. Leadership is the main driver of an organisation's knowledge management values.
- (2) *Organisation*. The organisation's overall strategies, mission, and goals should integrate with the organisation's structure. The organisation should support knowledge sharing programs and/or systems.
- (3) *Technology*. Technology plays the role of supporting the organisation with tools and resources that enables the organisation to optimise its performance and/or products.
- (4) *Learning*. Learning is the process by which the organisation continues to develop employee's knowledge through knowledge collaboration and sharing.

Hasanali (2002:3) also identifies five critical success factors for a thriving knowledge management plan. She categorises them as follows:

- (1) Leadership;
- (2) Culture;
- (3) Structure, roles, and responsibilities;
- (4) Information technology infrastructure; and
- (5) Measurement.

According to Williams (2009:3) critical success factors can become critical failure factors if they are not correctly implemented or monitored.

One of the elements that are critical to the establishment of a learning organisation is motivation. Apart from financial incentives; recognition, expectation, and peer pressure can strongly motivate employees to develop positive behaviour that can lead toward shared work, collaboration, teamwork and effective group-based performance (Williams, 2009:4).

A research study done by Hung *et al.* (2005:164) showed that employee training was the most significant factor of successful implementation of knowledge management. In this regard, training programs to familiarise staff with knowledge management ensures that they understand the system and the processes involved.

It must also be recognised that making organisations smarter and more efficient with knowledge management cannot happen overnight as the transformation requires ample time, funding, and commitment. Training, process re-engineering, taking on new knowledge management roles, and carrying out knowledge-sharing activities all require time. Additionally, purchases of new hardware, software, and services for a new knowledge management system require money as well. Moreover, changing the organisational culture and convincing employees of the benefits of knowledge-sharing requires major efforts (Williams, 2009:4).

The success of knowledge management systems also depends in part on executive support, a factor in the success of knowledge management systems whose significance cannot be overemphasised (Williams, 2009:1). For knowledge management systems to be successful, executives should fully support the implementation of knowledge management systems by:

- (1) establishing a clear vision for knowledge management and aligning knowledge management strategy with corporate strategy,
- (2) stressing the importance of knowledge and clarify which types are most important,
- (3) facilitating culture changes, and
- (4) making resources available.

Simply, the executives should clearly articulate the organisation's focus on knowledge management and direct the organisation toward it (Williams, 2009:5).

The key challenge in sustaining a high-performance knowledge management programme is to nurture a knowledge-sharing culture. This is best done by creating a new work environment where knowledge and information are easily shared (Reid, 2009:1).

Organisations must change the focus for growth from physical assets to the development of intellectual capital. Knowledge management must form part of a company's business strategy, vision and mission. Knowledge management programmes will only be successful if a culture of trust and knowledge sharing is established and supported by appropriate human resources policies and incentives (Conradie, 2010:70).

An integrated approach needs to be followed when knowledge management is pursued to add value and facilitate learning across all processes in the organisation. The focus must be to retain an organisation's knowledge as this is a key success factor to ensure future growth and sustainability.

2.4.2.1 The value of knowledge: continuity management

Over the past 30 years, the economy has moved from the industrial age to the information age, and, in this process from an industrial economy to what has been termed the knowledge economy. Knowledge has replaced capital as the scarce factor of production and productivity, and so has become the dominant economic force in business (Beazley *et al.*, 2002:4). As the importance of knowledge increases and knowledge loss accelerates, the negative impact of knowledge loss on organisations rises exponentially. The effects are predictable and costly, and they include:

- Reduced efficiency;
- Decreased productivity;
- Increased employee frustration and stress; and
- Lower revenues.

Beazley *et al.* (2002:7) conclude that the convergence of the following seven forces has turned what was once a troublesome problem of knowledge loss into a critical one of knowledge depletion and collapse:

- (1) The emergence of the information age and the knowledge economy, which have transformed knowledge into an asset and made it the basic economic resource.
- (2) The shift from relatively mechanistic organisational structures to more organic ones, which has ended job-function stability.

- (3) The emergence of data gathering and processing technologies, which have resulted in data and information proliferation and information overload.
- (4) High employee turnover and brief job tenure due to job hopping and transfers which create continuous knowledge discontinuities for the organisation.
- (5) Layoffs and terminations due to downsizing, which create huge knowledge gaps in the downsized organisation.
- (6) Greater use of the contingent workforce (temporary and contract), which leads to frequent knowledge turnover and uncontrolled knowledge loss.
- (7) An emphasis on higher quality, continuous improvement, and organisational learning, which requires access to prior organisational knowledge, including the lessons learnt from past success and failures.

These seven factors have converged to create a new management imperative: the preservation of corporate knowledge and productivity.

To understand both the urgent need for; and the great potential of continuity management, is to understand the radically different environment in which contemporary organisations are required to operate. The new context created by this environment is transforming the nature of management itself. It is a context defined by the transformation of knowledge into a capital asset, the unique nature of that asset, impending baby-boomer retirements and chronic job turnover that threaten the asset, and the relationship of knowledge continuity to productivity and innovation in the information age (Beazley *et al.*, 2002:1).

War, inflation, depression, stock market collapse, foreign imports, and labour shortages were all serious threats to business enterprises in the past century that had to be countered if those organisations were to survive. The new century offers no exception to the litany of threats; it merely adds a new one: knowledge loss. The loss of knowledge from departing employees poses a threat to the productivity and prosperity of contemporary organisations that is equal to the great business threats of the past century. Those organisations that can surmount this challenge by preserving their organisational knowledge base while job transfers, retirements, terminations, layoffs, job hopping, and resignations deplete the knowledge base will be the success stories of this century (Beazley *et al.*, 2002:3)

2.4.2.2 On-going knowledge depletion

The recurring loss of employees whose knowledge has not been harvested creates a chronic condition of knowledge loss that depletes an organisation's knowledge base and so destroys its ability to effectively build on that knowledge base.

In many cases, knowledge is an organisation's most valuable asset. In some cases, it is its only asset. Yet organisations treat this expensive asset in quite an unusual way (Beazley *et al.*, 2002:17).

Beazley *et al.* (2002:17) explains that if a company scraps 100 trucks before they are depreciated, they are written off as a loss on the corporate books. If the same company lays off 100 employees with extensive operational knowledge, they have no recorded value to write off. Yet, in reality, their value to the company was significantly higher than that of the trucks, which could be easily replaced. Ironically, a highly organised maintenance program was even instituted to preserve the trucks while they were in use, while virtually no effort went into preserving the operational knowledge of the employees while they were "in use." With every asset other than knowledge, organisations go to great lengths to prevent the loss of the asset, or at least, to salvage some of its value if the asset is discarded. Why should the asset of knowledge be treated differently?

It shouldn't be. The business case for continuity management is really a back-of-the-envelope calculation. If you're growing at 20% a year and you lose around 15% of your people annually that means that 35% of your staff in any year is new recruits. Getting them up to speed is a time-consuming and very costly exercise – in the millions per year. So if you could systematically capture knowledge from existing staff and make it easily available to new hires, and that would reduce their time to reaching full effectiveness by a few months, think of the savings you could achieve in this area alone (Beazley *et al.*, 2002:18).

Unfortunately, many companies do not have this realistic perspective on the value of employee knowledge – or the cost to replace and grow it. Despite many chief executive officer claims that "people are our greatest asset," people are often treated as expenses. Recognition of knowledge as the primary engine of corporate productivity means recognising that people are not a cost, but rather an enabler for the creation of

revenue and wealth. Preserving the operational knowledge of employees is as critical as preserving the tangible factors of production. Because it is through operational knowledge; built day by day; employee by employee; that an organisation utilises its tangible factors of production to create future sustainability (Beazley *et al.*, 2002:19).

2.4.2.3 The knowledge and productivity learning curve

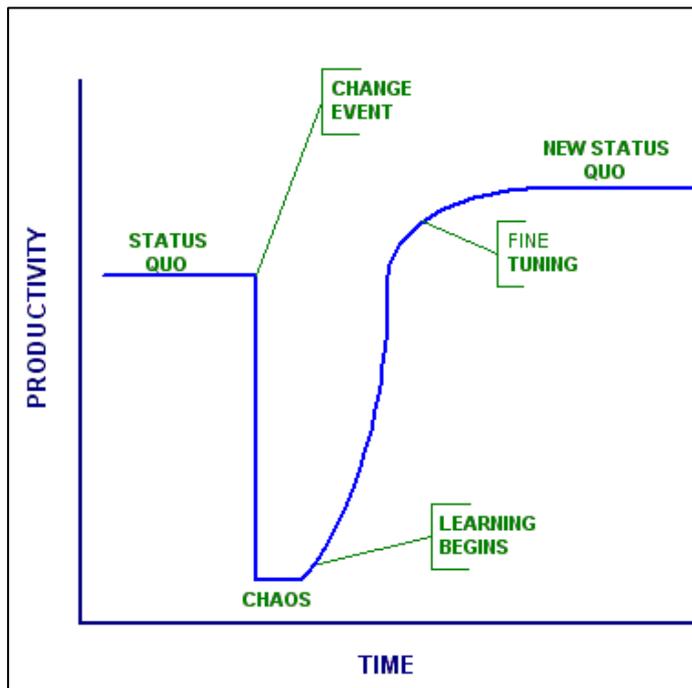
The classic learning curve assumes that knowledge is cumulative; that once an organisation acquired knowledge, it persists indefinitely through time. There is of course, considerable evidence that individuals exhibit forgetting. Organisations have structures, routines and information systems that arguably serve to capture knowledge. But organisations also have features, such as member turnover, that may make it hard to retain knowledge (Argote, 2005:15).

Learning is defined as change in individual behaviour that occurs as a result of experience. Acknowledging that individuals may acquire knowledge that does not manifest itself directly in changes in behaviour, learning is also defined in terms of changes in behaviour potentiality that occurs as a result of experience. Individual learning is also seen as a change in either behaviour or knowledge brought about by practice or experience (Argote, 2005:16).

The basic principle underlying the learning curve is that experience creates knowledge that improves productivity. The knowledge and productivity learning curve is depicted in Figure 2.3.

A positive slope suggest that learning is adaptive for the organisation since experience improves performance, whereas a negative slope suggest that learning is maladaptive since experience impairs performance (Argote, 2005:18).

Figure 2.3: The knowledge and productivity learning curve



Source: Beazley *et al.* (2002:69)

Interestingly, the slope of the knowledge learning curve can be negative (the curve falls rather than rises). When the knowledge learning curve is dropping, it means that negative learning is taking place. Performance, of course, is deteriorating, and productivity is falling. The slope of an organisational learning curve is negative when organisational forgetting occurs, meaning that the organisation is actually unlearning. An unlearning organisation will know less tomorrow than it did today. Organisational unlearning occurs on the micro level whenever an employee leaves and that employee's operational knowledge has not been harvested for transfer to the successor. It takes place on the macro level when knowledge discontinuities from downsizing or high employee turnover create a net loss in the organisation's knowledge base. Knowledge depletion from organisational forgetting can afflict a department, a business unit, or an entire organisation, leaving the knowledge base in shambles and the organisation vulnerable (Beazley *et al.*, 2002:71).

2.4.2.4 Knowledge continuity as productivity continuity

The knowledge and productivity learning curve in Figure 2.3 (Beazley *et al.*, 2002:69), illustrates a central point: new-employee; and ultimately organisational productivity, is a function of the amount of operational knowledge available to new employees and the

rate at which that operational knowledge can be acquired. This relationship between operational knowledge and productivity powers the potential of continuity management to create significant competitive advantage. If increased operational knowledge is equal to increased productivity in the early phases of a new job, then the more operational knowledge available to a starting employee, the higher that employee's productivity will be from the beginning and the shorter will be the time necessary to reach maximum productivity capacity.

Another way to express this principle is to say that knowledge continuity makes it possible to move up the learning curve at a faster rate. The knowledge learning curve explains the powerful effect of continuity management on productivity. Because continuity management increases the amount of operational knowledge transferred to a new employee and the rate at which that transfer occurs, an organisation that employs continuity management will suffer less productivity loss from retirements and recurring job turnover than one that does not. The more critical operational knowledge is to an employee's performance, the greater will be the negative impact on productivity of that employee's departure. When organisations haemorrhage knowledge from departing employees whose operational knowledge has not been transferred to their successors, they haemorrhage productivity (Beazley *et al.*, 2002:72).

2.4.3 Organisational learning

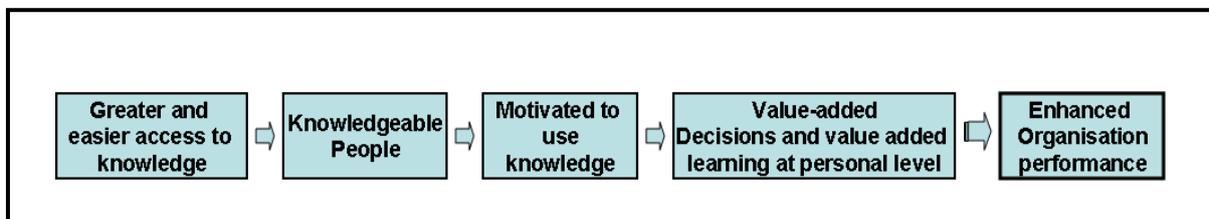
The impact of globalisation and new technologies has brought about an environment of radical and continuous change. The rapid changes require employees to learn new skills and knowledge continuously. Knowledge management is an important factor in building a learning organisation committed to high performance where new knowledge needs to be created, maintained and shared between employees. Knowledge management and organisational learning are interrelated change processes. Organisational learning focuses on the organisation's capability to acquire and develop new knowledge and knowledge management focuses on how the knowledge can be organised and used to provide competitive advantage (Cummings & Worley, 2009:161).

Literature suggests that if organisational learning and knowledge management initiatives are correctly applied that it will result into improved organisational growth, performance and competitiveness (Johannessen & Olsen, 2003:287).

The connection between knowledge and organisational learning is inevitable. Without a commitment to learning, organisations would find it difficult to succeed in sharing and managing knowledge (McInerney, 2002:1014). Organisational learning is about people working together to achieve their personal and organisational goals, and creating results that they truly care about (Devos & Willem, 2006:650). Organisational learning also enables organisations to be able to adapt to change, and knowledge constantly changes through experience and learning, which makes it dynamic. Learning and creating and sharing knowledge are processes that involve change and movement to new levels of cognition and understanding among individuals and organisations (McInerney, 2002:1014).

The benefits of knowledge management for organisational learning can be summarised through De Robillard's (2007:36) process model in Figure 2.4:

Figure 2.4: Knowledge management value chain to enhance organisational performance



Source: De Robillard (2007:36)

The higher the maturity of knowledge management the better the business decisions will be and the higher will be the performance of the organisation in terms of performance metrics (Buckman, 2007:33).

Knowledge management strategy must focus on the sharing of tacit knowledge and it must be done parallel to the implementation of organisational learning concepts (Johannessen & Olsen, 2003:286). Effective communication and the culture must be ready to share knowledge (Buckman, 2006a:6).

Organisational learning plays an important role in ensuring that knowledge is created and transferred to promote innovation. The shared values of innovation and learning are

important sources of value in the global economy and need to be managed and utilised successfully to sustain economic growth and competitive advantage (Kok, 2004:7).

Learning is necessary to make employees more adaptable to the changing environment. It is important to understand that companies must not only invest in the maintenance and improvement of fixed assets but formal investment must also be made in intellectual capital through formal training to improve skills (Buckman, 2006b:56). According to Buckman (2006b:57), the following aspects are important regarding learning:

- a) Provide training in multiple languages and expand access to learning available anytime, anywhere, through multiple delivery points (Web, classroom, CD, web-casting, university access).
- b) Implement a learning management system to record training and establish ways to facilitate the transfer of best practices and develop specific tools that will enhance the learning environment.

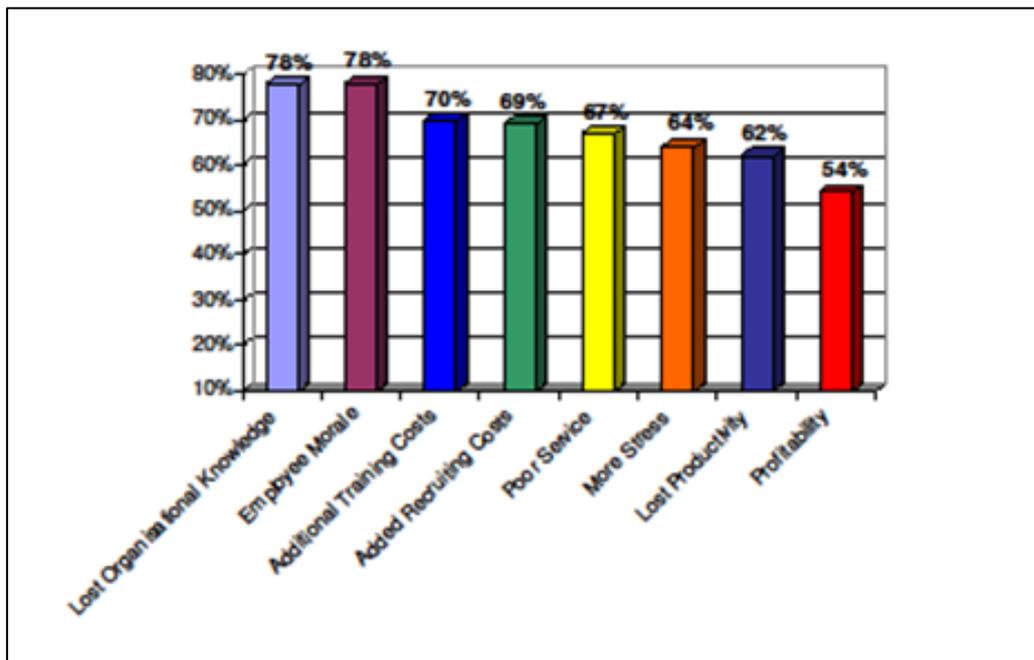
2.4.4 Knowledge loss

There has been growing concern in the business and organisational sector that organisational knowledge can be lost through the exit of employees. According to DeLong and Davenport (2003:51), unprecedented knowledge retention problems are created in many industries through changing workforce demographics such as an aging workforce, more competitive recruiting and faster turnover in younger people. They refer to the problem as "operational and institutional amnesia imperil". The most significant business and societal trend for the next decades are considered by many to be the rapidly aging workforce (Foster, 2005:28; Nicholson, 2008:14).

According to Juliano (2004:82), in the next five to ten years, the utility industry will face its most severe workforce problem since World War II, namely a massive loss of job-specific and plant knowledge through the retirement of a large portion of the current utility workforce. Brown and Galli-Debicella (2009:11) contend that fewer young workers are entering the skilled trades, and many companies only realise the importance of tacit knowledge in their employees after they have left the company.

In a study conducted in the USA by TalentKeepers at 240 organisations, it was found that 78% reported that the main impact of turnover is lost knowledge and lower employee morale as depicted in Figure 2.5 (Frank *et al.*, 2004:18).

Figure 2.5: Organisational factors most impacted by turnover



Source: Frank *et al.* (2004:18)

Job-hopping in South Africa is also exerting pressure on organisations' remuneration budgets, and the cost of replacing employees could amount to between 35% and 40% of the annual remuneration package. Overall, job-hopping could cost South Africa more than R25 billion per annum, based on figures from the SA Reserve Bank, which showed that employee compensation costs companies more than R600 billion a year in total. The costs of replacing employees refer to separation or severance pay, recruiting replacements, developing their skills and experience and factoring in a loss of productivity during that period (Ntuli, 2007:1). These costs do not even take into consideration the indirect costs of lost knowledge such as recreating knowledge for new projects.

DeLong (2004:11), Doyle (2004:45) and Salopek (2005:23) refer to the startling fact that most of the knowledge and experience of landing astronauts on the moon was lost in the 1990's on account of factors such as retirements, cost cutting and downsizing. NASA has had other priorities over the past 30 years, but when government officials

refer to returning to the moon, the \$50 billion plus price tag placed on returning to the moon, ignores the fact that NASA has forgotten how they did it in the first place. This means that NASA will be starting from scratch at an exorbitant cost, having lost the capacity to replicate one of the greatest achievements in the history of mankind.

Furthermore, having lost supporting knowledge and technologies, should NASA engineers, say, be able to build and launch a Saturn 5 rocket, they have lost the knowledge of how to fly it (DeLong, 2004:12). This example explains the hidden costs of lost knowledge that organisations do not always recognise. Additional factors that could cause knowledge loss, as well as knowledge attrition and knowledge gaps, are rapid growth, mergers and acquisitions, internal redeployment (APQC, 2002:6), downsizing and retrenchments (Pickett, 2004:248).

The amount and type of knowledge generated in organisations, combined with the reality of demographic trends such as Baby Boomer (born between 1946 and 1964) retirement from the workforce and many mid-career transitions from Generation X (born between 1965 and 1977), could result in massive quantities of invaluable, irreplaceable, specialised knowledge being lost by organisations every day (Salopek, 2005:23; Doyle, 2004:45; Garlick & Langlely, 2007:1; Juliano, 2004:83).

The consequence of employee turnover that has the most expensive price tag is the dispersal of an organisation's expensively acquired knowledge and experience (Kransdorff, 2003:42).

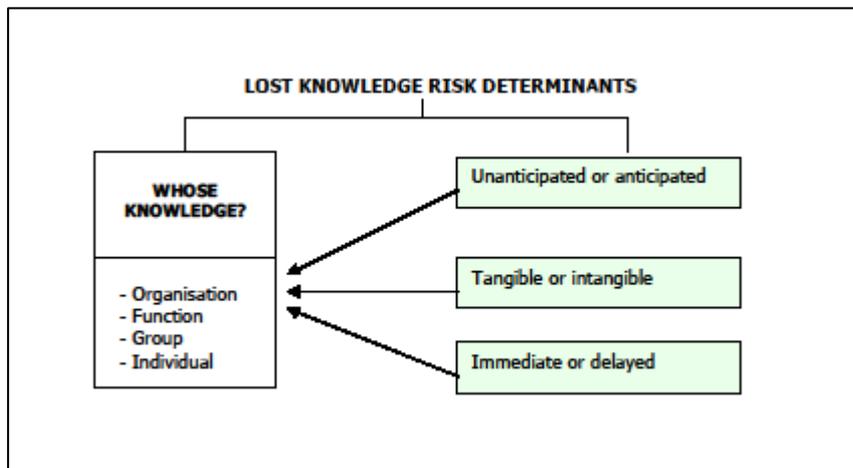
A lack of investment in knowledge retention means that some knowledge may have to be recreated for each new project, thus limiting project effectiveness (Davis-Blake & Hui, 2003:196).

According to Bender and Fish (2000:125) and Wong and Radcliffe (2000:493), the knowledge and expertise of an organisation's employees need to be seen as a critical strategic resource and a valuable asset in maintaining sustainability and growth.

DeLong (2004:26) describes a typology of lost knowledge that helps to define the landscape of lost knowledge problems by diagnosing the threats and enabling one to think more effectively about what intellectual capital or knowledge to retain in the

organisation. The typology of lost knowledge consists of four dimensions for determining knowledge loss risks, which, based on DeLong's discussion, can be displayed as indicated in Figure 2.6.

Figure 2.6: Determining knowledge loss risks



Source: DeLong (2004:26)

Employees who leave are not simply numbers that can be manipulated, because their departure leaves huge gaps of this valuable knowledge (Mayo, 2003:48). These knowledge gaps are difficult to identify until unexpected quality problems, mistakes, costly disruptions in performance or operations, loss of competitive advantage and even tragic accidents occur (DeLong, 2004:25).

Anticipated and unanticipated loss of experiential knowledge (Figure 2.6) could cost an organisation dearly. DeLong (2004:27) cites the example of a company that produced soybean oil; the quality of which deteriorated after the maintenance technician retired. It took the company two years to discover what the retired technician knew that had made the difference. An organisation should try and reduce these costly surprises that disrupt productivity – hence the importance of trying to anticipate areas of possible critical knowledge loss that could cause unnecessary costs to the organisation.

Sometimes the impacts of lost knowledge can be extremely tangible (Figure 2.6) and quantifiable (Figure 2.6) in financial terms. A case in point would be when the manager of an oil-drilling platform in the Gulf of Mexico shuts down the operation for safety reasons, because he cannot locate the design engineer in time to repair the fault, knowing that it will cost the company huge sums of money (De Long, 2004:28).

The reality of this was experienced in South Africa in early 2008 when Eskom could not supply sufficient power to the country and there were electricity cut rollouts that had a major impact on the economy. A further impact was the fact that some power stations blew owing to skills loss and the resultant lack of maintenance. At one stage, Eskom banned the appointment of white technicians despite the acknowledged shortage of suitably qualified and experienced black candidates to rectify the injustices of the past. The shortage of technical and management skills was undoubtedly a contributing factor to the on-going power shortages (Anon, 2008a:12).

Knowledge loss is often intangible (Figure 2.6) and difficult to quantify; for example, with the loss of social capital such as a retiring sales representative who has built up longstanding relationships with customers. Gradual degradation of knowledge in a specific function is also not easy to quantify, say, in a company like Sasol where knowledge and expertise might have been lost over time and only realised when there was an explosion at one of the reactors during maintenance work left six people dead and more than 100 injured (Sapa, 2004). DeLong (2004:28) concludes that making the cost of lost knowledge more visible poses an obvious challenge for management.

The effects of knowledge loss due to intellectual capital disappearance can be seen almost immediately (Figure 2.6) since it leads to production quality problems in manufacturing, faulty outputs in computer-related work or lost capability in service delivery. Sometimes the cost of lost knowledge is delayed (Figure 2.6), but still extremely costly, for instance, important tasks that are only performed intermittently (such as rebuilding a tank every 10 to 15 years) are at high risk because the knowledge might be lost or forgotten. This makes it more difficult to see specific knowledge loss as the cause of the current issue and it is also highly unlikely that the knowledge would ever be recovered (DeLong, 2004:29).

2.4.5 Knowledge sharing and transfer

Management must find ways to capture and transfer human capital within their organisations to ensure a sustainable future. The exchange process called knowledge transfer may facilitate the transfer of human capital (Alavi & Leidner, 2001).

Knowledge transfer involves two actions, transmission and absorption and can be defined as taking place when knowledge is both transmitted by the sender and received by the receiver (Davenport & Prusak, 2000:12). Organisations that understand the knowledge transfer process may facilitate the transfer of human capital more effectively than those that do not understand it. Knowledge transfer is ultimately a human process that requires dynamic interaction. Therefore, the effectiveness of knowledge transfer is dependent primarily on human characteristics. Values such as understanding, trust, cooperation, and teamwork contribute to the effectiveness of knowledge transfer (Zack, 2003:67).

According to Davenport and Prusak (2000:13), the most effective strategy for knowledge transfer and employee learning is face-to-face interactions.

Why don't people share knowledge? According to Minbaeva and Michailova (2004:663) and Bijlsma-Frankema and Koopman (2004:207), the main reasons for hostility towards sharing knowledge can be summarised as follows:

- Protection of an individual's competitive advantage, loss of potential value and bargaining power of personal knowledge.
- Reluctance to spend time on knowledge sharing.
- Imbalances in giving and receiving information.
- Fear of hosting knowledge parasites (for example people who have invested little or no effort in the individual's own development).
- Avoidance of exposure to external assessments of the quality of their knowledge.
- Avoidance of uncertainty regarding how the receiver will perceive and interpret the knowledge.
- Fear of losing power (for instance losing a position of privilege and superiority).

Sveiby (1997:83) identifies ten organisation and management driven barriers to knowledge-sharing as follows: (1) silo mentality, (2) knowledge is power, (3) lack of knowledge sharing processes, (4) no time allowed, (5) no knowledge sharing by executives, (6) management not walking the talk, (7) poor information technology systems, (8) lack of encouragement, (9) bureaucracy and (10) resistance to change by management.

Allee (2003:89), Gorelick *et al.* (2004:317), and Stankosky (2005:166) concur that an organisation's customs, habits, values, incentives and disincentives often discourage knowledge sharing, and entrenched power structures are likely to provide strong support to preserve the status quo. Where knowledge challenges the status quo, the culture of the organisation can constitute a significant impediment to useful knowledge being shared. Consequently, effective sharing of knowledge generally entails changing the culture and only indirectly managing knowledge (Denning, 2006:14).

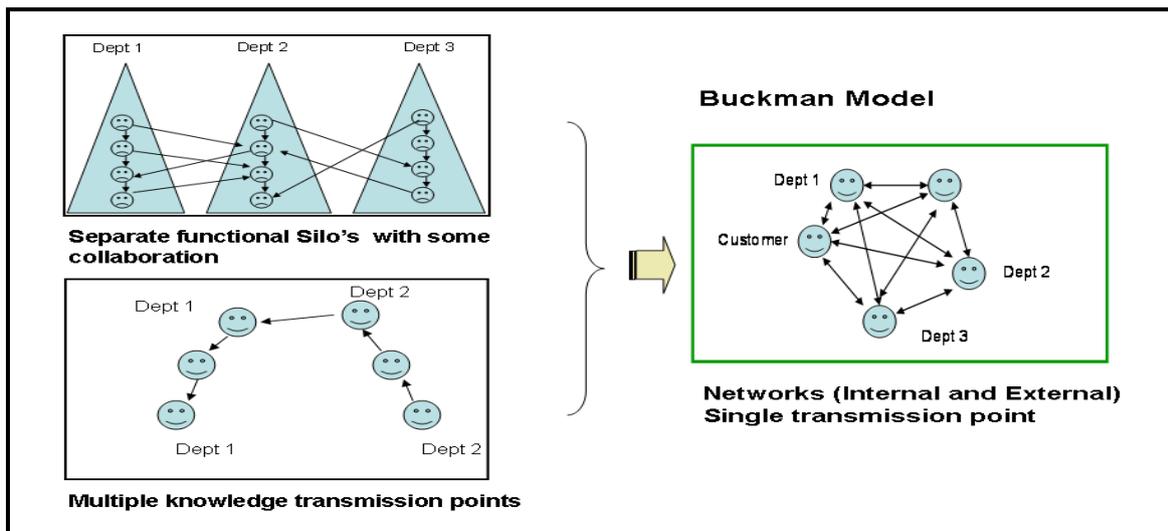
Incalculable human factors can also hinder knowledge transfer. These include prejudices, fear of criticism, lack of confidence, and constant time pressures. Additionally, organisations may also create barriers to knowledge management specifically through rigid hierarchies, red tape, and out-dated procedures. Moreover, communication media can also cause obstacles to transfer of knowledge (Lugger & Kraus, 2001:488).

Companies have to establish effective communication before they can advance to effective knowledge sharing. For any knowledge management environment to be successful, a collaborative environment must exist (Buckman, 2006b:12).

Organisations must move away from communication patterns which are embedded in the typical silo based organisation structures to a model which supports direct communication between the knowledgeable employees. Typical barriers to communication are different communication processes of departments, different operating entities in different countries, language barriers, security issues and culture differences (Buckman, 2006b:12).

Buckman (2007:14) confirmed this approach using a simple diagram, which is summarised in Figure 2.7.

Figure 2.7: Maturity of collaboration model



Source: Buckman (2007:14)

The intent is to leverage knowledge through the establishment of networks of people who collaborate directly as indicated in Figure 2.7. The rationale is that people networks leverage knowledge through a pull action rather than to try to push information centrally. Buckman (2007:16) found that companies must reduce the number of transmissions of knowledge to one, to achieve the least distortion of knowledge. If this is established the management must focus on the speed of responses. The faster the sharing and application of knowledge between individuals in a company the more value will be added, which will improve its competitiveness, as well as the effectiveness of organisational learning.

A climate of continuity and trust must be created to enable proactive knowledge sharing across time and space. The leaders must change the organisation to move from the old paradigm of knowledge is power to one in which collective knowledge sharing is power. In many companies the hoarding of knowledge is used to gain power and is seen by employees as a mechanism to protect their own position. This needs to be changed to sharing of knowledge to gain power (Conradie, 2010:55).

Mechanisms that allow for and promote knowledge transfer amongst employees can help minimise the effect of the loss of skilled staff to other companies (Cappelli, 2000:13). The retention of talented, skilled, experienced, and knowledgeable employees

is a key aspect in maintaining growth, sustainability, and the competitive advantage in any organisation.

2.4.6 Knowledge retention: the organisational behaviour model

It has been mentioned that when people leave, their knowledge walks with them out the door (Pickett, 2004:3). Organisations need to find ways of retaining the critical knowledge before people leave the organisation.

There are organisational factors that could prevent knowledge retention and have an impact on organisations, such as the risk of losing people and their knowledge through, say, retirement, staff turnover, downsizing, mergers and globalisation. The loss of valuable knowledge of organisations would have a strategic impact on their business. It is therefore necessary to identify where lost knowledge could have an immediate threatening effect on the implementation of the organisation's strategy which, in turn, could affect its competitive advantage. This means that the organisation needs to figure out beforehand, which knowledge, if lost, could undermine the organisational strategy and whose knowledge might be at risk of being lost (DeLong, 2004:30).

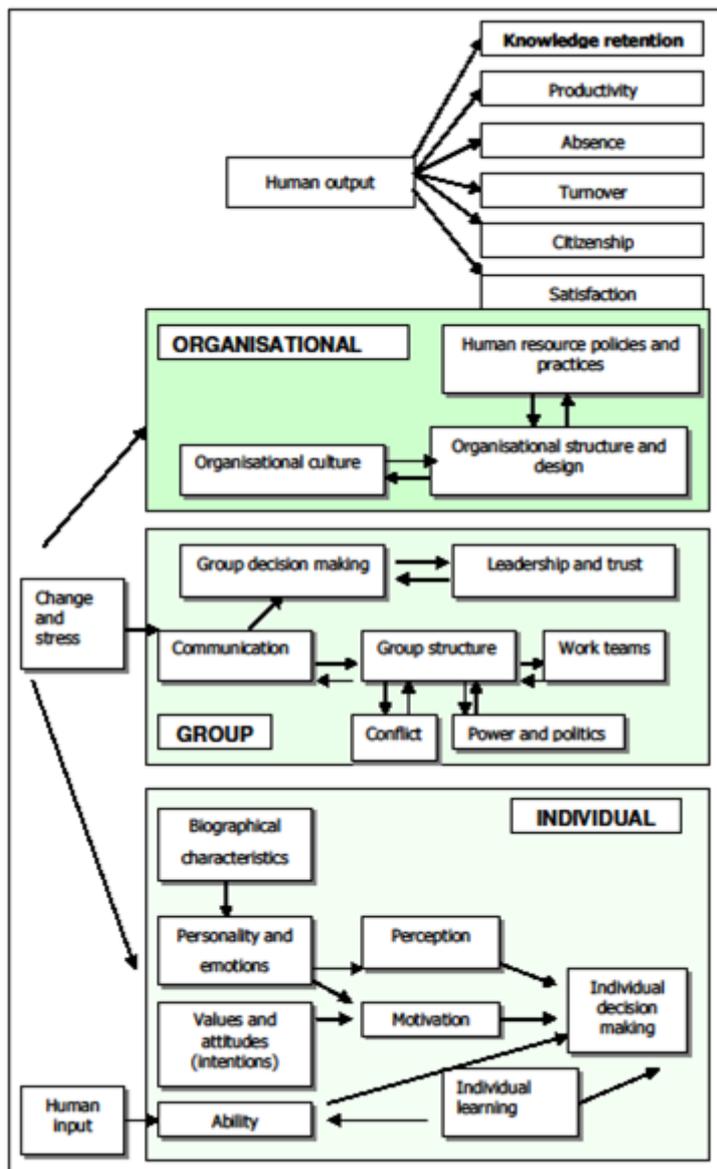
According to Conradie (2010:17), should the knowledge of a specific process only be embedded in the mind of a single individual who resigns, this can result in either a reduced quality of work, or it may negatively impact operational efficiencies, or can result in unsafe working conditions. A person with inferior skills and knowledge will most probably take longer to fix a problem which will result in lower productivity. The loss of knowledge can result in lower quality service or lower employee motivation, or can also negatively impact the organisational climate.

Retention of employees, and the retention of valued skill sets are important for continued business achievements (Action & Golden, 2003:137). The successful retention of employees leads to knowledge preservation within the organisation. The weakening of human resources may be a direct result of employee turnover thus weakening an organisation's competitive advantage.

An organisational behaviour model from Robbins (2005:32) is used to provide a framework for identifying the behavioural factors that would influence knowledge

retention. The model was organised by level of analysis, namely an individual, a group or team and an organisational perspective, which fits well into the general approach of the current research. Knowledge retention was added as a human output factor that would be influenced by the organisational behaviour factors at organisational, group and individual levels. The model is presented in Figure 2.8.

Figure 2.8: Organisational Behaviour Model



Source: Robbins (2005:32)

The organisational model in Figure 2.8 is complex and does not do justice to all possible independent variables at the three levels, namely individual, group and organisational level. However, it does give an indication of the factors that would help explain and predict people's behaviour. Some indication is given of the linkage between the

independent and dependent variables, but it is limited on account of the complexities in depicting it in the diagram (Robbins, 2005:31).

The concepts of change and stress are included to acknowledge the dynamics of behaviour and the fact that stress in the workplace is an individual, group and organisational issue (Robbins, 2005:31).

2.4.7 Confidentiality, trust and privacy in knowledge management

Knowledge management is about organisations sharing their resources and expertise, as well as building intellectual capital so that they can increase their competitiveness (Bertino *et al.*, 2006:41).

Furthermore, when experts leave the corporation through retirement or otherwise, it is important to capture their knowledge and practices so that the corporation does not lose the valuable information acquired through many years of hard work (Morey *et al.*, 2001:15).

Knowledge management enhances the value of a corporation by identifying the assets and expertise as well as efficiently managing the resources. Security for knowledge management is critical as organisations have to protect their intellectual assets. Therefore, only authorised individuals must be permitted to execute various operations and functions in an organisation. Therefore, confidentiality, trust, and privacy is important for secure knowledge management (Al-Kahtani & Sandhu, 2002:353).

One of the challenges in knowledge management is maintaining security. Knowledge management includes many technologies such as data mining, multimedia, collaboration, and the web. Therefore, security in web data management, multimedia systems, and collaboration systems all contribute toward securing knowledge management practices. In addition, one needs to protect the corporation's assets such as its intellectual property. Confidentiality, trust, and privacy management is key to a successful knowledge management system (Bertino *et al.*, 2006:72). Therefore, trust management and negotiation is inherent to knowledge management. For example, in an organisation, a vice president may be authorised to receive the information, but the president may not have sufficient trust in the vice president to share the sensitive

information. Privacy is also becoming critical for organisational knowledge management and data sharing.

According to Bertino *et al.* (2006:102), secure knowledge management consists of secure strategies, processes, and metrics. Security strategies for knowledge management include the policies and procedures that an organisation sets in place for secure data and information sharing as well as protecting the intellectual property. Secure knowledge management strategies should be tightly integrated with business strategies. When knowledge is shared across and within organisations, the parties involved have to establish trust rules for collaboration. It is important to notice that trust, in its many forms, relies on information and knowledge about the interacting entities. Trust management is a key security technique for knowledge management. This is because organisations have to establish trust before sharing data, information, and knowledge.

Kini and Choobineh (2003:51) define trust from the perspectives of personality theorists, sociologists, economists, and social psychologists. They highlight the implications of these definitions and combine their results to create their definition of trust in a system. They define trust as a belief that is influenced by the individual's opinion about certain critical system features. Their analysis covers various aspects of human trust in computer-dependent systems.

A different definition is based on the notion of competence and predictability. The European Commission Joint Research Centre (ECJRC) defines trust as the property of a business relationship, such that reliance can be placed on the business partners and the business transactions developed with them. Such definition emphasises the identification and reliability of business partners, the confidentiality of sensitive information, the integrity of valuable information, the prevention of unauthorised copying and use of information, the guaranteed quality of digital goods, the availability of critical information, the management of risks to critical information, and the dependability of computer services and systems.

Another relevant definition is by Grandison and Sloman (2000:12), and they define trust as the firm belief in the competence of an entity to act dependably, securely, and reliably within a specified context. They argue that trust is a composition of many

different attributes; reliability, dependability, honesty, truthfulness, security, competence, and timeliness; which may have to be considered depending on the environment in which trust is being specified.

Knowledge sharing has been connected to a variety of managerial and organisational factors and to situation-specific attitudes and motives; specifically interpersonal trust, which is the evaluation of the trustworthiness of specific others (Abrams *et al.*, 2003:1). They define interpersonal trust as the willingness of a party to be vulnerable. In the context of knowledge creation and sharing in informal networks, their research suggests two dimensions of trust that promote knowledge creation and sharing:

- Benevolence – You care about me and take an interest in my well-being and goals
- Competence – You have relevant expertise and can be depended upon to know what you are talking about

Trust is caused by a combination of all kind of variables. While such a personality factor is hard to change, there are some ways that leadership can promote and influence the level of trust within the department or organisation. The ways leadership can promote and influence the level of trust within the department or organisation include trustworthy behaviours, organisational factors, relational factors, and individual factors; and are aimed at influencing and promoting interpersonal trust (Abrams *et al.*, 2003:4). They are:

- Acting with discretion;
- Being consistent between word and deed;
- Ensuring frequent and rich communication;
- Engaging in collaborative communication;
- Ensuring that decisions are fair and transparent;
- Establishing and ensuring shared vision and language;
- Holding people accountable for trust;
- Creating personal connections;
- Giving away something of value; and
- Disclosing your expertise and limitations.

Without trust effective knowledge management is extremely difficult if not impossible. Leadership should be up to the task of nurturing trust in their departments or organisations in order to ensure effective communication between their staff (Abrams *et al.*, 2003:1).

2.5 INFORMATION TECHNOLOGY

Knowledge differs from the other resources as it multiplies itself by using and/or sharing it (Auer, 2004:4). Companies which do not actively manage knowledge as a key resource will not be able to sustain growth.

Sleezer *et al.* (2002:349) defines information technology as an umbrella term that encompasses many forms of hardware, software, and services used for collecting, storing, retrieving, and communicating information.

Knowledge is not simply shared and collected but knowledge is to be converted for use in the business environment. The knowledge of individuals needs to be converted into organisational knowledge, and information technology is often used as the vehicle for converting information into management knowledge (Lee & Suh, 2003:317). This is the role that information technology plays in knowledge management. Information technology distributes organisational knowledge company-wide to employees who need the knowledge to solve problems or to enhance their performance. Information technologies, including employee training on its use and capabilities, are an integral component of the knowledge management physical systems (Holsapple, 2005:42).

Information technology lets you plan and budget far more effectively than a piece of paper, and makes it possible to track people and processes much easier than a conventional roster. It also simplified communications by leaps and bounds and can draw from far more research sources than the largest collection of periodicals or books. This undeniably brings to reason that information technology should, and ought to, increase productivity. Technological support of an organisation's knowledge management program can take many forms depending on what the organisation specifically wants to accomplish. No single correct technology for knowledge management exists (Alavi & Leidner, 2001:119; Davenport & Prusak, 2000:4).

Knowledge management information technologies, such as repositories, databases, and knowledge maps, must be maintained and updated in order to provide accurate, assessable, and usable organisational knowledge (Davenport & Prusak, 2000:5). Knowledge management information technologies need to be user-friendly, up-to-date, and connect members of the organisation together. Knowledge management integrated computerised management systems support knowledge transfer by providing easy access to organisational policies and procedures, best practices or lessons learned, work planning and control, and allowing members of the organisation to identify subject matter experts. The outputs from these systems are readily available to all company employees through intranets (Dalkir, 2005:394; Tiwana, 2003:437).

Communication technologies are critical for all the key processes in knowledge management (Alavi & Leidner, 2001:116). Collaboration allows employees to work together and communicate effectively to create an environment that encourages knowledge creation and transfer (Sandars, 2004:202; Selamat & Choudrie, 2004:128). Knowledge mapping technologies allow individuals to find relevant knowledge within their organisation (Dalkir, 2005:395; Tiwana, 2003:438). Storage schemes should be consistent across the organisation for ease of accessibility and to enable employees in the organisation to search and retrieve knowledge more effectively.

2.5.1 Productivity

What is productivity? How is productivity measured? How can we improve productivity? For most people, how productive they are during the day or over the course of a week, month, year, etc. is one of the primary methods by which people measure success or personal achievement, which is why productivity measurement is so important. Productivity means different things to different people (Gomar *et al.*, 2002:104; Souza-Poza *et al.*, 2001:604; Tangen, 2002:8).

In conceptualising productivity as it relates to satisfying needs and best utilising time as a finite resource, where the motivation to satisfy needs leads to the definition of productivity as a resource allocation process through which energy is allocated across actions or tasks to maximise the person's anticipated need satisfaction. In this case, all resource allocation is focused on the goal of need satisfaction, which is another way of conceptualising productivity (Pritchard *et al.*, 2008:552).

While productivity is undoubtedly connected to the use of available resources, it is also linked to the concept of value creation, which refers to high productivity ultimately being achieved when actions, behaviours, and resources are utilised in such a way that they ultimately improve over time. Value creation can be thought of as the positive result of an action or behaviour. Furthermore, through the process of value creation the concept of continuous improvement is born. Without the element of continuous improvement being a part of the conceptualisation of productivity, we would instead be measuring levels of production rather than productivity, which is simply the quantity of a product or service produced (Tangen, 2002:9). In other words, value creation is refining the process over time so that greater output is created for the same amount of input energy.

Productivity in the workplace is not just about measuring the amount of time spent on a particular activity but also understanding the value of time spent on that activity and whether that time could be better utilised on a different activity (Tangen, 2002:9). Employees spend a finite amount of time at work and the allocation of that time can mean the difference between success and failure for a company, meaning that employees need to efficiently and effectively manage their time and allocate their time appropriately to their designated work tasks. Similarly, companies also have a finite production capacity at any point in time, so if an employee spends his time at work on tasks and activities that only deliver mediocre results, then the whole company is not functioning as efficiently and effectively as it needs to be in order to be successful (Chand *et al.*, 1996:967).

In the corporate environment of today, businesses succeed or fail based on productivity, so being able to accurately measure productivity is of critical importance (Bailey, 2000:364; Pritchard *et al.*, 2008:564).

"You can see the computer age everywhere except in the productivity statistics." With this apt remark, Nobel laureate economist Robert Solow summarised the so-called information technology productivity paradox as far back as the late 1980's. Today, more than 30 years later, the effect that computerisation has on productivity is difficult to assess: productivity increases cannot be readily attributed to information technology investments and information technology investments do not always measurably increase productivity. Productivity does not increase just by investing in the

infrastructure. Employees need to figure out how the new technology can be applied effectively. It takes time and money to achieve proficiency (Korhonen, 2009:4).

2.5.2 The influence of information technology on productivity

Mahmood and Mann (2005:187) found that increases in performance and productivity are not solely reliant upon information technology investments. Strategic decision making by management is needed to determine a direction before deciding the specific information technology investment necessary to achieve the goals and objectives. When an investment in information technology occurs in unison with changes in work processes, the effect on productivity will be significantly greater than an investment in information technology alone.

Brynjolfsson (2003:2) found a statistically significant correlation between information technology capital per worker and the company's overall productivity. The most effective organisations invested more in information technology and experienced higher performance and productivity measures. Mahmood and Mann (2005:192) contend that growing investment in information technology has been the most important reason for recent productivity growth, and they concluded that companies which invest more in information technology appear to achieve a higher level of performance and productivity.

According to Brynjolfsson (2003:2) and Dedrick *et al.* (2003:19), information technology has been increasing productivity and annual output per worker for more than three decades. Kudyba (2004:237) concluded that greater information technology skills increased firm output. Enhanced information technology skills among employees resulted in higher productivity, organisational performance, and firm output (Kudyba, 2004:242). Brynjolfsson and Brown (2005:28) also found that information technology intensive companies tend to be more productive.

In order to take advantage of new technologies, firms must ensure that employees are properly trained. Skilled employees are a source of sustained competitive advantage (Kudyba, 2004:241). Brynjolfsson (2003:4) found that companies achieved high levels of productivity and more employee and customer satisfaction when they successfully combine automation of numerous routine tasks, highly skilled labour, decentralised

decision making, improved information flow (vertically and laterally), strong performance-based incentives, and an emphasis on training and recruiting. Information technology investments will either directly or indirectly contribute to each of these attributes.

Information technology alone will not necessarily improve organisational performance. Organisational performance improvements need to be done through improved business processes which embody an organisation's day-to-day activities. Improved processes and organisational performance is a result of the right information technology applied within the right business process (Melville *et al.*, 2004:304).

The productivity increase does not come directly from a new investment; rather the increase comes from the business unit. For this reason, the direction for an information technology investment must come from the business unit. The information technology investment is intended to allow the business unit be more efficient or take advantage of new opportunities (Keller, 2004:33).

While the role of human resources management continues to transform, so has the technology adopted by human resources management. Fletcher (2005:11) observes that if human resources' role has always been to deliver the workforce support and management based on the needs of the business, then technology's role has been that of an enabler.

Any business enterprise or institution has only one true resource: people; it can only succeed by making human resources productive, so it can accomplish its goals through people's work. Business takes place in the context of society; therefore, any societal changes impact human activities directly, for example, economy, politics, legislations, culture, demographics, life styles and education (Drucker, 2001:341).

2.5.3 Total quality management

Lean and total quality management share the same origin – the quality evolution in Japan after World War II (Andersson *et al.*, 2006:289).

Total quality management has been defined as a company culture characterised by increased customer satisfaction through continuous improvements, in which all employees actively participate (Dahlgaard & Dahlgaard-Park, 2006:266).

Lean is a total quality management approach designed to identify and eliminate waste and encourage continuous improvement in pursuit of perfection in organisations (Andersson *et al.*, 2006:283). Lean involves conducting kaizens, intensive team sessions intended to review work processes and make continuous, incremental improvements (Balzer, 2010:4; Dahlgaard & Dahlgaard-Park, 2006:271). The literal definition of kaizen is change for the better (Emiliani, 2006:167).

While perfection itself may be impossible to achieve, this pursuit guides and commits an organisation to continuous improvement. A desire to achieve perfection provides hope, motivation and discipline to continually look to reduce waste. Continuous improvement leads to constant examination and monitoring of processes and services. Instead of this responsibility resting solely in a quality department, a continuous improvement methodology demands extensive employee involvement (Abdi *et al.*, 2006:199).

Organisations choose lean for a variety of reasons, such as reducing expenses, eliminating silos and enhancing coordination throughout the organisation, improving communication and efficiency, and developing high quality products and services (Comm & Mathaisel, 2005:134). The effects of lean on these aspects of organisational functioning have a positive lasting effect (Chowdhury *et al.*, 2007:21).

Both lean and empowerment are of growing interest among institutions of education, which have been faced with economic challenges, funding shortfalls, endowment declines, academic program cuts and rising tuition (Comm & Mathaisel, 2005:141). These challenges only multiplied during the 2008 economic downturn (Fischer, 2010:9; Wheeler, 2008:2). Simultaneously, these institutions have grappled with how to meet stakeholder demands for more responsive and comprehensive services, integrated use of technology, and managed costs, while faculty and administrators alike experience this tension as they are asked to do more with less (Comm & Mathaisel, 2005:141; Hines & Lethbridge, 2008:54). Lean has been implemented in both public and private institutions, working to balance the reality of limited resources with the demand for robust services (Balzer, 2010:6; Hines & Lethbridge, 2008:55).

Education requires its own framework when applying lean and quality management. Education, steeped in traditional structures and systems, appears to be more change resistant than conventional lean environments (Hines & Lethbridge, 2008:55).

Comm and Mathaisal (2005:134) went as far as describing education as one of the most immutable of institutions. Historically, education has been hierarchical with complicated and complex structures, including tiered departments and disciplines, a multitude of committees and fixed silos (Hines & Lethbridge, 2008:55).

According to lean and total quality management, strong leadership is critical for supporting employees' participation in continual improvements with limited resources (Andersson *et al.*, 2006:287; Dahlgaard & Dahlgaard-Park, 2006:267).

Strong leadership and effective communication are vital for achieving a successful lean implementation. This critical success factor is not unique to education, but true across all industries. In the education setting, the leadership charge must come from the top. Top management must act to champion the lean cause and to provide the necessary resources (Comm & Mathaisel, 2005:134).

Education also mimics other organisations in requiring top-down and bottom-up strategies. As lean strategy is implemented, education should expect to apply creativity and adaptation in its approach, working from within its own culture and circumstances.

2.6 EMPLOYEE EMPOWERMENT

2.6.1 Empowerment

Empowerment grew out of participative management and employee involvement (Spreitzer *et al.*, 1997:701), leading some critics to argue that empowerment is nothing more than employee involvement in borrowed clothes (Hill & Hug, 2004:1039).

This means providing employees with the authority, tools and rewards to take initiative, apply creativity, make decisions, implement change, and cultivate responsibility (Birdi *et al.*, 2008:479; Comm & Mathaisel, 2005:146).

According to Bartunek and Spreitzer (2006:255), empowerment refers to three concepts:

- (1) Sharing real power. This refers to having power, strengthening power for the underrepresented, political participation, gaining control over one's destiny and connectedness.
- (2) Fostering human welfare. This refers to improving lives of people, increasing self-worth, and expanding knowledge, increasing dignity and respect and providing resources.
- (3) Fostering productivity. This refers to participation in decision making, taking responsibility, sense of ownership, enabling others and working in teams.

Lean has a substantial effect on employee empowerment, based on the alignment between the basic characteristics of lean initiatives (such as encouraging involvement, building capability, supporting decision making) and the core elements of empowerment (such as impact, competence, meaning, self-determination or choice, and goal internalisation). For continuous improvement to be possible and effective, power must be granted to those doing the work (Carroll, 2001:87). Therefore, by its very nature, lean empowers employees, as employees are granted the authority and equipped with the capability to detect and make needed changes.

Empowerment can be further encouraged during lean initiatives by giving rewards for performance, administering training on group process and problem-solving techniques, and convening quality circles on a regular basis.

Empowerment is the foundation for total quality management and lean (Brah *et al.*, 2000:1299; Dahlgaard & Dahlgaard-Park, 2006:270). Ultimately, lean empower employees by shifting certain responsibilities away from management, therefore, institutionalising empowerment.

2.6.2 Capacity building

Capacity building is only referring to the potential and competency found within a person; that is, individual capacity. This is reflected as specific technical and generic skills, knowledge, attitudes, and behaviour accumulated through education, training,

experience, and so forth, directed towards helping school management systems to acquire the ability to undertake tasks (plan and manage their education systems more effectively), for achieving quality education targets and delivery (Taigbenu, 2007:2).

Institutional capacity building is a means of enhancing performance. At the basic conceptual level, building capacity involves empowering and equipping people and organisations with appropriate tools and sustainable resources to solve their problems, rather than attempting to fix such problems directly. When capacity building is successful, the results lead to more effective individuals and institutions that are better able to provide products and services on a sustainable basis (Netshidaulu, 2008:15).

Human resources development through training, education, and provision of information is the key dimension of capacity building. Training is not, however, enough. If new skills or ideas are going to be employed, then institutions and individuals need incentives to change practices and approaches; such incentives will need to be consistent with the broader goals of the institutions concerned. Improved human resources are a key factor in bringing about institutional capacity building (Taigbenu, 2007:8).

The relationship between employee aligned-commitment and capacity-building training effectiveness can be explained by stating that capacity-building training effectiveness is displayed by employees' effectiveness, demonstrating their level of commitment to the organisation and job satisfaction and performance (Netshidaulu, 2008:20).

Organisational capacity is the ability of an organisation to develop, manage, sustain, and improve programs and strategies that allow it to achieve its mission and objectives. For grassroots organisations, mission fulfilment means the ability to effect social and political changes for those they serve (Wright, 2011:15). Wright (2011:15-16) conclude that the key indicators of organisational effectiveness include:

- (1) Collaborative decision-making between constituents, governance, and leadership.
- (2) Governance and executive leadership in partnership.
- (3) Ability to engage community residents in leadership and change strategies.
- (4) Investment in human capital.
- (5) Organisational infrastructure.
- (6) Accountability to its constituents.

Horton *et al.* (2003:5) and Light and Hubbard (2002:3) concur that organisation's capacity includes resources, knowledge, and processes employed by the organisation to achieve its goals. These comprise the staffing, physical infrastructure, technology, financial resources, strategic leadership, program and process management, and networks and linkages with other organisations and groups.

Fullan (2007:154) and Newmann *et al.* (2000:267) discuss and analyse how schools can build capacity in order to improve student achievement and instructional quality. Fullan (2007:58) defined capacity building as a policy, strategy, or action taken that increases the collective efficacy of a group to improve student learning through new knowledge, enhanced resources, and greater motivation on the part of people working individually and together. Additionally, Newmann *et al.* (2000:261) stated that the collective power of the full staff to improve student achievement school-wide can be summarised as school capacity. This can be achieved through enhancing the five components of school capacity as defined by Newmann *et al.* (2000:261):

- (1) teacher knowledge, skills and dispositions,
- (2) professional community,
- (3) program coherence,
- (4) technical resources, and
- (5) principal leadership.

School capacity can be defined as the presence of characteristics needed to support the development of a thriving learning community (Hughes *et al.*, 2005:10). Supporting previous definitions, Cosner (2009:250) defined capacity building as a collection of resources, interactive in nature, that support the school-wide reform work, teacher change, and ultimately the improvement of student learning.

School capacity affects student achievement and the quality of instruction (Fullan, 2007:57). Focusing on improving the quality of instruction through capacity building provides opportunities for an organisation, a teacher, and/or a school's ability to engage in continuous improvement. Fullan (2007:244) stated the reason there is low student achievement or poor instructional quality is that those involved do not know how to improve the situation or do not believe they can improve it, and maintained that capacity building strategies work because, they give people concrete experiences that

improvement is possible. People need proof that there is some reality to the higher expectations.

Fullan's (2007:252) work on capacity building has many features and points. He maintained that everything you do effects newly acquired knowledge, skills, and competencies; enhanced resources; and stronger commitments. When schools build capacity on their own, they are empowered to be successful and continue to sustain the reform efforts. Capacity building is a collective effort that must be acted upon by all levels of support, including the local, district, and state levels.

Fullan (2007:236) also discussed the government's role in capacity building stating that Governments can push accountability, provide incentives, and foster capacity building. We will see that if they do only the first and second, they can get some short term results that, I will argue are real but not particularly deep or lasting. If they do all three, they have a chance of going the distance.

Cooter (2003:199) linked capacity building to effective teacher development and maintained it is crucial when developing, implementing, and sustaining any type of reform effort.

Borko *et al.* (2003:171), Newmann *et al.* (2000:261) and Fullan (2007:236) all cited the following components as necessary to building capacity: teacher knowledge, skills, and dispositions; program coherence; technical resources; professional communities; leadership; professional development, but expanded upon them by including vision and leadership, a collective commitment, supportive norms and resources, and structures conducive to learning.

2.6.3 Employee engagement

The Gallup Management consultants (Anon, 2006a) express engagement as employees who work with passion and feel a profound connection to their company. They drive innovation and move the organisation forward.

Right Management (Anon, 2006b) defines engagement as employees committed to the success of the business strategy. This is interpreted through job satisfaction,

commitment, pride and advocacy. Employee engagement represents an alignment of maximum job satisfaction with maximum job contribution. Employees are enthused and use their talents to make a difference in their employer's quest for sustainable business success (Anon, 2006c).

Employee engagement can be viewed as employees' willingness and ability to participate in helping their organisations succeed. In general, most definitions include employee commitment, a connection to the job and organisation, and an understanding of the organisation's goals and strategies. Engaged employees exhibit a willingness to make an extra effort for the success of the company.

Salanova *et al.* (2005:1217) suggest a motivational construct; a positive, fulfilling, work-related state of mind which is characterised by vigour, dedication and absorption. May *et al.* (2004:11) conclude that engagement is concerned with how the individual employs his/her self during the performance of his/her job. It entails the active use of emotions and behaviours as well as cognitions. Maslach *et al.* (2001:397) characterise engagement as the opposite of burnout and defined by involvement, efficacy and energy.

According to Maslach, *et al.* (2001:397) the antithesis of engaged is disengaged which also has connection to the term burnout. If an employee is not engaged, he/she could be burned out or disengaged. Burnout is a syndrome of emotional exhaustion, depersonalisation and reduced sense of accomplishment. It is the feeling of being emotionally overextended and drained by one's contact with other people.

Maslach *et al.* (2001:399) further define six antecedents of burnout: workload, control, reward, community, fairness and values. Disengagement is in a similar context. When individuals are disengaged, people withdraw physically, cognitively or emotionally. Individuals lack connections with others. Gallup (Anon, 2006a) classifies disengaged employees as not-engaged and actively disengaged. Not-engaged employees are essentially checked out. They are putting their time in towards their work but with no energy or passion. Actively disengaged employees are not just unhappy at work; they're busy acting out their unhappiness. Thus, burnout can be viewed as the opposite of engagement. It is the erosion of employee engagement.

Overall, employee engagement has been consistently defined as a distinct and unique construct that consists of cognitive, emotional, and behavioural components that are associated with individual role performance; job satisfaction and commitment. Saks (2006:601) emphasises that it is different from organisational commitment in that engagement is not an attitude; it is the degree to which an individual is attentive and absorbed in the performance of his/her roles. It also differs from job involvement in that engagement has to do with how individuals employ themselves in the performance of their job; it is not the result of a cognitive judgment about the need satisfying abilities of the job. Engagement involves the active use of emotions and behaviours in addition to cognitions.

Sweem (2009:31) conclude that employee engagement is the notion that a job is challenging and meaningful; and that individuals have the appropriate resources for their job and perceive adequate support from their supervisor as well as from the organisation. This invites employees to be committed to their job and company. They feel that they are appropriately rewarded and recognised for their performance. Employees have trust in management and feel the organisational culture promotes a positive environment in which to perform. These behaviours, emotions and cognitions all play a part in the level of engagement for employees that ultimately affect organisational effectiveness.

2.6.4 Talent management

Managing talent has become more important to a wider range of companies than it used to be. The future of talent management may be about embracing and leveraging connectedness (Frank & Taylor, 2004:34). Corporations now appear ready to embrace this concept (Oakes, 2006:21), and it has become a strategic imperative for many organisations (Ashton & Morton, 2005:28).

Talent management is defined as a collection of typical human resources department practices, functions, activities or specialist areas such as recruiting, selection, development and career and succession building; and it is managing the human resources function but doing it faster or across the entire organisation (Byham, 2001:56; Heinen & O'Neill, 2004:7).

Cheloha and Swain (2005:6) define talent management in terms of talent pools. This track is closely related to succession planning or human resource planning as it focuses on internal talent rather than external. Talent management is an architecture where a set of processes are designed to ensure an adequate flow of employees into jobs throughout the organisation.

Essentially, it is having the right people at the right time in the right job (Kesler, 2002:32). It is not unusual for many organisations to consider talent management as the recruitment process where technology can automate the procedures. If the definition is more than recruitment, it takes the employee lifecycle into consideration and includes not only attracting talent but also aligning and maintaining performance while developing talent (Blass, 2007).

Buckingham and Vosburgh (2001:17) define talent management in terms of managing talent according to performance and as an undifferentiated good that emerges from both humanistic and demographic perceptions. This is generic talent management. It does not focus on just specific positions or boundaries. A critical component is to manage everyone to high performance which requires cooperation and communication of managers at all levels (McCauley & Wakefield, 2006:4; Redford, 2005:20).

According to the Society for Human Resource Management (SHRM, 2006), it is the implementation of integrated systems designed to increase workplace productivity by developing improved processes for attracting, developing, retaining and utilising people to meet current and future business needs. Rothwell and Poduch (2004:405) further develop the notion that talent management includes succession planning which is a systematic, long term approach to meeting present and future talent needs in order to meet business objectives but also go a step further. It is not just about putting the right people in the right place at the right time but embodies any effort designed to ensure the continued effective performance of an organisation or department by focusing on the development, replacement and strategic application of key people over time (Rothwell, 2000:106).

Rothwell and Wellins (2004:3) purport utilising competency models to help plan for future talent requirements, identify work expectations, provide a common language for

feedback discussion regarding performance and recruit and select new talent. These all work in concert to develop individuals and plan for the future needs of an organisation.

Talent management is much more than simply recruiting, succession planning, training and putting people in the right jobs at the right time. While these dimensions are all included in talent management, there are other important components to consider as well which include communication, development of the individuals, and the culture or climate of an organisation. It is a strategic imperative (Ashton & Morton, 2005:28). When talent management becomes a core competence, it significantly improves strategy execution and operational excellence. It is a holistic approach to both human resources and organisational development and business planning. It improves the performance and the potential of people who can impact the organisation. Ashton and Morton (2005:29) conclude since there is no single, consistent, concise definition, talent management must be fluid so that as the business drivers change so does the talent management strategy. It involves the cooperation and communication of managers at all levels. Talent management must be more strategic, connected and broad-based than ever before in order to drive performance, deal with an increasingly rapid pace of change, and create sustainable success which aligns with the business strategy (McCauley & Wakefield, 2006:6).

Sweem (2010:5) proposed that the concept of talent management may need to take on a more holistic approach. Talent management is better defined by combining many of the attributes into a whole model viewed in terms of a concept and strategy that:

- (1) Integrates human resources and systems across all departments and levels,
- (2) Involves the cooperation of all levels of managers from the board of management to the first line supervisors,
- (3) Facilitates by nature,
- (4) Aligns talent with the business strategy,
- (5) Proactive in terms of future growth and sustainability,
- (6) Develops improved processes for developing and managing talent, and
- (7) Provides connectedness in culture among all employees and managers.

Talent management is not a human resources and organisational development initiative but is integrated within organisational strategy. It provides the framework for driving the

strategy throughout the company and at all levels. An organisation cannot simply implement one facet of talent management but must combine them all together in order to build a complete concept and strategy. By combining all talent management contexts together, talent management enables an organisation to grow the future from a holistic perspective (Sweem, 2010:5).

In order to develop a successful talent management strategy, employees need to feel connected or engaged to their job and organisation. Effective talent management policies and practices that demonstrate commitment to human capital result in more engaged employees and lower turnover (Anon, 2004). Employee engagement can make or break a bottom line; therefore, a talent management strategy cannot be sustained without employee engagement (Lockwood, 2006:4).

2.6.4.1 Talent management and its relationship to employee engagement

Talent management practices and policies that demonstrate commitment to human resources result in more engaged employees and lower turnover (Anon, 2004). Consequently, employee engagement has a substantial influence on employee productivity and talent retention. Employee engagement and talent management combined can make or break the bottom line (Lockwood, 2006:4). According to a study completed by the Corporate Leadership Council (Anon, 2004), employees who are committed perform 20% better and are 87% less likely to resign. In addition, they found a workforce that is engaged begins with the quality, depth and authenticity of communication by both human resources and senior management to employees. The role of the manager is a key component, if not one of the most important. It is the manager who enables employee commitment to the job and organisation.

The process of building employee engagement is on-going. Effective employee engagement fosters an environment of stimulation, development and learning, support, contribution and recognition (Lockwood, 2006:6). Lockwood (2006:6) concludes that it is the work experience and ultimately, the organisational culture that determine employee engagement and retention of talent. To sustain high-level business results in a global economy, organisations have to reinvent their approaches to talent management. Effective talent management requires strong participatory leadership, organisational buy-in and employee engagement. Companies that master talent management will be

well positioned for long-term growth in workforce performance for the future (Lockwood, 2006:7).

The demands to manage talent are placing new emphasis on strategic requirements of the human resources and organisational development function. This paradigm shift requires a new level of participation at the executive level. As Rothwell and Poduch (2004:45) note, most executives think of talent planning as executive placement planning, that is, planning for senior-level backups. Rothwell (2002:116) further explains that talent planning is proactive and attempts to ensure the continuity of leadership by developing internal talent, and needs to be considered at the same time executives make business decisions. But it goes beyond looking at internal needs to exploring the future goals that may be outside of the organisation and incorporates wider dimensions of strategy planning.

According to Farley (2005:60), the culture and communications of an organisation must also be integrated. The talent management concept is holistic and encompasses translating corporate goals into workforce needs, linking people to profit and effectively managing talent to improving business performance. The executive level management will need to redefine how human capital is incorporated into the overall organisational strategy. Improved outcomes will only come to those organisations that learn to master talent management functions.

2.6.4.2 Talentship

Boudreau and Ramstad (2005:18) have proposed a decision science model called *talentship* that enhances decisions about talent resources. Their model allows organisations to enhance decisions about human capital and it connects human resources to strategy by examining impact effectiveness and efficiency. People, intellectual capital and talent are ever more critical to an organisation's strategic success. This observation is so common today that it almost goes without saying (Boudreau & Ramstad, 2005:18).

Yet, when top executives are asked if their decisions about the talents of their people are made with the same rigor and strategic connections as their decisions about money, technology and products, they admit that their talent decisions are not (Boudreau &

Ramstad, 2005:19). This is where human resources and organisational development can help shift the paradigm for organisational strategy.

According to Boudreau and Ramstad (2005:18), human resources and organisational development, like finance and marketing, helps the organisation operate within a critical market for talent. It needs a new paradigm of decision science for talent. Decision science provides a system to identify and analyse key issues, adapting to the unique information and characteristics of the specific context. The lessons from marketing and finance tell us that the goal of talent decision science would be to increase the success of the organisation by improving decisions that impact or depend on talent resources.

Boudreau and Ramstad (2005:20) have coined the term *talentship* to describe the new decision science, and to reflect the notion of stewardship for the resource of employee talents. Talentship is to human resources what finance is to accounting and what marketing is to sales. Talent decision mistakes are not being made by human resources and organisational development professionals but by leaders who do not have a full understanding of their implications and effects on talent backgrounds of individual employees. The greatest opportunity to improve talent decisions is outside the human resources and organisational development profession. Human resources and organisational development can control the decisions or equip those outside the profession to better understand the implications of the decisions they make (Boudreau & Ramstad, 2005:20).

As organisations look for the ability to competitively succeed and sustain for the future, talent management is taking on a new role. A recent survey found that employers now view talent management as the top organisational challenge (Anon, 2008b: 2). Corporations are now reconsidering the role of the most valuable asset. It is evident from the emerging theories that the focus on the alignment of human resources in organisations is vital for success. Change and adjustment must occur simultaneously. The asset decisions are not only based on technology and equipment but also on people. This talent management strategy must be integrated and embedded into the overall organisation strategy in order to drive success and sustainability.

Talent management is a strategy, not a human resources initiative. It is not a one-time occurrence or communication. Talent management supports all strategic and cultural

objectives and embodies emotional commitment by management that is reflected in their actions and decisions (Ready & Conger, 2007:69). This allows organisations to develop and retain key employees to meet evolving business needs. However, talent management will fail without commitment from top management. The passion must start at the top and be infused into the culture. Ready and Conger (2007:71) state that the vitality of a company's talent management process is a product of three defining characteristics: commitment, engagement, and accountability.

2.6.4.3 How can a talent management strategy drive employee engagement and influence organisational commitment?

In order to sustain business results in a global economy, organisations will have to rethink their approaches to talent management and how it affects employee engagement. Many managers understand or even recognise that skilled and motivated people are key to the operations of any company that wishes to flourish (Barlett & Ghoshal, 2002:34). Yet, after a decade of reengineering and decentralising, employees are more exhausted than empowered and more cynical than positive. Only marginal attention has been focused on the issues of employee capability and motivation, and somewhere between theory and practice, precious human capital has been misused, wasted or lost (Bartlett & Ghoshal, 2002:34).

As change continuously occurs in sustaining companies, the talent management strategy is an integral component of driving continuous transition in the company (Grossman, 2007:54).

As complexity and change drive organisations, managing talent will need to move from an art to a science. Long gone is the day of the "gut instinct" management style (Davis & Stephenson, 2006:3). Today's business leaders are looking for decision-making techniques to help run their organisations and to engage the workforce.

Scientific management will become a necessary tool to not only maintain commitment and a competitive edge but simply to stay in the game (Davis & Stephenson, 2006:3). It should come as no secret that people are the ultimate source of sustained competitive advantage since traditional sources related to markets, financial capital and scale economies have been weakened by globalisation (Ulrich & Lake, 1991:79).

Pfeffer (1994:2) also makes the case that if firms are going to compete in today's economy; they need to build employees who possess the right skills and capabilities. The best talent management decisions are made when leaders have a wealth of data on talent in the organisation (Farley, 2005:59). To maintain and build talent requires that the employees be engaged and committed.

The talent management mind set must be altered. Many senior level managers believe that capital is the critical strategic resource to be managed. However, it is the human capital that should be viewed as the strategic resource. There are several different theories that drive talent management strategy toward engagement and ultimately, improved organisational effectiveness and aligned organisational commitment. Human resources and organisational development can play a pivotal role in developing this type of sustainable culture. Human resources and organisational development must undertake the objective to help management develop an engaging, motivating and bonding culture necessary to attract and keep talented employees. Human resource practices or processes are developed to manage the skills and abilities of talent in order to make them more difficult to duplicate for competitors (Barlett & Ghoshal, 2002:39; Lewis & Heckman, 2006:146).

2.7 PERFORMANCE STRENGTHENING

2.7.1 Performance management and change

In recent times, change in business environments has been inevitable as business strive to remain relevant and competitive. Bradford and Warner (2010:11) note that the need for change in business environments has been brought about by technological advancements, increased customers and shareholder's expectations, new initiatives, competition, and the need to increase demand among other factors. Therefore, in order to meet the new challenges and attain the organisational goals and objectives, organisations have introduced several changes. However, introduction of change, whether small or big, to organisational functions and processes have often proved intimidating to some managers and have sometime not yielded the intended outcomes (Phillips, 1999:184). This has resulted to adopting of change management strategies by managers in order to manage change successfully. According to Bradford and Burke (2005:6), change management can be defined as the application of a set of principles,

skills, processes, and tools for managing people and processes within an organisation in order to transition or shift the organisation from its current state to the desired or intended future state.

Several researches have shown that in the modern competitive environment, it takes more than the known management strategies to realise organisation's full potential (Bradford & Warner, 2010:26).

There is need for managers to welcome change and manage it effectively in order to achieve organisational success in the long-run. Continuous management of change is critical in performance management. Louis (2004:46) explains that the essence of managing change in the organisations is to improve performance and ultimately achieve organisational goals and objectives. As such, continuous management of change is related to performance management. Performance management refers to activities and processes that ensure that goals are met consistently in a manner that is efficient and effective (Aubrey, 2004:95). The focus of performance management is in regard to processes, departments, organisation, and employees and aims at facilitating overall performance of the organisation through attainment of organisational goals and objectives (Bradford & Warner, 2010:18).

In as much as change is important and in most cases inevitable within an organisation, the process of affecting it especially in regard to performance management often face dilemma. Dilemma in this respect can have adverse effect to the organisation as it will hamper the organisation's ability to achieve the set goals (Aubrey, 2004:23). Managing of continuous change is faced with a few dilemmas. Cokins (2009:61) states that dilemmas may arise due to changes based on adaptability versus rationality in organisational development strategy. For instance, management may be faced with the dilemma to either apply a rational strategy in order to improve performance or to opt for adaptive changes which are in most cases temporal aimed at meeting certain objectives within a given time. Also, managing continuous change in performance management is often faced with the dilemma of cultural versus structural change (Bradford & Burke, 2005:38).

In as much as change is desirable and should be entrenched in the organisational structure, it should instantly interfere with organisational culture. The structural change

should be gradual so as to be in tandem with cultural change. Achieving this will ultimately facilitate achievement of organisational goals since there will be little resistance.

In addition, the dilemma in managing continuous change in performance management usually occurs as a result of competing social and economic goals. According to Aubrey (2004:80), performance management must strike a balance between social and economic goals of an organisation in order to achieve sustainable growth. Ignoring or paying little attention to either of these goals may improve performance of the organisation in the short run but in the long-run, the performance may be compromised. Therefore, the dilemma faced between the competing economic and social goals of an organisation should be addressed adequately in order to ensure success in performance management (Phillips, 1999:188). Furthermore, despite the fact that the dilemma may sometime prove inevitable within an organisation, management should ensure that the process and decisions should be of benefit to the organisation.

Bradford and Warner (2010:49) argue that managing change in performance management, dilemma notwithstanding, should achieve the following benefits to the organisation: motivated workforce, direct financial gains and improvements, and improved management control.

2.7.2 Organisational health and performance measurement

Measuring the performance of people, especially managers and senior executives, presents a perennial conundrum. Without quantifiable goals, it's difficult to measure progress objectively. At the same time, companies that rely too much on financial or other hard performance targets risk putting short-term success ahead of long-term health; for example, by tolerating flawed stars who drive top performance but intimidate others, ignore staff development, or fail to collaborate with colleagues. The fact is that when people don't have real targets and incentives to focus on the long-term, they don't; over time, performance declines because not enough people have the attention, or the capabilities, to sustain and renew it (Gibbs *et al.*, 2012:1).

Gibbs *et al.* (2012:3) believe it's useful for executives and their senior teams to collectively examine how; and in some cases whether; their people-management

systems give sufficient priority to the long-term health of their organisations. Leaders should build health into performance management. While the specific measures of health that organisations employ will ultimately be unique to them, the principles should be applicable to any company.

Identifying the right values requires discussion and debate, informed by extensive engagement with a range of employees, among which, senior leaders. Organisations conducting such discussions are beginning to create metrics that shed light on how well employees respond to particular health-related values (Gibbs *et al.*, 2012:3).

Emphasising health-related values can be particularly important in turbulent times. What's crucial is to develop mechanisms that reward people while corporate health improves. Companies should embrace simplicity when trying to improve organisational health. In short, don't let the metrics get out of hand. Companies sometimes try to impose a comprehensive set of health measures on each employee, though a handful of well-chosen ones would suffice (Gibbs *et al.*, 2012:6).

2.8 SHARED VISION

2.8.1 Vision, mission and values

People are key in creating a vision and in ensuring that the vision is realised. The management and staff of any organisation are essential to the success of that organisation because they are responsible for acting out the vision of the institution. An institution can embark on a paradigm shift with good intentions and excellent new policies in place, but as long as the people who are supposed to implement the new policies as strategies do not change their attitude and are not capacitated to deliver accordingly, the mission will not be realised (Mhlongo, 2006:34). Seibel (1999:16) suggests provision of skills and motivation training, orientation, promotional and refresher training, as well as exposure training for management. Gratton (2003:1) states that employees' attitudes, behaviour, skills and capabilities underpin the value created in an organisation and she further confirms that human potential is created and developed through a combination of soft and hard processes, in which the hard processes forms the process backbone of an institution. The hard processes is a performance management process which creates a shared set of strategic objectives

and constantly aligns and realigns the behaviour of every individual in the institutions' goals.

It is essential that management and staff as a whole have a shared vision in order to attain the goals of an organisation. They also need to work together as a team and show commitment to the ideals and principles of the organisation. Generally, evaluation of whether or not restructuring has achieved the desired end result is affected through the concept of aligned commitment. According to Kreitner and Kinicki (1995:302), aligned commitment implies that all members of a work team are at the same level in their commitment to the organisation to facilitate a competitive edge in fulfilling its mandate. Aligned commitment implies that all employees focus on the same goal and take ownership of the goal.

The best way for an organisation to create future growth is to find a way to integrate and reconcile the two values of its own organisation, and that of its employees, in order to enrich each other's understanding (Hampden-Turner & Trompenaars, 2000:4).

Schwandt and Marquardt (2002:3) states that when an organisation overemphasises its own cultural values, there is a very high commitment to the existing culture, and therefore very little sense making that is able to integrate new information from another culture in a way that promotes learning. Reconciliation or integration of values can happen in two ways; both of which promote productivity. The values of the organisation can be applied first, and then the values of the employees can be integrated into them, or vice versa. However, it matters less which value is given priority, but that both values should be reconciled and integrated (Hampden-Turner & Trompenaars, 2000:6).

Most institutions tend to absolutise certain national cultural values in such a way that these unnecessarily appear contradictory to the values of other cultures. When values are absolutised, they exercise a controlling influence that is often unnoticed by those who inherited them. Few people will challenge values if most people within the culture have been affected by them through a process of socialisation. In a cross-cultural institution, the institution that is locked into its own cultural values or assumptions will not be able to learn from or appreciate the values of new generations or other cultures. It is in this sense that Hampden-Turner and Trompenaars (2000:8) insists that globalisation provides an important opportunity for organisations to learn.

Shared values and the adoption of a common culture are the most significant aspects of a successful implementation of knowledge management. Culture can be defined as a set of collective values and beliefs that shape the way people behave. In general employees of a company tend to adopt the same values and beliefs relating to their company (Kok, 2004:6).

Successful companies must have skilled people at all levels in the company, leaders must develop sound strategic visions, managers must make value-adding decisions and design efficient business processes, and train and motivate the workforces to implement the company strategy (Brigham & Erhardt, 2007:3).

2.8.2 Organisational culture and change

Lawler (2003:12) stated treating people right is not an option, it is a necessity. Treating people right is not just about talented people; it is about strategies, practices, designs, and policies that make organisations into places where people want to perform well.

Organisational culture can be changed when an organisation's structure, strategy, or human processes change (Beitler, 2006:577). The organisational change efforts will fail if organisational culture remains the same or the improved organisational strategies are not implemented. Cameron and Quinn (2006:16) stated that without cultural change, there is little hope of enduring improvement in organisational performance, and that the status quo will therefore prevail.

O'Dell and Leavitt (2004:2) purports that one must identify the current culture before one can determine how to change it. Cameron and Quinn (2006:367) noted, however, that most organisations do not operate within a single culture. The mixing and matching of cultures presents a unique dynamic and a tactical challenge when seeking to modify an organisation's culture. Therefore the dominant culture; the culture that represents the core values that are shared by most of the members, must be identified and targeted for change.

Change only occurs when both the organisation as a whole and all its individuals are committed to the change process. Producing change is about 80% leadership (establishing direction, aligning, motivating and inspiring people) and about 20%

management (planning, budgeting, organising, and problem-solving). In most change efforts he has studied, however, the percentages are reversed due to as many as two-thirds of all change efforts fail in some way (Kotter, 1996:2). The efforts not only fail to yield desired results, but they often produce a stream of unintended consequences. Research also shows that resistance derails most change efforts, with the most notable obstacle being management behaviours not supportive of the change. Often, culture change initiatives focus on just surface-level changes, essentially leaving organisational assumptions, values and beliefs unexplored. The ability of organisations to change has become inextricably linked to the ability of individual employees to change. Ultimately, however, the bottom-line for leaders is that if they do not become conscious of the culture in which they are embedded, those cultures will manage them (Schein, 2004:23).

One must recognise that effective cultural change is a long-term process and does not happen overnight. While the desired culture can be fairly quickly captured on paper, it takes time for it to exist in reality. Just as the prevailing culture evolved and became embedded over time, the new desired culture will need time to become widely adopted. The challenge comes in both shifting the culture of the organisation and in managing the expectations of that shift (Yoon & Kuchinke, 2005:501).

Schein (2004:289) believes that building an effective organisation is ultimately a matter of meshing the different subcultures by encouraging the evolution of common goals, common language, and common procedures for solving problems.

Employee involvement is frequently mentioned as a desirable cultural trait of an organisation. A culture that encourages innovation includes the freedom to try things and fail, expectation that innovation is part of every job, encouragement of lateral thinking, and willingness to consult others (Liu & Shou, 2005:102).

A culture that encourages innovation also embodies teamwork, a sense of ownership, concern for the whole organisation, expectation of action, belief that individuals can have an impact, delegation, and the empowerment of employees. In fact, employee involvement is crucial in every step of knowledge management because the purpose of knowledge management is primarily to elevate personal knowledge to organisational knowledge where individual involvement is a precondition. Without employee

involvement, knowledge management processes will fail (Gorelick *et al.*, 2004:317; McElroy, 2003:26).

The process of managing change is guided by the following steps; creation of urgency, formation of powerful coalition, creation of vision for change, communication of vision, removal of obstacles, motivation, building on the change, and anchoring changes in organisational culture (Kotter, 1996:56). Managing change calls for utilisation of tools and structures in order to control efforts of change in organisation. The goal of managing change is to avoid distractions and the negative impacts change may have on employees (Bradford & Burke, 2005:67). Majorly, managing of change entails strategic changes, technological changes, changing the behaviours and attitudes of personnel, operational or structural changes, and changes in regard to mission.

Bradford and Warner (2010:49) note that change management in organisations is usually multi-disciplinary and should be treated as such in order to achieve the desired goals and objectives. Formulation and implementation of change should take into considerations all the aspects of the organisation and should be systematic. Change being implemented should be relevant and of significance towards improving the overall performance of the organisation (Phillips, 1999:185).

A knowledge-enabled culture consists of a system of aligned human resource policies, tactics, processes, and practices that ensure knowledge is captured, created, shared, used, and reused to achieve superior organisational results and a sustainable advantage (English & Baker, 2006:1).

Organisational leaders must, where needed, change the existing culture and mind-sets so that employees are receptive, supportive, and committed to the principles of the knowledge management organisation. The role of knowledge leadership consists of promoting a constructive cultural direction toward knowledge acquisition and knowledge sharing, a culture that values continuous learning, and where experience, expertise, and innovation take over from hierarchical cultures and bureaucratic environments. In order to expect everyone in the organisation to learn, leaders must first have a vision of how learning should take place through the institutionalisation of systems, structure and strategy (Burnes *et al.*, 2003:452).

2.9 CONCLUSION

From the aforementioned literature review in this chapter, it is asserted that future growth and sustainability in education is achievable through aligned organisational commitment. Growth and sustainability in education is dependent on, and influenced by, a variety of factors including: people, resources, learning, commitment, relationships, development, knowledge innovation, collaboration, knowledge, knowledge management, business strategy, systems, policies and procedures, processes and structures, productivity, information management, culture, leadership, empowerment, performance, organisational structure, and mission (Sterling, 2001:12; Mckeown *et al.*, 2006:9; Hall & Vredenburg, 2003:62; Sveiby, 1997:37; Gilding *et al.*, 2002:4; Pachauri, 2004:38; Quin, 2001:61; Hart & Milstein 2003:56; Esty & Winston, 2006:4; Rucci *et al.*, 1998:84; Burke, 2008:136; Jickling, 2003:22; Smyth, 2002:6; Linnenluecke & Griffiths, 2010:353; Huckle & Sterling 1996:41; Wheeler & Bijur, 2000:6; Bertels *et al.*, 2011.12).

Furthermore, it is assessed that the literature provides a variety of methods and models to measure growth and sustainability, as depicted in Table 2, including: The competing values framework on organisational effectiveness (Quin, 2001:61); Creating sustainable value model on shareholder value and strategic planning (Hart & Milstein, 2003:56); Eco-Advantage Strategy on sustainability strategy (Esty & Winston, 2006:4); High Performance Model on organisational performance (Rucci *et al.*, 1998:84); Performance improvement model on organisational performance (Swanson, 1994:122); Sustainability operating system on building a sustainable organisation (Blackburn, 2007:109); The balanced scorecard on strategic performance (Kaplan & Norton, 1996:11); The aligned commitment model on organisational performance (Coetsee, 2003:30); and waves of sustainability on transformation in becoming sustainable (Dunphy *et al.*, 2007:239). The same models are frequently used to also measure organisational performance, sustainability and aligned organisational commitment.

For the purposes of this research, the aligned commitment model of Coetsee (2002:30) was used as the theoretical model to be adopted through the literature study and empirical research in an attempt to meet the research objectives.

The study concentrated on the five elements of Coetsee's aligned commitment model, namely: Knowledge, Information, Empowerment, Performance Strengthening and

Shared Vision. These elements were researched in depth in order to obtain a comprehensive understanding of each element, their components, and their impact in organisations.

The literature study revealed that the five elements of the aligned commitment model consist of the following components:

1. The knowledge element comprises: knowledge management, knowledge loss, knowledge sharing and transfer, knowledge retention, and trust.
2. The Information element comprises: information technology, productivity, and total quality management.
3. The empowerment element comprises: employee engagement, capacity building, talent management, and employee empowerment.
4. The performance strengthening element comprises: performance management, rewards and recognition, and job satisfaction.
5. The shared vision element comprises: vision, mission and values, commitment, culture and change.

The aligned commitment model of Coetsee (2002:30) from the literature review:
Aligned-Commitment = Knowledge x Information x Empowerment x Performance Strengthening (Rewards & Recognition) x Shared Vision (Shared Goals & Values)

The adapted aligned commitment model of Coetsee (2002:30) for the purposes of this research:

Aligned-Commitment = (Knowledge = knowledge management + knowledge loss + knowledge sharing and transfer + knowledge retention + trust) x (Information = information technology + productivity + total quality management) x (Empowerment = employee engagement + capacity building + talent management + employee empowerment) x (Performance Strengthening = performance management + rewards and recognition + job satisfaction) x (Shared Vision = Vision + Mission + Values + Commitment + culture and change).

2.10 CHAPTER SUMMARY

In this chapter, the focus has been on the theories and nature of growth and sustainability, knowledge continuity in the organisation and employee commitment emphasising the alignment to commitment (aligned-commitment) and the elements constituting the aligned-commitment equation. The role of management has been identified as a determining factor that underlies the commitment of employees in an organisation.

An integrated approach needs to be followed when growth and sustainability is pursued and knowledge continuity must be applied to make value-added decisions and facilitate learning across all processes in the organisation.

It can be concluded that organisations should change the focus for growth from physical assets to the development of intellectual capital, as it is no longer about what you own, but about what you know that makes the difference in achieving sustainability. Retention and talent management should be used to develop and increase an organisations' intellectual capital.

Some of the important lessons learned are that knowledge continuity should form part of an organisations' business strategy and mission, and must be driven by results and not by information technology, although an information technology enabled infrastructure must form part of knowledge continuity to enable networking and knowledge sharing between employees in the organisation. Effective collaboration and communication structures should be established. Furthermore, knowledge continuity will only be successful if a culture conducive of trust and knowledge sharing and transfer exist, and are supported by effective and appropriate human resource practices and incentives.

CHAPTER 3

EMPIRICAL RESEARCH

3.1 INTRODUCTION

Chapter three addresses the approach to the study and presents the results of the empirical research study. It provides an explanation of the research design, research method and statistical analysis used to achieve the aim of the study.

The theoretical study revealed various factors have to be considered in order for an organisation to grow and succeed. These factors pertain to individual and organisational behaviour.

The purpose of the research is to empirically determine by means of quantitative research the degree to which these factors enhance or impede growth and sustainability in an organisation.

The constructs that were conceptualised in the theoretical study were operationalised to determine the degree to which the independent variables influence, enhance or impede the dependant variable future growth and sustainability. The dependant variable will change as a result of variations in the independent variables (Welman & Kruger, 2001:13).

The aim of the statistical analysis that was performed to address the research objective of determining how future growth and sustainability in an organisation can be achieved, and which individual and organisational factors would enhance or impede future growth and sustainability, and ultimately to develop structural equation model of knowledge continuity that will enable future growth and sustainability in basic education.

The statistical analysis included exploratory factor analysis, assembling a structural equation model to validate the theoretical model, and multiple regression to determine predictors for growth and sustainability.

3.2 RESEARCH DESIGN

The general approach to the research is known as the research paradigm, which refers to the progress of scientific practice based on people's philosophies and assumptions about the world and the nature of knowledge (Welman *et al.*, 2005:13).

The purpose of the research design is to plan and structure the research study in a way that it enhances the validity of the findings. To obtain the research objectives, a survey design is used. Collecting the data is done by the questionnaire technique. This survey method is a cost-effective method in terms of time, resources and organisational constraints (Brewerton & Millward, 2001:68).

The quantitative data to be collected in the survey process would enable the researcher to measure the extent to which certain individual and organisational behaviour and factors influence growth and sustainability.

3.3 RESEARCH METHODOLOGY

The survey method involves administering a questionnaire to respondents. The purpose of the questionnaire designed for this research was to explore employees' attitudes and behaviours in their day-to-day work experience (Church & Waclawski, 1998:12).

3.3.1 Questionnaire design

The measurement process for quantitative research follows the sequence of first conceptualising, then operationalising, followed by measuring in order to collect data (Neuman 2000:161).

Conceptualising in this research was done by adapting a theoretical model based on the literature study on the concept of growth and sustainability, individual and organisational behavioural factors that could enhance or impede growth and sustainability on the one hand, and knowledge continuity as enablement for growth and sustainability on the other hand. These concepts were then operationalised in worded items as the measuring instrument.

Measurement enables researchers to describe the characteristics of an entity, make comparisons and determine whether any changes have occurred. In quantitative research, data are collected that can be presented in the form of numbers, in other words presenting some measurement. This provides an answer to the question *how much* (Uys, 2003:118), or how an individual feels or thinks about something (Neuman, 2000:180).

Scales are used as a technique for measuring variables. A scale is a measure in which a researcher captures the intensity or direction or level of a variable construct. Responses are arranged on a continuum and are generally at the ordinal level of measurement (Neuman, 2000:176). The Likert scale with four categories was used in this research, and was used to determine the relative intensity of different items. The scale categories are presented in Table 3.1.

Table 3.1: Questionnaire Likert scale

Strongly agree	Agree	Disagree	Strongly disagree
1	2	3	4

Respondents had to indicate the degree to which they agreed or disagreed with each statement in the questionnaire. No-opinion options such as *Neutral* or *Don't know* was not included in the scale because experimental research has shown that many more people will select this option when that alternative is explicitly offered than when it is not (Converse & Presser 1986:35).

In this research, the questionnaire (as indicated in Annexure A) was in paper format and 4 pages in length, consisting of 6 demographical/biological questions and 50 statements with the Likert scale as indicated in Table 3.1.

Since the questionnaire's appearance persuades the respondents to participate and should leave them with a positive feeling about the survey and a sense that their participation is appreciated (Neuman, 2000:270), the overall physical layout of the questionnaire and the format of questions and responses need to be clear, neat and easy to follow. Types of instructions to be included in a questionnaire are the general instructions explaining the purpose of the questionnaire, assurance of confidentiality,

and thanking respondents for their participation (Neuman, 2000:269). The sequencing of questions is important in that respondents might become confused, irritated and alienated if the questions are incoherently strung together. Questions should follow one after the other in a logical order (Booyesen, 2003:138).

The concept of validity of a measurement tool refers to the degree to which an instrument actually represents what it purports to represent. It is a multidimensional concept comprising different forms of validity (Brewerton & Millward, 2001:90).

To determine whether a measurement tool is content valid, a thorough analysis of the target domain is required, usually drawing upon expert judgement from appropriate sources. Content validity can be referred to as how much a measure covers the range of meanings included within the concept (Brewerton & Millward, 2001:90).

To ensure content validity, the researcher compiled the items in the questionnaire drawing from the theoretical study on the factors that could have an influence on growth and sustainability.

Construct validity refers to determining the degree to which the different indicators of the measurement provide corresponding results (Uys, 2003:124). It is closely related to theory development and testing; with an instrument being assessed while its underlying theoretical concepts are being rigorously investigated (Brewerton & Millward, 2001:92).

3.3.2 Sample population

Since the purpose of the survey was to determine the factors that enhance or impede growth and sustainability in organisations, the sample population should come from an organisation, which is a system of two or more persons, engaged in cooperative activities, working towards the same goal (Champoux, 2006:6).

For the purposes of this study, an organisation was contacted to possibly participate in the survey. The research purpose, process, the value of the survey and who should participate were explained to obtain permission and support for conducting the survey. The population was determined by choosing a total of six government schools in the

basic education system from the primary and secondary schools in the Sedibeng district.

3.3.2.1 Sample design

The decisions that a researcher has to make about the population and sample of the particular population are directly influenced by the nature of the research problem and the type of research design that will be used. The sample must reflect the characteristics of the group the researcher wishes to make statements about. Sampling is the process through which it is decided who will be observed (Uys & Puttergill, 2003:109).

To meet the research objectives a quantitative approach was selected. In order to maximise the number of responses received nonprobability purposive sampling was used to identify and select the categories of interest to the research study (Uys & Puttergill, 2003:113). The sample was selected on the basis of the researcher's knowledge of the population, its elements and the nature of the research objectives. The decision was made to limit the sample to principals, educators, and administration officials and to exclude general and maintenance workers; therefore, based on this sample specification, the size of the population was determined to be 194 people.

3.3.2.2 Sample size

The total sample sizes will significantly influence the accuracy of the results. This is due to the statistical 'power' required to report significance or non-significance accurately, taking into account type of statistical tests, effect sizes observed, significance level and sample size (Brewerton & Millward, 2001:118).

The researcher invited all the members of the population as described as 214 to participate in the survey. Of the possible 194 observations, 133 observations were collected.

The sample size is related to the degree of representativeness. Uys and Puttergill (2003:115) argued that the size of the sample is proportional to the size of the population. According to Krejcie and Morgan (1970:608), the sample size needed to be

representative of a given population of 200 is 132 observations. Neuman (2000:217) estimates a sample ratio of a small population has to be about 30% for a high degree of accuracy.

The number of observations received; 133, is therefore sufficient to ensure a high degree of accuracy, enabling the researcher to perform the necessary statistics to achieve the objectives of the study.

3.3.3 Data collection

The method or type of administration during the survey should be appropriate to the research objectives; able to elicit a form of data that would address the research question; feasible to the organisation in terms of time, resource, requirements and organisational constraints; ethically sound, agreed to and accepted by the organisation (Brewerton & Millward, 2001:68). The anonymity and confidentiality of participants are crucial to the ethical administration of the survey and data collection process (Neuman, 2000:98).

Since the privacy of respondents is transgressed in order to study social behaviour in organisations, the researcher should take certain steps to ensure anonymity and confidentiality (Neuman 2000:99). Neuman (2000:99) further suggests doing it by not disclosing a respondents' identity after information is gathered and presenting results only in an aggregate form.

The individual method of administering the survey questionnaire was used. The chosen method to collect the data was a paper format questionnaire which was hand delivered to the six schools. The completed questionnaires were handed to the researcher at the organisations directly after completion. The survey completion was anonymous and completely voluntary; no names were required or provided by participants.

In practice, a response rate of somewhere between 30% and 85% can be expected. The response rate is calculated by taking the number of completed usable survey responses, divided by the total number of survey instruments distributed, into consideration (Church & Waclawski 1998:143; Neuman 2000:267). According to Church and Waclawski (1998:144), when using the individual method of data collection

a response rate of 50% or more is adequate for analysis purposes. Church and Waclawski (1998:144) further contend that survey response rates lower than 50% are common in organisations owing to problems such as a resistive organisational culture and apathy on account of over-surveying, or poor project planning, communication and survey leadership.

In the research, the population consisted of 194 employees comprising principles, educators and administration officials, but excluding general and maintenance workers in the organisation. A total of 133 completed questionnaires were received, which equate to 68.5% of the population in the research. The response rate is sufficient in terms of the required rates to make statistical analyses about the population as discussed previously.

3.4 STATISTICAL ANALYSIS

The analytical approach followed in quantitative research requires descriptive statistics that describe numerical data. Multivariate statistics also applies to the research. The purpose of the research conducted involved exploring the data by examining patterns in the data (Brewerton & Millward, 2001:143; Neuman, 2000:317).

The following statistical techniques were appropriate to the research objectives and the collected data:

3.4.1 Descriptive statistics

Descriptive statistics are used to describe the characteristics of research units in the population and relationships between variables in the sample. These statistics summarise a set of sample observations (Babbie, 1998:11).

Descriptive statistics were used to summarise the different units in the data collected, namely:

- (1) Frequencies and percentage of frequencies were used to show the number of participants in each category of the different job title, gender, race, age, highest education and years in education.

(2) Means, the count of participants, the standard deviation, and the percentage of response distribution on the four point Likert scale were used to describe the results of the dimensions that were based on the theoretical model.

For any sample the arithmetic mean, or simply the mean, is the most commonly used measure of central tendency indicating the balance point in a set of data (Levine *et al.*, 2008:97). It is the average of the set of data. The standard deviation of a sample is a measure of the extent of variation in a frequency distribution and it gives an indication of how close the data is to the mean (Field, 2009:38). According to the empirical rule for bell-shaped distributions, 95% of the values in the sample data will fall within a distance of \pm two standard deviations of the mean (Levine *et al.*, 2008:120).

These statistics are appropriate to display central tendency (Brace *et al.*, 2003:48). The descriptive statistics provided an overview of factors that are enhancing or impeding growth and sustainability in the organisation.

To indicate the spread of the study sample in the different demographical and organisational categories, the descriptive statistics; as calculated for the study sample, are provided by making use of graphs and figures to display the results of the theoretically composed dimensions as measured in the questionnaire.

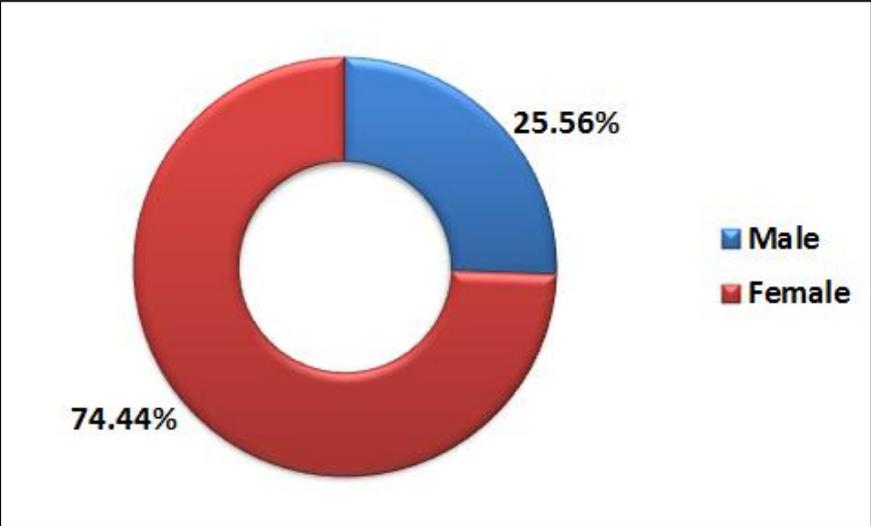
3.4.1.1 Demographic profile

Demographic variables that formed part of this research study include gender groups, age groups, race groups, education levels and job titles/levels. These variables are illustrated in the figures in the following sections.

3.4.1.1.1. Gender groups

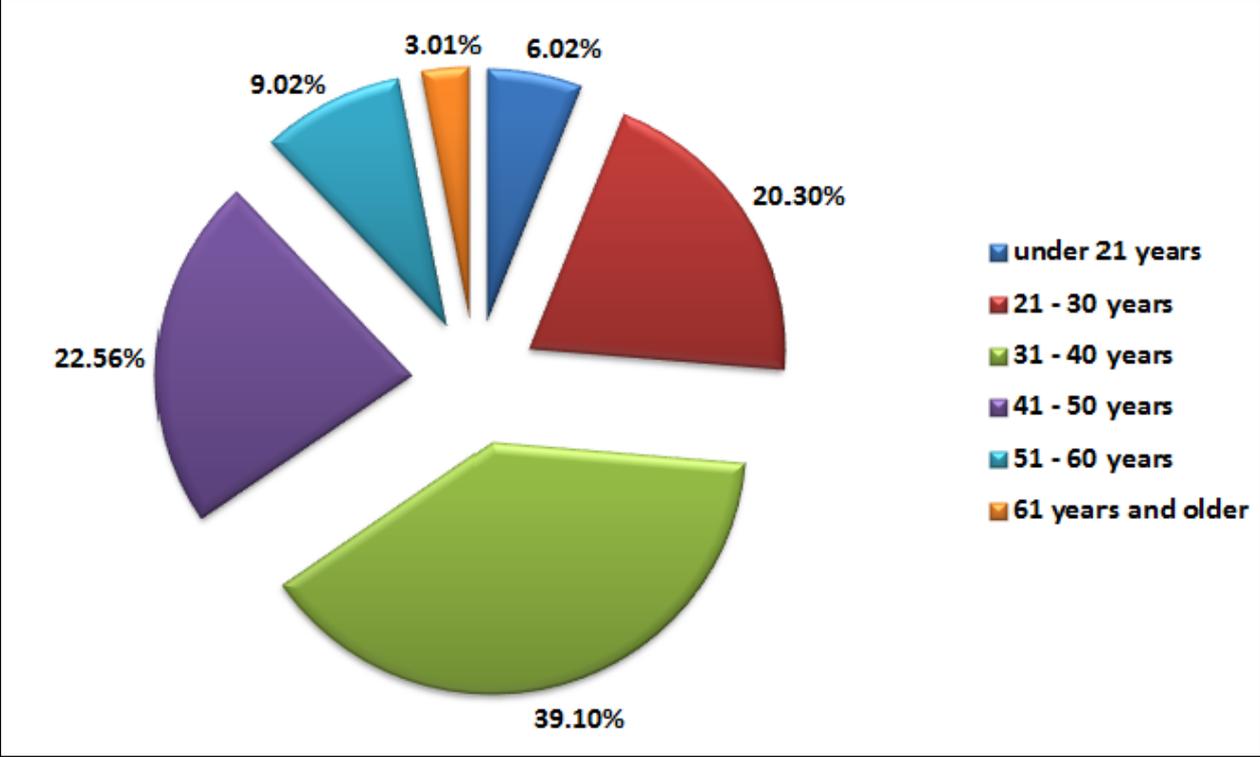
The breakdown of gender groups are depicted in Figure 3.1. The graph indicates that 25.56% of the respondents are male and 74.44% are female. This clearly illustrates that the female group is dominant in the age groups category of the study sample in the organisation.

Figure 3.1: Gender groups



3.4.1.1.2. Age groups

Figure 3.2: Age groups



As illustrated in Figure 3.2, the majority of respondents in the study sample are within the age group of 31 to 40 years, accounting for 39.10% of the sample; followed by the age groups that are similar in size of 41 to 50 years, and 21 to 30 years that accounts for 22.56% and 20.30% of the sample respectively. The youngest age group for less

than 21 years of age represent 6.02%, while the oldest two age groups of 51 to 60 years and 61 years and older represent 9.02% and 3.01% respectively.

3.4.1.1.3. Race groups

Figure 3.3: Race groups

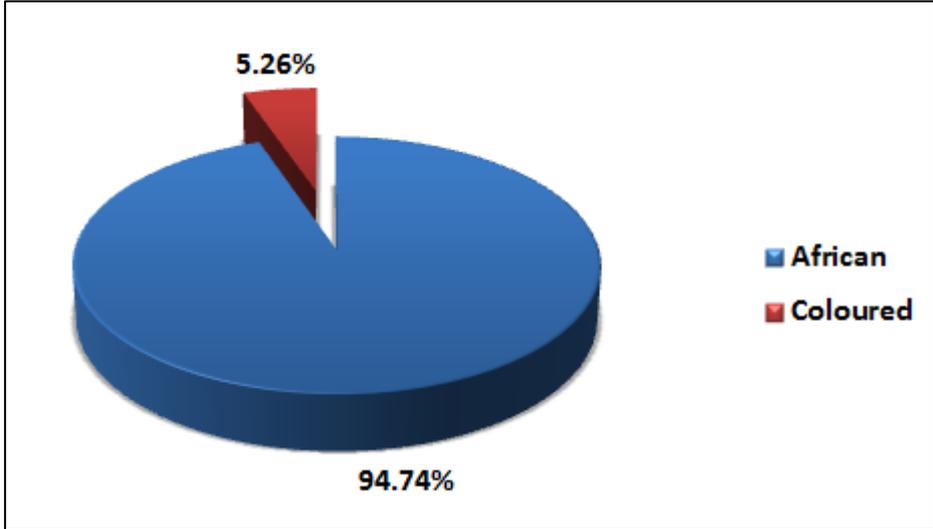
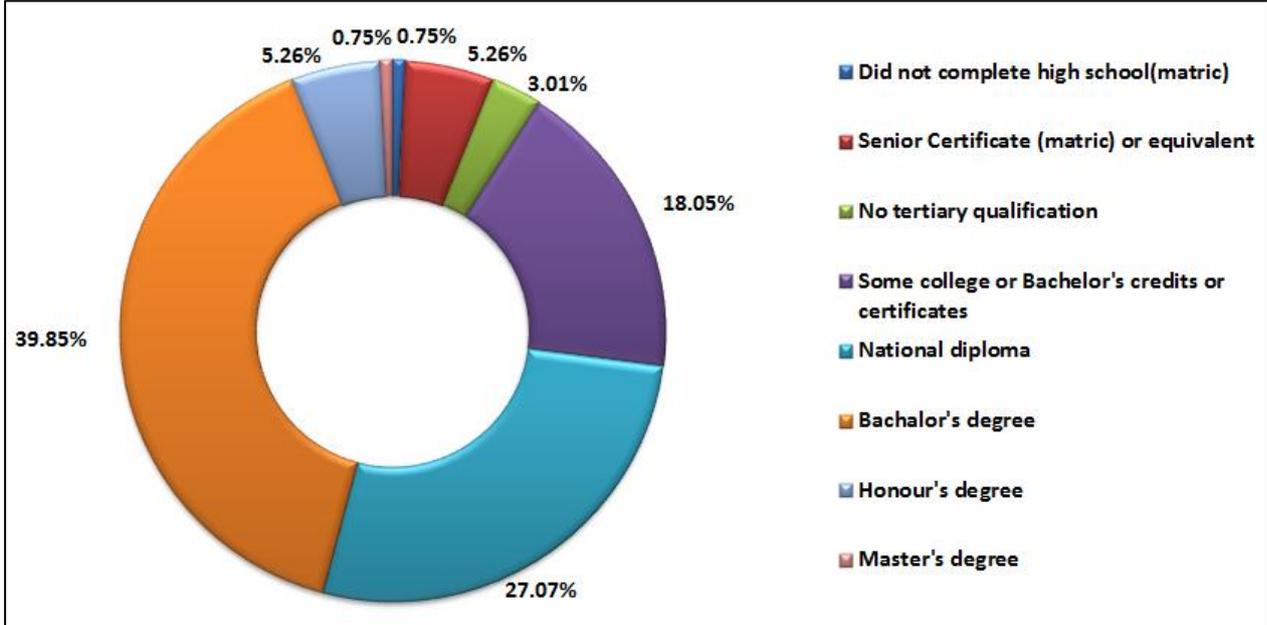


Figure 3.3 depicts the race groups of the study sample. The majority of the race groups are attributed to Africans representing 94.74% of the study sample, while the rest of the study sample; 5.26% are accounted for by Coloureds. There were no respondents from the Indian or White race groups in the sample.

3.4.1.1.4. Highest level of education

As illustrated in Figure 3.4, 39.85% of the study sample has a degree, and 27.07% have a national diploma which indicates that the majority of the respondents in the study sample have a formal qualification. The respondents with an Honour’s degree account for 5.26%, while only 0.75% has a Master’s degree, and none of respondents have an Honours degree. Respondents with some College/Bachelor’s degree credits or certificates account for 18.05% of the study sample, while 3.01% has no tertiary qualifications. Respondents with only a Senior certificate (Grade 12) or equivalent account for 5.26% of the sample, and 0.75% did not complete high school.

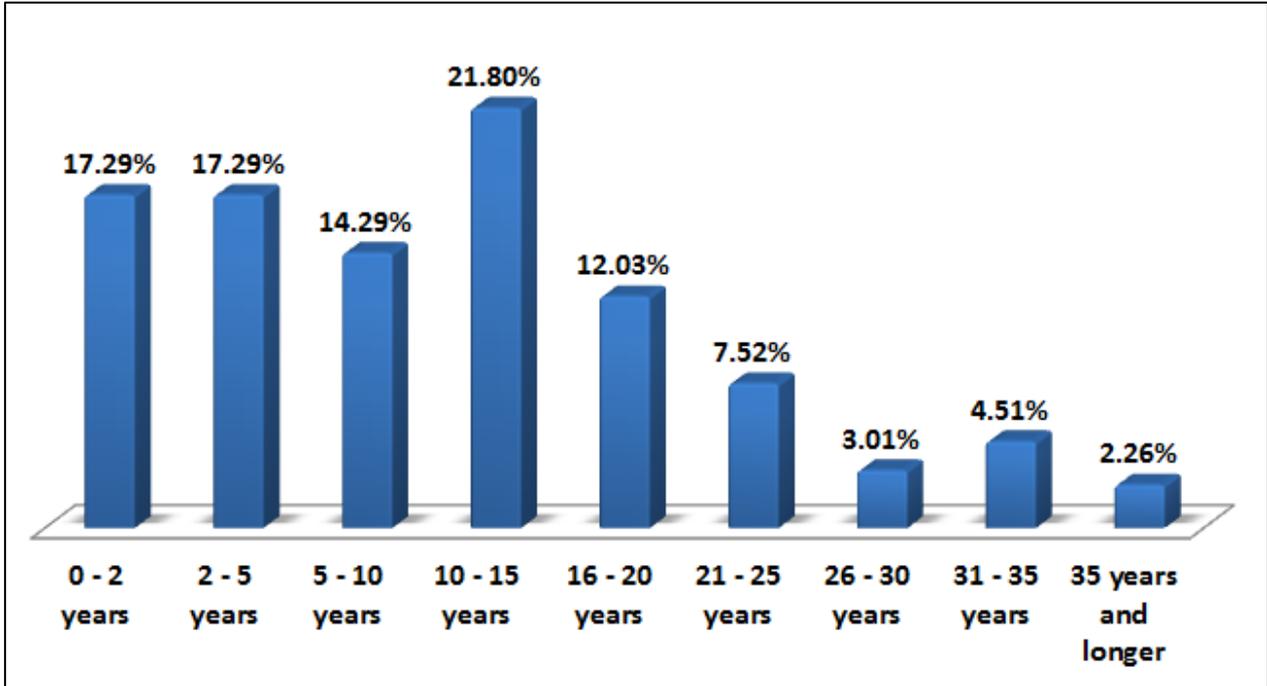
Figure 3.4: Highest level of education



3.4.1.1.5. Years' experience in a teaching/education institution

The study sample indicated diversity in the category of years' experience in a teaching or education institution, which is depicted in Figure 3.5.

Figure 3.5: Years' experience in a teaching or education institution



The largest group identified is that of 21.80% which have been in education for 10 to 15 years; followed by the second and third largest group in the study sample who have only been in education for 0 to 2 years at 17.29%; and 2 to 5 years also at 17.29%. The latter two groups indicate that a significant 34.58% of the respondents have only been in education or teaching for less than 5 years. The middle group identified is that of 14.29% attributed to respondents with 5 to 10 years' experience, and 12.03% with 16 to 20 years' experience in education. The smallest group are made up of: 7.52% that have 21 to 25 years' experience; 3.01% that have 26 to 30 years' experience; 4.51% that have 31 to 35 years' experience; and 2.26% that have more than 35 years' experience in education.

3.4.1.1.6. Job title

Figure 3.6: Job title

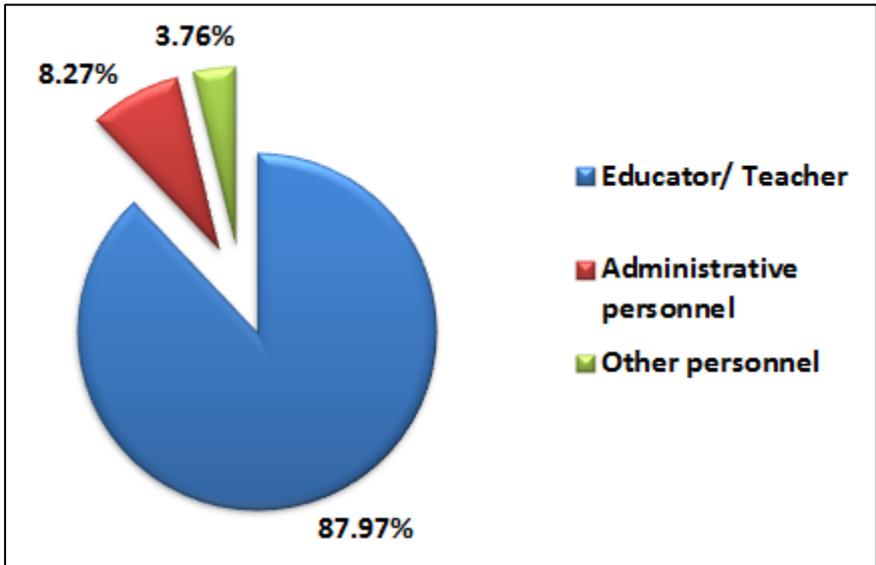


Figure 3.6 illustrates the different job levels, indicating that the majority of the study sample is at the educator/teacher level which account for 87.97%, while 8.27% account for employees in the sample at the administration personnel level, and only 3.76% account for other levels in the organisation.

3.4.1.2 Assessment of the questionnaire results

The extent to which the organisation is successful in achieving growth and sustainability is measured by means of the growth and sustainability questionnaire which was

compiled for the empirical research study based on the theoretical model that was developed and discussed in chapter 2.

The following is an extract discussion of the descriptive statistics that are highlighted as the highest and lowest ranking values for the calculated frequencies, arithmetic mean (\bar{x}) and the standard deviations (S) of the research study questionnaire. Please refer to Annexure B for the complete questionnaire summary of the frequencies and descriptive statistics.

Questions yielding the highest mean (\bar{x}) values for the respondents' perception of the degree to which they agree with the statements on individual and organisational behaviour:

- Question K4 (Knowledge retention): Captures undocumented knowledge from employees prior to retirement, transfer and termination. $\bar{x} = 3.56$, S = 0.50.
- Question K3 (Knowledge retention): Regularly updates your knowledge on their data base. $\bar{x} = 3.53$, S = 0.50.
- Question P6 (Job satisfaction): I would be happy to spend the rest of my career in this organisation. $\bar{x} = 3.28$, S = 0.53.
- Question E2 (Capacity building): My skill and competency to do my work is enhanced through the training provided by my organisation. $\bar{x} = 3.28$, S = 0.54.

Questions yielding the lowest mean (\bar{x}) values for the respondents' perception of the degree to which they agree with the statements on individual and organisational behaviour:

- Question V3 (Values): Do you know your organisation's values? $\bar{x} = 2.38$, S = 0.60.
- Question V12 (Commitment): Ensure that people grow in their jobs by learning new skills and developing themselves. $\bar{x} = 2.32$, S = 0.64.
- Question V9 (Commitment): Is committed towards education. $\bar{x} = 2.35$, S = 0.64.
- Question V2 (Mission): Do you know your organisation's mission? $\bar{x} = 2.29$, S = 0.68.

3.4.2 Exploratory/descriptive construct analysis

In the current research, the exploratory construct/factor analysis technique was used to explore the construct structure underlying the variables. Factor analysis is the generic name given to a group of multivariate statistical methods whose primary purpose is to define the underlying structure in the data matrix (Hair *et al.*, 1995:366). Factor analysis is the way in which one investigates whether variables can be reduced to factors. The factors are extracted from the variables (Brace *et al.*, 2003:278).

Factor analysis addresses the problem of analysing the structure of the interrelationships/correlations between a large number of questionnaire responses by defining a set of common underlying dimensions known as factors. The separate dimensions of the structure are identified and then the extent to which each dimension is explained by each variable is determined. It is an interdependence technique in which all variables are simultaneously considered. The variates/factors are formed to maximise their explanation of the entire variable set. Factor analysis is not used to predict a dependent variable or variables (Hair *et al.*, 1995:367).

The purpose of factor analysis can be achieved from either an exploratory or a confirmatory perspective. Exploratory factor analysis explores the possibility of a factor structure underlying the variables. The analysis identifies the number of factors as well as which of the variables make up which factor (Brace *et al.*, 2003:278).

Confirmatory factor analysis is used to confirm a pre-specified relationship, when testing which variables should be grouped in a factor or testing the precise number of factors. It generally occurs later in the research process when a theory about structure is to be tested. Variables are specifically chosen to reveal underlying structural processes (Tabachnick & Fidell 1983:373).

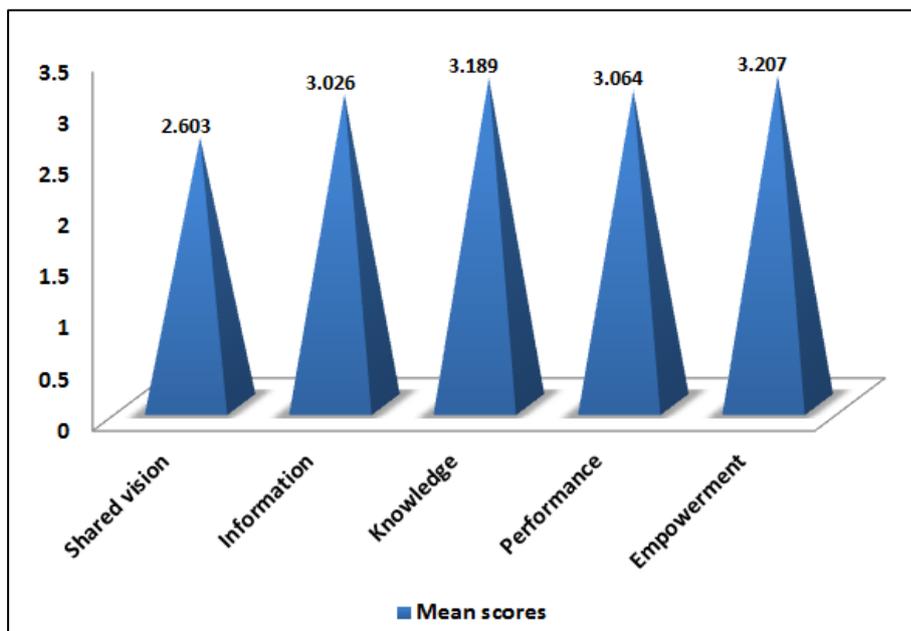
The five exploratory constructs for the research study is based on the growth and sustainability model that were adapted from the aligned commitment model in the literature study, and they are listed in Table 3.2.

Table 3.2: Constructs for the research study

Construct	Name	Mean	Std. Dev.
Construct 1	Shared vision	2.60	0.67
Construct 2	Information	3.03	0.61
Construct 3	Knowledge	3.19	0.60
Construct 4	Performance strengthening	3.06	0.61
Construct 5	Empowerment	3.21	0.51

The mean scores for the five constructs are displayed graphically in Figure 3.7.

Figure 3.7: Mean scores observed for constructs



For the observed data, construct 5: Empowerment ($\bar{x} = 3.21$, $S = 0.51$) yielded the highest ranked mean value whilst construct 1: Shared vision ($\bar{x} = 2.60$, $S = 0.67$) yielded the lowest ranked mean value.

A relatively high mean were also obtained for construct 3: Knowledge ($\bar{x} = 3.19$, $S = 0.60$).

The standard deviations as depicted in Table 3.2 indicates that there is a relatively small variance in the spread of the results over the four point Likert scale, measuring from 0.51 to 0.67, which means that the data set is normally distributed and the values lie

between +1 standard deviation and -1 standard deviation. This is also indicative that the spread of the data is in the form of a bell-shaped distribution.

The five constructs as mentioned in Table 3.2 are further described in detail in the following sections. The purpose of the descriptions is to indicate the content of each factor by providing the dimensions it comprises.

The researcher specified the variables that were included in the constructs because theoretically they are deemed to make a contribution to the research in the sense that measuring these items would contribute to growth and sustainability.

3.4.2.1 Construct 1: shared vision

The content of construct 1 relates to the different behaviours in an organisation with relevance to a shared vision. The dimensions of the variables belonging to the first construct are provided in Table 3.3.

Table 3.3: Construct 1 Shared vision

Dimension	Name	Mean	Std. Dev.
Dimension 1	Vision, mission and values	2.55	0.66
Dimension 2	Commitment	2.57	0.71
Dimension 3	Culture and change	2.71	0.64

For the observed data under the shared vision construct; dimension 3: Culture and change ($\bar{x} = 2.71, S = 0.62$) yielded the highest ranked mean value whilst dimension 1: Vision, mission and values ($\bar{x} = 2.55, S = 0.66$) yielded the lowest ranked mean value.

3.4.2.2 Construct 2: information

The content of construct 2 relates to the different behaviours in an organisation with relevance to information. The dimensions of the variables belonging to the second construct are provided in Table 3.4.

Table 3.4: Construct 2 Information

Dimension	Name	Mean	Std. Dev.
Dimension 1	Information technology	3.04	0.60
Dimension 2	Productivity	3.11	0.65
Dimension 3	Total quality management	2.93	0.56

For the observed data under the information construct; dimension 2: Productivity ($\bar{x} = 3.11$, $S = 0.65$) yielded the highest ranked mean value whilst dimension 3: Total quality management ($\bar{x} = 2.93$, $S = 0.56$) yielded the lowest ranked mean value.

3.4.2.3 Construct 3: knowledge

The content of construct 3 relates to the different behaviours in an organisation with relevance to knowledge. The dimensions of the variables belonging to the third construct are provided in Table 3.5.

Table 3.5: Construct 3 Knowledge

Dimension	Name	Mean	Std. Dev.
Dimension 1	Knowledge management	3.16	0.49
Dimension 2	Knowledge retention	3.55	0.50
Dimension 3	Knowledge loss	2.87	0.60
Dimension 4	Knowledge sharing and transfer	3.21	0.58
Dimension 5	Knowledge trust	3.17	0.62

For the observed data under the knowledge construct; dimension 2: Knowledge retention ($\bar{x} = 3.55$, $S = 0.50$) yielded the highest ranked mean value whilst dimension 3: Knowledge loss ($\bar{x} = 2.87$, $S = 0.60$) yielded the lowest ranked mean value.

3.4.2.4 Construct 4: performance strengthening

The content of construct 4 relates to the different behaviours in an organisation with relevance to performance strengthening. The dimensions of the variables belonging to the fourth construct are provided in Table 3.6.

Table 3.6: Construct 4 Performance strengthening

Dimension	Name	Mean	Std. Dev.
Dimension 1	Performance management	3.12	0.58
Dimension 2	Rewards and recognition	2.82	0.63
Dimension 3	Job satisfaction	3.23	0.54

For the observed data under the performance strengthening construct; dimension 3: Job satisfaction ($\bar{x} = 3.23$, $S = 0.54$) yielded the highest ranked mean value whilst dimension 1: Performance management ($\bar{x} = 3.12$, $S = 0.58$) yielded the lowest ranked mean value.

3.4.2.5 Construct 5: empowerment

The content of construct 5 relates to the different behaviours in an organisation with relevance to empowerment. The dimensions of the variables belonging to the fifth construct are provided in Table 3.7.

Table 3.7: Construct 5 Empowerment

Dimension	Name	Mean	Std. Dev.
Dimension 1	Capacity building	3.26	0.53
Dimension 2	Talent management	3.23	0.49
Dimension 3	Employee engagement	3.12	0.52
Dimension 4	Employee empowerment	3.21	0.50

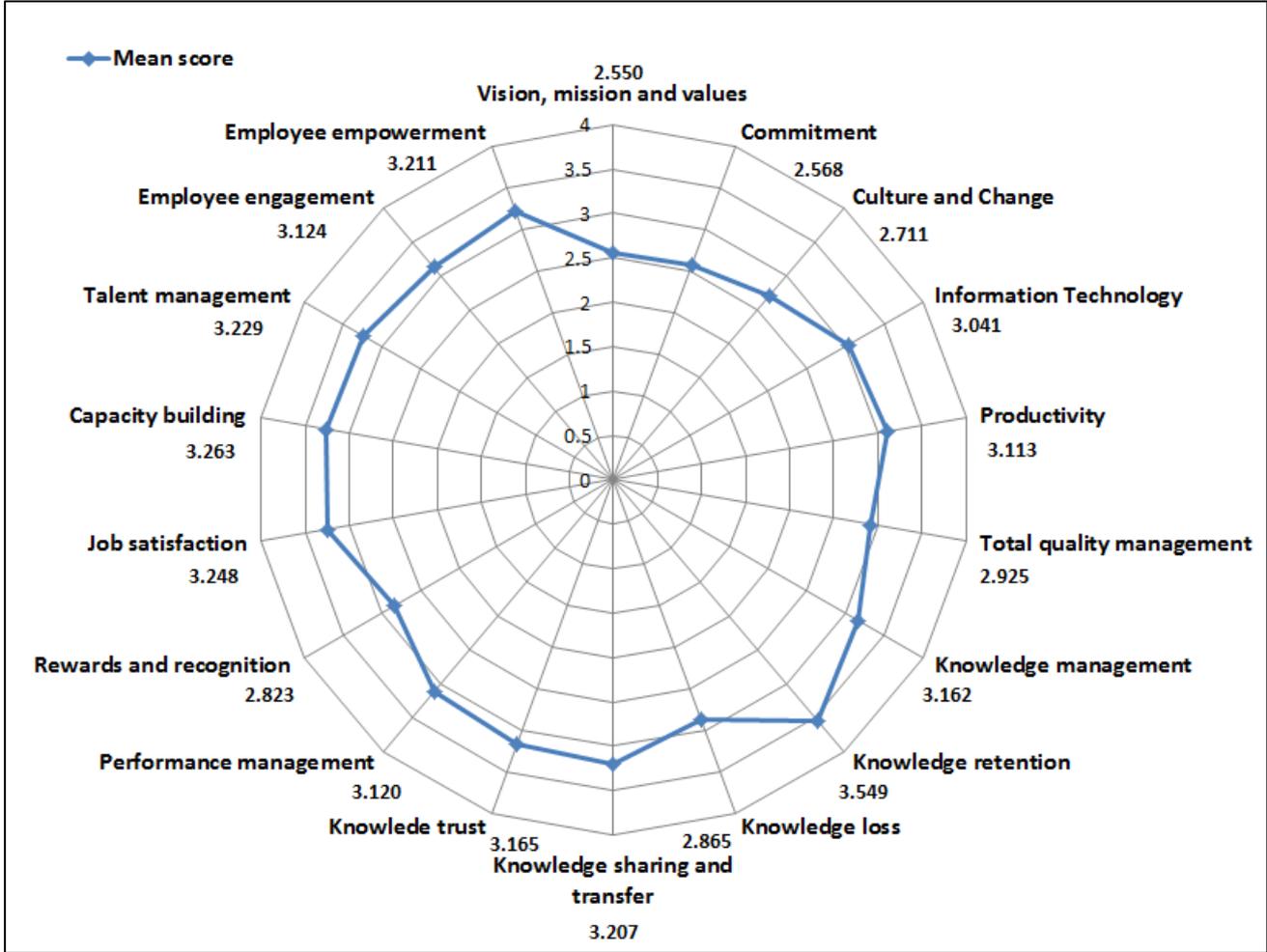
For the observed data under the empowerment construct; dimension 1: Capacity building ($\bar{x} = 3.26$, $S = 0.53$) yielded the highest ranked mean value whilst dimension 3: Employee engagement ($\bar{x} = 3.12$, $S = 0.52$) yielded the lowest ranked mean value.

3.4.2.6 Dimensions of constructs

The dimensions of all the constructs are graphically displayed with their mean values in Figure 3.8. The mean values vary between the lowest of 2.550 for the vision, mission and values dimension, and the highest of 3.549 for the knowledge retention dimension.

A total of 6 dimensions fall between the mean values of 2.5 and 3.0, while 11 dimensions' mean values range between 3.0 and 3.5, and 1 dimensions' mean value is above 3.5. Based on the Likert scale used and described in Table 3.1, the mean value for all the dimensions in the questionnaire are above 2.5; indicating that an overall negative attitude is expressed by respondents in the study sample towards the status of each of the dimensions measured in the research study.

Figure 3.8: Mean score values for dimensions



3.4.3 Reliability analysis: Cronbach’s alpha coefficient

Lee Cronbach proposed calculating the alpha coefficient as a means to determine the internal consistency, or reliability, of a test (Cronbach, 1951:297).

The Cronbach’s alpha to test reliability is the commonly used measure of reliability for a set of two or more construct indicators. An indicator is a single variable used in

conjunction with one or more other variables to form a composite measurement or factor (Hair *et al.*, 1995:1).

Field (2009:674) explains Cronbach's alpha as a measure which splits the data in two in all ways possible and calculating the correlation coefficient for each split. Cronbach's alpha coefficient is then the average of these values. Ravid (2010:150) concluded that using Cronbach's alpha as a test for reliability is well suited to questionnaires that make use of a Likert scale.

Cronbach's alpha coefficient is stated as a numerical value between 0 and 1, and described the extent to which items that measure the same construct is inter-related (Tavokol & Dennick, 2011:53). A generally acceptable value of Cronbach's alpha is greater than 0.8 for cognitive tests, while lower values of greater than 0.7 are suitable for ability tests, however, when testing psychological constructs even lower values can be realistically accepted due to the diversity of constructs being measured (Field, 2009:675). Tavakol and Dennick (2011:53) note that Cronbach's alpha is influenced by the length of the test, indicating that shorter tests will produce lower values.

The Cronbach's alpha was used to determine the internal reliability of the dimensions in each construct, as well as the items in each dimension. The test was conducted to validate the construct structure. The results for the reliability of the constructs and dimensions are in Table 3.8 and Table 3.9.

Table 3.8: Results of reliability of constructs

Construct	Cronbach's alpha	Cronbach's alpha based on standardised items	No of items
1. Shared vision	0.8054	0.8089	20
2. Information	0.7592	0.7602	6
3. Knowledge	0.7181	0.7209	10
4. Performance strengthening	0.7279	0.7218	6
5. Empowerment	0.6744	0.6747	8

Table 3.9: Results of reliability of dimensions

Dimension	Cronbach's alpha	Cronbach's alpha based on standardised items	No of items
1. Vision, mission and values	0.6553	0.6568	8
2. Commitment	0.5448	0.5449	6
3. Culture and change	0.6002	0.6025	6
4. Information technology	0.7944	0.7954	2
5. Productivity	0.7663	0.7696	2
6. Total quality management	0.7472	0.7692	2
7. Knowledge management	0.8250	0.8292	2
8. Knowledge retention	0.7312	0.7312	2
9. Knowledge loss	0.8181	0.8187	2
10. Knowledge sharing and transfer	0.7284	0.7323	2
11. Knowledge trust	0.7673	0.7673	2
12. Performance management	0.8596	0.8596	2
13. Rewards and recognition	0.8912	0.8913	2
14. Job satisfaction	0.8208	0.8214	2
15. Capacity building	0.9280	0.9287	2
16. Talent management	0.8967	0.9006	2
17. Employee engagement	0.9347	0.9366	2
18. Employee empowerment	0.8820	0.8821	2
Overall reliability of questionnaire of 50 items	0.8060	0.8074	50

The overall Cronbach's alpha coefficient obtained for the growth and sustainability questionnaire was .8060 for the 50 items. The closer the reliability coefficient is to 1.0, the better the correlation. Since the total value was above .7, the instrument scale can be deemed to be reliable. The reliability coefficient of the dimensions appears to vary between the lowest of .5448 and the highest of .9347. Two of the reliability coefficients are above .9; seven are above .8; six are above .7; and two are above .6. Only one reliability coefficient is below .6 at .5448.

Due to the diversity of constructs being measured, these values can be regarded as acceptable internal consistency reliability, and therefore satisfactory (Field, 2009:675; Hair *et al.*, 1995:2).

It can be concluded that the internal consistency or reliability of the overall growth and sustainability questionnaire and the factors and dimensions are consistent in what it is intended to measure. When multiple measurements are taken, the reliability measures will all be highly consistent in their values (Hair *et al.*, 1995:2).

3.4.4 Structural equation modelling

Structural equation modelling is a technique that allows separate relationships for each of a set of dependent variables. Other multivariate analysis techniques are not suitable in this situation because they allow only a single relationship between dependent and independent variables (Hair *et al.*, 1995:15). Hair *et al.* (1995:621) further describes structural equation modelling as a multivariate technique combining aspects of multiple regression and factor analyses to estimate a series of interrelated dependence relationships simultaneously.

The purpose in the current research is to confirm the exploratory structure and determine multiple relationships between the constructs. Application of this technique could enable the researcher to produce a new model based on the empirical research. Structural equation modelling deals with multiple relationships simultaneously while providing statistical efficiency. Furthermore, structural equation modelling's ability to assess relationships comprehensively has provided a transition from exploratory to confirmatory analysis (Hair *et al.*, 1995:621).

The main purpose of structural equation modelling is to compare the model to empirical data. The comparison leads to so-called "fit-statistics". If the fit is acceptable, measurement models and structural models are regarded as being supported by the data, in other words, the assumed model is not rejected (Nachtigall *et al.*, 2003:6).

The purpose of a structural equation modelling model developing strategy is a combination of confirmatory and exploratory approach. Theory provides a starting point

for the development of a theoretically justified model that can be empirically supported (Garson, 2009:2).

The structural equation modelling analysis was undertaken using the AMOS statistical program to complete the model development strategy. The model is based on a true reflection of the theory that suggests that most of the constructs and dimensions influencing growth and sustainability are interrelated.

3.4.4.1 Goodness-of-fit indices

The overall model fit is assessed by means of one or more goodness-of-fit measures, whereas three measures obtained at the acceptable levels are regarded as adequate. Hair *et al.* (1995:640) describes these types of goodness-of-fit statistics as follows:

- Absolute fit measures, which includes:
 - Chi-square: Measure is calculated by dividing CMIN (Chi-square) with DF (degrees of freedom) values up to 5 are acceptable.
 - Goodness-of-fit (GFI): values range from 0 indicating no fit; to 1 indicating perfect fit. Values closer to 1 indicate a good fit.

- Incremental fit measures, which includes:
 - Normed fit index (NFI): values range from 0 indicating no fit; to 1 indicating perfect fit. Values closer to 1 indicate a good fit.
 - Tucker-Lewis index (TLI): values range from 0 indicating no fit; to 1 indicating perfect fit. Values closer to 1 indicate a good fit.
 - Relative fit index (RFI): values range from 0 indicating no fit; to 1 indicating perfect fit. Values closer to 1 indicate a good fit.
 - Incremental fit index (IFI): values range from 0 indicating no fit; to 1 indicating perfect fit. Values closer to 1 indicate a good fit.
 - Comparative fit index (CFI): values range from 0 indicating no fit; to 1 indicating perfect fit. Values closer to 1 indicate a good fit.

Examining the structural model, after assessing the overall model fit, involves the significance of estimated coefficients. Several means of evaluation can be used to examine the structural model fit, such as specifying a significance level and then testing

each estimated coefficient for statistical significance for the causal relationship. The researcher can examine the standardised solution where the estimated coefficients all have equal variances and a maximum value of 1.0. Coefficients near 0 have little effect, whereas increased values correspond to increased importance in the causal relationship (Hair *et al.*, 1995:643).

The test statistics and fit indices for the model are indicated in Table 3.10.

Table 3.10: Goodness-of-fit indices with coefficient values for the structural equation model

	MEASURES OF ABSOLUTE FIT				INCREMENTAL FIT MEASURES			
GOODNESS-OF-FIT CRITERIA	Chi-square (CMIN)	Degrees of freedom (DF)	P-value	CMIN /DF	Normed Fit index (NFI)	Incremental fit index (IFI)	Tucker-Lewis index (TLI)	Comparative fit index (CFI)
SEM Model	262.58	132	.000	1.989	.556	.715	.654	.702

According to Hair *et al.* (1995:683), measures of absolute fit such as Chi-square statistics and goodness-of-fit statistics indicate the degree to which the overall model predicts the observed correlation or covariance matrix. It is recommended that goodness-of-fit measures be used in combination to assess model fit, model comparison and model parsimony. The different goodness-of-fit measures that are relevant to the structural equation modelling strategy in this study are discussed below.

Model chi-square (CMIN) is the most common fit test. Hair *et al.* (1995:683) indicate that a large value of chi-square relative to the degrees of freedom means that the observed and estimated matrices differ considerably. The chi-square value should not be significant showing that the model describes the relationship between the variables well (Garons, 2009:25). Low model chi-square (CMIN) values, which result in significance levels; P-value greater than 0.05, indicate that the observed and estimated input matrices are not statistically different (Hair *et al.*, 1995:683). For the purposes of the research study the model chi-square (CMIN) value of 1.989 is considered to be within the acceptable level of a maximum of 5.00; and the P-value is also acceptable at .000.

Incremental fit measures compare the model to a baseline model (Hair *et al.*, 1995:658). Some of the goodness-of-fit tests that are used when comparing the model are comparative fit index (CFI), normed fit index (NFI), Tucker-Lewis index (TLI) and incremental fit index (IFI) (Garson, 2009:31).

The results of the study produced acceptable incremental fit measures, with the incremental fit index (IFI) at 0.715, the Tucker-Lewis index (TLI) at 0.654 and the comparative fit index (CFI) at 0.702; which all reflects a good model fit. The goodness-of-fit test results indicate that the model can be accepted as a model with a good fit on the basis of the data observed in the research.

3.4.4.2 Causal relationships in structural equation modelling

In causal relationships the change in one variable is assumed to cause change in another variable. Causation lies in the theoretical justification provided to support the analyses and is expressed in terms of equations. The most critical error, also known as specification error; that might occur is when one or more key variables are omitted in developing the theoretically based model. Omission of a significant variable could imply a biased assessment of the importance of other variables (Hair *et al.*, 1995:626). In this research, the causal relationships would be between those variables that would impact or lead to future growth and sustainability.

Path diagrams are useful in depicting a series of causal relationships. Separate equations are required for each dependent construct. Structural equation modelling makes it possible to estimate all the equations simultaneously. Path diagrams are based on two underlying assumptions. Firstly, all causal relationships are indicated and theory is the basis for omission or inclusion of relationships. Secondly, it is assumed that causal relationships are linear. Nonlinear relationships cannot be directly estimated in structural equation modelling, but structural models can estimate nonlinear relationships (Hair *et al.*, 1995:631).

The regression analysis that forms part of the structural equation modelling process confirmed that there are relationships between most constructs and dimensions, which are in line with the theoretical study. The results of the structural equation modelling

regression analysis indicating causal relationships and correlations are indicated in Table 3.11.

Table 3.11: Causal relationships and correlations in structural equation modelling

CONSTRUCTS AND DIMENSIONS		Estimate	S.E.	C.R.	P
Knowledge	<--- Growth and sustainability	1.000	.000	.000	***
Shared vision	<--- Growth and sustainability	.186	.214	.872	.383
Information	<--- Growth and sustainability	1.908	.688	2.776	.006
Performance	<--- Growth and sustainability	1.439	.558	2.579	.010
Empowerment	<--- Growth and sustainability	.052	.090	.577	.564
Performance management	<--- Performance	1.000	.000	.000	***
Rewards and recognition	<--- Performance	2.064	.494	4.181	***
Job satisfaction	<--- Performance	.878	.276	3.184	.001
Vision, mission and values	<--- Shared vision	1.000	.000	.000	***
Commitment	<--- Shared vision	.909	.147	6.201	***
Culture and change	<--- Shared vision	.812	.133	6.081	***
Productivity	<--- Information	1.000	.000	.000	***
Information technology	<--- Information	1.081	.236	4.584	***
Total quality management	<--- Information	1.063	.222	4.794	***
Knowledge trust	<--- Knowledge	1.000	.000	.000	***
Knowledge sharing and transfer	<--- Knowledge	.998	.416	2.401	.016
Knowledge loss	<--- Knowledge	1.769	.612	2.891	.004
Knowledge retention	<--- Knowledge	.868	.360	2.415	.016
Knowledge management	<--- Knowledge	1.094	.410	2.666	.008
Capacity building	<--- Empowerment	1.000	.000	.000	***
Talent management	<--- Empowerment	5.320	8.493	.626	.531
Employee engagement	<--- Empowerment	5.706	9.109	.626	.531
Employee empowerment	<--- Empowerment	4.164	6.692	.622	.534

❖ Estimate: estimated path coefficient (prediction) of arrows in the model (Garson, 2010:4)

❖ S.E.: standard error

- ❖ C.R.: critical ratio (estimate divided by its standard error; >1.96 = significant at the 0.05 level) (Garson, 2010:4)
- ❖ P: probability value (<0.05 = significant on the 001 level ***) (Garson, 2010:4).

All the significant causal relationships are indicated by p-values below 0.05 or *** on the .001 level (two tailed). The intercorrelations are significant with p-values below .05 at the .001 (two tailed) level, which confirms the theoretical study that the dimensions are, for the most part, intercorrelated to a great extent. From the results the following significant causal relationships are indicated:

- The constructs knowledge, information and performance growth and sustainability as a dependent variable.
- The dimensions performance management, rewards and recognition and job satisfaction with the construct performance as a dependent variable.
- The dimensions vision, mission and values, commitment and culture and change with the construct shared vision as a dependant variable.
- The dimensions productivity, information technology and total quality management with the construct information as a dependant variable.
- The dimensions Knowledge management, knowledge retention, knowledge sharing and transfer, knowledge loss and knowledge retention with the construct knowledge as a dependent variable.

In the causal relationship structure the constructs that do not have a significant direct impact on growth and sustainability are shared vision and empowerment with P-values of .383 and .564 respectively. The dimensions of the empowerment construct do not have significant causal relationships with the construct. However, these constructs and dimensions are intercorrelated with several other dimensions, which indicate an indirect impact on growth and sustainability.

3.4.5 Multiple regression analysis

Multiple regression analysis is a statistical technique used to measure linear relationships between one dependent and several independent variables (Tabachnick & Fidell, 1983:86).

Multiple regression analysis is a statistical technique that allows the researcher to identify a set of predictor variables (independent variables) that will influence the dependent variable, indicating how well a set of variables explains a dependent variable. The dependant variable in this research is growth and sustainability. Predicting growth and sustainability is likely to be influenced by several factors. The use of multiple regression should enable the researcher to test the model about precisely which set of variables is influencing growth and sustainability by giving the direction and size of the effect of the independent variables on the dependent variable (Brace *et al.*, 2003:210; Neuman 2000:337).

Multiple regression analysis was performed in order to obtain further confirmation of the conclusions drawn from the structural equation model, and to determine the degree to which different dimensions predict growth and sustainability. The results from the multiple regression analysis are grouped per construct in Table 3.12 and per dimension in Table 3.13.

Table 3.12: Predictors of growth and sustainability grouped per construct

Constructs			Beta Coefficients	Significance level
Knowledge	<---	Growth and sustainability	.858	***
Shared vision	<---	Growth and sustainability	.099	***
Information	<---	Growth and sustainability	.993	***
Performance	<---	Growth and sustainability	.987	***
Empowerment	<---	Growth and sustainability	.218	***

The higher the Beta coefficient values, the bigger the influence of the construct or dimension on growth and sustainability. The following constructs as indicated in Table 3.12, appear to be very significant (all p-value < .05) and would predict growth and sustainability, which means that should an organisation focus on these constructs, growth and sustainability could be improved:

- Knowledge (.858 beta)
- Information(.993 beta)
- Performance (.987 beta)

The following constructs are very small predictors of growth and sustainability:

- Shared vision (.099 beta)
- Empowerment (.218 beta)

Table 3.13: Predictors of growth and sustainability grouped per dimension

Dimensions	Constructs	Beta Coefficients	Significance level
Performance management	<--- Performance	.416	***
Rewards and recognition	<--- Performance	.770	***
Job satisfaction	<--- Performance	.397	***
Vision, mission and values	<--- Shared vision	.829	***
Commitment	<--- Shared vision	.699	***
Culture and change	<--- Shared vision	.660	***
Productivity	<--- Information	.510	***
Information technology	<--- Information	.591	***
Total quality management	<--- Information	.644	***
Knowledge trust	<--- Knowledge	.326	***
Knowledge sharing and transfer	<--- Knowledge	.349	***
Knowledge loss	<--- Knowledge	.571	***
Knowledge retention	<--- Knowledge	.353	***
Knowledge management	<--- Knowledge	.441	***
Capacity building	<--- Empowerment	.073	***
Talent management	<--- Empowerment	.417	***
Employee engagement	<--- Empowerment	.414	***
Employee empowerment	<--- Empowerment	.325	***

From the dimensions in Table 3.13, the smallest predicting dimension is capacity building (.073 beta), and the biggest predicting dimension is vision, mission and values (.829 beta). An interesting observation from the multiple regression analysis that the construct shared vision (.099 beta) is the smallest predicting construct; however its one dimension; vision, mission and values (.829 beta) is the highest predicting dimension for growth and sustainability.

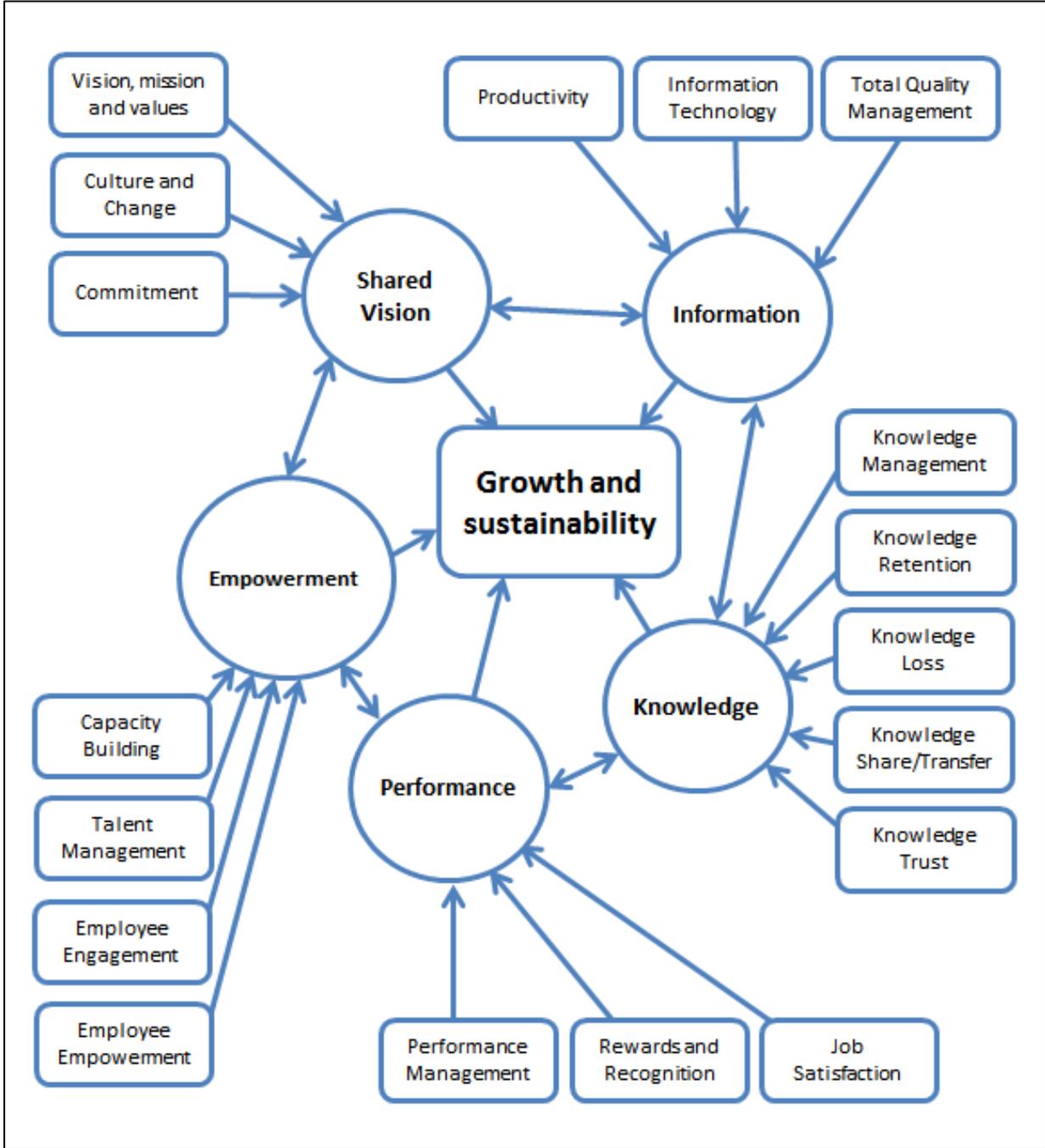
3.4.6 Knowledge continuum model of growth and sustainability

The causal relationships and correlations from the structural equation model and the multiple regression analysis in the previous sections confirm that the structural equation model is an acceptable model in the sense that most of the causal relations in the

structural equation model are confirmed by the multiple regression analysis and the intercorrelations between most of the dimensions are confirmed by both the structural equation model and the multiple regression analysis.

The empirical study revealed that a new growth and sustainability model can be compiled that would explain the factors that could impact on growth and sustainability, and provide a measurement for growth and sustainability and its impacting factors. This model is depicted in Figure 3.9.

Figure 3.9: Knowledge continuum model of growth and sustainability



The model of growth and sustainability indicate the five constructs namely shared vision, information, knowledge, performance and engagement that would contribute to growth and sustainability. The influencing dimensions of each construct indicate that all these dimensions would have some impact on growth and sustainability, and confirms the theoretical study.

The model would explain the specific impact of knowledge continuity, as part of the knowledge construct, on growth and sustainability, indicating that knowledge continuity could be an enabler for future growth and sustainability.

3.5 CONCLUSION

The research design chosen for this study was based on the survey method. The motivation for the survey method was to operationalise the constructs described in the theoretical model by compiling a questionnaire to determine the extent to which future growth and sustainability can be achieved in an organisation. The processes for questionnaire design, sample population, sample design, sample size and data collection were described as part of the research methodology followed in this research. From a population of 194, a total of 133 questionnaires were received, yielding a response rate of 68.5% for this study, which was deemed sufficient for further statistical analysis as described in the subsection data collection.

The analytical statistical analysis process in this research study comprises multivariate statistics to explore the quantitative data collected for patterns in the data. The statistical techniques that were appropriate for this study comprise:

- a) descriptive statistics utilised to summarise the different demographical and biological elements of sample data;
- b) exploratory factor analysis that explore the possibility of a factor structure underlying the variables;
- c) Cronbach's alpha to measure the reliability, or internal consistency of a set of two or more construct indicators;
- d) Structural equation modelling to confirm the factor structure and improve the theoretical model; and

- e) Multiple regression analysis to identify a set of independent variables, also known as predictor variables that will influence the dependent variable.

The chapter further outlined the research sample from which the data were gathered to be used in the research as well as the results from the research. The extent to which the organisation can achieve future growth and sustainability were explained. The results show the constructs contributing to growth and sustainability in the organisation, namely shared vision, information, knowledge, performance and engagement.

In the descriptive factor analysis process, principal component factor analysis was conducted, which describe the five constructs that would influence growth and sustainability. These constructs' dimensions produced significant intercorrelations which indicate that the dimensions are for the most part intercorrelated with each other in contributing to growth and sustainability. The questionnaire was found to be reliable with a Cronbach's alpha of .8060. The results that were obtained enabled the researcher to meet the research objective of determining statistically the enhancing or impeding factors that influence growth and sustainability.

The structural equation modelling building strategy that was followed gave rise to the structural equation model by applying different goodness-of-fit indices in order to find the best fitting model. The derived model found that there is a direct causal relationship between knowledge, information and performance with growth and sustainability. The results indicate that knowledge, information and performance would have a stronger effect on growth and sustainability than shared vision and empowerment.

Rewards and recognition would have an exceptionally strong impact on performance, while knowledge loss would have an exceptionally strong impact on knowledge.

The regression model of the structural equation modelling process confirmed that there are relationships between most dimensions, which are in line with the theory. Most of the relationships proved to be significant. The multiple regression analysis indicated that knowledge, information and performance would significantly predict growth and sustainability.

3.6 CHAPTER SUMMARY

In this chapter, the focus has been on the research design and methodology of the empirical research study. The purpose of this study was to empirically determine by means of quantitative research the degree to which the influencing factors would enhance or impede growth and sustainability in an organisation.

The findings in the model development strategy of the structural equation model produced a new growth and sustainability model using the constructs from the factor analysis. The comparison of the newly developed model with the theoretical model and the literature, conclusions and recommendations for this research are discussed in detail in chapter 4.

CHAPTER 4

CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

4.1 INTRODUCTION

The focus in this chapter is on drawing conclusions on the basis of the literature study and the results of the empirical research. The literature review on the concepts of future growth and sustainability, knowledge continuity and the factors that could contribute to future growth and sustainability, as well as the results from the empirical research performed in this study, will enable the researcher to draw certain conclusions.

The research limitations of the literature review and the empirical investigation will be explained in the context of the conclusions of the research.

Recommendations for further research, for the organisation that participated in the empirical research and for practitioners in the research disciplines, will be discussed.

4.2 CONCLUSIONS ON THE LITERATURE REVIEW

Conclusions will be drawn about future growth and sustainability and knowledge continuity with specific reference to the contextual framework of the research and the literature reviewed.

4.2.1 Literature review objective 1: What is understood under the concept of future growth and sustainability?

The first aim of the literature study was to conceptualise the nature of future growth and sustainability in terms of how it should be understood in organisations. After reviewing the literature it was concluded that the concept of future growth and sustainability can be defined as follows:

Growth and sustainability is the continuous development and committed continuation of all organisms, species and organisations, which requires the understanding of actions,

consequences, commitment and relationships, and which affects all areas of life, ecosystems, health, government, education and business. Becoming more sustainable organisations would require new ways of thinking and re-evaluating priorities and educational approaches. Whilst education is viewed as an instrument for achieving sustainability; growth and sustainability in education is a living system, which requires an understanding of how components are integrated, interrelated and interactive. Core competencies for sustainable future growth combine technologies, collective learning and the capacity to share knowledge across business units. Sustainability expands into organisational structures and processes, strategies and goals, and the essence of culture in an organisation (as indicated in chapter 2.2).

4.2.2 Literature review objective 2: Is growth and sustainability measurable, and how?

A multidisciplinary approach focusing on knowledge continuity, individual and organisational behaviour was followed in this research.

During the literature review several theories and models for organisational growth and sustainability were investigated. All the models depicted in Table 2.1 emphasised the importance of the human factor in some or other way to achieve organisational growth, sustainability and effectiveness. Although growth and sustainability is measurable in terms of all the models investigated, the model of Coetsee (2003:30) provided the background framework in this research. Coetsee incorporate knowledge, information, shared vision, performance and empowerment into his model.

4.2.3 Literature review objective 3: What is understood under the concept of knowledge continuity?

In the information age, which has evolved the industrial economy to a knowledge economy, knowledge has replaced capital as the dominant economic force in business. In some organisations knowledge has become their only asset. This transformation of knowledge into a capital asset; intellectual capital, has placed increased emphasis on knowledge which, in turn, has increased knowledge loss in organisations. The negative impact of knowledge loss in organisations includes reduced efficiency, decreased productivity, lower revenues, increased employee frustration and stress.

The once troublesome problem of knowledge loss has become a critical one of on-going knowledge depletion and collapse, with job transfers, retirements, terminations, layoffs, job hopping and resignations continuing to deplete the organisations' knowledge base.

Knowledge continuity is the preservation of an organisations corporate knowledge and productivity by preserving their organisational knowledge base. Organisational knowledge is the accumulated know-how and expertise in an organisation which includes all the embedded routines, systems, processes, cultures and environments. The knowledge may be explicit or tacit. Explicit knowledge can be codified in the organisations' documents, manuals or databases, while tacit knowledge are employees' skills, knowledge and intuitions. Preserving an organisations' knowledge is critical to an organisation in order to create a sustainable future (as indicated in chapter 2.4).

4.2.4 Literature review objective 4: What are the individual and organisational factors that could enhance or impede future growth and sustainability?

The objective of identifying the individual and organisational factors that would enhance or impede future growth and sustainability was formulated by determining that there are five factors, which consist of multiple dimensions, which could influence future growth and sustainability.

These five factors that were identified by the literature review in chapter 2 are: knowledge; information; empowerment; performance strengthening; and shared vision:

- (1) The knowledge factor comprises the dimensions of knowledge management, knowledge retention, knowledge loss, knowledge sharing and transfer, and trust.
- (2) The information factor comprises the dimensions of information technology, productivity, and total quality management.
- (3) The empowerment factor comprises the dimensions of capacity building, talent management, employee empowerment, and employee engagement.
- (4) The performance strengthening factor comprises the dimensions of performance management, rewards and recognition, and job satisfaction.

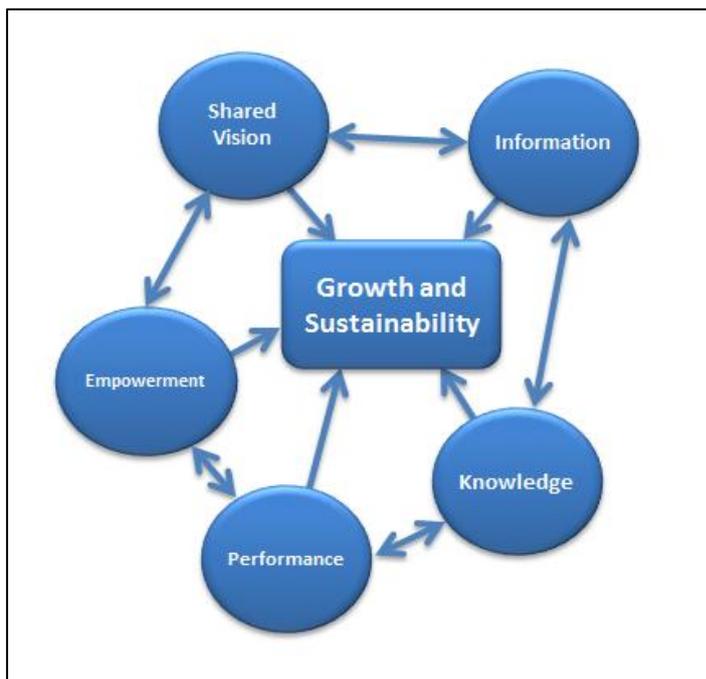
(5) The shared vision factor comprises the dimensions of vision, mission and values, commitment, and culture and change.

In terms of these factors it can be concluded that should any one of these factors or their dimensions not be present or at acceptable levels in an organisation, it would have a negative impact on the organisations' future growth and sustainability. Furthermore, should all of these factors and their dimensions be present and at acceptable levels in an organisation, the organisation would have a positive outcome for growth and sustainability.

4.2.5 Literature review objective 5: How can the individual and organisational factors be integrated to develop a theoretical knowledge continuity model aimed at enabling growth and sustainability?

A theoretical model that identifies the factors that need to be taken into consideration in addressing the issue of growth and sustainability was developed on the basis of the literature investigation. A condensed theoretical model, based on the detailed structural equation model that was developed in chapter 3 (Figure 3.9), is depicted in Figure 4.1.

Figure 4.1: Condensed theoretical knowledge continuity model of enhancing or impeding factors for growth and sustainability



It can be concluded that identifying the enhancing or impeding factors would indicate to the organisation where to focus its efforts towards future growth and sustainability and to enable it to design and implement organisational strategies that are aligned with a goal of achieving future growth and sustainability.

4.3 CONCLUSIONS ON THE EMPIRICAL RESEARCH

Conclusions will be drawn about future growth and sustainability and knowledge continuity with specific reference to the empirical research in this study.

4.3.1 Empirical research objective 1: to what extent is growth and sustainability influenced by certain behavioural and organisational factors in the basic education system in South Africa?

The first empirical review objective, namely to investigate the extent to which growth and sustainability is influenced by behavioural and organisational factors in the basic education system in South Africa, was realised, and the main results were discussed in chapter 3. The first step in achieving this aim was to determine what type of sample and population would enable the researcher to determine the extent of the influence. The data collection process was administered in paper format. Sufficient data were obtained through the research survey to enable the researcher to conduct the statistical analyses. The overall response rate was 68.5% of the total sample population.

The main findings of the data that were analysed for the organisation pertaining to the demographic profile questions (age groups, highest level of education and years' experience in a teaching or education institution) and the growth and sustainability dimensions, revealed the following:

(1) Age groups

The largest age group was between 31 to 40 years, representing 39.10% of the sample, followed by the age group of 41 to 50 years, representing 22.56%. It can be concluded that the 41 years and older age groups, totalling 34.59%, are nearing retirement and the organisation risks losing their knowledge in the near future. The largest age group between 31 and 40 years is the group who easily changes jobs or immigrates to other

countries, putting the organisation at risk of losing their knowledge and expertise. Furthermore, the two youngest groups up to 30 years, representing 26.32% of the sample are those who still need to acquire valuable knowledge and skills from the older, knowledgeable age groups before the latter departs from the organisation.

(2) Highest level of education

Education levels indicated that the postgraduate groups, namely the honour's and master's groups represent 6.01% of the sample population. It can be concluded that these people are highly knowledgeable and that they possibly represent a few key personnel, leaders or industry professionals, experts and specialists whose knowledge retention would be critical to the organisation. Furthermore, a total of 27.07% of the study population did not complete high school, have a senior certificate, have no tertiary qualification or have some college or bachelor's degree credits. It can be concluded that the organisation could invest in further education and training for these groups aimed specifically at developing and empowering these people and their skills.

(3) Years' experience in a teaching or education institution

The years' experience in a teaching or education institution indicated that the largest group was the 21.08% of the sample population who has 10 to 15 years' experience. An alarming 34.58% of the sample population has less than 5 years' experience. It can be concluded that the people in these groups with less than 5 years' experience would benefit tremendously from knowledge shared by personnel with many years of experience. The three smallest groups ironically represent the groups with the most experience, accounting for 9.78% of the sample population. Although this is a small group they could represent the experts or leadership whose knowledge retention would be critical to the organisation.

(4) growth and sustainability dimensions

In interpreting the results of the growth and sustainability dimensions that were measured in the questionnaire, it can be concluded that respondents are generally unhappy, demotivated and unproductive; are not empowered by the use information technology; and express negative attitudes towards trust in the organisation and are

unwillingness to share their knowledge. These negative indicating factors influencing growth and sustainability in the organisation are at individual and organisational level.

The areas that merit serious attention in the organisation pertain to addressing the impact on growth and sustainability successfully, by creating a culture and structure conducive to future growth and development, focusing on aligned commitment towards a shared vision, the use of information technology, knowledge practices, and practices that would enhance performance and empowerment throughout the organisation. These factors are at organisational level.

4.3.2 Empirical research objective 2: what empirically derived factors have an impact on growth and sustainability?

Empirical objective 2, namely to determine statistically the factors that influence growth and sustainability, is achieved in chapter 3 by means of exploratory factor analysis.

The overall reliability of the questionnaire was .8060, Cronbach's alpha coefficient, and on standardised items it was .8074. It thus can be concluded that the internal consistency, or reliability, of the questionnaire indicates that it measures what it is supposed to measure. Reliability measures should prove to be extremely consistent in their values if multiple measures are taken (Hair *et al.*, 1995:2).

The theoretical model consisted of the following five main constructs, namely knowledge, information, shared vision, performance strengthening, and empowerment. The statistical procedure (described above) confirmed the five constructs with their dimension as follows:

- (1) Construct 1, **shared vision**, focuses on the organisation's vision, mission and values, commitment, and the culture and change in the organisation.
- (2) Construct 2, **information**, focuses on information technology, productivity, and total quality management in the organisation.
- (3) Construct 3, **knowledge**, focuses on knowledge management, knowledge retention, knowledge loss, knowledge sharing and transfer, and knowledge trust in the organisation.

- (4) Construct 4, **performance strengthening**, focuses on performance management, rewards and recognition, and job satisfaction in the organisation.
- (5) Construct 5, **empowerment**, focuses on capacity building, talent management, employee engagement and employee empowerment in the organisation.

4.3.3 Empirical research objective 3: what is the empirically derived specific impact of knowledge continuity on growth and sustainability?

The third empirical objective to determine the impact of knowledge continuity on growth and sustainability is achieved in chapter 3 by means of multiple regression analysis and causal relationships in the regression analysis.

Based on the multiple regression analysis, knowledge, with a beta coefficient of .858, is a predictor of growth and sustainability, along with information and performance strengthening, with beta coefficients of .993 and .987 respectively (as discussed in chapter 3.4.5).

Based on the causal relationships identified in the regression analysis, knowledge is identified as a dependent variable with a p-value below .05 or *** at the .001 level, along with information and performance (as discussed in chapter 3.4.4.2).

It can be concluded that knowledge as a construct, implicating knowledge continuity, along with information and performance, are the most critical components for growth and sustainability, and, can therefore be termed as enablers of future growth and sustainability.

4.3.4 Empirical research objective 4: can a model be developed to verify the theoretical model?

The last empirical objective to determine whether a model can be developed to verify the theoretical model for growth and sustainability was realised in chapter 3. The focus is on the concluding outcome of the structural equation model, comparing the dimensions of and interrelationships between the theoretical and the empirical model.

The model was based on the theory, which suggested that all the factors (dimensions) were intercorrelated and could have an impact on growth and sustainability. In the theoretical model, most of the influences could be illustrated with the emphasis on the influence of the different constructs and their dimension on growth and sustainability. Although all the influencing relationships could not be illustrated in the theoretical model, namely the influence of all the dimensions of the constructs on growth and sustainability, these relationships were measured in the structural equation model. The model produced an acceptable absolute goodness-of-fit index and acceptable incremental fit measures, based on the data collected in this research.

The multiple regression analysis offered significant support for most of the causal relationships, particularly those of knowledge, information and performance strengthening on growth and sustainability. The intercorrelations between most of the dimensions were confirmed by both the structural equation model and the multiple regression analysis. An interesting observation was that two constructs were not significantly correlated with growth and sustainability as such, namely shared vision and empowerment.

In comparing the structural equation model and the theoretical model, it can be concluded that the constructs remained basically the same as the theoretical constructs.

It can be concluded that the structural equation model produced a more streamlined construct, or factor structure, which consists of a number of constructs and their dimensions that would be easier to interpret than the theoretically derived model. Furthermore, it would appear that if enhancing behavioural factors are in place, organisational behaviours could improve, which in turn would enhance future growth and sustainability in the organisation.

If knowledge continuity is not demonstrated, and if there is no organisational support for the continuity of knowledge, or if the risks of knowledge loss are not taken into consideration, not only could knowledge be lost, but it might not be possible to achieve future growth and sustainability. In other words, successful knowledge continuity should enable growth and sustainability.

It can furthermore be concluded, based on the multiple regression analysis described and evaluated in chapter 3, that if the organisation intends to improve growth and sustainability, it should focus on promoting knowledge, information and performance, which were identified as predictors of growth and sustainability, supported by the enhancing behavioural factors in an integrated manner (as discussed in chapter 3.4.5).

4.4 CONCLUSIONS ON THE PRIMARY RESEARCH OBJECTIVE

The primary objective of the study was to establish from an academic and theoretical perspective, whether future growth and sustainability in the basic education system is achievable; and if and how it can be measured. This objective was realised in chapters 2 and 3. The individual and organisational behavioural factors that influence future growth and sustainability are embedded in the constructs of shared vision, information, knowledge, performance strengthening, and empowerment. Most of the constructs and dimensions seem to be interrelated and have causal relationships. Knowledge, information and empowerment are positive predictors of growth and sustainability (as indicated in Table 3.12).

4.5 LIMITATIONS

The limitations of the literature review and the empirical research are discussed below.

4.5.1 Limitations of the literature review

The literature review revealed that very little research has been conducted with specific reference to knowledge continuity and growth and sustainability on the one hand, although a substantial amount of literature was found on knowledge, knowledge management and organisational behaviour, on the other hand, which facilitate the application of the relevant concepts to knowledge continuity.

4.5.2 Limitations of the empirical research

The empirical research limitations relate to the questionnaire, sample population and the structural equation model that was developed.

4.5.2.1 Questionnaire limitations

One of the limitations of the research was that no empirical research on the impact of knowledge continuity on growth and sustainability was found in the literature, which meant that a new questionnaire had to be developed based on the literature review and theoretical model.

4.5.2.2 Sample population limitations

Since the research was conducted in only 6 primary and secondary schools in the Sedibeng district in South Africa, the results cannot be generalised to other South African organisations and are therefore limited to the sample population in this research.

4.5.2.3 Structural equation model

The structural equation model development approach that was followed in this research could be regarded as post hoc due of the fact that it was constructed on one set of data collected from six schools in one organisation, which may not have been stable, which could mean that the model may not fit new data. However, researchers could test the model in further research or make use of a cross-validation strategy under which the model is developed using a calibration data sample and then confirmed using an independent validation sample (Garson 2009:2).

4.6 RECOMMENDATIONS

The recommendations, which are formulated based on the empirical research derived results of this research, are articulated for further research and for the organisation to improve growth and sustainability. The recommendations are discussed below.

4.6.1 Recommendations for future research

The research that was conducted revealed that some areas could offer opportunities for further research in the field of growth and sustainability. These areas are as follows:

4.6.1.1 Empirical research

A calibration data sample could be used in future studies and then confirmed using an independent validation sample (Garson 2009:2). A new empirical research study could be conducted with an improved questionnaire applying the structural equation model to new data in order to refine the model.

A larger scale future study on schools in the districts of South Africa could be conducted to enable the researcher to make statistical inference on a larger portion of the organisation in the basic education system of South Africa.

4.6.1.2 Influence of diversity on growth and sustainability

The influence of diversity on individual and organisational behaviours relating to growth and sustainability was not covered in this empirical research study. Further research is necessary on the impact of diversity on individual and organisational behaviours, to provide a more balanced approach with specific reference to a cross-cultural context.

4.6.1.3 Multidisciplinary retention and talent management strategies

An area for further in depth research is the type of knowledge retention and talent management strategies that could be implemented to enhance knowledge continuity and preservation, and the extent to which knowledge retention and talent management approaches have been implemented in South African organisations.

4.6.1.4 Influence of the use of information technology in basic education

The influence of the use of information technology in basic education in South Africa is another area for future research. The question could be asked how the use of information technology in schools could impact on individual and organisational behavioural factors and whether or not it would influence knowledge continuity in the organisation

4.6.2 Recommendations for the organisation

Taking into consideration the results discussed in chapter 3, and the conclusions discussed in chapter 4, recommendations can be made to the participating organisation on achieving future growth and sustainability. The organisational strategy that the organisation pursue could point out where to look for risks in losing knowledge in terms of whose and what type of knowledge needs to be preserved at individual, group and organisational level. The emphasis of the examination should be on the knowledge in the minds of people, also known as intellectual capital, which is difficult to document. A holistic approach to preserving this type of knowledge should be embedded in the organisations structure. The following actions are proposed to facilitate knowledge continuity, improve growth and sustainability and improve knowledge retention in the organisation:

- (1) The organisation should focus its efforts on knowledge, information and performance strengthening as predictors and enablers of future growth and sustainability.
- (2) The organisation could use its strategy as a baseline to determine what and where the risks of knowledge loss are, and focus on continuous innovation, productivity and performance enhancements, which are all interrelated with knowledge continuity and growth and sustainability.
- (3) Re-acquiring lost knowledge in the organisation would be costly, but critical to the future success or the organisation in achieving growth and sustainability.
- (4) To combat the current state of on-going knowledge depletion, the organisation should determine who has critical knowledge by selectively identifying the industry specific professionals and specialists, critical leaders, key people in the organisation, and knowledgeable experts approaching retirement.
- (5) In the organisation's strategy, the type of knowledge that could be at risk of loss could be determined. At organisational level, the emphasis could be on the accumulated organisational know-how, expertise and ways of working, as well as on cultural knowledge on how to behave and think, including the organisational values, culture and change norms that need to be retained. At group level, it would be

necessary to determine the collective and social networking knowledge, while at individual level, it will be the expertise of getting the job done that needs to be retained.

- (6) Human resource practices in the organisation that could enhance the retention of critical knowledge in the minds of people could include a multidisciplinary talent management programme, mentoring and coaching processes, training and development programmes that take the needs of different age groups into account, career path development processes and a performance management process that has appreciation for knowledge sharing and transfer as well as recognising talent and expertise.
- (7) To build an organisational culture that would encourage knowledge retention, trust relationships could be improved. Respecting and valuing employees' contributions, encouragement for interaction and cooperation, collaborating in solving problems and managing of expectations could prove valuable in building trust relationships between individuals, departments and the organisation.

These recommendations are specific to the participating organisation in the empirical research study. It is important to take cognisance that the results of other organisations might differ and a different set of recommendations would apply to them, depending on the enhancing and impeding factors that influence their knowledge retention.

The recommendations for the organisation cut across the fields of knowledge management, human resources, information technology, organisational learning and development supported by top management and the leadership roles. This implies that the organisation could investigate an interdisciplinary approach to implementing a knowledge retention strategy, and using knowledge continuity as an enabler for future growth and sustainability, using the survey results as an indicator of where to focus.

4.7 CHAPTER SUMMARY AND FINAL COMMENTS

In chapter 4, the main findings of the empirical research study were discussed by combining the results from previous chapters. The overall research question was

answered and the limitations of the research, opportunities for further research, and recommendations for the participating organisation were discussed.

This research study which was conducted from a humanistic perspective, contributes to the disciplines of organisational performance, knowledge management, organisational behaviour and organisational development. It is thus an interdisciplinary study that provides a broader understanding on the topics of knowledge retention and future growth and sustainability.

The study has practical value in the sense that the newly developed questionnaire and structural equation model should enable organisations to measure the degree to which the enhancing individual and organisational behavioural factors of growth and sustainability are in place and provide the measurement outcomes that would identify the factors that need to be focused on to improve and enable future growth and sustainability in an organisation.

This research study should be regarded as a stepping stone on the road to piloting more intuitive and significant research aimed at assisting organisations to not only retain the knowledge in the minds of employees; intellectual capital which is one of their most valuable assets, but also enable future growth and sustainability in an organisation through knowledge continuity.

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ANNEXURE A – QUESTIONNAIRE

SURVEY QUESTIONNAIRE INTRODUCTION AND INSTRUCTIONS

Thank you for participating in a survey on the education system as a component of a research study project I am conducting in partial fulfilment of the requirements of my MBA mini-dissertation at the North West University.

The purpose of this research study is to identify and understand how knowledge continuance may impact the education system. This research study will determine if and how specific knowledge activities affect the education system's ability to achieve future growth and sustainability.

Your feedback will be used to identify how the education system use knowledge continuity tools and practices and how effective the education system is in securing future growth and sustainability.

In the questionnaire there are questions that ask you to rate your organisation on specific performance areas, as well as questions that will reflect your experience or perception on issues relating to your work environment.

Participation in this research study is voluntary and anonymous. By completing and returning this questionnaire you give your consent that the results may be included in this research study.

If you have any questions about this research study, or your rights as a participant in the research, or to get feedback on the results of this research study, please contact me at 082 876 8871 or mariesteenhuisen@gmail.com, or my research study leader, Mr. Johan Coetzee of the NWU on 018 299 1382.

INSTRUCTIONS

Read each question, think about your school's performance, and then tick the level you believe most accurately describes or reflects your opinion and/or how your school is currently performing in that area.

Please answer this questionnaire by making a cross (X) in the space provided next to each question/item. You need only select ONE of the items, and I kindly ask that you answer all the questions.

Example:

Would you like to participate in this research by filling in a questionnaire?

X	Yes
0	No

SECTION 1: DEMOGRAPHICAL INFORMATION

1. Gender

1	Male
2	Female

2. Age in years

1	Under 21	2	21 to 30	3	31 to 40
4	41 to 50	5	51 to 60	6	61 and older

3. Nationality / Race

1	African	2	Coloured	3	Indian	4	White
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4. Highest level of education

1	Did not complete high school (Matric)	2	Senior Certificate (Matric) or equivalent	3	No tertiary qualifications
4	Some college / Bachelor's credits or certificates	5	National Diploma	6	Bachelor's Degree
7	Honour's Degree	8	Master's Degree	9	Doctor's Degree

5. Years you have worked in a teaching / education institution

1	Less than 2 years	2	2 to 5 years	3	5 to 10 years
4	10 to 15 years	5	16 to 20 years	6	21 to 25 years
7	26 to 30 years	8	31 to 35 years	9	36 years or more

6. Job title (please choose one only)

1	Educator/Teacher
2	Administrative personnel
3	Other

SECTION 2: INFORMATION ON YOUR EXPERIENCE AND OPINION

In your experience and opinion:	Strongly Agree	Agree	Disagree	Strongly Disagree
V.1. Do you know your organisation's Vision?	1	2	3	4
V.2. Do you know your organisation's Mission?	1	2	3	4
V.3. Do you know your organisation's Values?	1	2	3	4
V.4. Is the vision an inspiring view of the future?	1	2	3	4
V.5. Do you believe your organisation is carrying out the mission statement as it is intended?	1	2	3	4
V.6. Do you believe your organisation has the capacity needed to achieve the mission?	1	2	3	4
V.7. Do you believe your organisation is practicing its values?	1	2	3	4
V.8. Do you believe your organisation treats other with dignity and respect	1	2	3	4

In your opinion, your organisation:	Strongly Agree	Agree	Disagree	Strongly Disagree
V.9. Is committed towards education	1	2	3	4
V.10. Sets an example of what they expect of others	1	2	3	4
V.11. Follows through on promises and commitments they make	1	2	3	4
V.12. Appeal to others to share a dream of the future	1	2	3	4
V.13. Build consensus around a common set of values for running your organisation	1	2	3	4
V.14. Ensure that people grow in their jobs by learning new skills and developing themselves	1	2	3	4
V.15. Talks about the future of education	1	2	3	4
V.16. Talks about the trends that will influence how your work gets done	1	2	3	4
V.17. Is open (not – resistant) to change initiatives that will improve the way you work	1	2	3	4
V.18. Communicates changes to everyone in the organisation	1	2	3	4
V.19. Has a strong culture of shared values that support individual and organisational development	1	2	3	4
V.20. Has strong trust relationships between management and employees	1	2	3	4

To what extent do you agree/disagree with the following statements?	Strongly Agree	Agree	Disagree	Strongly Disagree
T.1. Employees at your organisation are empowered by the use of information technology	1	2	3	4
T.2. Your organisation places importance on the use of information technology	1	2	3	4
T.3. Your organisation uses information technology to improve the levels of productivity	1	2	3	4
T.4. Co-workers in your organisation are generally productive	1	2	3	4
T.5. Your organisation has clearly defined and documented processes (policies and procedures)	1	2	3	4
T.6. Processes are continually monitored and assessed in your organisation	1	2	3	4

In your experience and opinion, your organisation:	Strongly Agree	Agree	Disagree	Strongly Disagree
K.1. Has a formal knowledge management system	1	2	3	4
K.2. The existing knowledge management practices have improved your workforce skills, efficiency and productivity	1	2	3	4
K.3. Regularly updates your knowledge on their data base	1	2	3	4

K.4. Captures undocumented knowledge from employees prior to retirement, transfer and termination	1	2	3	4
K.5. In the past, your organisation has not lost valuable information and knowledge when personnel retired, transferred, resigned or died	1	2	3	4
K.6. Personnel that have departed from your organisation in the past has not taken with them critical operational or academic knowledge	1	2	3	4
K.7. Encourages experienced personnel to transfer their knowledge to less-experienced personnel	1	2	3	4
K.8. Knowledgeable people or senior members in your organisation have shared their knowledge with you	1	2	3	4
K.9. There is a strong trust relationship between management and employees	1	2	3	4
K.10. You trust your co-employees enough to share your knowledge with them	1	2	3	4

In your experience and opinion:	Strongly Agree	Agree	Disagree	Strongly Disagree
P.1. My performance appraisals are performed regularly by my superior(s).	1	2	3	4
P.2. I am happy with the amount of support and guidance I receive from my superior(s)	1	2	3	4
P.3. My salary is fair considering what other personnel receive in other organisations in the country	1	2	3	4
P.4. I get rewarded by my organisation for exceptional performance	1	2	3	4
P.5. I still have the passion for education/teaching that made me choose to become an educator/teacher	1	2	3	4
P.6. I would be happy to spend the rest of my career in this organisation	1	2	3	4
E.1. My organisation invests time and money in building the capacity of its employees	1	2	3	4
E.2. My skill and competency to do my work is enhanced through the training provided by my organisation	1	2	3	4
E.3. My organisation has a formal talent management programme	1	2	3	4
E.4. I feel that my talents are valued by my organisation	1	2	3	4
E.5. I am proud of my organisation	1	2	3	4
E.6. I am committed to my organisation	1	2	3	4
E.7. I am empowered with the freedom to decide how I wish to do my work	1	2	3	4
E.8. I am satisfied with the decision-making opportunities granted to me by my organisation	1	2	3	4

THANK YOU VERY MUCH FOR PARTICIPATING IN THIS RESEARCH!

ANNEXURE B – FREQUENCY ANALYSIS AND DESCRIPTIVE STATISTICS

Legend:

	Highest Mean Scores
	Lowest Mean Scores

OBSERVATIONS		1	2	3	4	Total	Mean	Std. Dev.	
Individual and organisational behaviours	Construct	Strongly Agree	Agree	Disagree	Strongly Disagree				
V1	Do you know your organisation's Vision?	1	2.26%	42.11%	48.87%	6.77%	133	2.60	0.65
V2	Do you know your organisation's Mission?	1	9.02%	57.14%	30.08%	3.76%	133	2.29	0.68
V3	Do you know your organisation's Values?	1	3.76%	56.39%	37.59%	2.26%	133	2.38	0.60
V4	Is the vision an inspiring view of the future?	1	3.76%	48.87%	45.11%	2.26%	133	2.46	0.61
V5	Do you believe your organisation is carrying out the mission statement as it is intended?	1	0.75%	39.85%	49.64%	9.77%	133	2.68	0.65
V6	Do you believe your organisation has the capacity needed to achieve the mission?	1	0.75%	34.59%	54.14%	10.53%	133	2.74	0.64
V7	Do you believe your organisation is practicing its values?	1	0.75%	39.85%	50.38%	9.02%	133	2.68	0.64
V8	Do you believe your organisation treats other with dignity and respect	1	2.26%	48.87%	39.10%	9.77%	133	2.56	0.70
V9	Is committed towards education	1	5.26%	58.65%	32.33%	3.76%	133	2.35	0.64
V10	Sets an example of what they expect of others	1	9.02%	44.36%	36.84%	9.77%	133	2.47	0.79
V11	Follows through on promises and commitments they make	1	1.50%	30.83%	48.87%	18.80%	133	2.85	0.73
V12	Appeal to others to share a dream of the future	1	0.75%	35.34%	54.89%	9.02%	133	2.72	0.63
V13	Build consensus around a common set of values for running your organisation	1	0.75%	39.10%	50.38%	9.77%	133	2.69	0.65
V12	Ensure that people grow in their jobs by learning new skills and developing themselves	1	6.77%	57.14%	33.08%	3.01%	133	2.32	0.64
V15	Talks about the future of education	1	0.00%	38.35%	54.14%	7.52%	133	2.69	0.60
V16	Talks about the trends that will influence how your work gets done	1	0.00%	33.08%	56.39%	10.53%	133	2.77	0.62
V17	Is open (not – resistant) to change initiatives that will improve the way you work	1	0.00%	43.61%	45.86%	10.53%	133	2.67	0.66
V18	Communicates changes to everyone in the organisation	1	0.00%	18.05%	66.92%	15.04%	133	2.97	0.57
V19	Has a strong culture of shared values that support individual and organisational development	1	1.50%	54.14%	39.85%	4.51%	133	2.47	0.61
V20	Has strong trust relationships between management and employees	1	0.75%	39.10%	51.13%	9.02%	133	2.68	0.64

OBSERVATIONS		1	2	3	4	Total	Mean	Std. Dev.	
Individual and organisational behaviours		Construct	Strongly Agree	Agree	Disagree				Strongly Disagree
T1	Employees at your organisation are empowered by the use of information technology	2	0.00%	12.78%	66.17%	21.05%	133	3.08	0.58
T2	Your organisation places importance on the use of information technology	2	0.00%	18.80%	62.41%	18.80%	133	3.00	0.61
T3	Your organisation uses information technology to improve the levels of productivity	2	0.00%	12.78%	61.65%	25.56%	133	3.13	0.61
T4	Co-workers in your organisation are generally productive	2	0.00%	18.80%	52.63%	28.57%	133	3.10	0.68
T5	Your organisation has clearly defined and documented processes (policies and procedures)	2	0.00%	30.08%	57.89%	12.03%	133	2.82	0.62
T6	Processes are continually monitored and assessed in your organisation	2	0.00%	9.02%	78.95%	12.03%	133	3.03	0.46
K1	Has a formal knowledge management system	3	0.00%	5.26%	62.92%	24.81%	133	3.20	0.51
K2	The existing knowledge management practices have improved your workforce skills, efficiency and productivity	3	0.00%	4.51%	78.20%	17.29%	133	3.13	0.45
K3	Regularly updates your knowledge on their data base	3	0.00%	0.00%	46.62%	53.38%	133	3.53	0.50
K4	Captures undocumented knowledge from employees prior to retirement, transfer and termination	3	0.00%	0.00%	43.61%	56.39%	133	3.56	0.50
K5	In the past, your organisation has not lost valuable information and knowledge when personnel retired, transferred, resigned or died	3	0.00%	24.06%	63.91%	12.03%	133	2.88	0.59
K6	Personnel that have departed from your organisation in the past has not taken with them critical operational or academic knowledge	3	0.00%	27.82%	59.40%	12.78%	133	2.85	0.62
K7	Encourages experienced personnel to transfer their knowledge to less-experienced personnel	3	0.00%	5.26%	64.66%	30.08%	133	3.25	0.54
K8	Knowledgeable people or senior members in your organisation have shared their knowledge with you	3	0.00%	12.03%	59.40%	28.57%	133	3.17	0.62
K9	There is a strong trust relationship between management and employees	3	0.00%	14.29%	61.65%	24.06%	133	3.10	0.61
K10	You trust your co-employees enough to share your knowledge with them	3	0.00%	9.77%	57.14%	33.08%	133	3.23	0.61
P1	My performance appraisals are performed regularly by my superior(s).	4	0.00%	8.27%	62.41%	29.32%	133	3.21	0.58
P2	I am happy with the amount of support and guidance I receive from my superior(s)	4	0.00%	15.04%	66.92%	18.05%	133	3.03	0.57
P3	My salary is fair considering what other personnel receive in other organisations in the country	4	0.00%	30.08%	56.39%	13.53%	133	2.83	0.64
P4	I get rewarded by my organisation for exceptional performance	4	0.00%	30.83%	57.14%	12.03%	133	2.81	0.63
P5	I still have the passion for education/teaching that made me choose to become an educator/teacher	4	0.00%	6.77%	64.66%	28.57%	133	3.22	0.55
P6	I would be happy to spend the rest of my career in this organisation	4	0.00%	3.76%	64.66%	31.58%	133	3.28	0.53

OBSERVATIONS		1	2	3	4	Total	Mean	Std. Dev.	
Individual and organisational behaviours	Construct	Strongly Agree	Agree	Disagree	Strongly Disagree				
E1	My organisation invests time and money in building the capacity of its employees	5	0.00%	3.76%	67.67%	28.57%	133	3.25	0.51
E2	My skill and competency to do my work is enhanced through the training provided by my organisation	5	0.00%	4.51%	63.16%	32.33%	133	3.28	0.54
E3	My organisation has a formal talent management programme	5	0.00%	0.75%	71.43%	27.82%	133	3.27	0.46
E4	I feel that my talents are valued by my organisation	5	0.00%	6.02%	69.17%	24.81%	133	3.19	0.52
E5	I am proud of my organisation	5	0.00%	9.02%	68.42%	22.56%	133	3.14	0.55
E6	I am committed to my organisation	5	0.00%	7.52%	73.68%	18.80%	133	3.11	0.50
E7	I am empowered with the freedom to decide how I wish to do my work	5	0.00%	3.76%	70.68%	25.56%	133	3.22	0.50
E8	I am satisfied with the decision-making opportunities granted to me by my organisation	5	0.00%	4.51%	70.68%	24.81%	133	3.20	0.50

18 November 2012

**CERTIFICATE: CONFIRMATION OF
LANGUAGE EDITING**

This certificate serves to confirm language and technical editing of the Masters in Business Administration Mini-dissertation by Mrs. Maria Jacoba Steenhuisen, Identity number: 7802120020088, NWU Student no: 22576789, titled: The knowledge continuum as an enabler for growth and sustainability in the South African basic education system.

Compliance with the Harvard referencing style was inspected.



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