Corporate Entrepreneurship and Organisational Performance in the Department of Basic Education; KwaZulu-Natal, South Africa

By

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DECLARATION

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person; nor material that has been accepted for award of any degree or diploma of the university or other institution of higher learning, except where due acknowledgement has been made in the text.

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DEDICATION

The biblical scripture in Jeremiah Chapter 1, verse 5: "**Before I formed you in the belly I knew you; and before you came forth out of the womb I sanctified you, and I ordained you a prophet unto the nations"** kept me going until completion of my thesis.

This doctoral thesis is dedicated to my parents, my late father, December Bafana, and my late mother, Triza Bengitheni, brothers, the late Joshua 'Bra Joe', the late Clement Mavuka, the late Immanuel 'Nzo', my sisters, 'Nto' and 'Shushu', and my only brother, 'Siko'.

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ABSTRACT

Entrepreneurship has been hailed as the new engine of economic growth in both developed and developing countries. It is described as the process of innovatively exploring and exploiting opportunities in the midst of risk and uncertainty, by synthesising resources to create novel output, often within the context of new organisation formation. Exalted as the driving force of innovation, entrepreneurship offers the benefits of increased economic efficiencies, alleviation of poverty, bringing innovation to the market, and creating jobs and sustained employment.

Traditionally, entrepreneurship was associated with the private sector and for-profit organisations, with entrepreneurial innovations considered to be those directed towards generating profits. The practice initially received marginal attention in public sector organisation management. Public sector organisations are state-owned suppliers of a service funded by the government; and are considered to be nationalised organisations; therefore their survival is seldom in doubt. However, public sector organisations are operating in an environment of increasing uncertainty. This uncertainty stems from their openness and consequent exposure to rapid environmental changes.

This study, through researching the literature and quantitative empirical research, focused on establishing the levels at which corporate entrepreneurship was practised in the Department of Education in KwaZulu-Natal province, South Africa; and the effects this has had on organisational performance. In addition, the relationship between entrepreneurial orientation and performance was explored.

Factors measuring entrepreneurial orientation were extracted from the literature review, and identified as innovativeness, proactiveness and risk taking. Grade 12 university entrance passes and through-put rates were used to measure organisational performance.

Data was collected using a structured questionnaire from a sample of 426 Department of Education senior executives in the province of KwaZulu-Natal.

The study found that positive and significant relationships exist between all corporate entrepreneurship elements: management support for corporate entrepreneurship;

organisational tolerance; work discretion; rewards/reinforcement; discretionary time; and organisational boundaries. It also found that positive and significant relationships existed between entrepreneurial orientation factors (innovativeness, proactiveness, and risk taking) and organisational performance measures (university entrance performance and output performance). In addition, age was found to significantly influence perceptions of innovativeness, proactiveness and management support for corporate entrepreneurship. Younger executives felt that there was no management support for corporate entrepreneurship in the Department of Education in KZN. However, irrespective of age, participants did not believe that the Department of Education was promoting action- and results-oriented behaviour in its employees.

All criteria were met to ensure that the research was conducted according to ethical research principles. Through this research, education and other public sector departmental managers in South Africa can gain insight into the generation of entrepreneurial success, as well as the measurements of organisational performance, in order to create sustainability and a competitive advantage.

It is recommended that future research on the relationship between corporate entrepreneurship and peformance should include poor performing districts in other provinces and even other public sector organisations in South Africa.

Key words: entrepreneur, entrepreneurial orientation, corporate entrepreneurship, public sector, organisational performance, and entrepreneurial management.

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LIST OF ACRONYMS

ANOVA	Analysis of Variance
CE	Corporate Entrepreneurship
CEAI	Corporate Entrepreneurship Assessment Instrument
CES	Chief Education Specialist
DBE	Department of Basic Education
DCES	Deputy Chief Education Specialist
DoE	Department of Education
DST	Discretionary Time
EFA	Exploratory Factor Analysis
EO	Entrepreneurial Orientation
FET	Further Education and Training
ICT	Information Communication Technology
INN	Innovativeness
KMO	Kaiser-Meyer-Olkin
KZN	KwaZulu-Natal
MDGS	Millennium Development Goals
MNG	Management Support
NECT	National Education Collaboration Trust
NSC	National Senior Certificate
OECD	Organisation for Economic Co-operation and Development
OGD	Organisational Boundaries
OGT	Organisational Tolerance
OP	Organisational Performance
OTP	Output Performance
PIRLS	Progress in International reading Literacy Study
PRO	Proactiveness
QLTC	Quality Learning and Teaching Campaign
RKT	Risk Taking

RWS	Rewards
SA	South Africa
SACMEQ	Southern and Eastern African Consortium for Monitoring Educational Outcomes
SES	Senior Education Specialist
SPSS	Statistical Package for social Science
Stats SA	Statistics South Africa
TIMSS	Trends in Mathematics and Science Study
TQM	Total Quality Management
UEP	University Entrance Performance
WRD	Work Discretion

CHAPTER 1

CONTEXT OF THE STUDY

1.1 INTRODUCTION

At the inception of democracy in South Africa; political, social and economic integration dominated the national agenda. To achieve this agenda, education was prioritised as an area that needed reform and expansion.

As observed by Modisaotsile (2012:1), to achieve the Millennium Development Goals (MDGS) this was to be based on a much improved education platform with highly educated people. There are several reasons why it is important to have an educated populace. First, this will serve as the platform on which a knowledge movement reflecting the heritage of South Africa can be developed. Secondly, and most importantly, a well educated populace is the basis for human development and it is responsible for maintaining socially responsible and inclusive political and economic systems.

While there is a general consensus about the importance of education, there are signs that the education system is not operating optimally. This is exemplified by increasingly poor Grade 12 results and high drop out rates. This is compounded by the fact that some Grade 12 learners often cannot meet universities' minimum requirements.

Lack of focused and competent managers within the Department of Education has been cited as one of the challenges causing concern. This led Malan (2016:1) to propose a new type of management and leadership. The author believes entrepreneurial leadership must be present in the department. In practical terms , this refers to leadership with a revolutionary and innovative mind-set.

This chapter presents the background to the study and the research problem which prompted the study. The chapter also presents the primary and secondary research objectives which the study seeks to achieve by the time it is completed. A brief overview of the research method to be used in collecting data is also presented. The researcher is going to make use of exploratory research techniques when gathering empirical data. The chapter also briefly discuss the methods and processes to be

followed during the development of data collection tools, defining the research population, the sampling methods and processes as well as the overall research design.

1.2 THE ENTREPRENEURSHIP PHENOMENON

The pursuit of entrepreneurial enquiry is an exercise that has engaged scholars for decades (Ozdemirci, 2011:612). This has prompted some interest in the field from several other perspectives. However, despite this interest and protracted research efforts, multiple definitions of entrepreneurship still exists (Kusumsiri and Jayawardane, 2013:26; Berglann, Moen, Roed and Skogstom, 2011:180).

Despite the fact that entrepreneurship is convoluted and dynamic with a complex set of perspectives and constructs, scholars have attempted to conceptualise an operational definition (Kusumsiri and Jayawardane, 2013:26). This is because the entrepreneurship still has a significant impact on the economy and which is why it still continues to incite significant interest. Several disparate disciplines, including mathematical economics, organisational theory and social anthropology have all tried to come up with a definition.

According to Davidsson (2004:4) several entrepreneurship definitions provide critical varied social realities. Kusumsiri and Jayawardane (2013:26) note that entreprenuership definitions also offer multiple meanings and possibilities to different ventures. Consequently, it is conceivable that the field of entrepreneurship would benefit more from an exploitation of these multiple possibilities that the various definitions presents as they look at entrepreneurship from very different but well justified contexts.

Shane and Venkataraman (2000:260) note that entrepreneurship focuses on the discovery and subsequent exploitation of opportunities. Naude (2011:75) and Henrekson (2007:94) contends that several disciplines engaged in this pursuit and gives perspectives on how this is done. Entrepreneurship, according to Shane (2012:11) “examines many outcomes other than business performance…and does not require the existence of an organisation, can occur before organisations are established, exists in settings in which organisations do not exist, and takes place at lower levels than organisation level analysis”. On the other hand, Kuratko (2013:5)

defines entrepreneurship as a “dynamic process of vision, change, and creation. It requires an application of energy and passion toward the creation and implementation of new ideas and creative solutions. Essential ingredients include the willingness to take calculated risks; the ability to formulate an effective project team; the creative skills to marshal needed resources; the fundamental skill of building a solid business plan; and finally, the vision to recognise opportunity where others see chaos, contradiction, and confusion”. For the purposes of this study, entrepreneurship is defined as “the process of identifying opportunities and innovatively engaging in creating, adapting, and managing growth-oriented projects with a reward motive”.

1.3 CORPORATE ENTREPRENEURSHIP

According to Ginsberg and Hay, 1994:382), corporate entrepreneurship is more than “an individual concept but also as an institutional concept within established organisations”. Scholars in the field of entrepreneurship agree that the concept exists in multiple contexts within organisations. Entrepreneurial beviour within mid and large organisations has come to be described as corporate entrepreneurship. According to Morris, Kuratko and Covin, 2011:11), corporate entrepreneurship “centres on enhancing the organisation’s ability to acquire innovative skills and capabilities, resulting in improved organisational performance”.

Sharma and Chrisman (1999:18) define corporate entrepreneurship thus “the process whereby an individual or group of individuals, in association with an existing organisation, create a new organisation or instigate renewal or innovation within that organisation”. Dess and Lumpkin (2005:147) on the other hand observe that “corporate entrepreneurship serves the purpose of creation and pursuit of new venture opportunities and strategic renewal”. Covin and Miles (2007:183) differentiates between corporate entrepreneurship and external corporate entrepreneurship by noting that the former refers to developing new business ventures inside established organisation while the later refers to developing business ventures outside the parent organisation.

Kuratko and Hodgetts (2007:55) are of the opinion that entrepreneurship is made up of three aspects and these include the following: corporate venturing which is necessary for the “creation of new business ideas within the corporate industry”,

innovation which involves the creation of new ideas upon which business ventures can be based and strategic renewal which relates to organisational structural changes and strategic inclination.

Some authors have also onsiderably expanded the conceptualisation of entrepreneurship (Corbett, Covin, O'Connor and Tucci, 2013). Phan, Wright, Ucbasaran and Tan (2009) and Morris et al., (2011) believe that the two constructs of corporate venturing and strategic entrepreneurship are what defines corporate entrepreneurship. Corporate entrepreneurship includes orientation in established organisations and entrepreneurial behaviour.

Zahra (1991:261) contends that corporate entrepreneurship can either be formal or informal but the overall goal is to create new businesses and organisations through the dual process of market development and process innovations. The premise of corporate entrepreneurship is that there may be some inidviduals either inside or outside formal organisations who think that something can be done better and differently.

However, it needs to be noted that corporate entrepreneurship has some attendant challenges. Hisrich et al., (2008:83) comes to the conclusion that the ventures formed within organisations far much worse when it comes to performance compared to those that are formed by individuals. Secondly, formal organisations also find it challenging to establish a competitive advantage in a given niche. Duncan, Ginter and Swayne (1998:7) define competitive advantage as "the result of an enduring value differential between the services of one organisation and those of its competitors in the mind-set of the customer". Morris et al., (2011: 8) contends that a competitive advantage within organisations can be achieved by being "adaptable, flexible, fast, aggressive, and innovative" so that they can "adjust to the complex, hostile and dynamic environment and also be able to initiate change within that environment".

1.4 THE IMPORTANCE OF CORPORATE ENTREPRENEURSHIP

Gantsho (2006:3) points out that experience so far indicates that superior organisational performance can be achieved through corporate entrepreneurship. A review of literature shows that corporate entrepreneurship is capable of sustaining

and promoting organisational performance and competitiveness. Lumpkin and Dess (1996) observe that through developing and exploiting value-creating and innovative opportunities, organisational performance can be improved through corporate entrepreneurship. According to Zahra and Covin (1995), cited in Gantsho (2006:4), research findings have shown that improved organisational performance can be achieved through corporate entrepreneurship. (Covin, 1999:25), who is in agreement with Zahra and Covin (1995) wonders at the reasons why such a causal relationship exists. The study also seeks to determine whether such a causal relationship between improved organisational performance and corporate entrepreneurship can exist in the Department of Education in KwaZulu-Natal, South Africa.

As a result, there has been an increase in understanding the consequences and antecedents within established organisations of entrepreneurial orientation (EO). While there is a significant number of theories on explaining EO causal relationships, there is a dearth of empirical evidence on the 'corporate entrepreneurship-performance' relationship in the public sector in South Africa.

1.5 ORGANISATIONAL ANTECEDENTS FOR CORPORATE ENTREPRENEURSHIP

Hornsby, Kuratko, Holt and Wales (2013) have singled out specific organisational antecedents that are key in achieving entrepreneurship within an organisation. Kuratko, Montagno and Hornsby (1990) uses the "corporate entrepreneurship climate instrument (CECI) which they developed as a diagnostic tool for managing, evaluating and assisting an organisation's internal environment in a manner that is conducive to entrepreneurship". According to Kuratko, Hornsby and Covin (2013:939), these antecedents include organisational boundaries; discretionary time; rewards / reinforcements, work discretion and management support for corporate entrepreneurship. For the purposes of this study, a sixth antecedent is added: organisational tolerance for risk and failure.

Kuratko and Zahra (2002:253) observe that corporate entrepreneurship has often been influenced by the antecedents mentioned above. Consequently, organisations setting to achieve a competitive advantage and entrepreneurial climate need to ensure that the aforementioned antecedents are significantly improved and promoted to ensure both organisational performance and entrepreneurial activities.

1.6 ORGANISATIONAL PERFORMANCE

Morris et al., (2011:403) observes that organisational performance should be the ultimate goal of all corporate entrepreneurial activities. Rauch, Wiklund, Lumpkin and Frese (2009:268) define organisational performance as a multidimensional concept with varied performance indicators. Rauch, Wiklund, Lumpkin and Frese (2009:268) further contend that the relationship between entrepreneurial activities and organisational performance may depend on the performance assessment indicators. The authors further argue that a definition of organisational performance should take into account qualitative and quantitative outcomes or financial and non-financial measures.

This study uses continued improvement in the quality of learner performance and also incorporates managers' perceptions of performance outcomes in its definition of organisational performance. This creates a basis for feedback to engender on-going improvements through continued planned strategies to improve identified performance dimensions.

1.7 PURPOSE OF THE STUDY

The "main purpose of the study was to explore the relationship between corporate entrepreneurship elements and entrepreneurial orientation factors and how they influence organisational performance in the Department of Education in KwaZulu-Natal (KZN), South Africa. The performance of learners in the Department of Education in South Africa is very poor (Spaull, 2013:9). The Department of Education in South Africa needs to improve learner achievement at all levels, particularly the matric results". The Department of Education needs to improve its performance, and this may be achieved through innovation, risk taking, proactiveness and entrepreneurially-oriented behaviour (Miller, 1993; Covin and Miles, 1995; Moreno and Casillas, 2009; Wekkee, Elfring and Monaghan, 2010). Lumpkin and Dess (1996:125) argue that "entrepreneurial behaviour and attitudes are key determinants of the ability of an organisation to survive and prosper".

The benefits of entrepreneurship have been widely documented and accepted (Hughes and Morgan, 2007:636). Organisations can therefore benefit by inducing an entrepreneurial orientation. The Department of Education in South Africa is struggling

with the challenge of improving the quality of education in the country (Gina, 2012:22). It is primary research like this which will yield data that will be useful to policy formulation and decision-making.

The research will investigate the relationship between corporate entrepreneurship (innovation, risk taking and proactiveness) and organisational performance. The organisational performance will be evaluated based on the number of learners who pass matric (Grade 12); the "number of learners who pass matric with university entrance passes; and the number of learners who pass matric mathematics and physical science", as these are considered the most important subjects required to improve the economy of the country.

1.8 RESEARCH PROBLEM

According to the Education Innovation (2016:3), the consistently poor learners' academic performance prompted government to conceptualise several initiatives to improve the quality of schooling. The need to find solutions and strategies to improve learner performance is particularly important in South Africa given the learners' poor academic performance. Lotz and van der Merwe (2010:131) contend that corporate entrepreneurship is key to improving performance in a number of organisations. This is supported by several studies that have established a positive correlation between entrepreneurially-inclined strategies and improved organisational performance (Zahra and Covin, 1995; Wiklund, 1998; Short et al., 2009; Chye, 2012; Fatoki, 2012). This suggests that the more organisations behave in an entrepreneurially-orientated manner and implements entrepreneurially-orientated strategies, the more it is likely to improve its performance.

Despite the evidence of the benefits that can be generated by entrepreneurially-orientated strategies in improving organisational performance, the Department of Education in South Africa is still lagging behind in the quality of the schooling system. This leads one to advance the argument that the poor education quality in South Africa exemplied by poor learner performance is a mirror of the failure of the Department of Education where a dearth of innovation, 'entrepreneurial thinking' and entrepreneurial orientation can account for the organisation's failure to meet its mandate and expectations.

Therefore, there is a need to investigate the extent to which some form of entrepreneurial orientation exists within the Department of Education in South Africa. Secondly, there is also need to ascertain the extent to which efforts to inculcate an entrepreneurial behaviour and culture within the organisation can influence positively the Department of Education's entrepreneurial orientation to improve the quality of the schooling system.

According to Spaull (2012:1), "there are different views about schooling and education in South Africa. While some think that the education system has worsened off since 1994, there are some who believe there has actually been an improvement. The Organisation for Economic Co-Operation and Development (OECD) (cited by SASIX, 2011) contends that learners have performed much worse when compared to their peers in international tests. Globally, Brazil, Seychelles, Mauritius, Kenya and Botswana are all rated much higher than South Africa. This is compounded by high illiteracy levels with Malan (2016:3) estimating that 24% of people above 15 years cannot read".

The above information indicating the poor state of education in South Africa is supported by several studies. The Department of Basic Education (2014:40-43) notes that although there has been some improvements in the education sector, there are still some areas of concern. For example, in mathematics, the following are the national averages: "43% for Grade 6 (a 4% improvement from 2013); and 11% for Grade 9 (a 3% decline). Only 65% of Grade 3 learners, 35% of Grade 6 learners and 3% of Grade 9 learners, could achieve at least 50% for mathematics. The national averages for Home Language are 56% for Grade 3 (an increase of 5%); 63% for Grade 9 (a 4% improvement); and 48% for Grade 9 (a 5% improvement)" (Department of Basic Education, 2014:40-43). This leaves one to relect on whether the education system is discharging its mandate considering the poor state of education which is expected to be the vehicle through which poor children can escape poverty especially considering that the unemployment rate stands at 26.7%.

Mahmood and Hanafi (2013:83) advance the argument that entrepreneurial orientation (EO) contributes significantly to organisational success. Some studies have also noted the positive relationship between organisational performance and entrepreneurial orientation (Covin and Slevin, 1991:19). This suggest organisations

will perform better if they adopt stronger entrepreneurial orientation. Malan (2016:5) notes that limited research has been conducted in South Africa on the extent to which entrepreneurial orientation can improve organisations. Consequently, it can be argued that the limited entrepreneurial inclination by the Department of Education can account for its inability to adapt and perform better. Malan (2016:5) further argue that the limited entrepreneurial orientation has limited its capacity to facilitate change and sustainability within itself. This means the organisation needs new entrepreneurial management and leadership with a revolutionary and innovative mindset. Reddy, Prinsloo, Netshitangani, Molestane, Juan and van Rensburg (2010:1) further note that issues of accountability and quality of education are inextricably linked to issues of education management.

The "research on the relationship between organisational performance, entrepreneurial orientation and corporate entrepreneurship in the South African public sector in general and the Department of Education in particular, is limited. With this background in mind, the study intends to address this gap in research by establising the relationship between organisational performance and corporate entrepreneurship within the Department of Education, using the key organisational antecedents affecting corporate entrepreneurship".

1.9 PROBLEM STATEMENT

The challenge of apparent under-performance and poor results by the Department of Education demands "ground-breaking disequilibrating actions" (Schumpeter, 1934; 1942). Additionally, the challenge requires continued innovative actions to ensure its effectiveness in delivering on its developmental mandate.

Zahra's (1991) integrated approach will be particularly helpful in answering questions to these research problems. The approach stresses the importance of formal and informal activities at the project, unit, divisional or organisational level with the unifying objective of improving an organisation's performance and effectiveness.

1.10 OBJECTIVES AND HYPOTHESIS OF THE STUDY

With a number of different programmes and initiatives being implemented by the Department of Education to improve learner achievement and quality of education as such, the primary objective of the study was to determine the extent the working

environment is entrepreneurial and how this affects performance. This would be achieved through the five secondary objectives of the study which were:

- to assess the levels of corporate entrepreneurship practices in the Department of Education in KwaZulu-Natal;
- to explore the relationship between elements of entrepreneurial orientation and corporate entrepreneurship environmental elements within the Department of Education in KZN;
- to establish the relationship between entrepreneurial orientation elements and organisational performance within the Department of Education in KZN;
- to establish the relationship between corporate entrepreneurship elements and organisational performance within the Department of Education in KZN; and
- to establish whether differences in perception existed among the department's management regarding the entrepreneurial climate within the Department of Education in KZN.

These objectives were measured by a number of hypotheses. These are outlined in the next section:

1.10.1 Hypotheses of the Study

The following hypotheses were formulated to contextualise various relationships within the study.

H_o1: There is no statistically significant correlation between innovativeness and each of the corporate entrepreneurship elements H_o1 (a-f) in the Department of Education in KZN.

H_o2: There is no statistically significant correlation between proactiveness and each of the corporate entrepreneurship elements H_o2 (a-f) in the Department of Education in KZN.

H_o3: There is no statistically significant correlation between risk taking and each of the corporate entrepreneurship elements H_o3 (a-f) in the Department of Education in KZN.

H_o4: There is no statistically significant correlation between innovativeness and university entrance performance measurement H_o4a, and output performance measurement H_0 4b, in the Department of Education in KZN.

H_o5: There is no statistically significant correlation between proactiveness and university entrance performance measurement H_o5a, and output performance measurement $H_0$5b, in the Department of Education in KZN.

H_o6: There is no statistically significant correlation between risk taking and university entrance performance measurement H_o6a, and output performance measurement $H_0$6b, in the Department of Education in KZN.

H_o7: There is no statistically significant correlation between each of the corporate entrepreneurship elements and university entrance performance measurement H_o7a, and output performance measurement $H_0$7b, in the Department of Education in KZN.

$H_0$8: There is no statistically significant difference of opinion between the mean scores of male and female respondents with regard to how they perceive the level of each EO element in the Department of Education in KZN.

$H_0$9: There is no statistically significant difference of opinion between the mean scores of male and female respondents with regard to how they perceive the level of each of the CE in the Department of Education in KZN.

$H_0$10a: There is no statistically significant difference of opinion between the mean scores of male and female respondents with regard to how they perceive the level of university entrance performance in the Department of Education in KZN.

$H_0$10b: There is no statistically significant difference of opinion between the mean scores of male and female respondents with regard to how they perceive the level of output performance in the Department of Education in KZN.

$H_0$11: A statistically significant variance does not exist between the mean scores of various age groups and how they perceive the level of innovativeness ($H_0$11a); proactiveness ($H_0$11b); risk taking ($H_0$11c); management support for CE

($H_0$11d); organisational tolerance ($H_0$11e); work discretion ($H_0$11f); rewards/reinforcement ($H_0$11g); discretionary time ($H_0$11h); organisational boundaries ($H_0$11i); university entrance performance ($H_0$11j); and output performance ($H_0$11k) in the Department of Education in KZN".

$H_0$12a: A statistically significant difference does not exist between the mean age categories of participants: 1and 2 ($H_0$12a_1); 1 and 3 ($H_0$12a_2); 2 and 3 ($H_0$12a_3), and their perception of the level of innovativeness in the Department of Education in KZN.

$H_0$12b: A statistically significant difference does not exist between the mean age categories of participants: 1 and 2 ($H_0$12b_1); 1 and 3 ($H_0$12b_2); 2 and 3 ($H_0$12b_3), and their perception of the level of proactiveness in the Department of Education in KZN.

$H_0$12c: A statistically significant difference does not exist between the mean age categories of participants: 1and 2 ($H_0$12c_1); 1 and 3 ($H_0$12c_2); 2 and 3 ($H_0$12c_3), and their perception of the level of management support for CE in the Department of Education in KZN.

$H_0$13: A statistically significant variance does not exist between the mean scores of various management levels of respondents with regard to how they perceive the level of innovativeness ($H_0$13a); proactiveness ($H_0$13b); risk taking ($H_0$13c); management support for CE ($H_0$13d); organisational tolerance ($H_0$13e); work discretion ($H_0$13f); rewards/reinforcement ($H_0$13g); discretionary time($H_0$13h); organisational boundaries($H_0$13i); university entrance performance ($H_0$13j); and output performance ($H_0$13k).

1.11 IMPORTANCE OF THE STUDY

Society can benefit significantly from an effective education system. This quality of education which is provided also determines the level and extent in which education can benefit society. Bazaz (2016:40) notes that an effective education system can aiso contributes to for social development, but only when all citizens gets just and fair opportunities to exercise their education rights.

This study is important because it highlights the importance of education in any country. Specifically, the study highlights the challenges apparent in the South African education system despite various interventions to address them. Despite the large budget allocated to education over the previous years, the education quality remains consistently poor with the outputs unchanged (Modisaotsile, 2012:2).

The study also highlights the importance of entrepreneurship as a solution to resolve the challenges facing the education system. Eyal (2007:3) observes that being entrepreneurially inclined inspires managers to innovate and improve their environments and institutions such as the Department of Education in South Africa.

By exploring and empirically testing the relationship between organisational performance and corporate entrepreneurship within the Department of Education and interpreting its results, the study will contribute to the general scholarship on both corporate and public entrepreneurship and its organisational performance impact. The findings have management practice implications.

Covin and Slevin (1998:86) as well as Miller and Friesen (1982:24) note how contemporary instruments for measuring entrepreneurial orientation and corporate entrepreneurship antecedents have been "adjusted to the public sector context and may serve future research in terms of measurement". This study contributes to that body of knowledge by focusing on public entrepreneurship management. These references have nothing to do with the above statement. The examination of the relationship between organisational performance and corporate entrepreneurship helps to illustrate how entrepreneurship can be operationally implemented.

The study goes further than just contributing to the literature on "the public sector but extends research on corporate entrepreneurship in general. This responds to the call to extend corporate entrepreneurship outside the private sector" (Diefenbach, 2011:5).

Specifically, the study findings show how education management practices can be modelled to support entrepreneurial orientation. The study will also guide policy makers and top management in inclining their organisations to be more entrepreneurially oriented, which serves to improve performance in their organisations which also improves public service delivery.

McGrath and MacMillan (2000:450) believe it is important that an “entrepreneurial mind-set” be engendered within the Department of Education for the organisstion to improve its contribution to development agenda of the country. This study draws on existing entrepreneurship literature and applies and adopts from it what is relevant for the Department of Education in terms of corporate entrepreneurship. The success stories of entrepreneurs, creativity and passionate innovation are embedded in the entrepreneurial approach which can contribute to the Department of Education improvinf its performance.

The study aims to develop entrepreneurially-minded managers who can conceptualise experimental initiatives within the South African Department of Education. These new managers will be alert to emergin opportunities and foster a more risk taking and innovative culture. It is expected that the change brought by this new form of management cascades down the entire organisation to all its units.

The study advances a strategy where managers are developed to be corporate entrepreneurs themselves and be focused more on seeking opportunities within the rest of the education department. Therefore, the objective is to have managers acting as mentors mentors in entrepreneurial thinking. In this scenario, the managers would adopt a more entrepreneurially-focused outlook, with the aim of encouraging employees to try different ways of executing their work and generally removing red tape.

The literature review in this study was designed to elicit from the corporate entrepreneurship and general entrepreneurship literature the concepts and principles that could be developed, refined and ultimately used in Department of Education to usher in a new organisational climate geared towards finding innovative solutions to the persistent underperformance challenge.

1.12 SCOPE OF THE STUDY

The study seeks to contribute towards the improvement of the Department of Education in KZN, and by so doing so, improving the general quality of education in South Africa by pointing out the necessity of applying entrepreneurial orientation in education. The study’s scope is however limited to the entrepreneurial actions of the KZN Department of Education.

The scope of the study is further limited by the internal environment of the Department of Education and external factors were not accounted for. Because the study's findings cannot be generalised, they will be treated with caution.

The study considers several factors as responsible for the Department of Education's success, among them entrepreneurial orientation. Factors that were not considered included, among others, the demographic composition of the district; the availability of resources; level of education of the community where the district is situated; the socio-economic status of the community and the geographic location of the district.

1.12.1 Field of the Study

This study falls within the discipline of entrepreneurship, with specific reference to assessing organisational performance and entrepreneurial orientation of the KwaZulu-Natal's Department of Education in South Africa.

1.12.2 Geographical Demarcation

The study was conducted in the twelve education districts in KwaZulu-Natal, South Africa. The Province of KwaZulu-Natal, one of the nine provinces in South Africa, is located on the east coast of the country. It has a population of 10.5 million people, of which 2.7 million are children. The Province of KwaZulu-Natal covers 94.361 km^2 of South Africa's land area, and is the seventh largest province in terms of area, constituting 7.7% of the total area of South Africa. It contributes around 16% to the national economy (KZN Socio-Economic Review and Outlook, 2017/2018).

Education "is well-organised in the province of KwaZulu-Natal. In 2017 a total of 153 624 full-time learners enrolled for the Grade 12 examination (24.2% of the national total of 634 527). Over 35 687 of the candidates obtained a university entrance (bachelor) pass. This is the best possible pass level a learner can achieve, as it qualifies learners to study at any tertiary institution in South Africa. The KwaZulu-Natal Department of Education contributed 20.70% of all bachelor passes nationally. UMgungundlovu was the best performing district in KwaZulu-Natal, with a pass rate of 81.51%. All districts in KwaZulu-Natal obtained a pass rate above 60%. The pass rate for mathematics was 41.59 % (compared to 51.0% nationally), while the pass rate for physical science was 65.11% (nationally, 65.1%). (KwaZulu-Natal Department of Education Report on the National Senior Certificate, 2017). For ease

of management and administration of education in the province, the Department has twelve education districts". Each district is managed by a district office with a District Director in-charge.

1.13 LAYOUT OF THE STUDY

The study consists of six chapters. The layout of the study is as follows:

Chapter 1 – Introduction, purpose, problem statement, scope of the study

The first chapter outlines the study's background. The chapter also presents the primary and secondary objectives, the hypotheses to be tested and the problem statement. Additionally, an outline of the entire study is presented.

Chapter 2 – The Field of Entrepreneurship: Corporate Entrepreneurship (CE) and Entrepreneurial Orientation (EO)

The second chapter reviews the literature of corporate entrepreneurship and entrepreneurship in general as well as providing respective definitions. The chapter also outlines the variables affecting entrepreneurial orientation

Corporate entrepreneurship is defined and its elements are determined and discussed. Conceptual models of corporate entrepreneurship, including public sector corporate entrepreneurship, are explained. Corporate entrepreneurship and performance of an organisation are also briefly explained in this chapter.

Chapter 3 – Overview of Public Entrepreneurship and the Education Sector in South Africa.

The third chapter presents an overview of the public sector entrepreneurship. The chapter outlines how the public education institutions form part of public entrepreneurship. The chapters also shows how principles of entrepreneurship can be used to organise the education system. The chapter also discusses the role of the education manager and his potential role as a leader of change. Lastly, a state of South African education is presented in the chapter and how entrepreneurial posture can reorient the education sector in South Africa.

Chapter 4 – Research Design and Methodology of the Study

The fourth chapter presents the research methodology that was followed in the collection of empirical data. This includes the sampling, questionnaire design, data collection and data analysis.

Chapter 5 – Presentation and Interpretation of Results

The fifth chapter presents the analysed empirical data. This includes the respondents' demographics. Some of the statistical tests that were conducted on the data includes one way analysis of variance (ANOVA), t-test, factor analysis as well as chi-square and Pearson's moment correlation tests.

Chapter 6 – Conclusions and Recommendations

The sixth chapter draws conclusion from both the collected empirical data and reviewed literature focusing on the KwaZulu Natal's Department of Education. The chapter recommends areas for further study and determines the extent to which the research objectives were met.

CHAPTER 2

THE FIELD OF ENTREPRENEURSHIP: CORPORATE ENTREPRENEURSHIP (CE) AND ENTREPRENEURIAL ORIENTATION (EO)

2.1 INTRODUCTION

This chapter reviews various aspects of entrepreneurship. The chapter seeks to presents an overview of entrepreneurship and its relationship with corporate entrepreneurship. Some other areas that will be covered by the chapter includes the the role of entrepreneurship in the economy; the relationship between entrepreneurship and corporate entrepreneurship; the entrepreneurial process; the history of the field of entrepreneurship and the various definitions of entrepreneurship.

Kuratko and Hodgetts (2007:xix) stress that: “Not too long ago the field of entrepreneurship was considered little more than an applied trade as opposed to an academic area of study. The economy was actually based upon entrepreneurship, and history has proven that with each downturn in the economy, it is entrepreneurial drive and persistence that brings entrepreneurship back”.

2.2 DEFINITION OF ENTREPRENEURSHIP

Shane and Venkataraman (2000:45) perceive “entrepreneurship as a broad label which has inspired a miscellany of research is based. Various researchers have mentioned that the problem with entrepreneurship is that there is no common definition and the boundaries of entrepreneurship research have still not been established” (Covin and Wales, 2012; Ucbasaran, Weasthead and Wright, 2001; Bruyat and Julien, 2000; Sharma and Chrisman, 1999; Morris, 1998). The term ‘entrepreneurship’ has been used to define a wide range of activities like managing, adapting, founding and creating a venture.

Table 2.1 summarises various definitions of entrepreneurship from prominent researchers in the field of entrepreneurship.

Table 2.1: Definitions of Entrepreneurship

Author	Definition
Schumpeter (1934)	"Entrepreneurship is seen as new combinations, including the doing of new things, or the doing of things that are already being done in a new way. New combinations include the introduction of new goods; new methods; opening of new markets; new sources of supply; new organisations".
Kirzner (1973)	"Entrepreneurship is the ability to perceive new opportunities. This recognition and seizing of the opportunity will tend to 'correct' the market and bring it back towards equilibrium".
Miller (1983)	"A firm's actions relate to product-market and technological innovation".
Drucker (1985)	"Entrepreneurship is an act of innovation that involves endowing existing resources with new wealth-producing capacity".
Kanter (1985)	"…the creation of new combinations".
Gartner (1985, 1989)	"…the process of new venture creation; the process by which new organisations come into existence"
Stevenson, Roberts and Groesbeck (1985)	"Entrepreneurship is the pursuit of an opportunity without concern for current resources or capabilities".
Schuler (1986)	"…the practice of creating or innovating new products or services within existing organisations, or within newly forming organisations"
Rumelt (1987)	"Entrepreneurship is the creation of new businesses, 'new business' meaning that they do not exactly duplicate existing businesses, but have some elements of novelty".
Low and MacMillan (1988)	"Entrepreneurship is the creation of new enterprise".
Stevenson and Jarrilo (1990)	"…the process by which individuals – either on their own or inside the organisations – pursue opportunities without regard to the resources they currently control. Entrepreneurship is the pursuit of opportunity beyond the

	resources you control”
Jones and Butler (1992)	“…the process by which organisations notice opportunities and act to creatively organise transactions between factors of production so as to create value”
Krueger and Brazeal (1994)	“…the pursuit of an opportunity irrespective of existing resources”
Timmons (1997)	“Entrepreneurship is a way of thinking, reasoning and acting that is opportunity obsessed, holistic in approach, and leadership balanced”.
Venkataraman (1997)	“Entrepreneurship seeks to understand how opportunities to bring into existence future goods and services are discovered, created, and exploited, by whom, and with what consequences”.
Morris (1998)	“Entrepreneurship is the process through which individuals and teams create value by bringing together unique packages of resource inputs to exploit opportunities in the environment. It can occur in any organisational context and results in a variety of possible outcomes, including new ventures, products, services, processes, markets and technologies”.
Sharma and Chrisman (1999)	“Entrepreneurship encompasses acts of organisational creation, renewal, or innovation that occur within or outside an existing organisation”.
Shane and Venkataraman(2000)	“…the discovery, creation and exploitation between factors of production so as to create surplus value”
Harding (2002)	“…any attempt at new business or new venture creation, such as self-employment, a new business organisation, or the expansion of an existing business by an individual, team of individuals, or established businesses”
Kuratko and Hodget (2007)	“Entrepreneurship is a process of innovation and new venture creation through four major dimensions: individual, organisational, environmental and process; that is aided by collaborative networks in government, education and

	institutions. All of the macro and micro positions of entrepreneurial thought must be considered while recognising and seizing opportunities that can be converted into marketable ideas capable of competing for implementation in today's economy".
Hisrich and Peters (2008)	"Entrepreneurship is the process of creating something different with value by devoting the necessary time and effort, assuming the accompanying financial, psychological and social risk and receiving the resulting rewards of monetary and personal satisfaction".

Source: Hitt et al., (2002:22); Welsh et al., (2004:3)

The table above shows that entrepreneurship can be defined in many ways and notably, no one definition overshadows the others nor has been universally accepted in the field of entrepreneurship. Morris (1998), while doing a review of the available entrepreneurship literature, found 77 definitions of entrepreneurship. From these definitions, Morris (1998) summised that most of the definitions are associated with "starting or creating a new venture; innovating or creating new combinations of resources; pursuing opportunity; acquiring or bringing together necessary resources; risk taking; profit-seeking and creating value" (Morris, 1998:73).

The definition by Jarillo (1986:26) manages to capture the essence and core elements of the other definitions that are presented above. The authors state that entrepreneurship is "the process of creating value by bringing together a unique combination of resources to exploit an opportunity". This definition captures the core elements of entrepreneurship in four main ways. First, the definition denotes that entrepreneurship involves putting together some resources in a manner that was not previously there. This combination includes facilities, procedures, materials, technologies and people. Secondly, the definition shows that entrepreneurship involves some opportunity-seeking behaviour. In this context, entrepreneurship can be defined as a combination of the pursuit of opportunity using controlled resources (Stevenson, Roberts, Sahlman and Hammermesh, 2006:25). Third, entrepreneurship can be thought of as a concept which can be broken down into several different pieces or stages. Consequently, entrepreneurship, as a process, can be contextually applied to any organisation. Lastly, from the definition it can be elicited that

entrepreneurship creates value which was not there before. Using the four core elements above, entrepreneurship can therefore be perceived as the capacity to perceive new opportunities in external environments, to priorities and evaluate these new opportunities and then to create value in them through business concepts.

Timmons and Spinelli (2008:120) extend on the definition of entrepreneurship by showing what entrepreneurs actually do. According to the authors they build vision from nothing. Timmons and Spinelli (2008:120) also add that entrepreneurship involves building a team with complementary talents and skills.

The field of entrepreneurship has grown exponentially since 1970 “despite the fact that there is no singularly acceptable definition of entrepreneurship”. A significant amount of research has been conducted in the field since then.

It is important to study the history of entrepreneurship so as to better understand the field’s emergence, development and growth. The next section is going to present a brief history of the entrepreneurship field.

2.3 HISTORY OF THE FIELD OF ENTREPRENEURSHIP

Despite its long tradition, entrepreneurship is still a relatively new area of study in the academia (Landstrom, 2005; Carlsson, Braunerhjelm, Mckelvey, and Yinenpaa, 2013:8; Lohrke and Landstrom, 2010). The term “entrepreneur” has been used in the French language since the 12th century. It is derived from the French word “entreprendre”, meaning “to do” or “to undertake” (Filion, 2011:2; Hisrich et al., 2008:6; Kuratko and Hodgetts, 2007:32; Wickham, 2006:3). Entreprenuers have been recognised since the 18th century when economist Cantillon (1755) associated the “risk-bearing” activity in the economy with the entrepreneur. Cantillon (1755) noted discrepancies between demand and supply which created opportunities for buying at low prices and selling at higher prices. Cantillon (1755) referred to as “entrepreneurs” those people who were aware of these opportunities. Jean-Baptiste Say (1803) also took interest in entrepreneurs. Say saw venture creation as the driver of economic development. Say and Cantillon (1755) saw entrepreneurs as risk-takers because they invested their own money (Groenewald, 2010:37). Say and Cantillon (1755) were primarily interested in comprehending the the relationship between the economy and the activities of the entreprenuers. From their

perspectives, the two saw entreprenuers as risk-takers (Buchanan and Di Piero, 1980; Leibenstein, 1968), creators of enterprises (Schloss, 1968) and detectors of business opportunities (Kirzner, 1979; Penrose, 1959).

Schumpeter (1928) has been credited for formalising the entrepreneurship field by associating entrepreneurship with innovation.

> "The essence of entrepreneurship lies in the perception and exploitation of new opportunities in the realm of business … it always has to do with bringing about a different use of national resources in that they are withdrawn from their traditional employ and subjected to new combinations" (Carlsson et al., 2012:8).

Stevenson and Jarillo (1990:19) observe that it was only after Schumpeter's clarification of innovation that both economists and non-economists come to acknowledge the connection between innovation and entrepreneurship.

Some observers place the 1970s as the time when entrepreneurship emerged as a field of study. Groenewald (2010:37) cites studies by Birch in 1979 and 1987 who concluded that entrepreneurship went beyond forming businesses but also to the growth of new businesses. This shows that the growth of existing businesses is particularly important to entrepreneurship just as much as starting new ones. In that context, Sexton and Smilor (1997:97) saw growth as the essence of entrepreneurship.

According to Carlsson, Braunerhjelm, McKeelvely and Yinenpaa (2012:11), the 1980s saw the first time entrepreneurship came into the mainstream science of management. Two high-profile events enabled this. The first was the first ever annual conference on entrepreneurship and the second was the publication of an entrepreneurship encyclopaedia which gave a description of the field's state.

Carlsson et al., (2012:13) further go on to mark the 1990s as a period of intense academic debate regarding entrepreneurship's contribution to management sciences and its overall legitimacy. Some accusations and criticism of the field using multiple levels of analysis to guide the field's research, lack of a unifying framework and lack

of precision also came up. Filion (2011:72) argues that it is beyond the bounds of possibility to engage a construct that is not defined.

Cooper (2003:57) further saw the 1990s as ushering in a new practice and theoretical era in entrepreneurship. Various observers took entrepreneurship to high levels of complexity through conceptualisation, modelling and empirical research. Entrepreneurs and managers embraced new business practices and philosophies such as organisational flexibility to thrive in increasingly competitive markets, market orientation and corporate entrepreneurship

Stevenson and Jarillo (1990:18) divides the entrepreneurship literature into three broad categories: how entrepreneurs act (entrepreneurial management); “why entrepreneurs act (the causes of entrepreneurship) and what happens when entrepreneurs act (the effects of entrepreneurship)”. The authors attribute these differences to the relative academic backgrounds of the researchers. According to Stevenson and Jarillo (1990:19), economists dominate on entrepreneurial effects, citing the Austrian tradition, German tradition and the Chicago tradition. On the other hand, psychologists dominate on the studies which seeks to explain the causes of entrepreneurship. Entrepreneurial management studies on the other hand have largely been examined from a practical point of view. In spite of these variances, there are several overlaps and similaries especially when it comes to defining entrepreneurship, with the bulk of the definitions coming from the effect studies as they seek to explain what causes entrepreneurship.

Morris (1998) has proposed that the entrepreneurship field has seven perspectives which partly account for how the field has been evolving. These perspectives include “the creation of value and the creation of growth; the creation of jobs; the creation of change; the creation of innovation; the creation of enterprise and the creation of wealth” (Kuratko, Morris and Covin, 2011:10). Creation is one variables consistent amongst all the perspectives. Entrepreneurship is about creating wealth, innovation, change and organisations.

Entrepreneurial research is classified according to Carlsson et al., (2012:9), as follows:

“Entrepreneurship is about creation. The research domain in the entrepreneurship field involves the:

- creation of new venture opportunities;
- creation of new combinations of goods and services, methods of production, markets and supply chains;
- recognition, exploitation and exploration of new and existing opportunities; and
- cognitive processes, behaviours and modes of action to exploit new and existing opportunities”.

This domain classification corresponds with the seven perspectives described by Kuratko (Kuratko et al., 2011:10).

Filion (2011:8) argues that not a single theory on entrepreneurship exists. This is because most of the research conducted is from the researcher’s perspective. Bula (2012:1) notes that “several approaches can be applied to entrepreneurship studies. These include classical theories like Richard Cantillon’s entrepreneur who balances demand and supply in the economy by bearing uncertainty or risks; Jean Baptise Say, who saw the entrepreneur not as a risk taker but an agent of production in the economy and a manager”. There are also neoclassical theories of Alfred Marshall introduced the innovation variables to entrepreneurship and sees the entrepreneur as constantly seeking opportunities to bring equilibrium to the economy and through perfect competition and minimising costs. There is also the Schumpeterian approach that saw the entrepreneur as “the creative destroyer of equilibrium through innovation and the discovery of opportunities by introducing new products or new processes; Kirzner who introduced the concept of entrepreneur alert, the creation of economic shock, and the response of the alert entrepreneur to the same; the Knightian entrepreneur, seen as a residual claimant and risk taker in the environment of uncertainty”; the approach of Schulz, which sees entrepreneurs using revealed information to react to opportunities through changes in behaviour and action.

Despite the absence of a single theory on entrepreneurship, the general trend now is linking valuable opportunities and enterprising individuals rather than the early approach of “from identifying people with certain characteristics and personality traits who prefer to become entrepreneurs” (Groenewald 2010:39).

Although there is no single theory of the entrepreneurship field, one thing common to researchers is that they have “shifted their attention away from identifying people with certain characteristics and personality traits who prefer to become entrepreneurs, towards understanding the link between enterprising individuals and valuable opportunities” (Groenewald 2010:39). This demands “a deeper understanding of opportunity in the entrepreneurial process, on which the entire concept is assumed to be based”.

Filion (1998:9) recommends that entrepreneurship be defined as a study of the practice of entrepreneurs. This will examine the entrepreneurs’ economic and social effects; activities and characteristics and the support mechanisms that are being used to express entrepreneurial activity. Table 2.2 summarises the research trends in entrepreneurship.

TABLE 2.2 Research Trends in Entrepreneurship Orientation

Period and topic	Perspective	Authors and researchers
What entrepreneurs do (1700 – 1950)	from an economic perspective	Cantillon; Say and Schumpeter
Who are entrepreneurs? (1960 – 1980)	from a behavioural perspective	Weber; McClelland; Rotter and De Vries
What entrepreneurs do and their trainability (1980 onwards)	from a management science perspective (human resources, operations, finance) and from an education perspective	Drucker; Mintzburg; McClelland;Gibb; Kuratko and Hodgetts
What support entrepreneurs need (1985 onwards)	from a social perspective	Gartner; Welsh; Bygrave and Reynold
What entrepreneurial activities are, and what competences they need to perform these activities (1990 onwards)	from an entrepreneurship perspective	Timmons; Vesper and Brockhaus

Source: Filion (1998:10)

As can be seen from Table 2.2, the notion of entrepreneurship that was established by Cantillon in 1755 began from a venture capital and economic perspective. This

viewpoint, according to Filion (1998:11), is still pertinent, although it lost its leadership to the behaviourist perspectives in the 1950s. The behaviourist approach to the study of entrepreneurs lost its dominance in the 1980s when management scientists worked on identifying more appropriate support systems for entrepreneurs. The 1990s produced more research that can be applied to help the practice of entrepreneurship, particularly entrepreneurial activities and the related competencies. The emergence of a research perspective in the field of entrepreneurship is, according to Filion (1998:15), limited and has not led to an evolution in the general discipline. For instance, the explosion of behavioural studies of entrepreneurs was a consequence of the emergence of the behavioural science, and not vice versa. This means that the science of entrepreneurship is, to some extent, shackled by the limitations of source paradigms that have unfolded as a result of their application to entrepreneurship, and its own incapacity to spawn new paradigms.

Meyer et al., (2002:25) highlights the importance of entrepreneurship on the global economy. This is because the pursuit of knowledge on entrepreneurship still engages researchers to investigate the inception, renewal, growth, transformation and failure of businesses. Also, the fact that the upside of successfully pursuing businesses is employment creation, wealth and economic growth all makes the research on entrepreneurship all the more compelling.

Kuratko and Hodgetts (2007:xxxiii) observe that the sheer number of journal on the subject of entrepreneurship is testament to the relative growth of the subject. This is further complemented by chairs in entrepreneurship, endowed professorships and the development of the 21st Century Entrepreneurship Research Fellows by the National Consortium of Entrepreneurship Centres as well as the number of academics who have switched to entrepreneurship as their primary area of interest. According to Kuratko and Hodgetts (2007: xxxiii), “Entrepreneurship is the new revolution, and it’s about continual innovation and creativity. Entrepreneurship is the future of our economy” (Kuratko and Hodgetts, 2007: xxxiii).The next section will deal with the reasons why entrepreneurship is important for the future of organisations and the world economy as such.

2.4 ROLE OF ENTREPRENEURSHIP IN AN ORGANISATION

Researchers view entrepreneurship as “the engine that moves the economy and society of most nations” (Carree and Thurik, 2002; Acs, 1992; Brock and Evens, 1989). Barringer and Ireland (2006:14) state that entrepreneurship’s importance in organisations and to the economy was first espoused in 1934 by Schumpeter. The authors observe that entrepreneurs develop new technologies and products that make the current ones obsolete. Schumpeter referred to this process as “obsolete destruction” or “creative destruction” meaning that over time obsolete products and technologies will give way to new ones and the process of replacing them with much better and imporved versions drive up consumer demand for these products which in turn creates economic activity. The elements of productivity in the society may also be increased by the new products and technologies.

The overriding reason for the increased interest in entrepreneurship is seen by Kuratko et al., (2011:12) to be “the widespread belief that entrepreneurial activity stimulates economic growth and development, as well as the performance of an organisation. Entrepreneurship is the key element for gaining competitive advantage, and hence greater organisational rewards”.

According to Birch’s (1987) research on entrepreneurship effects, “the entrepreneurial function is responsible for economic improvement in society, due to its innovation” (Stevenson and Jarillo, 1990:19). Entrepreneurship goes beyond the creation of small businesses and paves the way for the legitimisation of the concept of corporate entrepreneurship.

Kuratko et al., (2011:14) observe how entrepreneurship goes more than increasing income and per capita income in economic development. Rather, entrepreneurship is also responsible for instituting change within an organisation. This growth ought to be accompanied by increased output which in turn provides the impetus for more wealth to be created and shared between the various entrepreneurs. Kuratko et al., (2011:14) also argue that entrepreneurs also play the role of filling gaps created by the demand and supply nature of the market. Through their skills, they exploit opportunities to address these market imperfections. Besides creating employment opportunities, entreprenuers also act as transformative forces within the market where they also introduce new goods and services.

In order to understand how entrepreneurs implement entrepreneurship in established organisations, the process and decision-making activities used by entrepreneurs to act entrepreneurially is critical. However, engendering entrepreneurial behaviours, practices and innovation in an organisation is challenging as it requires many adjustments on structural, managerial and environmental levels (Kim, 2010:790). Hence, entrepreneurial behaviour needs to be adjusted and defined clearly before being applied in an organisational setting (Kim, 2010: 800). One of the promising ways of measuring the means by which entrepreneurial behaviours are engendered within established organisations is offered by the concept of corporate entrepreneurship.

The next section will deal with entrepreneurship in an established organisation. The review of relevant literature on various elements of corporate entrepreneurship is presented. These elements form the theoretical underpinnings of this study.

2.5 CORPORATE ENTREPRENEURSHIP

Kuratko (2010:129) discribes corporate entrepreneurship as “a concept which has seen multiple transformations and undergone several iterations over the past four decades”. This is confirmed by Morris and Kuratko (2002:350) who describe corporate entrepreneurship as “behaviour that is entrepreneurially inclined within established organisations”.

Morris, Lewis and Sexton (1994) suggest the extent to which the term entrepreneurial behaviour is broad. This was after the authors did a content analysis on books and journals on entrepreneurship which they synthesized to seventy-seven definitions. From the analysis they noticed that some fifteen key words kept recurring and these are: risk taking/uncertainty, pursuit of opportunity, innovation/new product/new market, new business/new venture, starting/founding/creating. Because the field of entrepreneurship is broad, it is to be expected that the definitions on the subject will also be extensive.

The next sections presents some of the defitions presented in literature on corporate entrepreneurship.

2.5.1 Definition of Corporate Entrepreneurship

Christensen (2005:306) observes that “the roots of corporate entrepreneurship can be found in the mid-1970s”. Aloulou and Fayolle (2005:24) on the other hand trace the empirical and theoretical roots of corporate entrepreneurship in the work of Miller (1983) and Burgelman (1983a; 1983b; 1984). The publication of the works of Pinchot’s (1985) marks a watershed moment when corporate entrepreneurship became an independent study on its own.

Despite the attempts by the authors above to situate corporate entrepreneurship in a historical and academic context, Guth and Ginsberg (1990:6) and Covin and Miles (1999:48) believe that the concept is still in need of a clear definition. This is based on the observation of the multiple definitions of entrepreneurship that have been put forward, some using different definitions for the same phenomenon and some same definition for different phenomenon. This has led to the unanimous observation that there is no single definition of entrepreneurship that is unanimously or even widely agreed among academics (Russel, 1999). It is worth noting that Schumpeter (1934) in his work the “pursuit for a discontinuous opportunity” saw the possibility of entrepenurship both as the creation of new businesses as well as innovation and taking opportunities within established organisations.

Different authors have also defined and labelled entrepreneurship differently. Some of these labels or tags include **strategic entrepreneurship** (Hitt, Ireland, Camp and Sexton, 2002); **strategic renewal** (Stopford and Baden-Fuller, 1994), **entrepreneurial management** (Stevenson and Jarillo, 1990); **corporate venturing** (Block and McMillan, 1993); **intrapreneurship** (Chinho, Hojung and Chienming, 2003); **internal corporate entrepreneurship** (Lumpkin and Dess, 1996) and **corporate entrepreneurship** (Morris, et al., 2011).

Russel (1999:67) observes that inspite of the fact that there is no consensus among academics on the actual meaning of corporate entrepreneurship, contemporary scholarship shows that corporate entrepreneurship still is a sub-domain within the general field of entrepreneurship. Table 2.6 presents some of the various definitins on corporate entrepreneurship, from different academics.

TABLE 2.3: Definitions of the Different Corporate Entrepreneurship Tags

CORPORATE ENTREPRENEURSHIP (CE)	
Antoncic (2001);	"CE refers to a process that goes on inside an existing organisation, regardless of size, and leads not only to new business ventures, but also to innovative activities and orientations such as developments of new products, services, technologies, administrative techniques, strategies and competitive postures".
Covin and Miles (1999)	"CE refers to the process whereby organisations engage in diversification through internal development. Such diversification requires new resource combinations to extend the organisation's activities in areas unrelated, or marginally related, to its current domain of competence and corresponding opportunity set".
Zahra (1991; 1993)	"CE is a formal or informal activity aimed at creating new businesses in established organisations through product and process innovations and market developments. These activities may take place at the corporate, division, functional or project levels, with the unifying objective of improving an organisation's competitive position and financial performance. CE also entails the strategic renewal of an existing organisation".
INTRAPRENEURSHIP	
Antoncic and Hisrich (2003)	"This is a process that goes on inside an existing organisation, regardless of its size, and leads not only to new business ventures but also to other innovative activities and orientations, such as development of new products, services, technologies, administrative techniques, strategies and competitive postures".
CORPORATE VENTURING	
Stopford and Baden-Fuller (1994)	"A corporate venture is defined as a business marketing a product or service that the parent organisation has not

	previously marketed, and that requires the parent organisation to obtain new equipment or new people or new knowledge".
STRATEGIC OR ORGANISATIONAL RENEWAL	
Guth and Ginsberg (1990)	"Strategic renewal involves the creation of new wealth through new combinations of resources".
Stopford and Baden-Fuller (1994)	"Organisational renewal alters the resource pattern of business to achieve better and sustainable overall economic performance. To be sustainable, more pervasive effort is needed, involving more than a few individuals and the finance function".
Zahra(1993;1995; 1996)	"Renewal has facets, including the redefining of the business concept, reorganisation and introduction of system-wide changes for innovation. Renewal is achieved through redefining an organisation's mission through the creative redeployment of resources, leading to new combinations of products and technologies".
Block and McMillan (1993)	"A project is a corporate venture when it involves an activity new to the organisation; is initiated or conducted internally; involves significantly higher risk of failure or large losses than the organisation's base business; is characterised by greater uncertainty than the base business; will be managed separately at some time during its life; is undertaken for the purpose of increasing sales, profit, productivity, or quality".
Ellis and Taylor (1987)	"Corporate venturing pursues a strategy unrelated to present activities; it adopts the structure of an independent unit and involves a process of assembling and configuring novel resources".

Source: Sharma et al. (1999:13); Maes (2003:3); Ramachandran et al. (2006:83)

Maes (2003:21) comes up with three key findings from the multiple definitions. First, the same author sometimes adopted different definitions for the same terms to account for different contexts. Secondly, it also shows that the same phenomenon can be labelled differently by different researchers. Third, the same concept can be

defined differently by different researchers. To confirm these observations, Maes (2003:21) use an example of intrapreneurship and corporate entrepreneurship where the same definition is used.

Morris, Kuratko and Covin (2003:11) are of the opinion that entrepreneurial behaviour within large and mid-sized established organisations can be defined as corporate entrepreneurship. This is confirmed by Ireland, Kuratko and Morris (2006a:10) who observe that this is the process where individuals in established organisations, without regard to present resources, pursue some innovative entrepreneurial opportunities. Consequently, these entrepreneurial opportunities can be seen as emerging services and goods whose current price exceeds their support, distribution and development costs. Srivastava and Agrawal (2010:164) on the other hand content that corporate entrepreneurship has always been in existence and the definition by Schumpeter (1934) suggests that anyone can be an entrepreneur when they use innovation to take opportunities.

Guth and Ginsberg's (1990:6) believe that corporate entrepreneurship strength is in its central focus on the role that entrepreneurship plays in improving existing organisations which can be achieved through venturing activities and innovation while leveraging the different capabilities, resources and skills available to organisations.

Kuratko and Hodgetts (2007:55) outline what they think are some of the critical components that make up corporate entrepreneurship. This includes corporate venturing in organisations already established, innovation which involves the introduction of new goods and services on the market and strategic renewal which involves overhauling or making some structural changes to existing businesses.

Durkan (2005:6) offers the following definition for corporate entrepreneurship: "Corporate entrepreneurship can be defined as a process that goes on inside an existing organisation and that may lead to new business ventures, the development of new products, services or processes, and the renewal of strategies and competitive postures." Put differently, corporate entrepreneurship is important in organisations for development of new services, products and processes; revenue growth and overall organisational development. In this content, corporate

entrepreneurship can be a tool inside organisations used to hasten up the innovation of new products and services.

Wolcott and Lippitz (2007:75) support this statement by saying that “Corporate entrepreneurship is a process by which teams within an established organisation conceive, foster and manage a new business that is different from the parent organisation but leverages the parent’s asset, capabilities and other resources”. According to this definition, “corporate entrepreneurship often involves internal partners. The resources of the parent organisation and the internal teams of the organisation are usually managing the projects. This definition implies that corporate entrepreneurship is about improving existing products as it is about developing new products and services”. Scott, Rosa and Klandt (1998), as cited by Kenney and Majtuba (2007:320), define the concept of corporate entrepreneurship as “the process of stimulating innovative ideas and processes. The common goal of the concept is wealth creation”. This definition deviates from convention in that it doesn’t specifically focus on the improvement of established organisation as a core component of corporate entrepreneurship.

One the other hand, Thornberry (2001:527) argues that “we need to define an entrepreneur in order to come-up with an adequate definition of corporate entrepreneurship. In this viewpoint an entrepreneur is an individual who is able to identify, shape and develop new opportunities and can turn these opportunities into new business or ideas”. Covin and Miles (1999:50) give emphasis to “innovativeness” in entrepreneurship. They observe that “innovation was the single common theme underlying all forms of corporate entrepreneurship”. According to Ginsberg and Hay (1994:382), “the concept of corporate entrepreneurship is mainly effective when an organisation has to deal with rapidly changing environments. In these environments it is often difficult to predict what will happen in the future”. Thornberry (2001:528) suggests organisations should focus on identifying emerging opportunities so that they can capitalise on these using pre-existing resources.

Morris et al., (2011:99) and Corbett et al., (2013:812) observe that there has been a shift in the scope of corporate entrepreneurship as the conceptualisations have expanded. They observe that now there is increased interest in the strategy of corporate entrepreneurship which has resulted in improved organisational

competitiveness, achievements and performance. Phan et al., (2009:197) and Morris et al., (2011:99) believe strategic entrepreneurship and corporate venturing are the two categories which make up corporate entrepreneurship.

Sharma and Chrisman (1999:19) define corporate venturing as "all the entrepreneurial activities that do not necessarily involve new business being added to the organisation", According to Corbett et al., (2013:813), these includes as "strategic renewal, domain redefinition, organisational rejuvenation, and business model reconstruction". Covin and Kuratko (2010) further observes that "strategic entrepreneurship also incorporates the Schumpeterian (disruptive) innovation phenomenon, and involves organisation-level innovations aimed at achieving competitive advantage".

Overall, "corporate entrepreneurship is initiated in established organisations for reasons which include performance improvement, strategic renewal, innovativeness, and effective configuration of resources as the pathway to developing competitive advantage" (Kuratko and Audretsch, 2013: 523).

The next section presents the summary on the various definitions of corporate entrepreneurship.

Guth and Ginsburg (1990:5) suggested that:

> "The topic of corporate entrepreneurship encompasses two types of phenomena: (1) the birth of new businesses within existing organisations, i.e. internal innovation or venturing; (2) the transformation of organisations through renewal of the key ideas on which they are built, i.e. strategic renewal."

Zahra (1991:262) states:

> "Corporate entrepreneurship may be formal or informal activities aimed at creating new businesses in established organisations through product and process innovations and market developments. These activities may take place at the corporate, division, functional, or project levels, with the unifying objective of improving an organisation's competitive position and performance."

Sharma and Chrisman (1999:18) believes “corporate entrepreneurship is the process whereby an individual or a group of individuals, in association with an existing organisation, create a new organisation within that organisation.” Kuratko and Audretsch (2013:332) makes the distinction between strategic entrepreneurship and corporate venturing. Kuratko and Audretsch (2013) offer the following definition of strategic entrepreneurship:

> “While corporate venturing involves organisation involvement in the creation of new businesses; strategic entrepreneurship corresponds to a broader array of entrepreneurial initiatives which do not necessarily involve new businesses being added to the organisation. Strategic entrepreneurship involves simultaneous opportunity-seeking and advantage-seeking behaviours (Ireland, Hitt and Sirmon, 2003). The innovations that are the focal points of strategic entrepreneurship initiatives represent the means through which opportunity is capitalised on. These are innovations that can happen anywhere in the organisation. Management seeks to achieve and maintain a competitive position for the organisation by emphasising an opportunity-driven mind-set” (Kuratko and Audretsch, 2013:332).

Hornby, Naffziger, Kuratko and Montagno (1993:35) believe “Entrepreneurship is multidimensional and relies on the successful interaction of several activities rather than events occurring in isolation”. Kuratko and Audretsch (2013) suggest the need to understand the individual variables that make up corporate entrepreneurship in the following statement: “Exploring these domains and gaining a sharper focus on the corporate entrepreneurship process may be a most important step for scholars interested in moving the field forward” (Kuratko and Audretsch, 2013:333).

Kuratko et al., (2011:49) captures the essence of corporate entrepreneurship by arguing that “corporate entrepreneurship is basically new ideals and opportunities that are developed within a large organisation”. As Kuratko et al. (2011:49) state, corporate entrepreneurship is unique in nature, yet to be a meaningful concept in an established organisation it must be woven into the basic fabric of the organisation.

There are various key elements that contribute to corporate entrepreneurship, such as entrepreneurial activities, behaviour, internal organisational processes and

strategies. All these elements contribute to the success of the entrepreneurial actions of both the individuals and the organisation as a whole.

In order to facilitate a better understanding of all the related variables and processes that contribute to the field of corporate entrepreneurship, researchers and authors have developed a number of conceptual models on corporate entrepreneurship. These conceptual models show the external and internal environments determining the corporate entrepreneurship phenomenon. The corporate entrepreneurship models place emphasis on innovations developed within existing organisations.

2.6 CONCEPTUAL MODELS OF CORPORATE ENTREPRENEURSHIP

Several conceptual models exist on corporate entrepreneurship. These include among others, “an integrated model of entrepreneurship (Mokaya, 2012; Kuratko et al., 2011), a model of sustained corporate entrepreneurship (Kuratko et al., 2004); an interactive model of corporate entrepreneurship (Hornsby et al., 1993); a conceptual model of organisation behaviour (Covin and Slevin, 1991) and the domain model of corporate entrepreneurship” (Guth and Ginsberg, 1990).

There are some marked differences between these conceptual perspectives. Collectively, they bring various elements and perspectives to the study of entrepreneurship. Singly, none of them can adequately and completely explain the concept of entrepreneurship but collectively they make a compelling case. These conceptual persepectives are presented below.

2.6.1 A Domain Model for Corporate Entrepreneurship (Guth and Ginsberg, 1990)

Guth and Ginsberg (1990:5) when defining corporate entrepreneurship, make the argument that “entrepreneurship is made up of two variables, the transformation of organisations through renewal (i.e. strategic renewal) and the birth of new businesses within existing organisations (i.e. venture or internal innovations)”. According to Guth and Ginsberg (1990:5), strategic management Is the point of departure for corporate entrepreneurship as shown in Figure 2.1.

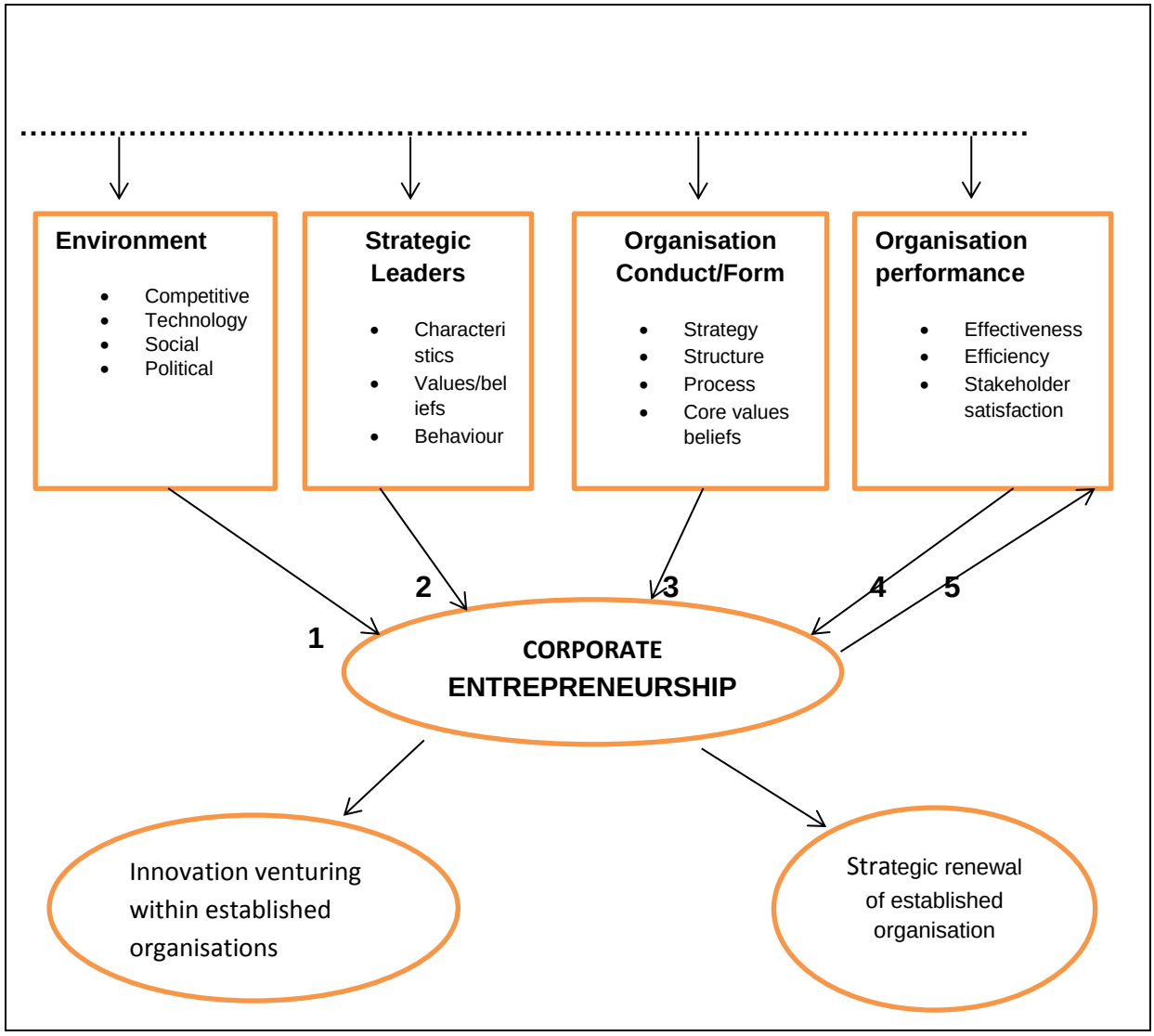
The components of this model, developed by Guth and Ginsberg (1990), can be described as follows: “The changes in industry competitive structures and the technologies underlying them affect the corporate entrepreneurship environment.

Opportunities for new products and services stem from new technologies developed by others. Both opportunities and problems stem from the potential of a business and its competitors in the industry to find new combinations of resources that lead to competitive advantage". Guth and Ginsberg (1990) further posit that an organisation's entrepreneurial behaviour is dependent on the vision, values, behaviour and characteristics of its strategic leaders.

Some authors have noted that the organisations with bureaucratic processes and structure tend to be more innovatiove produce new innovative goods and service. This lends credednce to the assumption that that corporate entrepreneurship is largely influenced by organisational influence (Groenewald, 2010:74).

Groenewald (2010:74) further outlines some of the factors tha influence corporate perfomance. These includes, amongst many others, crisis or severe external threats; excess resources which permits organisations to seize upcoming opportunities as well as radical change and innovation which may actually induce organisations "to look for more opportunities to levelrage on for growth and performance".

Figure 2.1: Fitting corporate entrepreneurship into strategic management



Source: Guth and Ginsberg (1990:7)

As Guth and Ginsberg (1990:8) see it, organisational performance is influenced by corporate entrepreneurship. Change and innovation has been seen to be negatively affected by management's short term performance orientation. This is because several years are needed before new ventures break even and contribute to organisational profitability.

There are some inherent weakness though with the the Guth and Ginsberg (1990) model. First, the model does not acknowledge the influence between strategic leadership, the operating environment and corporate entrepreneurship except in the case of organisational performance. The other weakness is that there is no acknowledging the feedback loop which may be involved when making the

assumption that there is a one way influence from organisational activities, leadership and the operating environment.

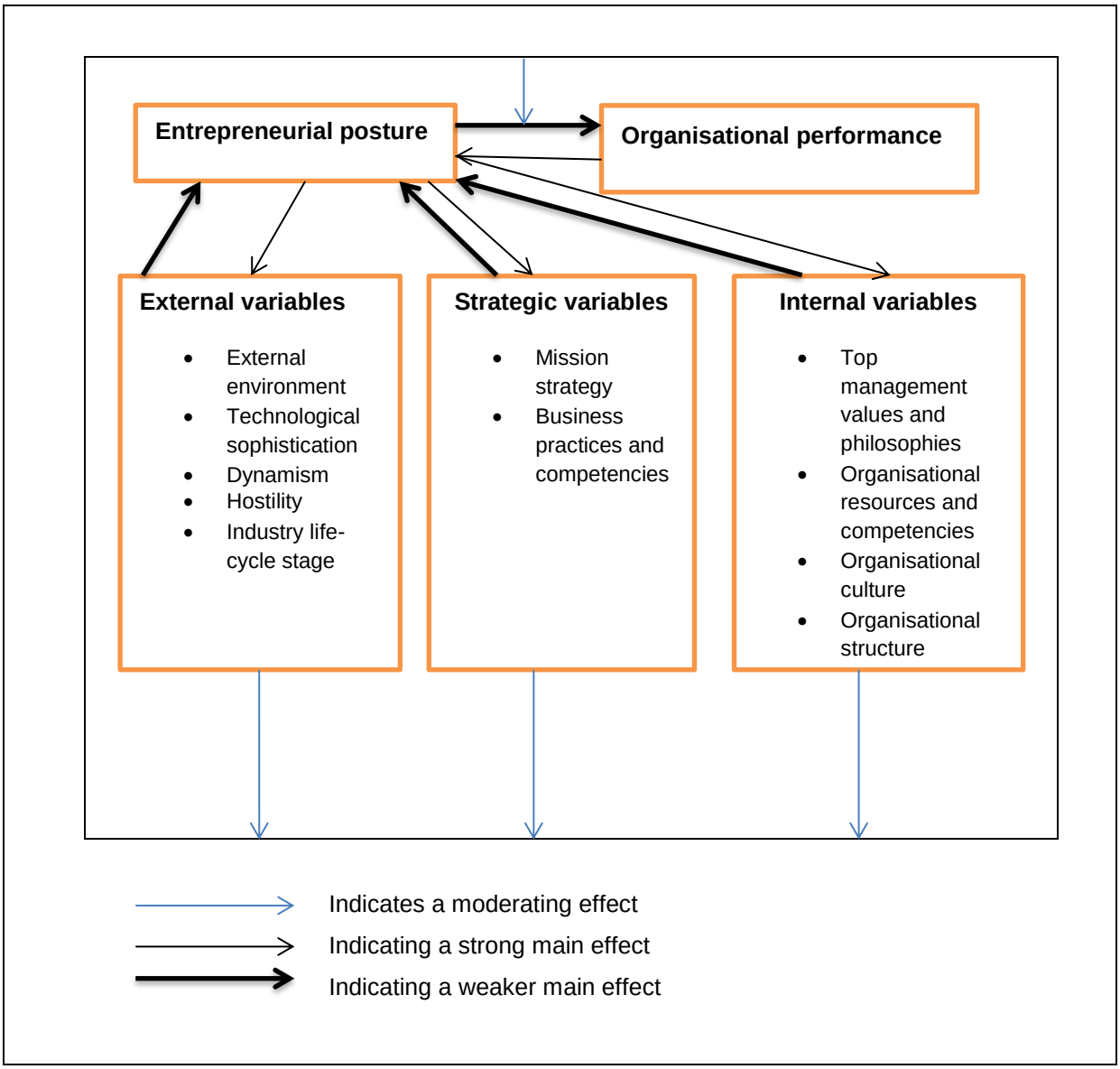
While it can be conceded that there are some weaknesses in the model, it still has relevance to the study as it offers some explanation for the the nature of corporate entrepreneurship and also acknowledges the link between organisational performance and corporate entrepreneurship.

2.6.2 A Conceptual Model of Organisational Behaviour (Covin and Slevin, 1991)

Covin and Slevin (1991) suggests an integrative model that explain the causality between an organisation's internal factors, strategy, environment, posture and its performance. The model by Covin and Slevin (1991) is intended to be an improvement to the model by Guth and Ginsberg (1990) in that it shows the feedback loop between entrepreneurial posture and corporate entrepreneurship factors. Additionally, the model by Covin and Slevin (1991) talks about entrepreneurial posture in generic terms without referring to any specific type of corporate entrepreneurship.

The key tenets of the model includes the internal and strategic factors influencing organisational behaviour as well as the external environment. This model assumes that internal variables, the external environment and strategy are all influenced by entrepreneurship and all these have a stronger relationship with organisational performance.

Figure 2.2: The conceptual model of entrepreneurship as organisational behaviour.



Source: Covin and Slevin (1991:11)

Zahra (1993:7) presents a critique of the model by Covin and Slevin (1991) and highlight several areas that can be either extended or improved. The critique is elaborated in full below.

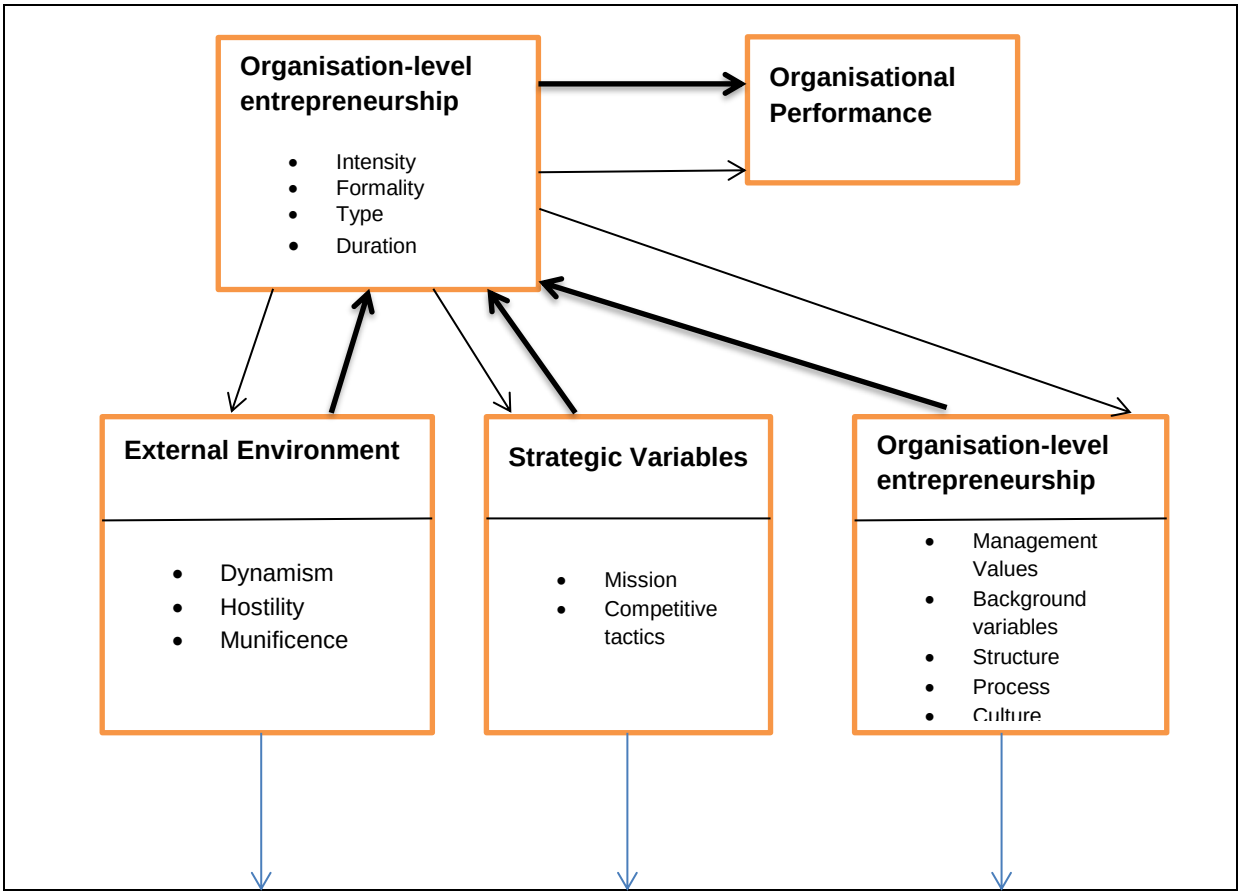
According to Zahra (1993:7), "in terms of the nature of entrepreneurial behaviour, the Covin and Slevin (1991) model should consider the intensity, formality, type and duration of organisation-level entrepreneurship. Failure to distinguish these four dimensions may lead to mis-specification of the relationship between entrepreneurship activities and other salient issues, such as the performance of the

organisation. In terms of the type of entrepreneurship", Zahra (1993:9) suggests three modifications to Covin and Slevin's model. The first suggestion includes "a shift in the model to differentiate between international and domestic ventures or entrepreneurial efforts. The second suggestion is to make a distinction between "new ventures within an established organisation's stand-alone ventures". The third suggestion includes the need to need to acknowledge the significant effect of senior executives' experiences, values and backgrounds.

Zahra (1993:12) "recommends another three changes to revise and extend Covin and Slevin's model". Firstly, "the model should recognise the outcomes of entrepreneurship (financial and non-financial outcomes). Secondly, the model should acknowledge the possibility that growth and profitability are not always guaranteed through organisation-type entrepreneurship". Thirdly, it should be recognised that financial and non-financial criteria are useful at different points in the life of an entrepreneurial venture". Zahra (1993:13) proposes an updated organisation-level entrepreneurship conceptual framework which is presented in Figure 2.3.

The proposal by Zahra (1993:13) differs in four main to the one by Covin and Slevin (1991). First, the "revised model factors in both the non-financial and financial outcomes of entrepreneurial activities. The model further proposes that some financial results results can come from the non-financial benefits of entrepreneurship. Secondly, the internal set highlights the four subsets of variables including organisational culture; managerial process; organisational structure and management background values. Third, the model "adopts a broader definition of an organisation's entrepreneurial behaviour than originally proposed. The revised model incorporates intensity, formality, type and duration of entrepreneurial behaviour" (Zahra, 1993:18). Lastly, "there is a more practical classification of the external environment set. It eliminates the technological sophistication variable because it appears to be redundant with environmental dynamism. Munificence is added as an additional environmental attitude" (Zahra, 1993:18).

Figure 2.3: A Revised Conceptual Framework of Organisation-Level Entrepreneurship.



Source: Zahra (1993:13)

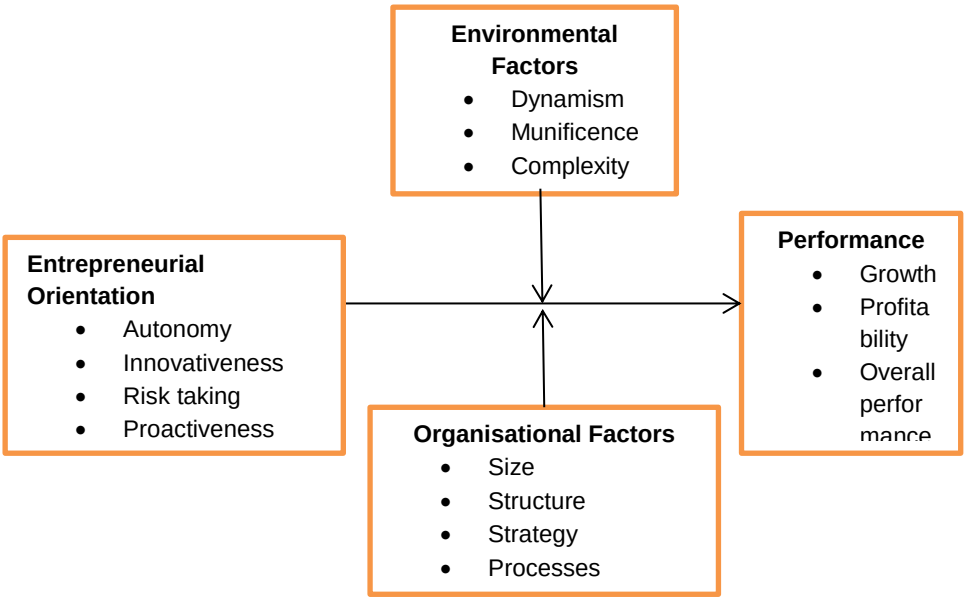
The updated model by Zahra (1993b) applies to this study as is appreciates the multidimensional nature of entrepreneurship. The model is also relevant in that it identifies the link between organisational performance and corporate entrepreneurship.

2.6.3 A Conceptual Model of Entrepreneurial Orientation (Lumpkin and Dess, 1996)

Lumpkin and Dess (1996) present an alternative model of corporate entrepreneurship in Figure 2.4 which situates corporate entrepreneurship within the

entrepreneurial orientation context. The model has five dimensions which are: competitive aggressiveness, pro-activeness, risk taking, innovativeness and autonomy.

Figure 2.4: Entrepreneurial orientation and performance relationship model



Source: Lumpkin and Dess (1996)

According to Lumpkin and Dess (1996:136), "entrepreneurial orientation refers to the process, practices and decision-making activities that lead to entering new markets with existing or new goods and services. In this context, a new entry is the idea that underlies the concept of corporate entrepreneurship". The key characteristics of entrepreneurial orientation include willingness to seize opportunities and innovate and a propensity to act autonomously (Lumpkin and Dess, 1996:136).

Lumpkin and Dess (1996)'s model presents a framework for corporate entrepreneurship that looks at the relationship between organisational performance and corporate entrepreneurship as context specific. The model also presumes that "the entrepreneurial orientation dimensions may vary independently of each other in a given context. Entrepreneurial orientation is also used to give a broader definition of corporate entrepreneurship which acknowledges the relationship between organisational performance and corporate entrepreneurship. In this study, however, conceptualisation and operationalization of corporate entrepreneurship is broader than entrepreneurial orientation".

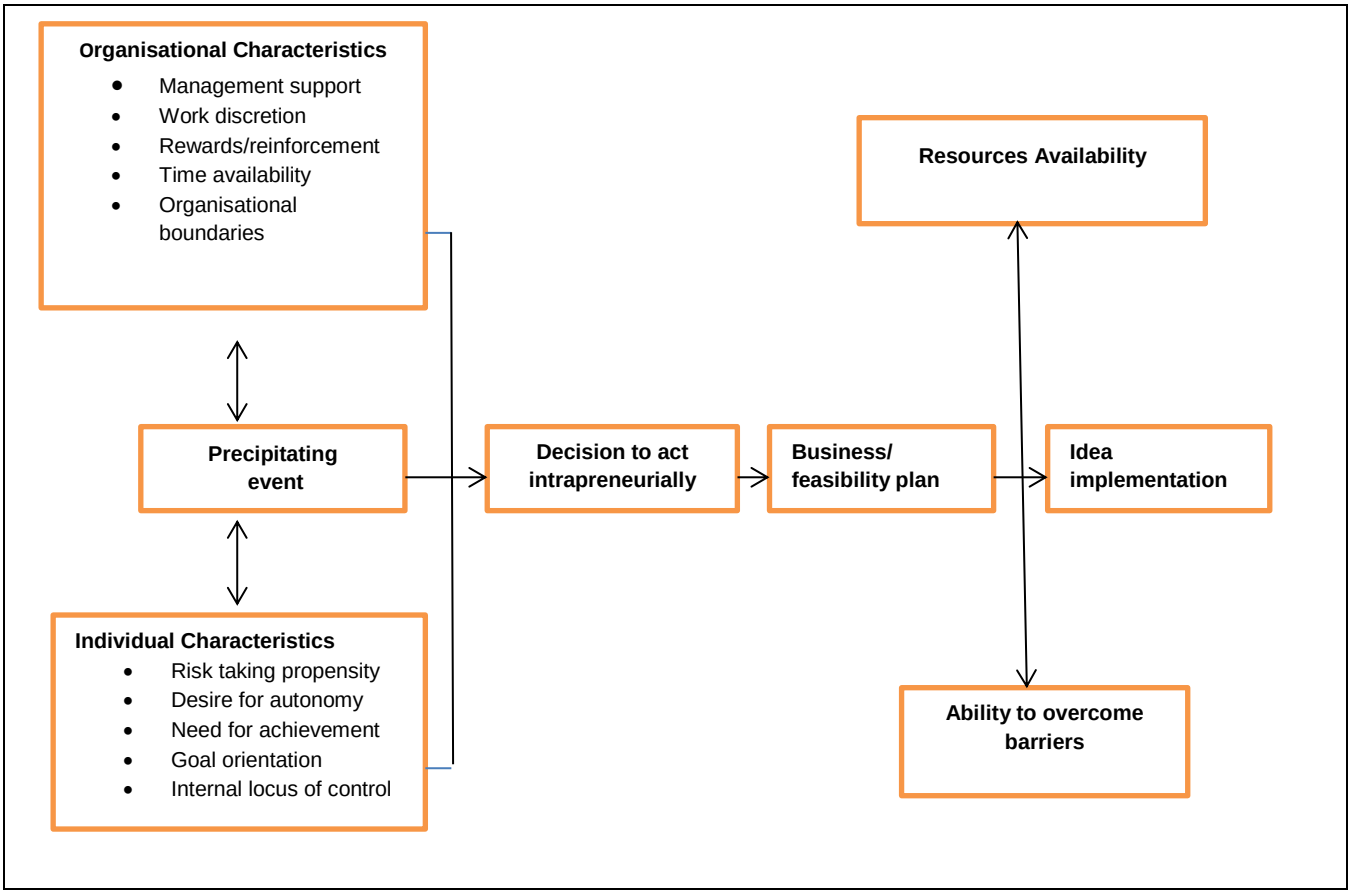
2.6.4 An Interactive Model of the Corporate Entrepreneurial Process (Hornsby et al., 1993)

Hornsby et al., (1993:29) give a description of the individual characteristics and and organisational factors whose combination can result in successful corporate entrepreneurship. Hornsby et al., (1993:29) argue that the precipitating event could be the development of new technology, an acquisition or merger, a change in organisation management or something which triggers the interaction between organisational factors and individual characteristics.

Hornsby et al., (1993) outlines some of the organisational characteristics that leads to corporate entrepreneurship. Some of these include "**organisational structure** (which is identified in various ways), **risk taking** (management and employees must be willing to have tolerance for failure and take risks); **appropriate use of rewards** (the rewards need to results based, emphasising individual responsibility, and be awarded for behaviour leading to the attainment of goals); **resources** (which includes availability of resources for innovative activities and time) and are **management support** (which relates to the willingness of managers to facilitate entrepreneurial projects)".

Hornsby et al., (1993:31) argue that although "many organisations do not always objectively assess the personality characteristics of either current or potential employees, it is important to recognise the influence of individual differences on innovative behaviour. This model suggests that this assessment may be efficacious. Individuals identified as having entrepreneurial potential could be targeted for training, or used for other entrepreneurial opportunities". Some of the individual entrepreneurial characteristics include internal locus of control, goal orientation, need for achievement, desire for autonomy and propensity for taking risks.

Figure 2.5: An interactive model of corporate entrepreneurship



Source: Hornsby et al. (1993:31)

As previously mentioned, entrepreneurship is precipitated by an interplay of individual characteristics and organisational characteristics. The impetus to behave entrepreneurially happens when there are favourable conditions for such behaviour.

Examples of precipitating events includes "environmental factors such as hostility (threats to the organisation's mission through rivalry); dynamism (instability in an organisational market because of changes); and heterogeneity (developments in the market that create new demands for an organisational product)" Hornsby et al., (1993:32). Additionally, some precipitating events may also include economic changes, changes in consumer demand, cost reduction, development of new technologies, a merger or acquisition, changes in management and include the development of new procedures.

The need to develop a business plan comes once the decision to act entrepreneurially has been made. The plan includes all phases of start-up research needed to clarify the operations involved in a new venture.

The model by Hornsby et al., (1993) has relevance to the study as it outlines the characteristics that are necessary to foster corporate entrepreneurship in an established organisation. These characteristics are discussed later in the chapter.

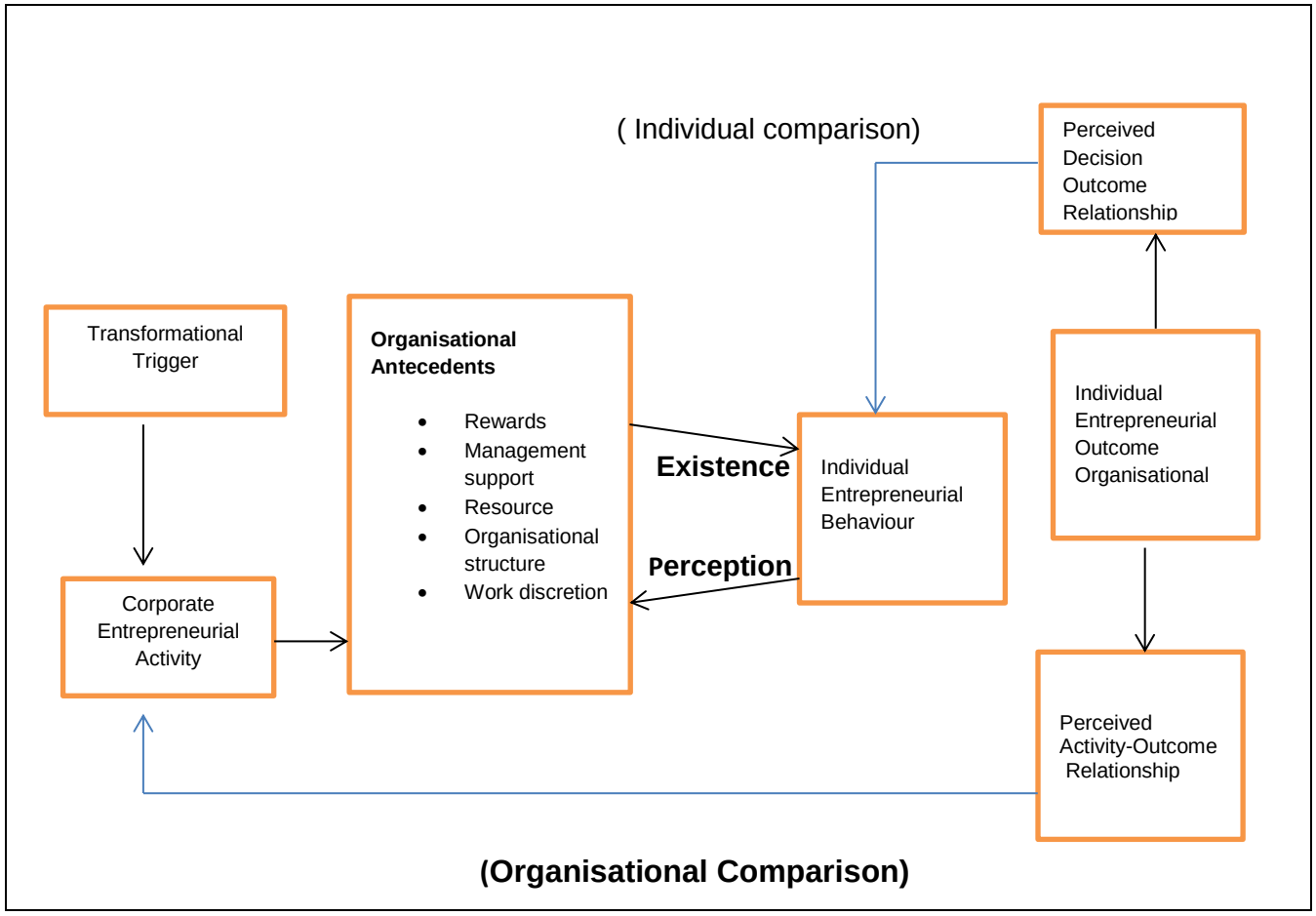
2.6.5 A Model of Sustained Corporate Entrepreneurship (Kuratko et al., 2011)

Kuratko et al., (2004:78) state that “more needs to be known about the specific factors that can influence all organisational members to develop entrepreneurial behaviour. They developed a model that focuses on the critical organisational factors that must exist and be perceived within the organisation in order to develop and sustain entrepreneurial activities”.

The focus of the model is to ensure the on-going sustainability of an organisation’s entrepreneurship. The model outlines some of the necessary measures for sustainability. These include the perception and subsequent acknowldgement by managemenet to allocate resources necessary for entrepreneurship as well as the individual members’ capacity to innovate. The model is further based on the premise that a trigger is needed for transformation to take place. This is ususally achieved through entrepreneurial activity driven by the organisation’s individual members.

According to Kuratko et al., (2004:78), “the model centres on the individual employee’s decision to behave entrepreneurially. Sustained entrepreneurial activity is the result of the perception of the individual that several organisational antecedents are present, such as top management support, autonomy, rewards, resources, and flexible organisational boundaries”.

Figure 2.6: A model of sustained corporate entrepreneurship



Source: Kuratko et al., (2011:51)

Entrepreneurial behaviour will result when both the individual employee and the leadership in the organisation perceive that the outcomes are equitable, or they meet or exceed expectations. Both parties must be satisfied with the outcomes; otherwise the amount of entrepreneurial activity will decline. Satisfaction with performance outcomes serves as a feedback mechanism for either sustaining the current strategy or selecting an alternate strategy. Individuals, as agents of strategic change, must be satisfied with the intrinsic and extrinsic outcomes they achieve for their entrepreneurial behaviour. The model suggests that, in a major strategic change, both individual behaviour and organisational strategy change are instrumental in making the change successful (Kuratko et al., 2011:51).

The model by Kuratko et al., (2004) is relevant and applicable to this study as it focuses on the elements necessary for instigating entrepreneurial behaviour, and also identifies the importance of satisfaction with performance outcomes as a

feedback mechanism to foster corporate entrepreneurship. The model focuses on the ability of an organisation to sustain entrepreneurship on an on-going basis. Another important aspect of the model which is applicable to this study is its conceptualisation that corporate entrepreneurship is the result of the perception by the individual that several organisational antecedents (e.g. management support, autonomy, rewards, resources, and flexible organisational boundaries) are present.

The models discussed so far approach entrepreneurship as an overall orientation that drives an organisation. They view corporate entrepreneurship as a discrete activity or event or behaviour (Kuratko et al., 2011:52). The major thrust behind all of these models is a revitalisation of personal creativity, product and process innovation, and on-going managerial development in an organisation (Kuratko et al., 2011:53). The strategies and insights presented in the models can serve as a foundation for understanding the increase in entrepreneurial activity within organisations, and they can guide the efforts of managers in creating work environments supportive of entrepreneurial spirit.

The next model was developed by Ireland et al., (2009), and is known as the integrative model of corporate entrepreneurship. The focus in this model is the on-going integration of entrepreneurship throughout the entire organisation.

2.6.6 A Strategic Integrative Model of Corporate Entrepreneurship

The integrative model of corporate entrepreneurship strategy represents key components of corporate entrepreneurship which are necessary for the stimulation/nurturing of entrepreneurship within organisations. The focus here is the on-going integration of entrepreneurship throughout the entire organisation, which is very different from viewing it as a discrete activity or event or behaviour. Entrepreneurship is not just something that a person or team does at a point in time, but instead should capture the essence of what an organisation is about and how it operates (Kuratko et al., 2011:52).

Defining a corporate entrepreneurship strategy as “a vision-directed, organisation-wide reliance on entrepreneurial behaviour that purposefully and continuously rejuvenates the organisation and shapes the scope of its operations through the recognition and exploitation of entrepreneurial opportunity,” Ireland et al., (2009)

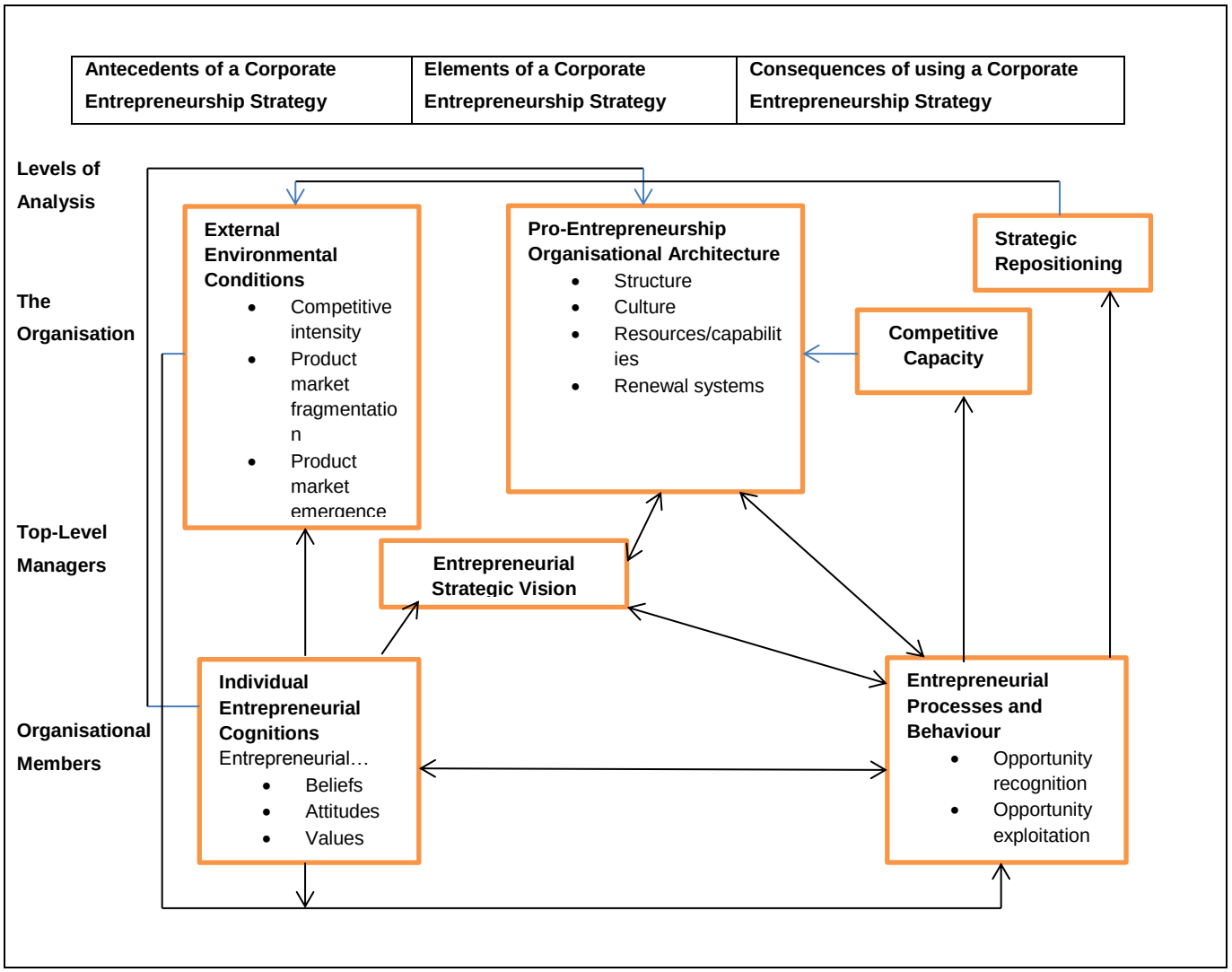
developed a model that illustrates how a corporate entrepreneurship strategy is manifested through the presence of three elements: an entrepreneurial strategic vision; a pro-entrepreneurship organisational architecture; and entrepreneurial processes and behaviour as exhibited across the organisational hierarchy (Kuratko et al., 2011:52). This model, as illustrated in Figure 2.7, has several linkages, which include individual entrepreneurial cognitions of the organisation's members; external environmental conditions that invite entrepreneurial activity; top management's entrepreneurial strategic vision for the organisation; organisational architectures that encourage entrepreneurial processes and behaviour; the entrepreneurial processes that are reflected in entrepreneurial behaviour; and organisational outcomes and results from entrepreneurial actions.

The model shows that an organisation's entrepreneurial orientation or intensity has a direct and positive influence on organisational performance. It does so because it is interlaced with the mission and vision of the organisation, the strategies, objectives, structures, the everyday operations, and the overall organisational culture. The major purpose of this integrative model is to allow for considerable managerial intervention to foster corporate entrepreneurship, as organisation leaders begin to understand that innovative behaviour by employees should not be an accidental or extemporaneous occurrence.

The strategic integration model by Ireland et al., (2009) is applicable in this study in many aspects, as it articulates the critical precipitating elements (such as internal environmental variables) appropriate for sustainable corporate entrepreneurship. Furthermore, the model acknowledges the multidimensionality of corporate entrepreneurship and its effect on organisational performance. An organisation's internal environments are critical components that stimulate organisational performance by influencing entrepreneurial activity.

Based on the extensive interdependence of concepts, as highlighted in Ireland et al.'s (2009) multidimensional integrative model, it becomes clear that there is value in exploring the relationship between conceptual framework items to determine which are more prevalent.

Figure 2.7: Strategic integration of entrepreneurship throughout the organisation



Source: Kuratko et al., (2011:52)

It is, however, first necessary to understand why it is of benefit for organisations to take part in corporate entrepreneurial activities.

2.6.7 Comments on the Models

The models discussed in this section of the literature review that can be applied to this study are:

- The entrepreneurial orientation model by Lumpkin and Dess (1996), Fig. 2.4, provides a corporate entrepreneurship framework that considers the relationship between corporate entrepreneurship and organisational performance.

- The interactive model, of Hornsby et al., (1993), as shown in Fig. 2.5, indicates the characteristics that foster corporate entrepreneurship. It also identifies obstacles or barriers to corporate entrepreneurship.
- The model of sustained corporate entrepreneurship by Kuratko et al., (2004), Fig. 2.6, focuses on the factors necessary to develop entrepreneurial behaviour and how to sustain entrepreneurship on an on-going basis.

The model of Covin and Slevin (1991), in Fig. 2.2, focuses on how to integrate entrepreneurship throughout the organisation. A specific focus is on entrepreneurial process and behaviour.

These four models can be linked directly to the hypotheses formulated for this study (Refer to Chapters 1 and 5 for the research hypotheses).

The biggest criticism of the development of the model by Covin and Slevin (1991) is that it does not consider the intensity, formality and duration of organisation-level entrepreneurship, and fails to distinguish these activities from other salient issues such as organisational performance. In this regard, Zahra (1993:12) recommended that both financial and non-financial criteria and outcomes of entrepreneurship should be recognised, as they are useful at different points in the life of an entrepreneurial venture. Furthermore, Zahra (1993) argued that the model should acknowledge the possibility that profitability and growth are not always guaranteed through organisation-type entrepreneurship.

A model by Antoncic and Hisrich (2004) addresses the various limitations identified by corporate entrepreneurial models. A valuable contribution of this model is with regard to the importance of organisational support that can be a direct predictor of corporate entrepreneurship success. In order to grow faster (Antoncic and Hisrich, 2004:543), organisations should pursue growth strategies that fit their level of corporate entrepreneurship to the level of industry growth and should make sure that their level of organisational support translates into the corresponding level of corporate entrepreneurship.

For the purposes of this study, corporate entrepreneurship is considered as a model that is adapted by organisations.

2.6.8 A Critical Evaluation of CE Models

The review of the above CE models reveal key features, contributions and weakness for each model. Some of these are highlighted below:

Lumpkin and Dess' (1996) model defines entrepreneurial orientation in terms of five dimensions proactiveness, risk taking, competitive aggressiveness, innovativeness and autonomy. These dimensions vary independently from each other in a given contex. It adds value by considering the relationship between CE and organisational performance. Its weakness is that the relationship between CE and organisational performance is context specific. This definition of EO that comprises of 5 elements have been generally accepted as is the one that comprises 3 elements; innovation, risk taking and proactiveness by Miller (1983) and Covin and Slevin 1986,1991).

- Hornsby and et al., (1993)'s model focuses on organisational and individual characteristics, the participating events, the decision to act intrapreneurialy, organisation/flexibility planning, resource availability, ability to overcome barriers and idea implematation. It adds value by putting emphasis on the multidimensional and interactive nature of intraprenaurship. Its potential weakness is that it has no evaluation of the entire entrepreneurial process.

- Kuratko et al.,'s (2011) intergrative model is a model of entrepreneurial inputs and outputs. The value add is its integration of different elements especially off entrepreneurship with innovation as a possible output of the entrepreneurial process. Its weakness is over simplification of procedures because it views entrepreneurship and innovation as a single process.

- The contribution of Covin and Slevin (1991) is that it treats entrepreneurship as organisational behaviour.

Although these models have a number of weakness, they all contribute some valuable new information or a new angle in the understanding of entrepreneurship. This results from the normal academic approach of viewing what currently exists at a particular moment, critiquing it and wanting to add to improve if there is room to do so.

According to Zahra (1993), any single model of corporate entrepreneurship is by definition incomple, therefore no one model can fit every organisation. To gain a

holistic understanding of models as they can be applied to corporate entreprenurship in different organisations which are by their nature highly subjective and complex, there is a need to understand model development and implementation. Wolcott and Lippitz (2007:24) proposed six steps to implement a model:

- Creation of a strategic mission for corporate entrepreneurship,
- Documentation of objectives,
- Gaining executive support and removal of negativity through strong communication,
- Selection of an appropriate model,
- Go for low hanging fruit to secure quick wins, and
- Evolve the model and process/stay flexible and take risk.

Models that focus on process, service, and product can yield significant results as they enhance organisations abilities to be entrepreneurial and more competitive through better opportunity recognition and exploitation.

2.7 The Benefits of Corporate Entrepreneurship

Beirwerth, Isidor and Kabst (2015) analysed the literature relating to corporate entrepreneurship and performance and found that a significant and positive relationship exists. “Our results reveal that strategic renewal (Guth and Ginsberg, 1990), innovation (Zahra, 1991; Kuratko et al., 2014) and corporate venturing (Sharma and Chrisman, 1999) positively influence overall, subjective and objective organisational performance” (Beirwerth et al., 2015:1).

One of the key advocates of this positive relationship argument is the article by Zahra and Covin (1995): An impact analysis was performed on 108 organisations and it was found that a performance index which consisted of profitability and growth measurements had a positive relationship with entrepreneurial behaviour (Zahra and Covin, 1995; Agca, Topal and Kaya, 2009:15). In a South African study by Goosen, Coning and van der Merwe Smit (2002), it was found that innovativeness, proactiveness and management’s internal influence were all deemed to be components of corporate entrepreneurship and significantly contributed to organisational performance (Goosen et al., 2002:23). Despite the significant evidence for improved performance, Zahra and Covin (1995) state that corporate

entrepreneurship may be risky and have an adverse effect on an organisation's short-term performance. The authors also mention poor organisation, lack of strategic focus and dysfunctional organisational politics as factors which detract from the effectiveness of corporate entrepreneurial activities (Zahra and Covin, 1995:45).

Covin (1999) proposes that corporate entrepreneurship is an antecedent to the promotion and sustainability of competitive advantage, which plays a role in achieving improved organisational performance. Covin (1999:47) states:

> "Schollhammer (1982), Miller (1983), Khandwalla (1987), Guth and Ginsberg (1990), Naman and Slevin (1993), and Lumpkin and Dess (1996) , for example, have all noted that corporate entrepreneurship can be used to improve competitive positioning and transform organisations, their markets, and industries as opportunities for value-creating innovation are developed and exploited."

This statement is further supported by Kuratko et al., (2014:38) who state that corporate entrepreneurship is a significant form of corporate innovation and is envisioned to be a process that can facilitate an organisation's efforts to innovate constantly and cope effectively with the competitive realities organisations encounter when competing in world markets.

These statements are significant in that they are supportive of the corporate entrepreneurial concept. More important than the realisation of increased organisational performance is the understanding of the multiple facets of corporate entrepreneurship and how these interlink to result in improved performance. "It is only after understanding how and why corporate entrepreneurship produces superior organisational performance that reservations regarding the possible aberration of the relationship can and should be discounted" (Covin, 1999:60). Therefore, the concepts of an internal environment for corporate entrepreneurship (organisational factors) and entrepreneurial orientation (a proxy of entrepreneurial behaviour) are explored in the next sections.

2.8 THE INTERNAL ENVIRONMENT FOR CORPORATE ENTREPRENEURSHIP

Kuratko et al., (2005:699) propose that the factors related to a supportive internal corporate environment serve as antecedents to promote entrepreneurial behaviours

among managers. Such a reciprocal relationship between organisational architecture and entrepreneurial behaviour is also supported by Ireland et al., (2009:25).

Researchers have sought to identify key internal organisational factors that have had a bearing on supporting corporate entrepreneurial activities. Although such internal factors are plentiful, the literature seems to converge on at least five dimensions (Hornsby et al., 2002). The five dimensions related to an organisation's internal environment, which are considered to be antecedents of entrepreneurial activity, are explained by Hornsby et al., (2002:260) and were used to develop the Corporate Entrepreneurship Assessment Instrument (CEAI). They are **top management support; work discretion; rewards/reinforcement; discretionary time; and organisational boundaries**.These elements can also be traced in all the corporate entrepreneurship models discussed in Section 2.6.

For purposes of this study, a sixth corporate entrepreneurship environmental factor is included. This factor pertains to the organisational power structure, differences in the institutional environment and co-ordination failures.

The CEAI is a survey instrument desined by Hornsby et al., (2002) to help managers and leaders measure internal environmental factors of an organisation. The CEAI measures organisational antecedents in a way that provides those that use it with a guide to improve corporate entrepreneurship activities (Kontic, Vidicki and Domiavic ,2017:69). The CEAI questionnaire focuses on the individual perception of corporate entrepreneurship. Using the CEAI could help improve entrepreneurial skills of individual employees, who are regarded as more important resources when entrepreneurial activites need to be pioneered (Kontic et al., 2017:70). As the CEAI is used as a guide to improve corporate entrepreneurship activities, it stands to reason that it should take the workplace environment into consideration.

Good workplace relationships help individual employees do their job better and can make their going to work every day a joy. Poor relationships in the workplace can leave employees demotivated and hence unproductive. Tolerance in principle and practice can be a challenge in the workplace for various reason such as personal biases, disagreement and prejudices. Just because tolerance is a challenge does not mean it is not fixable. Making the right choices on both individual and organisational levels will facilitate resolutions in helping overcome the challenges.

Tolerance means adopting an open mind in your interactions with others. The benefits that come with adoption of tolerance, among others, include creativity forstered by open exchange of ideas across a broad spectrum of expertice, respect and trust between individual. It must be emphasised that tolerance is the responsibility of both the manager and the employee. Tolerance is an indivindual's responsibility that can strengthen organisational initiatives. It is therefore important to include a tolerance dimension of the organisation's environmental factors when assessing the individual perception of corporate entrepreneurship in the CEAI.

Organisational tolerance is the degree of variety of institutional arrangements observed in performing a similar activity (Caleman, Zylbersztajn, Pereira and de Oliveira, 2017:468). Organisational tolerance is defined by Arnold (2005:625) as the distinctive norms, beliefs, principles and way of behaving in an organisation that combine to give each organisation its distinct character. Organisational tolerance should indicate the employees' and managers' willingness to take risks and show a tolerance for failure when it happens (Kuratko and Hornsby, 1993:13). The sixth organisation environmental factor, in this study, is **organisational tolerance.**

The six corporate entrepreneurship environmental factors as applicable in this study (top management support; organisational tolerance; work discretion; rewards/reinforcement; discretionary time; organisational boundaries) are now discussed.

Hornsby, Kuratko and Zahra (2002:120) developed an instrument that measures these factors in an organisation and concluded that the existence of such stable organisational factors should be recognised in promoting entrepreneurial activities within an organisation. Hornsby et al., (2002) believed that these factors represent a succinct description of internal organisational factors that influence managers to foster entrepreneurial activity within established organisations.

Scholars (e.g., Hornsby et al., 2009; Kuratko et al., 2015) have relied on fairly stable set of organisational factors to explain corporate entrepreneurship, and recent research has shed light on specific factors that include: management support; organisational tolerance; autonomy/discretion; rewards/reinforcement; time availability and organisational boundaries (Urban,2017:5). These factors are briefly

delineated in terms of theory and prior research to indicate their role in the formation of the current study hypotheses.

2.8.1 Management Support for Corporate Entrepreneurship

Management support entails a clear direction from the top of the organisation that permeates throughout the organisation to motivate, support, and reward innovation and entrepreneurial behaviour. In support of this view, the literature refers to the willingness of managers to facilitate and promote entrepreneurial activity in the organisation (Quinn, 1985; MacMillan, Block and Narasimha, 1986; Sykes and Block, 1989; Stevenson and Jarillo, 1990; Damanpour, 1991; Kuratko et al., 1993; Peace II et al., 1997; Hornsby et al., 1999; Hisrich and Peters, 2002; Morris et al., 2008). According to these authors, management support can assume many forms, including championing ideas, providing necessary financial and human resources, and facilitating the embedding of entrepreneurial activity in the organisational system and process. Kuratko (2009:68) mentioned that such behaviour, which reflects management support, includes support of employees who bring ideas forward, support for small experimental projects and the provision of resources required to take entrepreneurial actions. Whipple and Peterson (2009:14) support Kuratko (2009:68) by stating that management support may include expertise and institutionalisation of the entrepreneurial activity within the organisation's system and processes. According to Whipple and Peterson (2009:14), it is important for top level managers to also give inputs, get involved and encourage employees to take entrepreneurial actions. Besides encouragement, managers must be in a position to assist employees in dealing with the stigma associated with failure, as it discourages employees from trying something new. Failure should be seen as an integral part of innovation and corporate entrepreneurship.

Barringer and Buedorn (1999), and Zahra, Kuratko and Jennings (1999), assert that the ability of an organisation to increase entrepreneurial activity is also determined by the compatibility of its management practices with its entrepreneurial intentions. Among the most pertinent of these management practices is strategic management leadership (Whipple and Peterson, 2009; Morris and Kuratko, 2002; Ireland et al., 2009). Strategic leadership implies management facilitation of both incremental and

radical innovation in order to enhance the organisation's competitiveness and its tactical operations and processes (Kemelgo, 2002:25).

Covin and Slevin (1991:72) refer to the behaviour of top management in support of entrepreneurship as "entrepreneurial posture". Adonisi (2003:36) claims that entrepreneurial posture comprises three components: strategic management's propensity to support risky ventures; the extent and frequency of product innovation; and the pioneering nature of management to engage in proactive competition with industry rivals.

Morris and Kuratko (2002) and many other researchers claim that organisational culture plays a key role in an organisation's ability to develop corporate entrepreneurship. However, Sebora, Theeraptvong and Lee (2010:184), assert that "pockets or islands of entrepreneurial activity can develop and thrive, at least for a while, in cultures that are not in themselves entrepreneurial". According to this view, successful ventures can develop in non-entrepreneurial organisations with the right kind of technical interventions. All it takes is a critical mass of "switched on" (Thornberry, 2003:338) corporate entrepreneurs, with some championing at the leadership level, to start seeing entrepreneurial activity.

Morris et al., (2008:330) and Scheepers et al., (2008:55) mention that managers should encourage rational risk taking, provide open communication and constructive feedback, recognise creative work, and provide resources as well as participative and collaborative management. According to Scheepers et al., (2008:55), these kinds of support from managers encourage employees to solve problems in an innovative way, seek opportunities in a proactive manner and embark on moderately risky projects.

The management cadre plays an important role in fostering a culture of corporate entrepreneurship in an organisation or part thereof. The first step in the process of establishing such an entrepreneurial culture is to secure commitment and support by top and middle management. Only after commitment from these levels of management may the concept be introduced throughout the whole organisation (Hisrich and Peters, 2002:53). This assertion will be tested in Department of Basic Education in KwaZulu-Natal, in the present study.

Kuratko and Hodgetts (2004:57) came up with the following guideline for managers to develop an innovative philosophy in the organisations:

- Encourage innovation.
- Use informal meetings whenever possible.
- Tolerate failure and use it as a learning experience.
- Reward innovation for innovation's sake.
- Expect clever bootlegging of ideas – secretly working on new ideas in the organisation's time.
- Plan the physical layout of the organisation to encourage informal communication.
- Provide the freedom and encouragement to entrepreneurs which are required to develop their ideas.
- Develop policies that will help innovative employees reach their potential.
- Educate employees with regard to innovation and entrepreneurship.

This argument suggests the hypothesis where:

Hypothesis: Perceptions of management support will positively influence the organisational level of (innovativeness, proactiveness and risk taking)

2.8.2 Organisational Tolerance

The highly complex environment in which organisations operate requires planning systems that are tolerant or flexible in order to allow frequent changes (Kukalis, 1989:567) and meet the varying needs in the market. Organisational tolerance is the extent to which organisational units react to situational changes efficiently, supported by administrative relations and situational proficiency (Barrett, Oborn, Orlikowiski and Yates, 2012:1449). Rundh (2011:330) defines organisational tolerance as the ability of an organisation to respond to, and introduce, change; while Barrett et al., (2012:1448) describe it as an organisation's ability to adapt administratively to situational knowledge. Organisational tolerance includes the organisational practices and characteristics that demonstrate the willingness to accept, promote, and enhance exploration within an organisation (McGrath, 2011:86). Some of these practices and characteristics might be embedded in the organisation's compensation

and reward systems and in their organisational and management support (Slutzky, 2012:10).

Organisational tolerance is vital for complex innovation to take place (Ngamkroeckjoti, Speece and Dimmitt, 2005:287), while ensuring adaptability with improved performance (Kaiser, Lindberg and Craig, 2007:42). Kriegesmann, Kley and Schwering (2005:57) argue that organisations whose culture displayed a lack of tolerance would develop innovative incompetence because creative and fearless behaviours would be avoided. Failure has innovative potential when it is understood as a learning process that provides information that otherwise would not be available. As McGrath (2011:78) explained, managers should understand the need to reduce the failure, to engage in experiments constantly, to fail early and often, and to learn as much as possible in the process.

A tolerant structural design is likely to encourage free and open discussion of ideas among employees, which is helpful in the successful development of innovative corporate entrepreneurial ventures (Jaworski and Kohli, 1993:56; van de Ven and Poole, 1995:511). The creation of an entrepreneurial environment is not achieved by the implementation of rules, because it is largely a spontaneous process. It is by nature an adaptable flexible process (Chung and Gibbons, 1997:10). In this way, organisations are able to react swiftly to customer needs and market opportunities while avoiding risks (Enderwick and Ronayne, 2004:54). Changing customer demands and market responsiveness have to be met with flexible organisation policies (Rundh, 2011:336).

A tolerant response is of strategic importance in a competitive environment. This study will use a combination of definitions of organisational tolerance: organisational practices and characteristics that demonstrate the willingness to accept, promote, and enhance the occurrence of exploration within an organisation (McGrath, 2011:79); the ability of an organisation to maintain competitiveness and initiate change (Rundh, 2011:336) by means of efficient administrative support (Barrett et al., 2012:1450) in reaction to situational knowledge. Building on this research direction and in line with the empirical findings on organisational tolerance, the hypotheses predicts that:

Hypothesis: Perceptions of organisational tolerance will positively influence the organisational level of (innovativeness, proactiveness, and risk taking).

2.8.3 Autonomy/Work Discretion

Work discretion is a construct that is affected by a number of factors: degree of formality and prescriptiveness; desire for conformance and compliance with set job descriptions; degree of rigidity in work formats; desire for consistency from time to time and between people doing the same task; desire for individual initiative in carrying out tasks; and level of freedom and discretion in one's own job (Morris et al., 2008:220).

According to Morris et al., (2008:330), work discretion involves the commitment of top level managers to tolerate failure, provide decision-making latitude, and delegate authority and responsibility to managers. Organisations should allow employees to make decisions about their own work process and should avoid criticising them for failure (Kuratko, 2009:28; Ireland et al., 2009:31; Viswanathan and Gowri, 2004:28). According to Ireland et al., (2009:31), tolerance of failure should result in innovation, proactive behaviour and risk taking amongst employees. Kuratko (2009:68) and Scheepers et al., (2008:55) state that employees have discretion if they are able to make decisions about their job performance in the way they believe is effective.

According to Viswanathan and Gowri (2004:28), entrepreneurs do not have to get permission for every move: "freedom and independence is crucial". Chen et al., (2005:531) added that entrepreneurs need creative and independent thinking to come up with new ideas and undertake risk.

In the context of the corporate venturing form of corporate entrepreneurship, researchers are unanimous that a high degree of autonomy should be accorded to those charged with venturing (MacMillan, 1986; Block and MacMillan, 1995:253). According to La Nafie, Nimran, Musadieq and Suyadi (2014:84), increased autonomy dramatically increased the success of ventures. As for the characteristics of the venture teams, Hill and Hlavacek (1972) found in their study of many cases that venture teams, separated from the opening organisation, were multidisciplinary; had diffuse authority; were given a broad mission; had direct access to senior management; and were not subjected to defined time deadlines. In contrast, a later

study by Dunn (1977) found the following characteristics of failed ventures: their missions were too broad; too few constraints were placed on their activities; they enjoyed too much functional autonomy; and they were not put under enough pressure to produce (La Nafie et al., 2014:85).

It appears from these contradictory views that too much of a good thing can precipitate venture failure, as far as autonomy or work discretion is concerned. In support of this view, Sebora et al., (2011:184), suggested that management cannot abdicate its oversight responsibility, but has to monitor the venturing activity more closely.

In short, the facilitation of entrepreneurship appears more consistently with role flexibility and autonomy, which can be achieved if employees enjoy a high degree of autonomy and are empowered to exercise discretion and personal initiative in performing their jobs. Following this line of reasoning, it is hypothesised that:

Hypothesis: Perceptions of work discretion will positively influence the organisational level of (innovativeness, proactiveness, and risk taking).

2.8.4 Rewards and Reinforcement

Rewards and reinforcement normally take the form of recognition and incentives. Recognition is a reward that occurs after demonstrable innovations or entrepreneurial outcomes. In contrast, incentives are designed before an innovation effort starts, and they link performance measurements and rewards (Davila, Epstein and Shelton, 2006:262).

Morris et al., (2008:330) refer to rewards and reinforcement as the developing and using of systems that reinforce entrepreneurial behaviour, highlighting important achievements and encouraging the pursuit of challenging work. Rewards and reinforcement motivate employees to engage in innovative, proactive and risk taking behaviour (Hancer et al., 2009:527; Kuratko, 2009:68; Scheepers et al., 2008:55). According to Hancer et al., (2009:527), the use of appropriate rewards can enhance managers' willingness to assume the risk associated with entrepreneurial activity. If good performance is not recognised and rewarded there is no incentive for employees to take risks (Kearney et al., 2008:303). Scheepers et al., (2008:55)

mention that effective reward systems that drive entrepreneurial activity should be in line with set goals and provide performance-based incentives and timeous feedback.

According to Viswanathan and Gowri (2004:31), not only are financial rewards crucial for corporate entrepreneurship, but non-financial, emotional rewards are also important. “Substantive attention, rather than monetary rewards, is in some cases more highly prized”. The authors further opine that emotional rewards include a whole set of rewards ranging from recognition, through organisations’ award ceremonies and organisation publications, to job enhancement.

The literature on corporate entrepreneurship highlights the fact that an effective reward system that spurs entrepreneurial activity must consider goals; feedback; individual responsibility; and result-based incentives (Davila et al., 2006:263).

In fostering corporate entrepreneurship, recognition is more appropriate than incentives. It is important to note that recognition does not have to happen through explicit management systems in an organisation. It can happen within the realm of personal interactions: praise in the passage, or recognition by peers. In short, people are motivated by expected incentives; passion about the activity; recognition; and leadership vision that provide a clear sense of purpose. In line with these findings, it is hypothesesed that:

Hypothesis: Perceptions of rewards and reinforcement will positively influence the organisational level of (innovativeness, proactiveness, and risk taking).

2.8.5 Discretionary Time

The actual and perceived time availability by employees is an important element in facilitating innovation and corporate entrepreneurship (Kuratko, 2009:68). Covin and Slevin (1991:9) indicate that entrepreneurial ventures are time-consuming activities and, therefore, an organisation’s ability to pursue innovations will be constrained by the available time. Hornsby et al., (2013:937) further argue that a key challenge facing the pursuit of corporate entrepreneurship as a strategic thrust is resource deployment to support strategic entrepreneurial efforts. Therefore, the resource view of strategy holds that the internal resource of an organisation is a source of unique and inimitable competitive advantage.

Time availability refers to the evaluation of workloads to ensure that individuals and groups have ample time to pursue innovations (Hancer et al., 2009: 527; Morris et al., 2008:331). Scheepers et al., (2008:56) and Kuratko (2009: 68) postulate that, for new and innovative ideas to thrive, employees should have time to incubate their ideas. Organisations must therefore be reasonable in assigning workloads to their employees; avoiding putting time constraints on aspects of employees' jobs; and allowing employees to work with others to solve long-term problems (Kuratko, 2009:68). Scheepers et al., (2008:56) mention that, in entrepreneurial work environments, employees are allowed to conduct creative entrepreneurial experiments in a limited portion of their work time.

Fostering corporate entrepreneurship requires that individuals be afforded time to incubate new and innovative ideas. Therefore, the workload of employees must be moderated to such an extent that they are allowed to work with others on time-consuming innovations.

Time availability assumes greater importance when attempting to foster radical innovation rather than incremental innovation. Radical innovation takes time and is accompanied by a risk that the creation may not find its way to the marketplace.

Therefore, time availability is an essential organisational characteristic for the implementation of corporate entrepreneurship. In the present study, employee perceptions about time availability in a Department of Basic Education (DBE) environment are assessed with the objective of fostering a corporate entrepreneurship culture within the DBE. Following this line of reasoning, it is hypothesed that:

Hypothesis: Perceptions of discretionary time will positively influence the organisational level of (innovativeness, proactiveness, and risk taking).

2.8.6 Organisational Boundaries

Organisational boundaries refer to the precise explanations of outcomes expected from organisational work and the development of mechanisms for evaluating, selecting and using innovation (Morris et al., 2008:331). Kuratko (2009:68) believes that organisations should avoid having standard operating procedures, and should reduce their dependence on narrow job descriptions and inflexible performance

standards. Kearney et al., (2008:299) are of the opinion that organisations should have loose intra-organisational boundaries. According to Storey (2004:204), corporate entrepreneurial activities are promoted by increased flexibility in organisations' policies and procedures. Kearney et al., (2009:37) support Storey (2004:204) by indicating that, if organisational policies and procedures are complex and impose unrealistic timetables and unrealistic performance benchmarks, they will discourage corporate entrepreneurial spirit within the organisation. According to Storey (2004:201), flexible policies are considered to be those policies which reduce bureaucracy and induce less reliance on rules and procedures.

Morris et al., (2008:231) mention that the best option in promoting innovation and corporate entrepreneurship is a boundary-less organisation, which refers to the elimination of barriers that slow things down and create resistance to change. According to Kuratko and Hodgetts (2001:73), these organisational support elements are important for organisations to act entrepreneurially. The authors further believe that the decision to act entrepreneurially takes place as a result of the interaction among the organisational support elements, individual characteristics and precipitating events.

A supportive organisational structure provides the administrative mechanism by which ideas are evaluated, chosen and implemented. Bureaucracy leads to perceived boundaries and people should be encouraged to look at the organisation from a holistic perspective and not be dependent on narrow, standard operating procedures, rigid performance standards, or stifling job descriptions.

Obsolete strategy and bureaucratic structures create barriers to entrepreneurial behaviour in organisations. The most familiar forms of bureaucracy include hierarchical control, centralised authority and inflexible or fixed functional boundaries (Hornsby et al., 2013:57). These authors argue that fixed and static bureaucratic organisational forms tend to stifle innovative behaviour.

According Kuratko et al., (2011:126), in large organisations where established bureaucracies are prevalent, the creativity necessary for radical innovation and the individual initiative pertinent to embarking on new ventures, are often suppressed. The sheer size of these organisations demands that there be control and order, but such order and predictability, if strictly adhered to, work against innovation.

The next section briefly presents entrepreneurial orientation as an organisation's strategic orientation and the extent to which an organisation innovates, takes risks to compete aggressively, and acts autonomously and proactively. Consequently in this instance it is hypothesed that:

Hypothesis: Perceptions of flexible organisational boundaries will positively influence the organisational level of (innovativeness, proactiveness, and risk taking).

2.9 ENTREPRENEURIAL ORIENTATION (EO)

Countries such as South Africa operate within a global village where economic growth, through various organisations, in different sectors, is of critical importance. To achieve the envisaged outcomes, it is expected that an organisation will continually innovate (Molokwa, Barreira and Urban, 2013:4) to ensure that it stays ahead of its competitors. In today's turbulent and volatile economic environment, with increased competition, scholars such as Fang, Yuli and Hongzhi (2009:102) argued that entrepreneurial orientation is a prerequisite for organisational success. Research studies conducted over the years (Covin and Slevin, 1998, 1991, 1997; Lumpkin and Dess, 1996) affirmed that EO has three dimensions: innovativeness, risk taking and proactiveness, which are critical in organisation performance (Sharma and Dave, 2011:45).

According to Covin and Lumpkin (2011:25), entrepreneurial orientation refers to the simultaneous exhibition of behaviours reflecting risk taking, innovativeness and proactiveness; or the domain of activity that includes the dimensions of risk taking, innovativeness and proactiveness. On the other hand, McGuineness (2008:8) defines entrepreneurial orientation as the process, practice and decision-making activities that lead to new approaches. It can happen at organisational and individual level (Miller, 1983:10).

The concept of EO can be traced back to Miller (1983). His often-cited description of an entrepreneurial organisation is "one that engages in product-market innovation, undertakes somewhat risky ventures, and is first to come up with proactive innovations, beating competitors to the punch" (Miller, 1983: 11). Most empirical studies in the field of entrepreneurship have used measures based on this

conceptualisation that has been extended and elaborated by Covin and Slevin (1991) and Lumpkin and Dess (1996).

Covin and Slevin (1991) have developed a conceptual model of entrepreneurship as organisational behaviour. Accordingly, this kind of entrepreneurship is an extension of Schumpeter's idea into organisation-level entrepreneurship. Entrepreneurial organisations have, as Covin and Slevin (1991) call it, an entrepreneurial posture and are innovative, proactive, and risk taking (Sharma and Dave, 2011:46). Entrepreneurial posture is affected by variables, and may affect variables, at the organisation, environment, and individual levels (Gcaza, 2013:20). The extent to which an entrepreneurial posture is positively related to performance is contingent on the environment. Lumpkin and Dess (1996) also identify dimensions that characterise entrepreneurial process and study the relationship between EO and organisational performance as well as possible moderators. According to Rauch (2009:763), "entrepreneurial orientation represents the policies and practices that provide a basis for entrepreneurial decisions and actions. Thus, entrepreneurial orientation may be viewed as the entrepreneurial strategy-making processes that key decision-makers use to enact their organisation's purpose, sustain its vision, and create competitive advantage(s)".

In essence, entrepreneurial orientation translates into the capabilities of an organisation which distinguish it from its competitors (Miller, 1983; Lumpkin and Dess, 1996; Wiklund and Sheperd, 2005) and ensure improved performance (Sharma and Dave, 2011:96). The notion of improved organisational performance was also affirmed by Corbett, Covin, O'Connor and Tucci (2013), who indicated that entrepreneurial orientation is a significant and consistent predictor of organisational performance (Corbett et al., 2013: 25).The results from research studies conducted by various scholars (Covin and Slevin, 1991; Lumpkin and Dess, 1996; Wiklund, 1999) indicate that there is a significant relationship between entrepreneurial orientation and organisational performance (Arief, Thoyib, Sudiro and Rohman, 2013:72).

Organisations that adopt high levels of entrepreneurial orientation are growth orientated and are more inclined to spot opportunities and to capitalise on them, and

their net worth is positively related to entrepreneurial orientation (Arbaugh, Cox and Camp, 2009).

A further review of the literature indicates that the basis for entrepreneurial activity in an organisation is its degree of entrepreneurial orientation (Ghina and Permana, 2012: 15). Dess and Lumpkin (2005) suggested that entrepreneurial orientation, when adopted, has the potential to enhance performance (Wiklund and Shepherd, 2005:150), which eventually translates into client/stakeholder satisfaction (Ghina and Permana, 2012:16). According to Lumpkin and Dess (2005), innovation, proactiveness and risk taking are prioritised and this study will only focus on these aspects.

In the next section, the dimensions of entrepreneurial orientation and the summary of key terms as used in this study are discussed.

2.9.1 Dimensions of Entrepreneurial Orientation

Discussion on the dimensions of entrepreneurial orientation and their conceptual and empirical characteristics is on-going. Miller (1983) introduced the three (traditionally used) dimensions of innovativeness, proactiveness and risk taking, in order to determine whether or not an organisation is entrepreneurial (Sharma andDave, 2011: 45). Researchers have adopted this original approach (Ireland, Kuratko and Morris, 2010; Covin and Slevin, 1991; Lumpkin and Dess, 1996; Zahra, 1991), although with nuances of their own. Authors often provide slightly differing definitions of the dimensions, with largely similar meanings. In the following Table 2.3, the definitions based on Miller (1983); Covin and Slevin (1989); Lee and Peterson (2000); Kreiser et al., (2002); Messeghem (2003) and Tarabishy et al., (2005) are presented.

Table 2.4: Dimensions of Entrepreneurial Orientation

Study	EO Dimensions Used
Miller (1983); Covin and Slevin (1983)	Innovation, proactiveness and risk taking.
Covin and Slevin (1989); Lee and Peterson (2000)	Autonomy, innovativeness, risk taking, proactiveness, and competitive aggressiveness.

Kreiser, Marino and Weaver (2002); Tarabishy, Solomon, Fernald and Saghkin (2005); Messeghem (2003)	Innovation, proactiveness, and risk taking.

Source: Sharma and Dave (2011:45)

Entrepreneurial orientation has its roots in the strategy-making process literature and represents the policies and practices that provide the basis for entrepreneurial dicisions and acticons (Rauch et al., 2009:763). Based on Miller's (1983:770) conceptualisation that an entrepreneurial organisation is one that enganges in product innovation, undertakes somewhat risky ventures and is first to come up with pro-active innovations, three dimensions of entrepreneurial orientation were identified, namely, innovativeness, pro-activeness,and risk taking. Covin and Slevin (1989:76) further refine Miller's definition by stating that the entrepreneurial orientation of an organisation is demeonstrated by the extent to which the top managers are inclined to take organisation-related risks (risk taking dimension), to favour change and innovation in order to obtain a competitive advantage for their businesses (innovative dimension), and to compete with other businesses (proactive dimension). While a number of authors have adopted similar definitions (Zahra, Jennings and Kuratko, 1999:50; Morris, Kuratko and Covin, 2008:54), others have made devious changes that altered the meaning of the construct (Gearge and Marino, 2011:992). Dess and Lumpkin (2005:147) define entrepreneurial orientation as the strategy-making practices that organisations use to identify and launch corporate ventures. This definition seem to be limited to decisions related to the launch of new ventures. An orgnaisation may therefore, have a high entrepreneurial orientation based on the Covin and Slevin (1989:76) definition, but not necessarily on the Dess and Lumpkin (2005:147) definition.

George and Marino (2011:992) show that several authors have define the domain of entrepreneurial orientation as containing fewer ro more dimensions (George and Marino, 2011:992). Two other dimensions were added by Lumpkin and Dess (1996: 139-140), namely, competitive aggressiveness and autonomy. These aurthors argue that entrepreneurial orientation includes a and a tendency to be aggressive towards competitors. Wang (2008:637) on the other hand, adopted four dimensions namely, pro-activeness, competitive aggressiveness, risk taking and innovativeness. This

study adopted Lumpkin and Dess's (1996) approach, who argued that dimensions of entrepreneurial orientation can be measured independently of each other in a given context (Lumpkin and Dess, 1996:139 - 140) and will focus on innovativeness, proactiveness, and risk taking.

Covin and Lumpkin (2011:885) explain that the entrepreneurial orientation construct has been widely debated, but there is no consensus on the approate definition of the construct and its dimensionality (Covin and Lumpkin, 2011:856; George and Marino, 2011:992).

The three dimensions (innovativeness, proactiveness and risk taking) measuring an entrepreneurial orientation are discussed in this section, with reference to the education sector.

2.9.1.1 Innovativeness

The concept of innovation dates back to Schumpeter's theory (1934-1942), which emphasised that wealth creation was preceded by the disruptive introduction of new factors/novelties in the form of products and services (Taylor, 2013:50). According to Schumpeter (1934) and Drucker (1979), an entrepreneurial organisation is underpinned by inventions of products as well as processes. The concept of innovativeness is embodied in an organisation as an attribute that propels it to novelties which may have a return on investment (Molokwa et al., 2013). The core of entrepreneurship is innovation, which refers to the development of new products or services, or re-inventing new processes (Schumpeter, 1934). It was also mentioned that innovation can take the form of new or improved services (Kuratko et al., 2011: 26) which benefit the organisation's stakeholders and enhance the organisation's performance. Innovation has the ability to ensure business growth and differentiation in an organisation (Taylor, 2013). An organisation with an innovative stance is able to achieve a significant return on its investment (Ambad and Wahab, 2013) and there is a degree of self-reliance on its resources (Hafeez, Shariff and bin Mad Lazim, 2012:60).

According to Lumpkin and Dess (1996:142), the innovation dimension of entrepreneurial orientation mirrors the propensity of an organisation to engage in new ideas and creative processes that may result in new products, services and

technological processes. Sharma and Dave (2011:46) further state that Schumpeter was among the first to place emphasis on the role of innovation in the entrepreneurial process. His views were of creative destruction, by creating wealth when existing market structures are disrupted by volatility and uncertainty by the introduction of new goods, services, process or procedures that will cause the organisation to grow. Innovation has been posited as the most critical trait of the entrepreneurial orientation traits (Gcaza, 2013:20). Entrepreneurial orientation may occur along a continuum, where one shows the willingness to try a new way of accomplishing tasks by being enterprising, inventive, imaginative and resourceful (Kuratko et al., 2011:58).

Kuratko et al., (2011:58) point out that innovation can take the form of new or improved service. They further point out that the innovation frontier is in processes, or finding new and better ways to accomplish a task. They argue that innovativeness is concerned with the relative emphasis on concepts or activities that represent a departure from what is currently available within the organisation; and to what extent the organisation is doing things that are unique or different.

Antoncic and Hisrich (2003) suggest that organisational innovativeness is more concerned with products, technologies and administrative innovation and that corporate entrepreneurship is more congruent with going beyond these activities, insofar as creating new units or even organisations (Kuratko et al.,2011:58).

From a public sector perspective, innovation denotes improving organisational performance. However, it does not come naturally to public sector organisations (Tosterud, 1999:120), as there are many features of the public sector which serve as barriers to innovation. Research studies by Tosterud (1999) and Ramamuti (1989) asserted that the mission and vision of the public sector is mainly influenced by political forces and, as such, innovative initiatives may be discouraged or distorted as they may be perceived to be politically incorrect, inappropriate or even potentially harmful.

It was further argued by Tosterud (1999) that it is easy to quantify innovation in the private sector; whereas it is difficult to measure innovation in the public sector as it relates to quantity and quality (Tosterud, 1999:135). A research study by Bartlett and Dibben (2010) found that innovation in the public sector often generates internal conflict which presents itself in the form of resistance to change, conflicting interests,

and fellow employees wanting to maintain the status quo. The study found that conflict also manifests at the community and public level where innovation is perceived to be an encroachment on existing 'territories'. The performance of the Department of Education will be discussed in more detail later in Chapter 3. Following this line of reasoning, it is hypothesed that: Innovativeness will positively influence organisational performance.

2.9.1.2 Risk taking

According to Dess and Lumpkin (2005:146), risk taking is the willingness of an organisation to commit resources to projects, ideas, or processes whose outcomes are uncertain and for which the cost of failure would be high. Risk taking denotes a different meaning depending on the context in which it is applied. In the context of strategy, Baird and Thomas (1985), in Sharma and Dave (2011: 46), outline three types of risk: venturing into the unknown; committing a large portion of assets; and borrowing heavily. These types of risks are inherent in entrepreneurship, as starting a new venture entails some level of personal, financial and psychological risk. Kuratko et al., (2011: 66) argue that anything new involves risk, or some likelihood that actual results will differ from expectations.

The emphasis is on risk that is moderate and calculated and involves a reasonable awareness of all risks, including financial, technical, market and personal. These risks are reflected in various decisions about resource allocation, as well as choice of product or service and the market the organisation emphasises.

Risk taking is an inherent element in an organisation. It is present in the operations and processes. Decision-making and risk-taking tendencies do not guarantee high returns (Lotz and van der Merwe, 2014:21). Some theorists assert that, through entrepreneurship, organisations take higher risks and usually get the associated returns, as such risk is accepted as part of the organisation's strategy and outlook. However, Dess and Lumpkin (2005:147) cautioned that organisations should always take calculated risks.

Research indicates that organisations with high risk-taking profiles tend to have a matching financial performance (Ambad and Wahab, 2013:98). Previous research studies (Klomp and van Leeuwen, 2001; Calantone, Cavusgil and Zhao, 2002;

Rauch, Wiklund, Lumpkin and Frees, 2004; Casillas and Moreno, 2010; Gibb and Haar, 2010; Wang and Yen, 2012) confirmed that risk-taking tendencies have a direct positive effect on organisational performance, whilst moderate risk takers were outperformed by organisations with high risk-taking levels.

However, from a public sector perspective, Tosterud (1999:139) argued that innovation brings with it a certain degree of risk and a high chance of potential failure. He argued that the cost and possible magnitude of failure could result in disastrous consequences for the public at large, or even the state as a whole. Tosterud (1999:142) further argued that innovation is good; however, the costs associated with it are too high for a state to bear; therefore he recommended that the public sector should choose the safe path in innovating.

Sadler (1999:28) argued that the public sector gets funding allocated from the fiscus and is, therefore, accountable to state representatives who are themselves risk-averse. The scholar further argued that the state representative's risk aversion is linked to public scrutiny, electoral period and reappointment of office bearers; as such, public sector risk management is focused on accountability and control mechanisms. It is important to note that, whist entrepreneurial activities in government may involve risk taking, the risk need not necessarily have to be monetary. In line with such findings, it is hypothesed that: Proactiveness will positively influence organisational performance.

2.9.1.3 Proactiveness

Proactiveness, as a dimension of entrepreneurial orientation, is concerned with the implementation of innovative ideas, taking responsibility, and doing whatever is necessary to bring an entrepreneurial concept to fruition. It was defined by Lumpkin and Dess (1996:137) as a posture of anticipating and acting on future wants and needs in the market place. It involves a high level of commitment and perseverance, flexibility and adaptability, and a willingness to take responsibility for possible failure (Kuratko et al., 2011:71). Entrepreneurial managers who are proactive are needed in an organisation to provide the vision and direction necessary to engage in opportunistic expansion.

Proactive tendencies also involve acting quickly before the competitor does so, and relate to pioneering and initiating practices and behaviours on entering new territories ahead of competitors (Xaba and Malindi, 2010:79). They involve being on the lookout for future market needs and wants and having the notion of first-mover advantage, which gives the organisation a head-start on the market (Taylor, 2013:51). Proactiveness requires deliberate and planned actions, because an organisation should be in a position to anticipate potential future opportunities through proper entrepreneurial actions, so that they can become leaders in the market rather than followers (Schillo, 2011:52). Proactive organisations have to have a degree of tolerance of failure and should, therefore, be adaptive to changes in the external and internal environment (Molokwa et al., 2013:3). Proactiveness behaviours ensure that an organisation sets standards and trends that competitors will follow; benefits from high profit margins and captures customers' loyalty. The organisation's products will automatically be authenticated by its brand(s) (Ambad and Wahab, 2013:102).

Sharma and Dave (2011:46) contend that taking the initiative and pursuing new opportunities is, to a large extent, closely linked to entrepreneurship, and is referred to as proactiveness. They further state that proactiveness is "seeking new opportunities which may or may not be related to the present line of operations, introduction of new products and brands ahead of competition, strategically eliminating operations which are in the mature or declining stages of the life cycle".

For organisations to have entrepreneurial orientation, the internal structure of the organisation needs to support the needs of such an environment, because the structure of the organisation plays a critical role in determining the entrepreneurial orientation of an organisation. Clear communication of roles and responsibilities, support of management and high performance-driven systems are critical (Gcaza, 2013:21).

Additional dimensions or alternative sets of dimensions have been suggested, none of which has achieved wide acceptance (Rauch et al., 2009:763). Lumpkin and Dess (1996), for example, suggest adding competitive aggressiveness (direct challenge with rivals) and autonomy (independent idea development and implementation) (Diefenbach, 2011:15). The latter had previously been used by Burgelman (1983) and Mintzberg (1973). On the other hand, Stopford and Baden-Fuller (1994) explicitly

exclude risk taking as an attribute of entrepreneurial orientation. Instead, they view proactivity, aspirations beyond current capability, team orientation, the capability to resolve dilemmas, and team learning capacity as attributes shared by all types of entrepreneurial orientation. Debate evolved around whether the dimensions of EO should be analysed in combination, or separately. Originally, Miller (1983) considered an organisation to be entrepreneurial only if it scored high on all three traditional dimensions. This approach has been widely adopted (e.g. Covin and Slevin, 1991). On the other hand, Lumpkin and Dess (1996) argue for independently varying dimensions of EO. They regard the Miller, Covin and Slevin approach as too narrow to capture all types of entrepreneurial organisations.

The most common view is the association of EO with the three dimensions of innovativeness, proactiveness, and risk taking (Diefenbach, 2011:16). In order to determine an organisation's entrepreneurial orientation, these three dimensions are usually combined.

In this study, EO is considered to be referring to 'the policies and practices that provide a basis for entrepreneurial decisions and actions within the organisation'. Within entrepreneurship literature, this study will draw on the entrepreneurial orientation research, which is reasonably suitable for the public sector. The term entrepreneurial orientation will be used as originally defined by Covin and Slevin (1991): an organisation with entrepreneurial orientation is innovative, proactive, and risk-taking. The degree of entrepreneurial orientation varies between organisations but also between business units or areas within one organisation (i.e. between districts within one department of education and between departments within one district). At an individual level, the term entrepreneurial behaviour will describe how entrepreneurship is practised (Kuratko et al., 2011: 105). Consiquently in this instance it is hypothesed that: Risk taking will positively influence organisational performance

In contrast with EO that determined the tendency of the organisation to being entrepreneurial, CE will gauge the actual entrepreneurial actions.

The relationship between entrepreneurial orientation and corporate entrepreneurship is discussed next.

2.10 ENTREPRENEURIAL ORIENTATION AND CORPORATE ENTREPRENEURSHIP

Entrepreneurial orientation is one of the phenomena associated with corporate entrepreneurship, which Corbett, Covin, O'Connor and Tucci (2013:813) describe as the "engine that drives specific acts of corporate entrepreneurship". According to van Rensburg (2013:17), the notion of entrepreneurial orientation was introduced by Lumpkin and Dess (1996) as an expansion on the work of Covin and Slevin (1989). Entrepreneurial orientation is commonly conceptualised as either the concurrent exhibition of behaviours reflecting risk taking, innovativeness and proactiveness, or as the domain of activity that includes dimensions of risk taking, innovativeness, autonomy, or competitive aggressiveness (Covin and Lumpkin, 2011:326).

There are basically two conceptualisation approaches for entrepreneurial orientation, namely: the composite dimension approach, which is largely associated with Miller's (1983) and Covin and Slevin's (1989) work; and the multidimensional approach commonly associated with Lumpkin and Dess's (1996) work. According to Covin and Lumpkin (2001:860), "these two conceptualisations of entrepreneurial orientation are fundamentally different and neither is superior to the other and it is therefore important to come to terms with their irreconcilability". The two conceptualisations also require separate construct definitions and measurement models (Covin and Lumpkin, 2011:863; Covin and Wales, 2011:694). A review of literature by Rosenbusch, Rauch and Bausch (2013:642) shows that debate about dimensionality of entrepreneurial orientation constructs still rages on, with some preferring to operationalise it unidimensionally, while others operationalise it multidimensionally; yet others still conceptualise entrepreneurial orientation multidimensionally but operationalise it unidimensionally. However, notwithstanding the conceptualisation challenges associated with the concept of entrepreneurial orientation, it is commonly considered that organisations that exhibit high levels of the phenomenon perform better than those with low levels of entrepreneurial orientation (Gathungu, Aiko and Machuki, 2014:345; Rauch, Wilkund, Lumpkin and Frese, 2009:764).

The literature study reveals that there is a difference between the concepts 'entrepreneurial orientation' and 'corporate entrepreneurship'. Entrepreneurial orientation is part of corporate entrepreneurship (Covin and Lumpkin, 2011:855). According to Urban and Turró (2013:250), corporate entrepreneurship includes

entrepreneurial behaviour and orientation in established organisations. Covin and Lumpkin (2011:855) clearly indicate that corporate entrepreneurship is a larger domain within which discussions about entrepreneurial orientation occur and that many scholars consider entrepreneurial orientation to be an aspect of corporate entrepreneurship. Corporate entrepreneurship is the bigger and overarching phenomenon for describing entrepreneurship within established organisations. There is growing recognition of corporate entrepreneurship as an overall construct capturing all entrepreneurial activities within established organisations (DeJong, Parker, Wennekers and Wu, 2011:4; Sharma and Chrisman, 1999:18). In other words, whereas corporate entrepreneurship serves the purpose for "creation and pursuit of new venture opportunities and strategic renewal" (Dess and Lumpkin, 2005:147), entrepreneurial orientation is "the driving force" for corporate entrepreneurship (Memili, Lumpkin and Dess, 2010:326).

According to Rauch et al., (2009:765), entrepreneurial orientation refers to "the strategy-making processes that provide organisations with a basis for entrepreneurial decisions and action". Thus organisations with a strong entrepreneurial orientation in terms of processes, practice, and decision-making styles that enhance capacity to identify and capture entrepreneurial opportunities, tend to possess superior competitive advantage (Kuratko et al., 2005b; Lumpkin and Dess, 1996). In this respect, organisations that would like to successfully pursue corporate entrepreneurship should have a strong entrepreneurial orientation (Dess and Lumpkin, 2005).

As discussed above, EO and CE are two divergent constructs of the organisation level entrepreneurship that have focused on different dimensions of entrepreneurial phenomena. While EO points out to the orientation of an organisation, especially top managers to take entrepreneurial actions, CE gauges the actual entrepreneurial actions as the representative of entrepreneurship. If the organisations use one of these constructs, they will desin a blind picture of the entrepreneurship phenomena in the organisations. In fact, CE just measures the entrepreneurial actions and ignores the tendency of an organisation to being entrepereneurial and EO only reveals the tendency of the top mangers to entrepreneurship.

Because of the complementarities of EO and CE, measurements of the organisation level entrepreneurship (Lyon et al., 2000), some studies have presented integrated measurements (Antoncic and Hisrich, 2001; Kreiser and Davis, 2009). These measurements have selected some special indicators of EO and CE and synthesising them in an new construct. Kreise and Divis (2009), for example, chose innovativeness and proactiveness from EO and strategic renewal from CE, and Antonci and Hisrich (2001) combined innovativeness and proactiveness with venturing and strategic renewal. While EO indicators have focused on the tendency and attitudes of the top manager, CE indicators measured the entrepreneurial actions. On the whole, EO cannot account for the whole entrepreneurial situation of an organisation and provides an incomplete understanding of organisation level entrepreneurship. Along the same line of thought, CE is also not a true representation and delivers an incomplete image because it only captures the behavioural component while ignoring the attitudinal dimension. Actually, EO displays an orientation while CE shows entrepreneurial behaviour and activities (Hisseini, 2016:56). Consequently, the two cover separate dimensions of the organisation level entrepreneurship (Zahra, 1991) and it is necessary to measure both to obtain a complete picture. This study has conceptualised these two constructs as two distinct but related dimensions of the organisation level entrepreneurship which aims at different characteristics.

2.11 CORPORATE ENTREPRENEURSHIP AND ORGANISATIONAL PERFORMANCE

One of the objectives of a business organisation is to improve its performance (Otache and Mahmood, 2015:528). This could be in terms of profitability, or overall organisational performance. According to Otache and Mahmood (2015), for any organisation to improve its performance, it must consciously undertake certain activities, exhibit certain behaviour, and align itself with the dictates of the external environment. The literature shows that entrepreneurial activities such as risk taking, innovativeness, and proactiveness have a positive relationship with overall organisational performance (Barringer and Bluedom, 1999; Bhardwaj and Momay, 2006; Covin and Slevin, 1991; Hameed and Ali, 2012; Lampkin and Dess, 1996; Olakitan and Charles, 2012; Odumeru, 2013).

In the longitudinal research of Zahra and Covin (1995), it has been proved that corporate entrepreneurship has a positive impact on organisational performance. The effect on performance increases over time, suggesting that corporate entrepreneurship may be a generally effective means of improving long-term organisational performance (Zahra and Covin, 1995:45).

Zahra and Covin (1995:55) state that corporate entrepreneurship should not be viewed as a short-term fix, but as a long-term strategy for achieving superior financial performance. Managers should adopt a long-term perspective in developing, managing and evaluating corporate entrepreneurship. Zahra and Covin (1995:55) found that there is also a possibility that corporate entrepreneurship pays off by improving non-financial indicators of organisation performance.

A review of literature from the business sector reveals that the entrepreneurial processes and behaviour of an organisation enhance opportunities to generate resources for sustained competitive advantage, and corporate entrepreneurship has a positive relationship with performance (Tepthong, 2014:59). Corporate entrepreneurship is the organisational capacity for sustaining the competitive advantage. Brook (2009:4) describes corporate entrepreneurship as a process consisting of five parts: opportunity recognition, concept development, resource determination, launch and venture growth, and harvesting the venture.

Innovation, proactiveness, and risk management have been viewed as the key components of corporate entrepreneurship. Davis, Nikolic and Dijkema (2010:708) found that organisations that have a preference for innovative activities, risk taking and proactiveness are in a more favourable position, in terms of their performance, and they stand to compete well with others. Basically, customers take an interest in new products, services, and technologies which may result in organisational growth. Entrepreneurial organisations believe that they need to be proactive to survive and to grow in the market. Compared to passive competitors, proactive organisations can be seen as first-movers who can dominate the market. Also for non-profit organisations, the progressively more competitive environment has forced them to place greater emphasis on innovation for creating activities. Additionally, they have to adopt a highly cautious approach in dealing with risk management, with a clear focus on the survival of the organisation. Good risk management leads to retaining and

accelerating performance in the long term. Corporate entrepreneurship has a complex relationship with organisational performance. According to Oeij et al. (2010:1), active organisations with corporate entrepreneurship have more often reported improved organisational performance. The response of organisations that practise corporate entrepreneurship (entrepreneurial organisations) to environmental complexity has been, according to Weerawardena and Mort (2006:1), to create the need for innovativeness, proactive behaviour, and risk management. Cheng et al., (2007:227) found in their study that innovation and proactivity influence a new venture's profit and growth. Fox (2008:429) suggested that the field of corporate entrepreneurship offers a framework for continually improving performance.

In this study, the degree and amount of entrepreneurship (entrepreneurial intensity) within the Department of Education as an organisation is viewed as the simultaneous demonstration of innovativeness, proactiveness and risk taking. This strategic orientation is important in the Department of Education as it aims at improving the lives of people in the community; and hence entrepreneurial action is essential. Although the Department of Education may not gain financially, it must be able to identify new opportunities arising from these actions, seize them, and innovatively act to better achieve their overarching objectives.

Innovativeness, in this study, refers to the extent to which the Department of Education tends to do things in new ways. It is an organisational activity to engage in novel processes and actions to generate new solutions to problems within the organisational context. Organisations exhibiting innovativeness tend to be pursuing new combinations that improve operations or offer a new basis to meet customer/societal needs (Pearce, Fritz & Davis, 2010). Such organisations welcome experimentation, and encourage employees to try new things in the accomplishment of their organisational mission. This contrasts with organisations that lack innovativeness, that focus on established routines and norms in their operations. The nature of the environment in the organisation is likely to determine when innovativeness is beneficial for performance (Covin & Slevin, 1989). In the context of this study, exhibiting high levels of innovativeness is more likely to create and facilitate the type of changes that have a lasting impact. This innovation, and a tendency to experiment and act creatively, will lead to more innovative solutions in solving complex social issues, accomplishing the organisational mission, and

satisfying the, sometimes-conflicting, demands of the public (Morris et al., 2011). Such creative solutions, even where the status quo is often not considered ideal (Blakely & Bradshaw, 2011:73), will lead to higher levels of organisational performance.

It is not enough, however, to have ideas alone; but a willingness to act on those ideas is also important. Organisations can be thought of as catalysts for economic development and change in communities; and as such, they must demonstrate leadership. Action, as reflected through proactiveness, is one such demonstration. It is not enough to have ideas that allow the organisation to better achieve its objectives. It must have the will and ability to act on those ideas without waiting for others to act first. Proactiveness will enable the organisation to implement its innovative ideas. Proactive moves are likely to be perceived positively by communities and the public at large and, in turn, will positively impact on the organisational performance.

Risk taking is another vital strategic input for entrepreneurial intensity. Risk taking involves the committing of organisational resources to uncertain outcomes. Since risk and investment are essential to the economic development process (Blakely & Bradshaw, 2011:76), an organisation must take calculated risks in order to effect any sort of real change in the community. The very definition of economic development requires that changes be made in a particular locale. When the organisation is involved in the investment of resources to improve the economic conditions of the community it is often necessary to change the status quo. The organisation which is unwilling to take such risks is less likely to experience the benefits that come to those that do so.

Entrepreneurial orientation is understood to be the strategy-making process, structure and behaviour of an organisation characterised by innovativeness, proactiveness, and risk taking. In general, research has found that entrepreneurial orientation has a positive impact on organisational performance, but associated analysis suggests that the entrepreneurial orientation - performance relationship is mediated or moderated by diverse variables (Messersmith and Wales, 2011a). Messersmith and Wales (2011a:2) argue that research on mediators is still rare and

there is little understanding of the causal mechanisms of how or why entrepreneurial orientation affects other variables.

It is widely argued in the entrepreneurship literature that corporate entrepreneurship is operationalised through innovativeness, proactiveness, risk taking, and autonomy and competitiveness (Al-Swidi and Mahmood, 2012:720). The above argument is supported by George and Marion (2011) when they argue that the innovativeness of an organisation, its proactiveness, and its readiness to tolerate risk are crucial factors for organisational competitiveness; and hence the need for entrepreneurial strategy is becoming more vital, as it is seen as one of the main tools for organisations to cope with various challenges in the ever-changing, turbulent and uncertain organisational environment.

Corporate entrepreneurship has been found to directly influence the organisation's ability to generate wealth, as well as growth and profitability (Antoncic and Antoncic, 2011:84). Goldsmith (2014:26) points out that corporate entrepreneurship has long been recognised as a viable means of promoting and sustaining corporate competitiveness.

Over the past thirty years of academic investigation (Goldsmith, 2014:27), it has been established that organisations that conduct themselves in an entrepreneurial manner operate at a higher level of performance than those that are more conservative in nature (Anderson and Yoshihiro, 2013:413). The study by Goldsmith (2014:27) found that organisations with high levels of entrepreneurship are more likely to have better organisational performance. Even more, entrepreneurship is expected to be positively associated with corporate financial and operational performance.

Although corporate entrepreneurship is said to improve organisational performance, not all corporate entrepreneurship activities lead to improved organisational performance (Ireland, Kuratko and Morris, 2010:11). Zahra and Covin (1995:45) also argue that corporate entrepreneurship can be risky, and detrimental to an organisation's short-term financial performance. Poor communication, lack of strategic focus and dysfunctional organisational policies often doom corporate entrepreneurial activities.

2.12 CONCLUSION

The overview of the field of entrepreneurship discussed in this chapter presented the rationale of the phenomenon of entrepreneurship in established organisations. The literature review started with the definition of entrepreneurship. Researchers do not have an agreed-upon definition for entrepreneurship, but most definitions correlate with Morris's (1998) seven perspectives: the creation of wealth; the creation of enterprise; the creation of innovation: the creation of change; the creation of employment; the creation of value and the creation of growth.

A brief history on the emergence of entrepreneurship was given as well as some areas of research, identified by prominent researchers, for future research.

The entrepreneurial process (identify an opportunity; develop the business plan; garner the required resources; manage the enterprise) encapsulates all the activities related to entrepreneurship, regardless of the context in which it takes place.

The researchers in corporate entrepreneurship are in agreement that no single definition of corporate entrepreneurship exists. The concept of corporate entrepreneurship is used in many ways, and includes concepts like internal corporate entrepreneurship; intrapreneurship; corporate venturing; entrepreneurial management; strategic renewal and strategic entrepreneurship. A table summarising most of the views on the concept of corporate entrepreneurship was given. For the purposes of this study, the broad definition of Sharma and Chrisman (1999:18) is adopted: "Corporate entrepreneurship is the process whereby an individual or a group of individuals, in association with an existing organisation, create a new business or instigate renewal or innovation within the organisation".

From the literature review, it was very clear why it is necessary for organisations to undertake corporate entrepreneurship. Organisations need corporate entrepreneurship to grow, integrate and develop entrepreneurial spirit, create and sustain competitive advantage and to be adaptable, flexible and innovative. The organisation that instils corporate entrepreneurship can gain and sustain competitive advantage at all levels of the organisation. Corporate entrepreneurship can affect the economy by increasing productivity, improving best practices and enhancing competitiveness.

Seven conceptual models of corporate entrepreneurship were discussed. Mostly, these models were developed to address the various aspects, concepts, processes and phenomena of corporate entrepreneurship. Researchers also use these models to guide research. As research on corporate entrepreneurship improves, researchers are improving and extending existing models of corporate entrepreneurship. The biggest criticism of the development of models by researchers in the field of corporate entrepreneurship is that most have not been tested empirically.

The entrepreneurial orientation (consisting of risk taking, proactiveness and innovativeness) is used to determine how entrepreneurial an organisation is. Entrepreneurial orientation has been used extensively by researchers in the field of corporate entrepreneurship.

A framework for sustainable corporate entrepreneurship was given to guide this process. The antecedents for corporate entrepreneurship are very important for the purposes of this study. These antecedents are management support; organisational tolerance; autonomy/work discretion; rewards/reinforcement; resource/time availability and organisational boundaries.

Lastly, this chapter addressed corporate entrepreneurship as a strategy. A corporate entrepreneurship strategy is a set of commitments and actions framed around entrepreneurial behaviour and processes that the organisation designs and uses to develop current and future competitive advantage.

CHAPTER 3

OVERVIEW OF PUBLIC ENTREPRENEURSHIP AND THE EDUCATION SECTOR IN SOUTH AFRICA

3.1 INTRODUCTION

Research findings from the last decade have shown that it is vital for large organisations managed traditionally to support entrepreneurial behaviour at all hierarchical levels (Zampetakis and Moustakis, 2010:872). Shaw, O'Loughlin and McFadzean (2005:400) argue that "entrepreneurial behaviour within organisations (or corporate entrepreneurship) is regarded as a vehicle for increased organisational growth, strategic renewal, organisational change, and customer value-added services".

Zampetakis and Moustakis (2010:872) explain that "the literature demonstrates strong consensus that, to some extent, entrepreneurial behaviour is present in all organisations, irrespective of size or type (Borins, 2000:499; Drucker, 1985). Drucker (1985) argues that almost anyone can be an entrepreneur if the organisation is structured to encourage entrepreneurship. However, research on factors or practices that motivate entrepreneurial behaviour in the public sector is limited" (Zerbinati and Souitaris, 2005:43).

Kim (2010:782) determines that "the virtues of the traditional ideas about government have been challenged, and significant changes have emerged in societal, demographic, and cultural movements. The need to be more competitive in an unstable environment demands changes in the role of government. The public sector has created innovative ways of restructuring and managing governmental arrangements as a consequence of administrative reform activities. With the goal of performing government tasks effectively, a number of organisation-based approaches have been introduced into the public sector, such as privatisation, public-private partnerships, outsourcing, and entrepreneurship".

Boyett (1997:78) argues that "this form of entrepreneurial government has been introduced as a means to provide organisation-based practices for better services. The adoption of beneficial entrepreneurial practices into the public sector could be a sound approach for satisfying citizens' needs for a more efficient and low cost

government." Kim (2010:781) finds that, "despite the enthusiasm and widespread belief in the applicability of entrepreneurial practices to the public sector, there are still on-going debates about their suitability to public institutions in terms of the core values of the public sector. The idea of public entrepreneurship is to increase opportunities, confront challengeable ideas and find ways to offer more public choices and benefits, providing high-quality services to citizens".

Unlike "privatisation or contracting out, which reduces the public sector's involvement and responsibility as a significant service provider" (Morris and Jones, 1999:73), "organisation-based practices like public entrepreneurship provide many advantages and have important roles to play in public policy and management" (Bozeman, 2007:7). Thus, "adopting entrepreneurial practices, such as searching for innovative opportunities and providing the opportunity to be proactive, can improve an organisation's capacity for contributing to the public values of sustainability and productivity, and could be the best way to resolve perennial perceptions of less-than-efficient service delivery".

Public sector organisations "are often portrayed as bureaucratic, conservative, disingenuous monoliths" (Hughes, 1998:371). Drucker (1985:241) proposes that "one of the great social innovations required to reform the modern economy is to organise the systematic abandonment of outdated social policies and obsolete public service institutions".

3.2 PUBLIC SECTOR ENTREPRENEURSHIP

Ramamurti (1986:143) indicates that "public entrepreneurship appears to be a contradiction in terms. Entrepreneurs are usually perceived as individuals who need a great deal of freedom to make decisions, take risks and earn a personal fortune. The public sector seems like the last place in which such individuals (entrepreneurs) would find a home, given the limited autonomy it provides, the extensive bureaucratic and political control to which it subjects entrepreneurs, and the limited incentives that it offers entrepreneurs for taking risks".

Kearney, Hisrich and Roche (2009:28) concur with Ramamurti (1986:145) that the "characteristics of the public and private entrepreneur are different. Some aspects of the definition of 'entrepreneur', used in the context of the private sector, cannot be

applied to the public sector. Entrepreneurs in the private sector are commonly profit-oriented, and this is not appropriate in the context of the public sector, where profit making is not the primary goal". Klein, Mahoney, McGahan and Pitelis (2010:1-15) agree with this statement as they state that the "purpose of public sector entrepreneurship is to fulfil public interest". Dhliwayo (2017:3) further endorses the assertion by Klein et al., (2010), and states that, for any government, the citizens' welfare is its primary concern.

Kearney and Meynhardt (2016:543) explain that "enterprise no longer just refers to the creation of new business ventures, or the characteristics of model entrepreneurs; but it also refers to the ways in which political, social and personal vitality is achieved by generalising a particular conception of enterprise to all forms of conduct of organisations previously seen as non-commercial, government and its agencies, and individuals". Thompson (1992:209) says "that entrepreneurs can be found in many walks of life: entrepreneurship extends far beyond the small business owner-manager sector, with which it is globally linked. Large and small organisations, public or private sector organisations, all need to be enterprising; although there are too many organisations in both the private and public sectors which have restrained creativity as they have grown".

Definitions of public sector entrepreneurship are limited and diverse. Luke, Verreynne and Kearins (2010:139) define public sector entrepreneurship as "the deliberate search for innovative change, the generation of new revenue sources and the provision of enhanced services through the involvement of citizens; and on-going innovation to achieve increased efficiency and effectiveness". Wei-Skillern, Austin, Leonard and Stevenson (2007:407) define public sector entrepreneurship as "the process of creating value for citizens by bringing together unique combinations of public and/or private resources to exploit social opportunity. Individuals who generate, design, and implement innovative ideas in the public domain become known as public entrepreneurs".

The definition by Wei-Skillern et al., (2007) emphasises the creation of value for citizens, bringing together unique combinations of resources and the exploitation of social opportunities. The created value is "derived from unique resource combinations, while the value creation comes from the exploitation of opportunities".

The social opportunities are viewed by Dhliwayo (2017:5) as unsatisfied needs that the citizenry may have. Dhliwayo (2017:5) further argues that “it is only when these unsatisfied needs of citizens have been satisfactorily acted upon, through innovative solutions, that public sector entrepreneurship would have taken place”. As pointed out by Dhliwayo (2017:5), any entrepreneurial thinking or behaviour undertaken by a government employee, a civil servant, or agent represents public sector entrepreneurship.

Definitions of public sector entrepreneurship have a number of elements in common. Firstly, the dimensions of “innovativeness, proactiveness, and risk taking emerge repeatedly and these are referred to in terms of ‘innovate’, ‘initiate change’, and risk facilitation” (Kearney et al., 2009:277). These correspond with the entrepreneurial orientation dimensions discussed in the previous chapter. Secondly, some definitions incorporate value creation (Leonard and Stevenson, 2007:407), or “the ability to deliver services and create value” (Bernier and Hasfi, 2007:489).

Public sector entrepreneurship integrates and builds on the “concept of entrepreneurial government connected to the New Public Management” (Edwards, Jones, Lawton and Llewellyn, 2002:120). Malik and Mahmood (2012:28) state that public sector entrepreneurship is “a powerful form of public entrepreneurship that prevails within a public or non-profit organisation promoting non-bureaucratic mechanisms to remedy fundamental problems of traditional bureaucracy by changing organisational structures, processes, and cultures through the dimensions of risk taking, innovation, and pro-activeness: inclined to shared governance, reduction of red tape, promotion of customer satisfaction, empowerment of employees, more responsive to its stakeholders, and promotion of cost-efficient performance”. So, public sector entrepreneurship is considered by Malik and Mahmood (2012:28) to have the same hallmarks as “private entrepreneurship, by introducing market-like competition”.

Morris and Jones (1999:86) identified three components of public sector entrepreneurship: “innovativeness is inclined to be more concerned with novel process improvement, new services, and new organisational forms; risk taking includes pursuing initiatives that have a calculated likelihood of resulting in loss or failure; and proactive behaviour is action-oriented and includes the creative

interpretation of rules, skill at leveraging resources, and a high level of tolerance in effecting change".

The "external environment of today's public sector organisations is characterised as highly turbulent, presupposing an increasingly dynamic, hostile and complex set of environmental conditions". Consequently, the term 'entrepreneurship' has "appeared in public administration literature with increasing frequency in the past decade. Popular terms include reinventing government, downsizing, re-engineering, continuous improvement, participative management, privatisation, or outsourcing certain activities to the private sector" (Kuratko et al., 2011:129).

Nayyar and Mohmood (2014:26) argue that "entrepreneurship is a universal construct that can be applied in public sector organisations as well as large private organisations. They emphasise that this is due to the fact that they both have formalised hierarchies; established stakeholder groups with competing demands; deeply entrenched cultures to propel financial controls, budgeting and employee rewards; and they have higher job security for the managers, lower personnel responsibilities and established pools of resources".

Morris and Jones (2012:87) posit that "entrepreneurship is an attitudinal and behavioural activity, with underlying dimensions of innovativeness, risk taking, and proactiveness; and that these characteristics are applicable to public sector organisations. An organisation's overall entrepreneurial intensity is the result of combining the number of entrepreneurial events taking place with the extent to which these events are innovative, risky and proactive".

Kearney et al., (2009:28) describe public sector entrepreneurship as "the process that exists within the public sector that results in innovative activities such as the development of new and existing services, technologies, administrative techniques, new or improved strategies, risk taking, and proactivity. Personal goals and objectives are less important than the generation of a good result for the organisation".

Public entrepreneurs need to "take their political authority seriously and follow the principles of democratic theory in policy design and implementation" (Malan, 2016:87). Malan's (2016) statement resonates with Bellone and Goerl (1992:132), as

they advised that “public entrepreneurs also need to be concerned with a more active approach to administrative responsibility which includes helping to facilitate increased citizen education and involvement. The important characteristics of public sector entrepreneur-autonomy include a personal vision of the future; a need for risk taking to be reconciled with the fundamental democratic values of accountability and open policy-making processes; and a concern for the long-term public good” (Bellone and Goerl, 1992:131).

Kearney and Meynhardt (2016:567) conclude that “entrepreneurialism in the public sector, unlike the private sector, does not rely upon particular individual attributes, but on a group desire in organisations to change, adapt, innovate and take risks, where personal qualities and motivations are far less important than the generation of an exciting force at the organisational and collective levels”.

3.2.1 Unique Public Sector Entrepreneurship Characteristics

Public sector entrepreneurship would, on the surface, seem to have much in common with entrepreneurship in a large corporate. However, a number of characteristics distinguish public sector entrepreneurship from private organisations. To “understand public sector entrepreneurship, some unique characteristics of the sector should be borne in mind. Some of these unique characteristics”, cited by Kuratko et al., (2011:124) are summarised below:

- “They do not have a profit motive, instead they are guided by social and political objectives.
- They have less exposure to the market and its incentives for cost reductions.
- They receive funds indirectly from an involuntary taxpayer rather than directly from a satisfied and voluntary customer.
- They serve a number of different publics and cannot easily identify their organisations’ customers.
- They produce services that have consequences for others beyond those immediately involved; hence managers have greater accountability for the indirect consequences of their actions.

- They are subject to public scrutiny and their decisions have to be made with transparency, and must involve consensus among, and consultation with, a variety of interest groups and constituencies.
- They face risk/reward trade-offs that strongly favour avoiding mistakes".

The authors are of the opinion that "these factors present a completely different set of challenges from those of the private sector entrepreneur. One such problematic characteristic is the existence of the multiplicity of constituencies and the rigid bureaucratic nature of the systems that have to deliver to many publics".

Dieffenbach (2011:34) provides a summary of factors that foster and/or inhibit public sector entrepreneurship. These are shown in Table 3.1.

The author points out that public sector obstacles emanate from the "attitudes, 'turf fights' and general resistance to change inherent in bureaucracies; inadequate resources; legislative or regulatory constraints; and political opposition and obstacles arising in the environment outside the public sector, such as doubts about the programme, inability to reach the target group, and public or private sector opposition because of the need to compete with the public sector".

Table 3.1: Factors that foster or inhibit public sector corporate entrepreneurship

Factors fostering public sector entrepreneurship:	**Factors inhibiting public sector entrepreneurship:**
• "anticipative or decentralised decision making; • decisions made by people with specialised training; • decision-making relying on few integrating devices; • performance objectives developed from shared participation; • managers tend not to be penalised if risky projects fail and risk taking is encouraged; • organisation autonomy; • hostile operating environment; • organic organisation structure; • availability of resources for innovation and project size; • cohesive work groups;	• "policies/procedures/red tape; • limited size rewards; • limited managerial autonomy; • interference from media and politicians; • pressure to emphasise equity over efficiency; • ambiguity of goals; • lack of competition; • short-term orientation; • reward system that penalises failure; • high public visibility; • difficulty in defining customers; • lack of resource control;

• moderate personnel turn over; and • smaller, flexible organisations".	• on-going government financial backing; • restrictive employee policies and rigid salary scales; • risk aversion tendencies; • soft budget; and weak financial discipline; • public sector unions".

Source: Kearney et al., (2008:126)

According to Bhatti, Zaheer and Rehman (2011:87), "efforts to pursue entrepreneurship have to overcome the following obstacles, peculiar to the public sector:

- restrictive personnel policies which reduce the manager's ability to motivate subordinates;
- multiplicity and ambiguity of goals which paralyse management;
- short-term orientation, which discourages long-term and high impact entrepreneurial initiatives;
- high visibility, which results in over-cautious managerial behaviour; and
- limited managerial autonomy with high potential for interference, which discourages innovation".

The author's opinion is that "the factors that inhibit public sector entrepreneurship are huge, given their structures as well as their mandates, which are usually that of a service nature. The practices of public sector entrepreneurship become very important if quality service delivery is to be met".

In order for public sector organisations to be entrepreneurial and innovative, "public sector organisations should consider breaking with protocol, and challenging the rules and regulations; as well as breaking with normality and coming up with what is not obvious" (Department of Public Service and Administration, 2009:11). This calls for the amendment and changing of service delivery models in order to deliver better services that meet the needs of the public. Kearney et al., (2008:301) opine that "there is a need to change the culture of public service officials so that they can be seen to be innovative in dealing with service delivery challenges and not viewed as 'mundane and unimaginative".

Kearney et al., (2008:301) identified “several approaches to overcoming barriers to corporate entrepreneurship in the public sector, including persuasion and accommodation”.

- **“Persuasion** involves highlighting the benefits of innovation, establishing demonstration projects and social marketing.
- **Accommodatio**n involves consulting with affected parties; co-opting affected parties by engaging them in the governance of innovation; training those whose work would be affected; compensating losers; and ensuring that the programmes are culturally and linguistically sensitive.
- **Other approaches** in overcoming public sector entrepreneurship barriers include finding additional resources; resolving logistical problems; persevering and exerting continual effort; gaining political support and building alliances. Furthermore, public sector organisations are required to have a clear vision and focus on important aspects of innovation, changing legislation and regulations as well as providing recognition for programme participants”.

Osborne and Gaebler (1992:19) believe that public sector organisations can be transformed into entrepreneurial organisations. According to Osborne and Gaebler (1992:20), in order to reinvent government, public sector organisations need to focus on the following themes:

- **“Competition:** Public sector organisations should find more creative ways to introduce competition and the corresponding incentives for greater efficiency and greater responsiveness to public needs”.
- **“Citizen empowerment:** Public sector organisations should involve citizens in ownership and control of services, so that people can feel that they also own public assets”.
- **Focus on outcome:** Public sector organisations should focus on measuring public sector programmes rather than inputs.
- **Mission over rules and regulations:** The public sector should focus decisions and resources on the primary purpose of the public agency, rather than on rules.

- **Customer orientation:** Public sector organisations should develop an obsession with customer services and satisfaction, service quality and on-going customer feedback.

3.2.2 Public Sector Entrepreneurship vs Social Entrepreneurship

Leyden and Link (2015:243) define public sector entrepreneurship as “innovative public policy initiatives that generate greater economic prosperity”. The authors further state that “these initiatives can transform a status quo economic environment into one that is more conducive to economic units engaging in creative and innovative activities in the face of uncertainty”.

Bornstein and Davis (2010:1) define social entrepreneurship as “a process by which individuals build or transform institutions or organisations to advance solutions to social problems”.

Public sector entrepreneurs are found in public sector organisations, while social entrepreneurs can be found in both non-profit and public organisations. This suggests that “social entrepreneurship is a process that can be found within the public sector, which means that a public sector entrepreneur can also be a social entrepreneur”. Morris and Jones (1999:87) define public sector entrepreneurship as “a process of creating value for citizens by bringing together unique combinations of public resources in the interest of the public, which is the society. The focus for both social entrepreneurship and public sector entrepreneurship is opportunity taking to create value for the society or citizens”.

Mair (2008:5) stated that social entrepreneurs are more focused on basic human needs which persist because other organisations, such as public sector organisations, have not catered effectively for them. This again suggests that social entrepreneurship can be a specialised area in public sector entrepreneurship. Mair (2008:6) stated that “social entrepreneurship is about rapid economic growth and radical transformation of social life that leads to a resurgence of basic human needs. In short, social entrepreneurship acts in an opportunity space of persistent human need, caused by the lack of products, services, or institutions provided by public sector actors, who are public sector entrepreneurs”. Mair (2008:10) further points out that “the context in which the social entrepreneur operates depends on the need that

is addressed and the actor can be an individual entrepreneur or an established organisation". The "choice of the organisational form is more a reflection of the particular problem at hand, rather than a paradigm issue. In other words, profit and non-profit are not defining characteristics of social entrepreneurship; but are specific choices to be made, depending on the overall model required to address the social need".

According Bornstein and Davis (2010:29), "social entrepreneurs are the idea champions who advance change within, between and beyond established organisations". This suggests that social entrepreneurs are working within established organisations, including public sector organisations; therefore they are public sector entrepreneurs. Bornstein and Davis (2010) further state that social entrepreneurs are similar in their skills and temperament to organisation entrepreneurs and this includes public sector entrepreneurs.

The only difference between social entrepreneurs and public sector entrepreneurs, according to Bornstein and Davis (2010:30), is in "their primary objectives. For public sector entrepreneurs the objective is usually to build a lasting and respected entity, while the objective for social entrepreneurs is to maximise social impact by addressing an urgent need that is being mishandled by other institutions". Unlike public sector entrepreneurs, "who work from top down, social entrepreneurs address problems from bottom up". Public sector entrepreneurs often "implement ideas before testing, adapting them as they go; they lack the nuanced understanding of ground-level details that is the key to success in social entrepreneurship. Also, public sector entrepreneurs are bound by protocol, rules and procedures; social entrepreneurs have more flexibility. A social entrepreneur has the luxury of trying seemingly crazy ideas and gets rid of ideas that do not work, whereas public sector entrepreneurs get bogged down in finalising the details prior to implementation, without the chance to learn from mistakes" (Bornstein and Davis, 2010:40).

Social entrepreneurs can stay working on a problem until they solve it, whereas public sector entrepreneurs are under pressure for quick, tangible results. Public sector entrepreneurs benefit from their "access to a wide array of resources and legitimacy", while for social entrepreneurs to address social problems they must combine their creativity and their agility with resources and government bureaucracy.

Now that the difference between public sector entrepreneurship and social entrepreneurship is understood, it is necessary to justify why entrepreneurship should be practised in public sector organisations.

3.2.3 Justification for Entrepreneurship in the Public Sector

Inadequate solutions and turbulence (Bernier and Hafsi, 2007:489; Klein et al., 2010:86) "provide public entrepreneurs with opportunities to create public value. Westrup" (2013:108) argues that "an analysis of public sector organisations will usually reveal a number of what he calls 'gaps'. These gaps, which represent an organisation's current inability to fulfil its goals, require innovation. The extent to which an organisation's performance can be improved depends on how well an organisation is adapted". Morris and Jones (1999:75) use the term 'opportunity' from entrepreneurship research to make the same point. They showed "that such opportunities for entrepreneurship in a public university included changed demographics; the emergence of new market segments; process needs; new technologies; and funding and regulatory change. Pursuing such opportunities by means of entrepreneurship in a public organisation can improve internal processes and yield better solutions to social and economic problems" (Morris and Jones, 1999: 87).

Politics need not "predefine all public sector organisations' operations. While some legislation provides very explicit and detailed guidelines, others define objectives" (Luke et al., 2010: 228). The onus is therefore "on public entrepreneurs to act upon the above-mentioned gaps/opportunities and initiate innovation". Bellone and Goerl (1992), in Diefenbach (2011:39), noted that "such public sector entrepreneurship can only gain legitimacy in democracies through the involvement of the public".

However, as with the "private sector, public sector entrepreneurship is not equally applicable in all cases" (Covin and Slevin, 1991). Kelly et al., (2002:35) recognised that "value in public sector organisations is created through entrepreneurial behaviour in some areas, but through adherence to standards in others".

The 'centre' cannot specify how "best a local agency, providing a complex service, can boost service satisfaction, improve outcomes and secure local legitimacy. However, this does not mean that, in every instance, public value should be equated

with greater managerial discretion and looser accountability. In some circumstances an established process – a service template – can be used reliably to deliver an efficient service". Arguably, "this approach would be beneficial in institutions such as the Department of Education. In these instances, public value is likely to be created by ensuring that all service providers adhere to recognised best practice" (Kelly et al., 2002:35; Diefenbach, 2011:39).

Morris et al., (2008:106) argued along the same lines and provided examples of the "efficacy of public sector entrepreneurship in specific organisations: social security services (low), water departments (medium), and education (high)". In short, "public sector entrepreneurship is not effective in all situations. However, in many situations, there are opportunities that cannot be foreseen by central units or politicians".

The practice of entrepreneurship in the public sector is not without limitations. The next section provides a brief discussion on the limitations of entrepreneurship in the public sector.

3.2.4 LImitations to Entrepreneurship in the Public Sector

From the literature, three broad themes on the limitations to entrepreneurship in the public sector emerge. These include some "liabilities that apply equally to the private sector" (Diefenbach, 2011:40). Firstly, "for many critics, the engagement by public managers in innovative, proactive, and risk taking activities represents a threat to democratic governance. The primary perceived problem is a lack of legitimacy. As public managers should act in accordance with consent established by elected politicians, manipulation of the political will is considered undemocratic" (DeLeon & Denhardt, 2000:95; Terry, 1998:197). Morris and Jones (1999:78) consider "any moves designed to increase the power of public institutions and public managers as threats to democracy. There is a potential conflict between risk taking and public managers' obligation to use public resources responsibly" (Bellone and Goerl, 1992:132). Du Gay (2000:12), a defender of traditional democracy, also highlighted legitimacy problems. He holds that "entrepreneurial management and the public sector are inherently incompatible, due to different 'regime values' in the public and private sectors". Du Gay (2009:146) therefore concluded that "representative democracy still needs the bureaucratic ethos". Even those who promote public sector entrepreneurship (Roberts and King, 1996) admit to "difficulties in legitimising

entrepreneurship within public sector organisations; for example, when it includes breaking rules such as the reallocation of funds" (Diefenbach, 2011:40).

Secondly, "public managers, just like private managers, might go too far in their entrepreneurship. Such rogue entrepreneurs (Currie et al., 2008) are described as pursuing self-interest, misusing public funds, dominating others, and implementing radical change, thereby ignoring tradition" (DeLeon & Denhardt, 2012:92). DeLeon and Denhardt (2012:95) further warn of "exaggerated expectations from public entrepreneurs (whom they compare with superheroes), who could become as dangerous as unchecked national leaders". Terry (1998:198) asserted that "values such as fairness, justice representation, or participation are not on the public entrepreneur's radar screen". Those who promote "public sector entrepreneurship are also aware of these dangers and give the example of a 'public entrepreneur' ending up in jail due to the pursuit of personal gain" (Schneider, 1998:215). However, as Roberts and King (1996) noted, "these public officials might be the exception, rather than the rule". Alford (2008:360) counted on public sector managers' integrity in promoting their projects (Diefenbach, 2011:40).

Third, "entrepreneurial activities not completely in line with their organisations' objectives can result in unintended consequences. Such consequences include neglecting the core business or core responsibilities" (Rhodes and Wanna, 2008:368); competition with private or public sector organisations (Morris and Jones, 1999:78); or overruns of budgets (Currie et al., 2008:340).

3.3 CORPORATE ENTREPRENEURSHIP IN THE SOUTH AFRICAN PUBLIC SECTOR

Government departments in South Africa are faced with "increased public scrutiny and the need for entrepreneurship has become even greater. Most South African government departments are striving to recast their management styles into an entrepreneurial mould", and these include the Department of Basic Education.

Government is used to "lumbering bureaucracies funded from the public fiscus, yet they are often deaf to public needs, with missions largely undefined or unfulfilled" (Dhliwayo, 2007:133). Government departments are "condemned to dependence on public funding because they create little value and eschew innovation in the face of

changing times". Kuratko et al., (2011:128) note that "the challenges for entrepreneurship in the public sector are greater, considering the poor service delivery that is being witnessed today, as reflected by on-going demonstrations against poor service delivery. Some of these demonstrations (Dhliwayo, 2007:133) have been violent. The government has introduced the Batho Pele (people first) initiative, which aims to improve the quality and accessibility of government services by improving efficiency and accountability to the recipients of public goods and services".

Batho Pele requires that eight service delivery principles be implemented (Department of Public Service and Administration, 1997) and these are as follows:

- "Consultation: Citizens should be consulted about their needs.
- Standards: All citizens should know what services to expect.
- Redress: Remedy failures and mistakes.
- Access: Citizens should have equal access to services.
- Courtesy: Citizens should be treated courteously.
- Information: Citizens should have more, and better, information about services.
- Openness and transparency: Increase openness and transparency about services.
- Value for money: Provide services that offer value for money".

The drafting of the Service Charter is "an attempt to create an entrepreneurial environment for public servant entrepreneurship, but the situation on the ground suggests complete failure or the existence of a non-entrepreneurial climate. The researcher is of the opinion that factors from the Service Charter that offer entrepreneurial challenges include access to services, correction of mistakes and remedying failures, increased openness and transparency and provision of services that offer value for money. It is, however, doubtful that entrepreneurial skills and the entrepreneurial structures are in place to enable the execution of an entrepreneurial service within the public service sector" (Dhliwayo, 2007:134).

The researcher believes that government and other public sector organisations increasingly comprehend the benefits of corporate entrepreneurship. Large public

sector organisations, including the Department of Education, are restructuring, removing other layers and encouraging entrepreneurship among the departments. The purpose is to “inject some new energy and a fresh culture and ethos that will enable these departments to compete in a global world” (Kuratko et al., 2011:113; Simrie, Herrington and Turton, 2011:63; Nieman and Nieuwenhuizen, 2014:451).

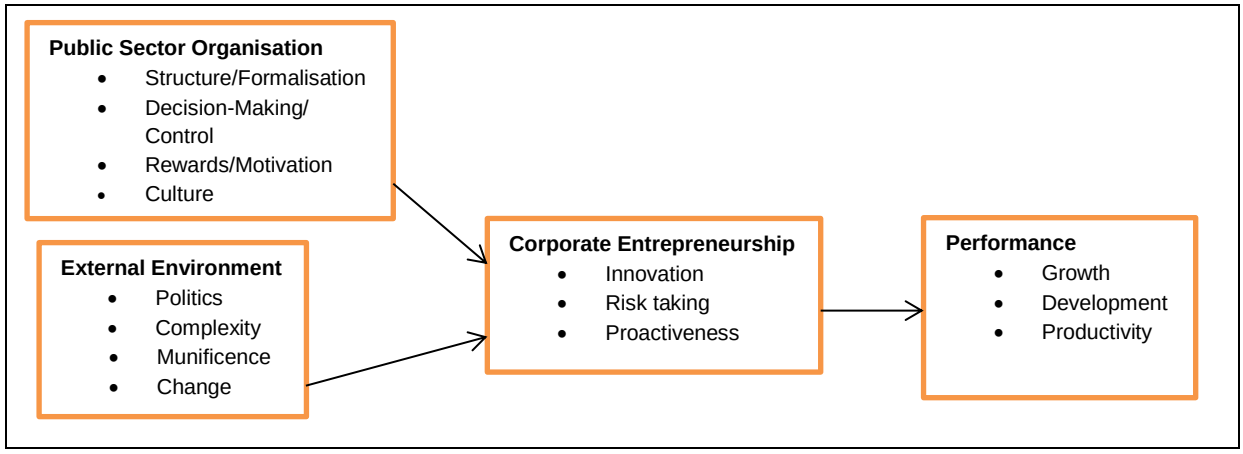
In order to understand the benefits of corporate entrepreneurship and how entrepreneurial activities stimulate organisational performance in public sector organisations, scholars and researchers developed a public sector corporate entrepreneurship model (Covin and Slevin, 1991:9). The model is presented below.

3.3.1 Public Sector Corporate Entrepreneurship Model

Kearney, Hisrich and Roche (2008:298) mentioned that “corporate entrepreneurship effectiveness can be measured in terms of organisational performance which includes growth, development and productivity. The public sector corporate entrepreneurship model integrates corporate entrepreneurship in the public sector with its internal and external environments and its direct and indirect impact on the organisation’s performance” (Shan and Bhutta, 2013:82).

According to this model, the “internal environment elements of the public sector, such as structure/formalisation; decision-making/control; rewards/motivation; culture; risk taking; and proactiveness affect the ability of public sector organisations to engage in entrepreneurial activities” (Kearney et al., 2008:298; Morris, 2007:1368; Covin and Slevin, 1991:9; Shan and Bhutta, 2013:82). Politics, complexity, munificence and change create an external environment and are considered to be the fundamental determinants in influencing corporate entrepreneurship in the public sector (Antoncic and Hisrich, 2004:525; Nutt, 2005:5 in Shan and Bhutta, 2013:82).

Figure 3.1: Public Sector Corporate Entrepreneurship Model



Source: Covin and Slevin (1991:9)

According Kearney et al., (2008:302; 2009:31), "the internal environment of public sector organisations is vital for any corporate entrepreneurship to occur. The internal environment of the public sector is made up of the following dimensions: structure/formalisation; decision-making/control; rewards/motivation; culture; risk taking; and proactiveness".

For entrepreneurship to take place within the public sector "there is a need for greater flexibility, as high levels of rigidity and red tape are in conflict with the development of an entrepreneurial culture" (Kearney et al., 2009:36). According to Thompson (1999:210), "public sector structures and systems make use of formal controls which inhibit entrepreneurship in the public sector. As a result, public sector employees are less innovative than their private sector counterparts".

In this regard, Sithole (2015:1) states that "a hindrance to innovation in the public sector in South Africa is the use of traditional monitoring and evaluation (M&E) methods that typically assess inputs, activities and output. Whereas, if a results-based method was used to assess outcomes and input, a culture of excellence would be internalised amongst public sector employees at local government level".

Furthermore (Sithole, 2015:1) argues that "local government lacks proper formal evaluation that examines whether or not the assumed operational logic corresponds with actual operations and identified immediate consequences of implementation in relation to the initially envisaged outcomes".

A method which is currently prevalent uses “only key performance indicators (KPIs) to assess whether employees do their work or not” (Department of Provincial and Local Government, 2017:19). For instance, in local government some of the KPIs are:

- attending a certain minimum number of meetings;
- assisting a certain number of service users per month.

The problem with such KPIs is that they don’t measure impact. One way of measuring impact is to include effectiveness alongside KPIs.

Another dimension of the internal environment in the public sector is reward and remuneration. Hornsby and Zahra (2002:259) mentioned that, “for entrepreneurship to be encouraged in the public sector, there is a need for positive rewards and remuneration that recognise individual and group contributions within the organisation”. According to Sithole (2015:2), another reason for the lack of effectiveness in the public sector in South Africa is that people are paid, based on set working hours, such as 8:00 to 17:00, Monday to Friday. This allows them to be complaisant because their salaries are not attached to making an impact. If remuneration was attached to impact assessment and actual hours worked, it would encourage innovation through constantly exploring ways of doing more with less time and resources they would typically do (Sithole, 2015:5).

Culture is another dimension of internal environment. Effective management of public sector entrepreneurship involves “managing a culture that views all employees as self-perceiving entrepreneurs, applauds failures and success, and facilitates innovative activities and processes. Although public scrutiny of employees within the public sector results in risk aversion which impedes entrepreneurial activities in the public sector, public sector organisations need to encourage risk-taking behaviour as their environment is unpredictable and unstable” (Kearney et al., 2009:33).

Morris and Jones (1999:76) state that “it is important for public sector organisations to be proactive. Proactiveness entails an action-orientation and an emphasis on anticipating and preventing public sector problems before they occur. This action-orientation includes creative interpretation of rules, leveraging of resources and a

high level of persistence with regard to public sector entrepreneurship" (Morris and Jones, 1999:76).

The 2018 report by the Auditor General of South Africa (AGSA) points to the lack of credible information and planning in directing the education sector in South Africa. The report highlighted a lack of accurate data on school infrastructure which hampers the process of fixing schools. Inaccurate data results in some learners being left without learning materials, while waste occurs at other schools that receive more textbooks than they need.

The Auditor General of South Africa also noted a failure by government to assess the management and administration capacity at every level of the basic education hierarchy, from schools to national department, in order to guide support measures (AGSA, 2018). The AGSA report also notes that, in order for accountability measures to be more than punitive, there is a need to provide adequate support throughout the system, especially where capacity is lacking. The AGSA's report also highlighted, amongst other things, "a lack of decisive leadership to address the lack of accountability by ensuring consequences for those who flouted basic processes that hampered effective municipal governance. The AGSA reported weakness in internal control and the risks that needed attention in local government in South Africa by providing root causes for the audit findings and recommendations to remedy the underlying causes".

According to Covin and Slevin (1991:9), influences on the external environment, such as politics, complexity, munificence and change can affect public sector organisations and their entrepreneurial endeavours. Nutt (2005:5) perceives the external environment of the public sector to be "full of political considerations which result in changes to policy and the imposition of short-term horizons on public sector managers." Morris and Jones (1999:5) mention that "the environment facing public sector managers is more complex and dynamic than in the past, and the ability of public sector organisations to respond to those challenging circumstances is limited by the management philosophies and structures that characterise public sector organisations". Another aspect of the external environment of the public sector is munificence. According to Kearney et al., (2009:35), "munificence refers to the

environment's support for organisational growth and it is manifested in improved service delivery in the public sector".

With regard to external environmental factors that affect the public sector organisations and their endeavours, Thabane and van Deventer (2018:14) gave an account of the poor state of "corporate governance and challenges within many state-owned companies in the South African public service". Despite "the well established legislative framework within which state-owned companies are understood and operate, severe under-performance, frequent bailouts, high board and CEO turnover and shareholder interference in board matters continue to characterise most of the state-owned enterprises in South Africa" (Thabane and van Deventer, 2018:14).

Of the state-owned enterprises, the national carrier, South African Airways (SAA), is arguably one of the worst under-performers. At one stage "the corporation developed eight turnaround strategies within a period of six years, but implemented none of the"m (Thabane and van Deventer, 2018:15). "SAA has had seven CEOs within a period of four years and has under-performed financially, necessitating a capital injection by government on numerous occasions. This has been accompanied by board in-fighting which has led to the shareholder (government) firing the entire board. Tender irregularities implicating executive managers, and some board and executive members' fraudulent, or lack of, qualifications are scandals that have faced SAA" (Thabane and van Deventer, 2018:15). The fact that the "qualifications ascribed to some board members were allegedly false or non-existent shows that the SAA board composition had a problem. As the shareholder, the government had not taken care to appoint suitably qualified individuals to the board, and due diligence had not been followed to ensure that board members are fit and proper".

The South African Broadcasting Corporation (SABC), like SAA, has had an "unhealthy turnover of both board members and executive management; having at times experienced an exodus as a result of resignations or dismissals. The irregular appointment of unqualified top executives abounds. A scandalous issue involving the qualifications of the board chairperson emerged in an equiry by the parliamentary oversight committee on communications. A further shocking development surfaced when the shareholder (government) minister put herslf in charge of the appointment,

suspension and dismissal of the CEO, COO, and CFO. She went on to introduce the Broadcasting Amendment Bill, which if passed could have bestowed upon her the power to directly recommend the names of board candidates to the president for appointment, thereby removing the process from the oversight of the National Assembly" (Thabane and van Venter, 2018:18).

These developments point to internal and external corporate governance issues at the SABC.

Morris and Jones (1999:75) mention that "both public and private sector organisations need to be able to adapt to the increased environmental complexity facing both public and private organisations". The last dimension of external environment is change. The environmental changes in the organisations' competitive structure and underlying technologies have an influence on the organisations' entrepreneurial activities (Kearney et al., 2008:306). Both "public and private organisations need to be in a position to adapt themselves to increased environmental dynamism facing their organisations" (Kearney et al., 2009:36).

3.4 CORPORATE ENTREPRENEURSHIP IN EDUCATION

The Department of Education in South Africa is a public sector organisation. Based on the meaning of entrepreneurship, Hamzah, Yusof and Abdullah (2009:536) are of the opinion that "the time has come for the educational institutions to absorb entrepreneurship characteristics, with particular reference to education administrators and managers. This would turn them into social entrepreneurs who can make use of the limited resources surrounding them, to create profit in the form of shaping well-grounded learners and future citizens of the country. As a result of globalisation and liberalisation challenges, choosing education institution managers and administrators has become aggressive and dynamic in order to handle the challenges faced by the Department of Education. The strength of an education institution, and of the education system, lies in the competencies of education executives. They have to have a set of comprehensive skills and it is possible that by absorbing entrepreneurship characteristics, education institutions will be more successful if education executives can be public entrepreneurs".

Entrepreneurship is considered by Yemini, Addi-Raccah and Katarivas (2014:529) to be “a driving force for change and innovation, introducing opportunities to achieve efficient and effective performance in both the public and private sectors. The phenomenon of entrepreneurship is intertwined with a multifaceted set of overlapping constructs, such as the management of change, innovation, and environmental turbulence. Although entrepreneurship is considered to be a driving force of change and innovation, there is a continual debate over its definition of its core concept. Despite this debate, scholars agree that entrepreneurs are risk takers, high achievers and creative in their approaches to producing unique services” (Fernald, Solomon and Tarabishy, 2005:528); and they can be found among the Department of Education executives. In addition, as Sheingate (2003:188) puts it, “entrepreneurship can be regarded as one of the features of extraordinary leaders whose innovative solutions to pressing problems can bring benefits”.

Entrepreneurship was traditionally associated with private sector organisations (Yemini et al., 2014:528), with “entrepreneurial innovations considered to be those directed toward the market place”. Therefore, as Borasi and Finningan (2010:3) put it, “the phenomenon initially received marginal attention in public educational settings”. Education institutions are “the focus of great expectations, but are habitually charged with discouraging results and the inability to meet expectations (Levin, 2006:31). Education is widely believed to be the solution to major social challenges, including those of workplace productivity, social equity, technology and the effectiveness of democracy” (Malan, 2016:88). In response to these persistent issues, the Department of Education is under constant pressure to change and improve learner performance; “but one of the most common complaints about education is its resistance to change”.

Education researchers have “applied different approaches to entrepreneurship to those in the for-profit milieu, because of the fact that education is generally a non-profit field” (Borasi and Finnigan, 2010:3;). Educational entrepreneurship as an organisations’ tendency to “initiate and implement incremental and radical innovations in its environment, indeed, falls under corporate entrepreneurship” (Eyal, 2007:2).

Corporate entrepreneurship has been investigated in the context of large organisations in fluctuating and competitive environments. In the education setting, by contrast, as Yemini and Goren (2016:529) explain, “leadership innovation takes on an aspect of social entrepreneurship that encompasses innovative activities with social objective in both for-profit and non-profit organisations”. In this regard, Selman (2004:4) proposes “that innovation is an intentional action to bring about something new which can be sustained and has some value. Innovation is about making new processes, and brings something new, which allows people to accomplish what they were not able to accomplish before. Innovation underpins an expectation for change and improvement”.

In education, “innovations can be related to practices by education institutions, standards and policies” (Yemini et al., 2016:2) in different areas, such as “instructional strategies with immediate impact at the classroom level, and curricular content”.

The benefits of entrepreneurship for educational improvement have, according to Pihie, Asimiran and Bagheri (2014:4), been manifested in two ways: “entrepreneurship in general and entrepreneurial leadership. Entrepreneurial leadership has been considered in terms of procedures and techniques of thinking and changing lifestyles, rather than the mere establishment of new organisations” (Klein and Bullock, 2006:436). In this regard, “entrepreneurial attributes and approaches can be applied to improve all aspects of education and the schooling system”. This can be done through influencing individual behaviour and the performance of tasks. Accordingly, education managers and executives are “obliged to acquire and practise entrepreneurial leadership characteristics in order to improve their education institution’s effectiveness and to facilitate the process of innovation. The advantage of organisational entrepreneurship is that organisational innovativeness reflects the capacity of an education institution to develop and implement the novel ideas that result in critical changes and improvements in an institution” (Eyal and Kark, 2004:227).

Entrepreneurial leadership competencies, as suggested by Pihie et al., (2014:4), can assist education leaders and managers in facing the complexities and constraints of the education environment, such as limited resources, preparing learners for their

highly competitive futures, and a host of factors affecting the performance of the Department of Education (Xaba and Malindi, 2010:78). These competencies can also enable education leaders and managers to create the required innovations and look beyond the current status of schooling to develop new opportunities for educational improvement (Eyal and Kark, 2004: 229). Hamzah, Yusof and Abdullar (2009:537) concur that it is time for education leaders and managers to acquire entrepreneurial attributes to improve the education system.

According to Blake and Mestry (2014:164), "there is a need for education managers in South Africa to engage in active entrepreneurial activities. Entrepreneurship can be seen as an approach to general management that begins with opportunity recognition and culminates in the activities of planning, organising, leading and control". According to Denhardt, Denhardt and Aristigueta (2009:180), "education managers who become increasingly entrepreneurial would be committed to educational reforms, and would have the ability to help other employees to create powerful shared visions to bring about change in their institutions".

Although the entrepreneurship phenomenon is applicable in the education field and can improve educational performance (Pihie, Asimiran and Bagheri (2014:4), due to changes around the world affecting education, it is critical to understand the government's policy position on promoting entrepreneurship in public education.

As mentioned earlier, traditionally, "entrepreneurship was associated with the private sector and business organisations working for profit, and was only of marginal interest to the public education system" (Borais and Finnigan, 2010:3). In the current reality, "there is a growing demand for entrepreneurship in the public education system" (Levin, 2006:31).

The next section discusses the promotion of entrepreneurship policy as a mechanism to stimulate growth, and the capacity to become innovative in the education system.

3.4.1 Educational Entrepreneurship

Bazaz (2016:40) asserts that "an effective education system can be of benefit to society in a number of ways. The contribution of education very much depends on the type and quality of education which society imparts. The education system can do the groundwork for social and sustainable development, only when everybody

receives a fair and just opportunity to exercise their right to education". As suggested by Levis (2006:31), "education is believed to be the solution to social challenges, including those of economic competition and effective democracy. In response, education institutions are under pressure to change, repeatedly, in divergent directions".

Entrepreneurs and entrepreneurship have always been related to private sector organisations. According to Hamzah et al., (2009:535), the terms have seldom been referred to in education. The term 'entrepreneur' has been inextricably linked to businesses and capitalism, but generally carries a positive connotation (Nieswandt, 2017:13). Entrepreneurship attributes are honest attributes that can be the foundation for education administrators and managers that can enable "them to find and create opportunities for others in the context of educational institutions. According to Levin (2006:3), the broad definition of entrepreneurship suggests a potentially key role for entrepreneurship in education, through innovation and managerial breakthroughs required to provide quality education. Education institutions are the focus of great expectations, but are habitually blamed for poor results and an inability to meet expectations".

The "meaning of entrepreneurship in education is not clarified" (Attali and Yemini, 2016:5), nor is its domain conceptually differentiated from the entrepreneurial domain as understood in the private sector organisation (Man, 2010:2). Eyal and Inbar (2003:224) are among the researchers who defined entrepreneurship. Their definition is based on Miller's (1983) definition of for-profit entrepreneurship, which "characterises entrepreneurship as innovation, proactiveness and risk taking". Eyal and Inbar (2003:224) adopt this definition for the education context, but without the risk-taking dimension. The "risk-taking characteristic of entrepreneurship is not relevant to the public sector, and hence it is excluded in the definition of entrepreneurship in education" (Wiseman, 2004:65). In contrast, Ellison (2009:30) argues that "innovative public education is characterised by decentralised decision-making, the space for risk taking, and strong support systems to encourage risk taking and innovative ideas".

The concept of "innovation is dominant in the discourse regarding entrepreneurship in education and it is closely related to leadership and change" (Attali and Yemini,

2016:5). Entrepreneurs in the education sector, as defined by Wiseman (2014:8), are individuals or groups who seek to lead the transformation of the education system; and they "consistently turn ideas into initiatives that create value for their institutions and the customers they serve".

Educational entrepreneurship focuses "strategically on short- and long-term opportunities for learning that will create significance for individuals and societies. Educational entrepreneurship is related to institution-level activities which lead to innovation and change" (Hess, 2007:1). Smith et al., (2006:30) concur that educational leaders initiate innovation and change, and in this regard they proposed six principles for supporting education entrepreneurs:

Six Principles of an Entrepreneurial Education System

- **Responsiveness**: "In an ever-changing world, education systems should be responsive to changes in the needs of learners and communities. Education institutions should be based on how well they are serving market needs and how well they are aligned to the demands of the market".
- **No monopolies or oligopolies**: "Monopolies and oligopolies are fundamentally closed, unresponsive systems that aggregate power and maintain it even if results are unsatisfactory. Such inflexible practices should not be tolerated in public education".
- **Customer-oriented**: "Public education has many 'customers', including parents and communities that provide funding. In order to satisfy their mission, public institutions must focus on the needs of learners and not institutions. As such, there must be a diverse supply that addresses the unique learning needs".
- **Performance-driven**: "With improved learner performance as the target, public education systems must strive for both effectiveness and efficiency. There must be clear goals, alignment of resources toward those goals, and consistent assessment and adjustment of those goals and resources, based on progress".
- **Constant learning**: "In a dynamic environment, the work of public education is never completed. As soon as one level of performance is achieved, the next target becomes clear, with continual improvement always a priority. This cycle

of on-going learning applies to learner instruction as well as management of the education system".

- **Culture of meritocracy**: "When results are the priority, those who find a way to achieve those results are rewarded for their efforts".

Drobnic (2015:7) highlights the "challenges and constraints facing entrepreneurial leaders in the education sector. These challenges have a potentially limiting effect on the ability of leaders to act entrepreneurially":

- "the individualism of entrepreneurialism versus the democratic governance of education institutions;
- the bureaucracy inherent in the public sector;
- being answerable to a range of stakeholders, which has the potential to impose incompatible demands on education leaders (Currie, Humphreys, Ucbasaran and McManus, 2008:990); and
- performativity and accountability agenda-targets and monitoring".

Hamzah et al., (2009:542) are of the view that "the attributes of entrepreneurship can help education institutions to be successful by improving learner performance". Education managers must have vision, a mission and set goals to ensure the "success of learners, not only in academics, but also in character building so that the educational field will be able to produce the human capital needed by the country. However, they posited that the entrepreneurship characteristics of education managers are average to poor. They suggested that education managers be capacitated in entrepreneurship so that they can be entrepreneurs who will always see opportunities and provide opportunities to other employees in their respective institutions".

3.5 THE STATE OF EDUCATION IN SOUTH AFRICA

Education is "a basic human right that is enshrined in the constitution of South Africa and even in international law. Alleviating poverty, improving health and addressing inequalities are all dependent on educational policy and practice. No country has ever reduced poverty without creating sustained economic growth, and education plays a critical role in generating productivity and accelerating this growth" (SASIX, 2011).

The Education for All (EFA) movement is a “global commitment to provide quality basic education for all children, youths, and adults. The movement was launched at the World conference on Education for All in 1990 by UNESCO, UNDP, UNICEFF and the World Bank. Participants endorsed an ‘expanded vision of learning’ and pledged to universalise basic education and massively reduce illiteracy by the end of the decade. They identified six key educational goals which aim to meet the learning needs of all children, youth and adults by 2015” (UNESCO, 2015).

The six EFA goals that were set for 2015 are:

- “to expand early childhood care and education;
- to ensure that all children, especially girls, complete free and compulsory, good quality education;
- to ensure equal access to learning and life-skills training for youth people and adults;
- to achieve a 50% improvement in adult literacy rates;
- to achieve gender equality in primary and secondary education; and
- to improve the quality of education – especially literacy, numeracy and life skills (UNESCO, 2015)”.

In 2000, “in addition to the EFA goals, 147 heads of state and government, and 189 nations, pledged to halve extreme poverty by 2015. The United Nations Development Programme identified the eight Millennium Development Goals (MDGs) listed below”:

- “Eradicate extreme poverty and hunger.
- Achieve universal primary education.
- Promote gender equality and empower women.
- Reduce child mortality.
- Improve maternal health.
- Combat HIV/ADIS, malaria and other diseases.
- Ensure environmental sustainability
- Develop global partnerships for development (UNDP, 2015)”.

SASIX (2011) stresses how crucial education is for “improving individual income, child and maternal health, and environmental sustainability. Its role goes beyond pure economic growth, by promoting social progress with well-documented links

between education, public health and social issues. Its primacy is reflected in the commitment to achieve universal primary education in Goal 2 of the Millennium Development Goals (MDGs). In addition, education is part of MDG 1, which calls for the eradication of poverty and hunger, and MDG 3, which calls for the promotion of gender equality."

The Millennium Goals Report (United Nations, 2014) reported that "disparities in primary school enrolment between boys and girls are being eliminated in all developing regions. Also, the enrolment rate in primary education in developing regions increased from 80% to 90% between 2000 and 2012. Most gains were achieved by 2007, and thereafter they levelled out. In 2012, 58 million children dropped out of school, globally. High drop-out rates remain a major impediment to universal primary education (United Nations, 2014). According to SASIX (2011), achieving the EFA and MDG's goal is hindered by poor quality education, the high cost of schooling, and persistently high adult illiteracy rates. Inequalities remain the biggest obstacle. By the age of seven, almost all children in the Organisation for Economic Co-operation and Development (OECD) countries are enrolled in primary school, while the rate for sub-Saharan Africa is just 40%. Inequalities within the countries themselves are also apparent, as is the case in South Africa".

Spaull (2012:1) finds that "South Africa still faces the reality of two different education systems: a dysfunctional schooling system (75% of schools) and a functional schooling system (25% of schools), which are miles apart in terms of performance. Despite the high spending and many interventions which have been made by government over the past 24 years, the system remains virtually unchanged. The South African government spends over 20% of the total government expenditure on education, of which 78% goes to teacher salaries. Up to now, the education system has continued to breed, rather than mitigate, inequality. For those who are born into poor families, their prospects for social mobility are very slim. Education is the main driver of social mobility, but the system continues to reproduce inequality, because there are so few good schools, which are also geographically and financially inaccessible to the poor".

Modisaotsile (2012:2) shows that, "despite the fact that South Africa has reached MDG 2 and spends just over 18.5% of its annual budget on education, the education

system remains largely in a poor state of affairs. The quality of education remains poor, and the output rate has not improved. The drop-out rate is very high and literacy and numeracy levels are low. Other challenges include poor teacher training, unskilled teachers, a lack of commitment by teachers to teach, poor support for learners at home and a large shortage of resources in education, despite the large budgetary commitments by government" (Modidaotsile, 2012:2).

SASIX (2011) finds that "the lack of quality educators had a tremendous impact on the country's performance. Many of today's teachers were educated under the apartheid regime, and as a result did not experience quality education themselves. Without best practice and knowledge-sharing from experienced trainers to fall back on, the motivation, confidence and morale of teachers are low. This has led to high levels of teacher absenteeism. Efforts to transform the education system have largely been driven by government; without the leadership of educators themselves. A lack of management and leadership at schools are contributing factors to the challenges faced by the South African education system".

The Global Competitive Report 2013-2014 (World Economic Forum, 2014) which "assesses the competitiveness landscape of 148 economies, in order to provide insight into the drivers of their productivity and prosperity, ranks the South African education system at 146 out of the possible 148 countries. The South African government spends the equivalent of $1225 US per child on primary education, yet accomplishes less that the government of Kenya which spends only the equivalent of $258 US per child. The report ranks the quality of the education system in Kenya at 44 out of the possible 148. South African learners also perform badly in standardised global tests against South Africa's peers and other African countries. The organisation Education Moving Up, explains that some of the most under-performing schools in Singapore perform better than the most of the top achieving schools in South Africa. Nel (2016:3) claims that money is seldom a problem in the South African education system. The problem lies with the execution of current policies".

3.5.1 Comparative Testing

Spaull (2013a:4) explains that the "three main international tests of educational achievement that South Africa participates in are Trends in International Mathematics and Science (TIMMS), Progress in International Reading Literacy Study (PIRLS), and

Southern and Eastern African Consortium for Monitoring Educational Quality SACMEQ".

According to the Human Science Research Council (2012:2), "the Trends in International Mathematics and Science (TIMSS) is a cross-national assessment of the mathematics and science knowledge of fourth and eighth grade learners, conducted by the International Association for the Evaluation of Educational Achievement (IEA) since 1995. It used results from achievement tests and questionnaires conducted with principals, teachers and learners to ascertain achievement scores and contextual factors relevant to achievement. A stratified sampling methodology was used in which schools were selected on the basis of province, the language of teaching and learning, and public or private status".

TIMSS was designed to "align broadly with mathematics and science curricula in the participating countries. The results can, therefore, be used to determine the degree to which learners have acquired the mathematics and science concepts and skills likely to have been taught in schools. The tests are constructed to measure achievement to help inform governments, policy makers and educators about the proficiency of their learners at key points in the educational process. The findings of TIMSS provide an indication of the health of an education system" (HSRC, 2012:2).

Spaull (2013a:4) indicates that "the TIMSS study showed no improvement in Grade 8 mathematics or science between 1995 and 2002. Thereafter, it was decided that the international Grade 8 tests were too difficult for South African Grade 8 pupils, so that in 2002 both Grade 8 and Grade 9 pupils wrote the Grade 8 test, and in 2011 only Grade 9 pupils wrote the Grade 8 test. Comparing the performance of Grade 9 pupils between 2002 and 2011 indicated a noticeable improvement in mathematics and science performance, amounting to approximately one and a half grade levels of learning. This shows that there was some improvement over the period. While this brings hope, it is difficult to celebrate, taking into consideration how low the post-improvement level of performance really is. Part of the reason for the improvement is the fact that South Africa started from an exceedingly low base in 2002". To place this into perspective, Nkozi (2012:45) explains that "South Africa's post-improvement level of performance is still the lowest of all participating countries, while the average South African Grade 9 child performs between two and three grade levels lower than

the average Grade 8 child from other middle-income countries. Rural schools with the least resources achieved lower scores, while former Model C schools were the best performers".

The 2015 TIMSS results revealed that "South Africa is one of the lowest-performing countries in mathematics in comparison to 39 other participating countries; and the national average falls short of the lowest international performance benchmark. Three out of five South Afican learners do not reach the minimum competencies in basic mathematical knowledge required at Grade 5 level" (Department of Basic Education, 2017:23). The 2015 TIMSS results show that "only one-third of Grade 9 South African learners demonstrated achievement at the minimal level in both mathematics and science" (Reddy, Visser, Winnar, Arends, Juan, Prinsloo and Isdale, 2015:6).

It is worth noting that the South African defined benchmarck for achiement in TIMSS studies is 325 points, while the international benchmark is 400 points. In 2003, "73% of South African Grade 9 learners and 72% of Grade 9 science learners scored below 325 points. This has decreased to 31% of mathematics learners and 40% of science learners in 2015" (Reddy et al., 2015:7). Performance in mathematics and science appears to have shifted from a very low level to a low level.

The next TIMSS results will be available in 2019.

SACMEQ II (2000) and SACMEQ III (2007) (Southern and Eastern African Consortium for Monitoring Educational Quality: Grade 6 numeracy and literacy) showed that "there was no improvement in South African Grade 6 literacy or numeracy performance over the seven year period. Given that 13 other African countries also participated, it is possible to compare the achievements of South African Grade 6 children with other Grade 6 children on the continent. In the SACMEQ (2007) round, South African pupils ranked 10th of the 14 education systems for reading, and 8th for mathematics, behind much poorer countries such as Tanzania, Kenya and Swaziland" (Department of Basic Education, 2010). According to Spaull (2013a:4), the study found that "27% of South African Grade 6 pupils were illiterate, since they could not read a short and simple text and extract meaning, with the proportion varying significantly by province: half (49%) of Grade 6 pupils in

Limpopo were illiterate, while only 5% of pupils in the Western cape were thus classified. The study also reflected differences within provinces in the country".

The SACMEQ IV results show that South African learners have considerably improved their performance between the SACMEQ III and IV studies, by 63 points in reading and 92 points in mathematics. This compares favourably to the slight improvement in performance across SACMEQ II and III studies (by 3 points in reading and 9 points in mathematics). South African learners also achieved 587 in mathematics in SACMEQ IV, which is above the average score of 584 in the subject and have equalled the SACMEQ average score of 558 in reading. In SACMEQ III, South Africa had under-performed in both reading and mathematics compared to the SACMEQ average (South African Parliament, 2016:3).

Howie, Van Staden, Tshele, Dowse and Zimmerman (2011) explain that "the Progress in International Reading Literacy Study (PIRLS) is an international assessment, administered every five years, that measures trends in students' reading achievement; and policy and practices related to literacy. This study is carried out under the auspices of the International Association for the Evaluation of Educational Achievement (IEA), a consortium of research institutions in 60 countries. The first PIRLS assessment took place in 2001".

The PIRLS SA report (2011:xvi) indicates that, "in 2011, South African Grade 4 learners achieved well below the international average, despite writing an easier assessment. They continued to perform at a low level, overall, on easier assessments compared to their counterparts internationally. A few South African learners (6%) were able to read at an advanced level, although 71% were able to reach a rudimentary level of reading and attain the low international benchmark. For Grade 5 learners, there was no difference between the overall achievements of South African learners in 2011, compared to those of 2006. Grade 5 learners tested in Afrikaans and English were performing below the international average for literacy of Grade 4 learners. Another important result of the report indicated the important role of the school in compensating for minimal home opportunities available to learners from low socio-economic backgrounds. Schools can only compensate if they are properly and adequately resourced and well managed". PIRLS SA (2011: xviii)

reveals a “strong, negative relationship with achievement where schools are not well managed, or well resourced”.

PIRLS SA (2017:54) reveals that no South African official language tested attained the international average. PIRLS 2016 did not demonstrate the progress in literacy performance of South African learners that might have been expected after 10 years since the results of the first study in 2006 (PIRLS SA, 2017:199).

3.5.2 Interventions

In 2010 the Minister of Basic Education, Mrs Angie Motshekga, announced an “improvement plan for schools in South Africa called the Action Plan to 2014, that would “form part of a larger vision called Schooling 2025”. This plan is, in many ways, the country’s most comprehensive long-term sector plan for schools”. It has “a long-term focus, stretching to 2025, as expressed in the ‘Schooling 2015’ notion. The main focus of the Action Plan is “aimed at almost 25 000 schools, known as public ordinary schools”. The focus is based on both the magnitude of this subsector and the especially serious nature of the challenges these schools are facing. The Action Plan explains the 27 national goals that lie at the heart of the plan. Thirteen of these goals are output goals, dealing with better school results and better enrolment of learners in schools. The remaining 14 goals deal with the ‘how’ of improving schooling” (Department of Basic Education, 2012:4).

The Department of Basic Education commissioned “a School Monitoring Survey of ordinary public schools to monitor progress towards the achievement of some of the goals and indicators set out in the Action Plan to 2014: Towards the Realisation of Schooling 2025” (Department of Education, 2011:235) and the “Delivery Agreement between the President of South Africa, the Minister of Basic Education, Members of the Executive Committee on Education, government departments and other stakeholders” (The Presidency, 2010:1-4).

For some indicators, the minimum standards for the indicators were not met:

- “A total of 65% of all schools met the requirement that 100% of all state-paid post must be filled”.
- “Educators only spend an average of 38.1 hours on professional development activities, out of the expected 80 hours per year.”

- “Nationally, 6.1%, on average, of educators were absent each day”.
- “The minimum required standard to measure the volume of work covered was set at four exercises a week for both Grades 6 and 9, in both language and mathematics. Only 7% of Grade 6 learners met this requirement for language; and 31% met it for mathematics”.
- “In Grade 6, 100% of all learners should have access to DBE Workbooks Volume 1 and Volume 2, for both language and mathematics. In Grade 6 and 9, 100% of all learners should also have access to a textbook for both language and mathematics. A total of 78% of Grade 6 learners had access to a language textbook, 38% to a language workbook, 83% to a mathematics textbook, while 85% had access to the mathematics workbook”.
- “Only 30% of schools met the requirement to have a minimum set of specified management documents in place, at a required standard”.
- “A total of 48% of schools had a School Governing Body that met the minimum criteria for effectiveness in terms of correctly constituted membership, minutes of every meeting, various policies, audited financial statements and minimum prescribed number of meetings”.
- “Nationally, only 47% of learners were in schools that were funded according to the minimum national levels”
- “A total of 34% of principals rated 50% or more of the district support services as satisfactory” (Department of Basic Education, 2013:7-12)”

3.5.3 The Annual National Assessment (ANA)

The Department of Basic Education (2013:2) stresses that the “Annual National Assessment (ANA) is a critical measurement for performance in learner achievement, as outlined in the Education Sector Plan, Action Plan to 2014: Towards the Realisation of Schooling 2025. The target of the plan is to ensure that at least 60% of learners achieve acceptable levels in literacy and numeracy. In keeping with the international norm of large-scale assessment, the ANA has a particular focus on assessing mathematics and language competencies, which are regarded as the foundational skills for further learning and teaching. For the purpose of this study, emphasis is placed on ANA as it is the only national measure of performance for learners from Grades 1 to 9”.

In 2014, the “overall results for ANA for Grades 1 to 6, pointed towards an upward trajectory in test scores, while in Grade 9 mathematics, the performance of learners has remained at a low level, as was the case in 2012 and 2013. Over the past years, the analysis of provincial trends in the ANA indicates that the educational sector is making strides in the foundation and intermediate phases in both language and mathematics. In the summary table below, the average national percentages that learners achieved in mathematics and language are indicated”.

Table 3.2: Summary for ANA result scores: 2012 - 2014

	2012			2013			2014		
Grade	**Maths**	**HL**	**FAL**	**Maths**	**HL**	**FAL**	**Maths**	**HL**	**FAL**
1	68	58		60	61		68	63	
2	57	55		59	57		62	61	
3	41	52		53	51		56	56	
4	37	43	34	37	49	39	37	57	41
5	30	40	30	33	46	37	37	57	47
6	27	53	36	39	59	46	43	63	45
9	13	43	35	14	43	33	11	48	34

Source: Department of Basic Education (2014:9)

The ANA report of 2014 also contains “valuable information on provincial performance. The results suggest that in the foundation phase, there are noteworthy increases across all provinces in the overall scores for languages and mathematics” (Department of Basic Education, 2014). In KwaZulu-Natal, for example “the average percentage mark is above 55% across Grades 1 to 3 in both subjects. In the intermediate phase, learners in Grade 6 perform well in home languages, and across all provinces the achievement level is above 50%. At national level, Grade 6 shows a 4% increase in performance of learners for home languages and mathematics. However, learner performance for the first additional language across all grades remains on the lower side”.

In the senior phase, “the sector is challenged for not delivering the expected progress against targets set by the Department of Education in 2010. In particular, performance in Grade 9 mathematics does not show any improvement; although there was a 1% improvement in 2013, the performance in 2014 was even below the performance in 2012. Across all provinces, the performance of learners has dropped a few percentage points. In home language, at Grade 9 level, there has been an improvement in learner performance, but the national performance is below 50%.

The trends in learner performance at district level are similar to what is observed at provincial level. In Grade 9 mathematics there has been a drop in performance in all districts. For Grade 9 home language, the district level scores range from 31% to 59%. In Grade 9, first additional language scores range from 28% to 42%. The last records for ANA results were for the 2014 assessment. In 2017 the national Minister of the Department of Basic Education, Minister Motshekga, announced that Annual National Assessments were on their way out and will be replaced by the National Integrated Assessment Framework (NIAF). The first cycle of the summative assessment will be implemented in 2019".

According to The Presidency (2010:1-4), "the overarching goal, as per the directive of the President of the Republic of South Africa in his state of the Nation Address of 2010, was that by 2014 at least 60% of all learners in Grades 3, 6 and 9 should have achieved acceptable levels of competency in mathematics and language. In the ANA report a 50% or higher test score is regarded as an acceptable level of performance. This is in line with CAPS (Curriculum and Assessment Policy Statement), where a mark of at least 50% is required for adequate and higher achievement" (The Presidency, 2010:1-4).

Table 3.3: Percentage of learners obtaining at least 50% in maths, home language and first additional language

2012				2013			2014		
Grade	**Maths**	**HL**	**FAL**	**Maths**	**HL**	**FAL**	**Maths**	**HL**	**FAL**
3	36	57		59	57		65	66	
6	11	39	24	27	68	41	35	77	42
9	2	39	21	2	37	17	3	48	18

Source: Department of Basic Education (2014:10)

The table above indicates that "a substantial increase in the percentage of learners reaching acceptable achievement levels can be observed for mathematics in Grades 3 and 6. For Grade 3, the target of 60% that was set in the Action Plan to 2014 has been achieved in both mathematics and language. In Grade 6 there has been a large increase in the percentage of learners achieving acceptable achievement levels, for both home language and mathematics, although the target has not been yet achieved in mathematics. In Grade 9, achievement is still below the target, even though there was an increase in the percentage of learners reaching acceptable levels in home language".

Spaull (2013b: 34) stresses that “it is important to note that the National School Effectiveness Study (2011c) found that Grade 3 learners scored an average of 29% for numeracy on a Grade 3 level test”.

Prior to the implementation of the ANA in 2011, “there was no standardised, national examination at any other level other than Grade 12”. According to Ardington and Leibbrandt (2014:4), “a comparison of continuous assessment school-based marks, in conjunction with externally evaluated matric examination marks, provides direct evidence of the poor the quality of internal assessment in many schools”.

3.5.3.1 Comments on the Annual National Assessment

The “Annual National Assessments are intended to give teachers and parents an accurate indication of how pupils fare at school, as well as to allow for better intervention in earlier grades by recognising that basic literacy and numeracy are critical to performance in the final years of basic education” (Malan, 2016:124). At their national congress in 2014, “the South African Democratic Teachers Union (SADTU) and the National Professionals Teachers Organisation of South Africa (NAPTOSA), resolved to keep pressure on the Department of Basic Education not to extend the scope of the testing” (SADTU, 2014; Gernestky, 2014). The teachers’ organisations “both recognised that pushing for standardised testing was good for international standards, but their implementation are neither good nor bad for SA teachers. Teachers complained that they spend too much time teaching how to do the tests, rather than teaching the curriculum”.

Spaull (2013a:8) argued that the “ANA is one of the most important and needed policy innovations, but the way the tests are implemented means they cannot not be used as a reliable indicator of progress”.

In 2015 a coalition of teacher unions boycotted the administration of the Annual National Assessment and in 2017 the Minister of Basic Education, Minister Motshekga, announced that “the Annual National Assessments were on their way out and will be replaced by the National Integrated Assessment Framework (NIAF). A pilot study on the test items to be used in the NIAF was conducted in 2017 and the system readiness for using it as part of progression and promotion of learners will be

piloted in 2018. The first cycle of the summative assessment will be implemted in 2019" (Department of Basic Eduction, 2016:24).

3.5.4 National Senior Certificate Examination (NSC)

The Department of Basic Education (2015:16) stresses that "attainment of quality education for the population at large, particularly the youth, has been a national priority since the advent of democracy in South Africa. The National Senior Certificate and the Annual National Assessments are vital in terms of measuring the progress in achieving the set targets as outlined in the Action Plan to 2019: Towards Realisation of Schooling 2030, and the National Development Plan". The following targets are measured through performance in the National Senior Certificate:

- "the increase in the number of Grade 12 learners who become eligible for a Bachelor programme at a university;
- the increase in the number of Grade 12 learners who pass mathematics; and
- the increase in the number of learners who pass physical sciences" (Department of Basic Education, 2015:16).

In 2017, 629 155 full-time candidates registered for the NSC, of which 534 484 wrote the examination, with the highest proportion coming from Gauteng and KwaZulu-Natal. Of these, 2777 were classified as special needs learners. As was observed in 2016, more girls than boys entered the NSC examination. The achievement rate of this cohort showed a marked improvement from 2016, with an increase of 2.6% from 72.5% in 2016 to 75.1% in 2017 (Department of Basic Education, 2017:12). The pass rate was 78.2% in 2013, 75.1% in 2014, 70.7% in 2015, and 72.5% in 2016.

The Free State (86.1%) and Gauteng (85.1%) provinces had the highest Grade 12 pass rates in 2017, followed by the Western Cape (82.8%), and the North West (79.4%). Limpopo (65.6%) and the Eastern Cape (65.0%) were at the bottom (Department of Education, 2017:65). However, "only considering the pass rates can give a misleading picture of the state of education in these provinces, and indeed, the country".

Table 3.4: Comparison of NSC passes by provinces: 2013 - 2017

	2013			2014			2015			2016			2017		
Province	Total wrote	Total passed	% passed	Total wrote	Total passed	% passed	Total wrote	Total passed	% passed	Total wrote	Total passed	% passed	Total wrote	Total passed	% passed
EC	72 138	46 840	**64.9**	66 935	43 777	**65.4**	87 090	49 475	**56.8**	82 902	49 168	**59.3**	67 648	43 981	**65.0**
FS	27 105	23 689	**87.4**	26 440	21 899	**82.8**	31 161	25 416	**81.6**	26 786	23 629	**88.2**	25 130	21 631	**86.1**
GP	97 897	85122	**87.0**	99 478	84 247	**84.7**	108 442	91 327	**84.2**	103 829	88 381	**85.1**	97 284	82 826	**85.1**
KZN	145 278	112 403	**77.4**	139 367	97 144	**69.7**	162 658	98 761	**60.7**	147 648	98 032	**66.4**	124 317	90 589	**72.9**
LM	82 483	59 184	**71.8**	72 990	53 179	**72.9**	101 575	66 946	**65.9**	101 807	63 595	**62.5**	83 228	54 625	**65.6**
MP	50 053	38836	**77.6**	45 081	35 615	**79.0**	54 980	43 229	**78.6**	54 251	41 801	**77.1**	48 483	36 273	**74.8**
NW	29 140	25 414	**87.2**	26 066	22 061	**84.6**	33 280	27 118	**81.5**	32 045	26 448	**82.5**	30 792	24 462	**79.4**
NC	10 403	7 749	**74.5**	8 794	6 715	**76.4**	11 623	8 064	**69.4**	10 041	7 902	**78.7**	8 735	6 608	**75.6**
WC	47 615	40 542	**85.1**	47 709	39 237	**82.2**	53 721	45 489	**84.7**	50 869	43 716	**85.9**	48 867	40 440	**82.8**
NTL	**562112**	**43 779**	**78.2**	**532 860**	**403874**	**75.8**	**644 536**	**455825**	**70.7**	**610 178**	**442672**	**72.5**	**534 484**	**401435**	**75.1**

Source: Department of Basic Education (2017:51)

Key: EC (Eastern Cape); FS (Free State); GP (Gauteng); KZN (KwaZulu-Natal); LM (Limpopo); MP (Mpumalanga); NW (North West); NC (Northern Cape); WC (Western Cape); NTL (National)

The Department of Basic Education (2017:38) highlights that the performance of learners against the three indicators articulated in the National Development Plan that are directly linked to the promotion of excellence and scarce skills in Grade 12 class of 2017 showed an improvement as follows:

- "the number of Grade 12 leaners who become eligible for Bachelor's programmes at a university (28.7%): an improvement of 2.1% from 26.8% in 2016";
- "the number of Grade 12 learners who passed mathematics (51.9%): an improvement of 0.8% from 51.1% in 2016";
- "the number of Grade 12 learners who passed physical science: (65.1%), an improvement of 3.1% from 62% in 2016".

The Department of Basic Education (2017:38) indicates that in 2017 there was a decrease of 45 497 learners, nationally, compared to 2016's enrolment for the NSC examination. KwaZulu-Natal had the largest enrolment, with 153 125 full-time

candidates, followed by Gauteng with 108 522 candidates. Limpopo registered 100 041 candidates and Northern Cape had the lowest number of entries, at 10 519, which showed a decrease of 1302 from the number of candidates registrated in 2016.

The Umalusi Council “sets and monitors standards for general and further education and training in South Africa in accordance with the National Qualifications Framework Act No.67 of 2008 and the General and Further Education and Training Quality Assurance Act No. 58 of 2001. The council is tasked with the development and management of a sub-framework of qualifications for general and further education and training, as well as for attendant quality assurance. In schools, Umalusi is responsible for the certification of the Senior Certificate (SC), continuing as a revised qualification for adults, and the National Senior Certificate (NSC), which replaced the SC in 2008” (Umalusi, 2015).

Umalusi (2017) explains that “a total of 58 subjects were presented for standardisation. After moderation, row marks were accepted for 38 of the 58 subjects. The figure represents 65.5% of the total subjects”. Moderation with upwards adjustment was done for 16 subjects and only 4 subjects were adjusted downwards.

According to Umalusi (2017), “the class of 2017 was the 4th Grade 12 cohort to write final examination under the Curriculum Assessment Policy Statement (CAPS). The learner performance of the class of 2017 moved closer to the average historical performance profile”. The council also indicated that “there was a steady upward trend in the marks of subjects such as mathematics, mathematical literacy, physical sciences, and life science. However, some subjects that do not fall under the category of gateway subjects, such as virtual arts, dramatic arts, and agricultural science need to be given more attention and be afforded the status they deserve in terms of providing them with the necessary resources” (Umalusi, 2017).

3.5.4.1 Comparison of Bachelor’s Passes by Province: 2015 - 2017

The percentage of learners achieving Bachelor passes improved from “26.6% in 2016 to 28.7% in 2017. 153 610 candidates qualified for Bachelor Studies at higher education institutions with the highest number of distinctions recorded in the Western Cape. As in 2016, the Western Cape had the highest percentage of Bachelor passes (39.1%) and Free State had the highest percentage of Diploma passes. It should be noted that Gauteng had the highest combined percentage of Bachelor and Diploma passes (71.4%). It was also significant to note that KwaZulu-Natal had the highest percentage increase in bachelor passes of 4.2%, as well as the highest number of bachelor passes (35 687)”.

Table 3.5: Comparison of Bachelor’s passes by province: 2015 - 2017

Province	2015			2016			2017		
	Number Wrote	Number of Bachelors	% Bachelors	Number Wrote	Number of Bachelors	% Bachelors	Number Wrote	Number of Bachelors	% Bachelors
EC	87090	15291	17.6	82902	15645	18.9	67648	15380	22.7
FS	31161	9277	29.8	26786	9596	35.8	25130	8822	35.1
GP	108442	3876	35.7	103829	37582	36.2	97284	35012	36.0
KZN	162658	34751	21.4	147648	36139	24.5	124317	35687	28.7
LM	101575	20992	20.7	101807	18762	18.4	83228	17790	21.4
MP	54980	13497	24.5	54251	12420	22.9	48483	11335	23.4
NW	33286	8865	26.6	32045	8820	27.5	30792	8278	26.9
NC	11623	2451	21.1	10041	2606	26.0	8735	2205	25.2
WC	53721	22379	41.7	50869	20804	40.9	48867	19101	39.1
National	644536	166263	25.8	610178	162374	26.6	534484	153610	28.7

Source: Department of Basic Education (2017:54)

3.5.4.2 Performance at 30% and above in Mathematics and Science: 2014- 2017

Table 3.6: Performance at 30% and above in maths and science: 2014-2017

Subject	2014	2015	2016	2017
	% pass rate	% pass rate	% pass rate	% pass rate
Mathematics	53.5	49.1	51.1	51.9
Physical Sciences	61.5	58.6	62.0	65.1

Source: Department of Basic Education (2017:61)

In line with the general performance, the learner performance in these two subjects has been declining. The system has generally not been doing well in mathematics for the last four years. The decline has been relatively sharp in mathematics from 2013.

3.5.5 Comments on 2017 NSC Results

Although the 2017 Grade 12 results were appreciated by many people, organisations and even political parties, particularly the opposition, they were not without condemnation. Cranfield (2018) notes that “the 2017 pass rates did not mean that the education system was in a good state and that achievement levels were stabilising”. According to Cranfield (2018), “it was premature to celebrate the so-called improvements in the system as not all the data for an in-depth analysis was available”.

Sanco (2018) hailed the improvement of results, but was concerned about the drop-out rate. They argue that “a school could have a 100% pass rate in mathematics, but the average for the subject could be 37%, and the range of scores for the class between 30% and 40%; since the pass mark for mathematics is 30%. On the issue of the drop-out rate”, McFarlane (2018) said that “the drop-out rate was a cause for concern, and if this had been taken into account, the pass rate would be closer to 40% than 75%”.

The Democratic Alliance congratulated all learners who passed their matric. However, the party was concerned by “truly shocking” figures that “put the real pass rate at 37%. It determined this calculation from the number of learners who passed Grade 10 in 2015, compared to those who passed their final examination in 2017. The party further argued that only 49% of Grade 10s actually wrote the final exams, and a startling 37.8% of 2015’s Grade 10 learners actually passed”. This means that over 62.7% did not pass, dropped out or became stuck in the system. This suggests that the South African schooling system is not a system on the rise.

3.6 DROP-OUT RATE

Equal Education (2016:2) notes that “the drop-out rate continues to be excessively high in South Africa. In 2016, nearly 40%, that is almost half of all learners, do not reach Grade 12. For a perspective on the pass rate, it is useful to take the actual drop-out rate into consideration (Table 3.7). Starting in Grade 2, six cohorts (2010-2015) can be identified and tracked over a 10-year period. Approximately half of each cohort drops out before reaching Grade 12. Looking at the number of learners who wrote the NSC, a cohort Grade 12 pass rate can be created. The 75.7% pass rate of

2014 is now closer to a 36.41% pass rate, and the 70.7% of 2015 is actually closer to 40.7%".

Table 3.7: **Drop-out rates**

Year	Grade 2 enrolment (2000-2004)	Grade 10 enrolment (2000-2004)	Grade 12 enrolment (2000-2004)	Percentage Drop Grade 10 – 12
2010	1 090 765	1 076 527	579 384	50.07%
2011	944 977	1 017 341	534 498	51.24%
2012	1 012 892	1 039 762	551 837	50.84%
2013	1 111 858	1 094 189	576 490	48.63%
2014	1 109 201	1 103 495	550 127	51.71%
2015	1 118 690	1 146 285	668 122	41.71%

Source: Equal Education (2016:2)

According to Equal Education (2016), the reasons for substantial numbers of learners dropping out of school are likely to include the following:

- "The absence of a solid early schooling foundation means learners find themselves too far behind academically, making learning a demotivating and stressful experience.
- Poverty forces learners to leave school to attempt to find work. This is exacerbated by the relative lack of reward in the labour market for a 'mere' matric pass, so those with a standard pass are only slightly more likely to find job than those without.
- Attending school is often costly and burdensome, and many learners must spend significant sums of money on transport, or walk long distances daily". (Equal Education, 2016:2).

According to Hartnack (2017:1) and Karrin and Lee (2012:3), South Africa experiences high drop-out rates in schools. These are also affirmed by van Zyl (2013:581), and Branson, Hofmeyr and Lam (2013:10). Dropping-out affects all grade levels from Grade R to Grade 12, in the South African schooling system (Mnguni, 2014:3). Most school drop-out in South Africa "occurs in Grades 10 and 11, resulting in 50% of learners in one cohort dropping out before reaching Grade 12" (Spaull, 2015:34). The situation is "even more worrying when NSC graduaton rates

are taken into account. About 60% of children in South Africa who start Grade 1 dropout before completing grade 12" (Hartnack, 2017:2).

In the NSC, according to the Democratic Allience, the opposition party in South Africa, there were 20 180 learners in Grade 10 during 2015 in the Northern Cape, with only 8 735 (43.3%) writing their final National Senior Certificate (NSC) in 2017. Of the 20 180 Grade 10 learners, only 6 607 passed their NSC, putting the province's real pass rate at 32.7%.

The Department of Basic Education's figures show that "1 100 877 learners enrolled for Grade 10 in 2014, but only 610 178 enrolled for Grade 12 in 2016 – so 44.6% of learners either dropped out of the system altogether or remained stuck in Grades 10 and 11" (Business Tech, 2017). This pattern was "visible across every province in the country, where the drop-out rate reached as high as 54.4% in the Northern Cape in 2016. The Free State, which became the top province in the country in the 2016 matric results, saw more than half of its learners drop-out between 2014 and 2015" (Busines Tech, 2017). The drop-out rate of learners changes from province to province. In 2016 the drop out rates according to provinces were as follows: "Northern Cape (54.4%); North West (52.7%); Free State (51.6%); Eastern Cape (46.2%); Limpopo (46.2%); KwaZulu-Natal (44.2%); Mpumalanga (42.6%); Gauteng (40.5%); and Western Cape (32.9%)" (Business Tech, 2017).

The News 24 (2018) report states that, despite the 2017 matric pass rate being 75.1%, the reality of the situation is bad. The report claims that of the 1 155 629 learners who started Grade 1 in 2006, only 34.7% obtained a matric pass in 2017 (Africa Check, 2018).

Mnguni (2014:1) states that "less than 50% of learners in the world complete their education". According to McFarland, Cui and Stark (2018:iii), the drop-out rates for 16 to 24 year olds were higher for American Indians/Alaska Natives (11.5%) than Hispanics (10.7%), Pacific Islanders (10.6%), Blacks (7.9%), Whites (4.4%, and Asians (2.5%) in 2014.

The drop-out rate of indigenous Australians has remained the same for 2014, at 16.5%, compared to 16.8% in 2017. The drop-out rate for indigenous Australians

(16.8%) was less than the drop-out rate for non-indigenous Australian (17.0%) in 2017 (Lee, 2018:3).

The World Bank data (2018) states that South Sudan has the lowest primary school completion rate globally, at 37%. Chad closely follows South Sudan as having one of the lowest primary completion rates, standing at 38.78%. Other countries with low primary completion rates are the Central African Republic (45.35%); Ethopia (47.25%); Mozambique (49.25%); and Niger (49.59%) (Worldatlas, 2018). The following countries are also reported to have low primary completion rates: Uganda (54.24%); Angola (54.32%); Equatorial Guinea (54.79%); Sudan (56.97%); Mali (58.83%); Liberia (58.83%); Rwanda (59.3%); Cote d'Ivoire (60.50%); Senegal, (60.91%); and Burkina Faso (62.75%) (Worldatlas, 2018).

3.7 PROMOTION AND REPETITION: 2010-2012

As can be seen in Table 2.6 below, "the repetition rates are high in Grades 1 and 2. These rates are low through the rest of primary school and then start to rise again in secondary school, peaking in Grade 10. Survival rates are high up to Grade 9: of every 1000 learners entering Grade 1, 927 make it to Grade 9. By contrast, 692 of every thousand not destined for FET colleges make it to Grade 12".

Retention and repetition rates from Grade 1 to Grade 9 suggest that the system functions well, though repetition rates in Grade 1 and 2 are high. The situation in Grades 10 to 11 is much less encouraging. Pass rates are much lower. Many learners arrive in Grade 10 unprepared to tackle the three year National Senior Certificate curriculum. High repetition rates are observed. Learners and parents often make unsatisfactory choices about education and training, post-Grade 9.

Table 3.8: Promotion and repetition rate: 2010-2012

Grade	Pass (%)	Repeat (%)	Survivors
1	80.3	19.7	999
2	87.8	11.8	996
3	91.0	8.8	994
4	90.6	9.4	994
5	94.2	5.5	990
6	94.5	3.1	967
7	95.2	1.8	938
8	91.4	7.4	927
9	82.5	15.1	905
10	63.4	23.4	791
11	64.3	21.8	692

Source: Simkins (2013:7)

3.8 CHALLENGES IN THE EDUCATION SYSTEM IN SOUTH AFRICA

Prew (2009:43) is of the opinion that "South Africa has a high-cost, low-performance education system that does not compare favourably with education systems in other African countries, or similar developing countries. There are multitudes of problems, including a shortage of teachers, under-qualified teachers, and poor teacher performance. In the classroom, this results in poor learner performance. On the government level, problems emanate from lack of teacher support and monitoring. All this has led to disenchantment among teachers and poor learner performance".

Although the South African government has one of the highest education budgets (20% of the GDP), the South African education system is in a very bad state with regard to learner performance. Gaza (2012:5) emphasises that "it is critical to understand that history alone is not the only reason why South Africa's education system is in a crisis". Gaza (2012:6) highlights the critical challenges facing South African education as:

- "Children leave school illiterate and innumerate.
- South African learners do not have a culture of reading and lack the motivational drive to learn from their communities. A study published by the University of Stellenbosch found that while 71% of learners in Grade 6 were functionally literate, only 58.6% could be considered functionally numerate (Spaull and Taylor, 2012:12).
- There is inadequate organisational support to teachers and bureaucracy from the Education Department.
- The Education Department has failed to deliver core responsibilities".

Although there are so many factors that contribute to poor learner performance in South Africa, van den Burg (2011:1) finds that, “among the host of challenges, education management and accountability are issues that are prominent hindrances to learner performance. Without education managers who manage resources efficiently, ensure that teachers arrive on time for duty, cover the curriculum and assess at an appropriate level, any policy intervention will achieve limited success. Teachers need to be accountable to school managers, school managers to departmental officials and departmental officials to senior management. There should be enforcement of standards through consequence management with appropriate sanctions in place for offenders”. As van den Berg (2011:1) puts it, accountability devoid of consequences is not accountability.

While there have been some signs of improvement in learner performance and policy innovation in South African education, the picture is not appealing. However, this study chooses to measure the effectiveness of the education system in South Africa through the performance of learners, as “the majority of South African learners are significantly below where they should be in terms of the curriculum; and more generally, have not reached normal numeracy and literacy milestones. Presently, the South African education system is grossly inefficient, under-performing and egregiously unfair” (van den Burg, 2011:1).

Spaull (2013:8) makes it clear that “the National Development Plan (NDP) is quickly becoming a roadmap for South African progress and is acknowledged as authoritative by government and the public sector at large. The NDP indicates a number of institutional and systemic issues that that should be addressed in the South African education system”. The most notable issues are:

- “Improve the management of the education system”.
- “Increase the competence and capacity of education managers”.
- “Improve results-orientated accountability”.
- “Improve educator performance and accountability”.

Bloch (2009:82) observed that education authorities, at different levels, “are often unable to assume the burden of administrative and academic support required of them”. All managers should be capable of running their education institutions well and have the operational skills required.

3.9 SUMMARY

Education plays a major role in addressing social injustice by creating an environment for equal opportunities, facilitating development and strengthening democracy. In South Africa, this role of education is still to be realised. The South African education system is characterised by “low quality and high inequality that combine to skew the distribution of resources, and delay development and participation in democratic governance”.

The poor quality of the public education system in South Africa is in itself a major injustice to South African society. At an individual level, it limits the acquiring of skills, capacity, and prevents the youth from realising their full potential. Poor education condemns the youth and society at large to lives of fewer opportunities and low income; and it causes the loss of a huge amount of human potential. In this regard, the poor education system in South Africa is making poverty eradication very diffuicult, which leads to social ills such as crime and violence.

Although the South African education system is poor, there are public education institutions that are producing good, quality results with regard to learner performance. Unlike “most other low- and middle-income countries with high inequality rates, most South African low- and middle-income children continue to attend public education institutions. Inequality in assessing high quality educational opportunities poses a challenge and has serious implications for the individual. Individuals at low quality education institutions are likely to repeat grades and drop-out, resulting in them becoming far less likely to access tertiary education. Over the longer term, those who receive poor education are likely to have lower income, fewer opportunities, poor health, and shorter life expectancies” (De Kadt, 2009:26).

Empirical studies, according to Madsen (2007:188), support the assertion that “there is a positive correlation between entrepreneurship and organisational performance, which in practice suggests that organisations that adopt entrepreneurship will also perform better. Within the South African context, limited research has been conducted on the benefits of entrepreneurship – especially within the public education sector. The dysfunctionality of education institutions, particularly schools, can, in part, be ascribed to education management teams that do not possess the dimensions of entrepreneurship. Concerns about education quality are also

inextricably linked to broader accountability issues in terms of education management" (Reddy et al., 2010:1). It is against this background that management in the public education sector is required to adopt corporate entrepreneurship leadership. In practice that means leadership with an innovative mentality (Malan, 2016:148).

In conclusion, the chapter reviewed literature on corporate entrepreneurship in the public sector in general, and the Department of Education in particular. This study hypothesises that entrepreneurship is the answer to the problems facing the public sector organisations.

In the next chapter, the researcher will discuss the research methodology followed in the study, focusing on the research design and strategy, data collection, reseach instrument and data analysis.

CHAPTER 4

RESEARCH DESIGN AND METHODOLOGY OF THE STUDY

4.1 INTRODUCTION

The extent or ability of corporate entrepreneurial activities to improve any organisation's performance depends on the organisation understanding and accepting that change with innovation is necessary to remain competitive and sustainable. The management question in this study is: to what extent does a corporate entrepreneurship climate impact on the performance of the Department of Education as an organisation?

This study is based on this management question and the main purpose of the study has been to determine whether the working environment is entrepreneurial; and how this affects performance. This would be achieved through the following objectives of the study:

- to assess the levels of corporate entrepreneurship practices in the Department of Education in KwaZulu-Natal;
- to explore the relationship between the corporate entrepreneurship environmental elements and entrepreneurial orientation elements within the Department of Education in KZN;
- to establish the relationship between corporate entrepreneurship elements and organisational performance;
- to establish whether differences in perception existed among the departments' management regarding the entrepreneurial climate within the Department of Education.

This chapter focuses on the research design and methodology used to address the research problem.

The study made use of a formal research design to test the hypotheses formulated. The research methodology is presented in terms of the research design strategy, sampling design, data collection and data analysis.

4.2 RESEARCH DESIGN

Research has, according to Kumar (2014:5), "multiple meanings, and its definition varies from discipline to discipline. Across disciplines, there seem to be agreement

with respect to the function it performs, which is to find answers to research questions. Research is a procedure which attempts to obtain answers to questions, and to solve identified problems in a systematic manner with the support of verifiable facts". Kothari (2004:1) describe research as "the application of scientific methods in search of the truth".

Bryman, Hanekom and Brynad (2014:3) indicate that "research is a multidimensional phenomenon and that the interpretations of scientific enquiry are complementary". Leedy and Ormrod (2005:8) define research as "a systematic process of collecting, analysing and interpreting information in order to increase understanding of a phenomenon of interest".

Kumar (2014:10) agrees with Leedy and Ormrod (2005:8); "but adds that, for a process to qualify as research, it must have certain characteristics and fulfil some requirements. It must, as far as possible, be controlled, rigorously systematic, valid, verifiable and empirical".

Mouton (1996:20) identifies four interpretations of scientific investigation:

- "The goal of science is the search for truth and how it is defined will determine the route to be followed in order to reach the goal.
- Scientific enquiry is a social activity, aimed at solving certain theoretical and empirical problems.
- Scientific investigation is the production of new knowledge.
- Scientific investigation can be regarded as a 'business venture' that has to be properly managed in order to produce the desired goals".

4.3 RESEARCH PROBLEM

A problem occurs when "there is a difference between the current conditions and a more preferable set of conditions" (Zikmund et al., 2013:11). The problem statement identifies the gap in knowledge to be filled (Cooper and Schindler, 2008:83).

Leedy and Ormrod (2016:27) explain that "the first step in the research process is to identify a problem with clarity and precision". Zikmund et al., (2013:108) refer to this first step as problem definition, which is t"he development of a decision statement and the steps involved in translating it into more precise research terminology".

From the literature review, it is evident that to nurture organisations' current and future competitive advantages, organisations increasingly rely on corporate entrepreneurship. Corporate entrepreneurship provides the "framework for the facilitation of ongoing change and innovation in established organisations" (Morris and Kuratko, 2002:149). It is generally agreed "that corporate entrepreneurship is a means of promoting and sustaining corporate competitiveness and organisational growth, particularly in private sector international organisations; not necessarily in public sector organisations in South Africa". The management quandary then exists – how to foster and implement corporate entrepreneurship in public organisations in South Africa to improve organisational performance.

The "purpose of this study is to explore the relationship between the corporate entrepreneurship environment and organisational performance in the Department of Education in KwaZulu-Natal" (KZN DoE), South Africa.

Limited "empirical research is available on corporate entrepreneurship climate and organisational performance within public sector education in South Africa. No formal study has been conducted in South Africa, using Hornsby, Montagno and Hornsby's (1990) CEAI to establish the influence of corporate entrepreneurship on performance in the Department of Education in South Africa".

4.4 HYPOTHESES

At the outset of this study, hypotheses, rather than propositions, were formulated. Cooper and Schindler (2014: 62) refer to a proposition as "a statement about concepts that may be judged as true or false if it refers to observable phenomena. When a proposition is formulated for empirical testing it is called a hypothesis" (Groenewald, 2010:151). According to Zikmund (2003:498), a proposition is "a statement concerned with the relationships between concepts; assertion of a universal connection between events that have certain properties". Babbie (2012:84) gives a more practical explanation: "A hypothesis is a specified, testable expectation about empirical reality that follows from a more general proposition. It is a statement of something that ought to be observed in the real world if the theory is correct." Zikmund (2003:498) agrees that "a hypothesis is an unproven proposition or supposition that tentatively explains factors or phenomena – a proposition that is empirically testable".

The hypotheses in this study can be referred to as relational hypotheses. Relational hypotheses specify a relationship between two or more variables (Coldwell and Herbst, 2004:86; Cooper and Schindler, 2008:51).

“When stating hypotheses, statistical hypotheses are generally stated in the null form (Zikmund, 2003:499). The null and alternative hypotheses are further clarified. A null hypothesis (H_0) refers to” a “statement about a status quo, asserting that any change from what has been thought to be true will entirely be due to random error. An alternative hypothesis (H_a) is a statement indicating the opposite of the null hypothesis”. Cooper and Schindler (2008:523) state that “the null hypothesis is used for testing”. In this regard, only the null hypothesis related to this study will be tested. The hypotheses formulated for this study were stated in Chapter One.

4.4.1 Hypothesis Testing

The purpose of hypothesis testing is to determine which of the null or alternative hypotheses are correct. Zikmund (2003:500) refers to the significance level that is “a critical probability in choosing between the null and alternative hypothesis”. The “level of significance determines the probability level that is then considered too low to warrant supporting the null hypothesis. Because no statement about a sample can be made with complete certainty, there always exists a chance that an error will be made. Researchers refer to these types of errors as Type I or Type II errors. A summary of these types of errors”, according to Zikmund (2003:504), is presented in Table 4.1.

TABLE 4.1 Type I and Type II errors in hypotheses testing

State of null hypotheses in the population	Decision	
H_o is true	Correct – no error	Type I error

H_o is false	Type II error	Correct – no error

Source: Zikmund (2003:504)

Table 4.1 indicates that "the null hypothesis can be either true or false and the statistical decision will be either to accept or reject the hypothesis. When a Type I error (α) is committed, a true null hypothesis is rejected. This means it is stated that a statistically significant difference exists, when in reality one does not exist. A Type II (β) error is made if the alternative hypothesis is true but the researcher indicates that the H_o should be rejected" (Zikmund, 2003:504). In business problems, "Type I errors are generally more serious than Type II errors, and there is a greater concern with determining the significance level alpha (α) than with determining (β)" (Zikmund, 2003:504).

4.5 RESEARCH METHODOLOGY

The research methodology in this section focuses on the research design, the methods and procedures for the data collection, measurement and the analysis of data.

4.5.1 Research Design Strategy

According to Babbie and Mouton (2011:74), "research design is a plan or a blueprint of how one intends conducting the research. Research design occurs at the beginning of the research project and it involves all the steps of the subsequent project" (Babbie and Mouton, 2011:97). Robscon (2011:13) states that "research design is a very important part of research and that human action can only be understood in the context of its place within different layers of social reality". Cooper and Schindler (2008:146) indicate that "the research design constitutes the blueprint for collection, measurement and analysis of data".

"This research was designed as a formal study. The goal of a formal research design, according to Cooper and Schindler (2008:140), is to test the hypotheses posed by the research questions. The literature review surveyed the background on corporate entrepreneurship in terms of":

- "the concept of corporate entrepreneurship";

- “the relationship between corporate entrepreneurship and organisational performance”;
- “the importance and value of corporate entrepreneurship”;
- “how to foster, develop and implement corporate entrepreneurship”; and
- “conceptual models for corporate entrepreneurship and methods for measuring entrepreneurial activity”.

The literature review illuminated the research problem as well as the framework needed to guide the empirical part of the study.

4.5.1.1 Time Dimension

The time design of the study is cross-sectional. Cooper and Schindler (2014:149) state that “cross-sectional studies are carried out once and represent a snapshot of one point in time”. Bryman and Bell (2007:55) agree with this explanation and also add that “in a cross-sectional design, relationships are examined between variables. There is no time ordering to variables, because the data on them are collected more or less simultaneously and the researcher does not manipulate any of the variables”.

4.5.1.2 Topical Scope

“Topical scope refers to the depth and breadth of a study” (Cooper and Schindler, 2014:147) which “can be based on statistical studies or case studies. In this study, the empirical method is embedded in a case study design”. Cooper and Schindler (2014:153) state that “a single, well-designed case study can provide a major challenge to a theory and become a source of new hypotheses and constructs, simultaneously”. Cooper and Schindler (2014:128) indicate that case studies add credence to a “full contextual analysis of few events or conditions and their interconnections”. The insight that comes from a case study, with its emphasis on detail, is invaluable to problem solving, evaluation and strategy formulation.

4.5.1.3 The Research Environment

“Research can occur in a real-world environmental (field conditions); or under staged or manipulated conditions” (Cooper and Schindler, 2014:150).

This research was conducted in the real world in 12 education districts of the KwaZulu-Natal Department of Education, South Africa.

4.6 TARGET POPULATION

Population refers to the entire group of people, events or things of interest that the researcher wishes to investigate (Sekaran, 2006:6). There is one group of interest in this study, namely those individuals employed in post level 2 to 6 in a managerial capacity (hereafter referred to as managers). All these individuals are permanently employed in the 12 education districts in the KwaZulu-Natal Department of Education. The employee population of targeted managers in the Department of Education in KwaZulu-Natal is 10 671 departmental heads, 4 605 deputy principals, 6000 principals, and 1 589 education specialists (chief, deputy and senior education specialists and circuit managers) (KwaZulu-Natal Department of Education, Annual Performance Plan, 2017/18). The total population is 22865 managers targeted for this study.

4.7 SAMPLE AND SAMPLING TECHNIQUE

The non-probability sampling approach was used (Sekaran, 2006:6). The sample selected was purposive. In purposive sampling, participants are selected based on their expect knowledge in the field under investigation (De Vos, Strydom and Fouché, 2011:392). Middle management service members were invited to participate, by agreeing to complete the research questionnaire. (See Annexure 1, letter of invitation). The cohort of participants is typical of the population of middle managers in the public service (Blanche et al., 2007:139).

The sample size was determined by using a sample size calculator. A confidence level of 99% and a margin of error of 5% were used in calculating the sample size. The targeted participants were grouped into four groups of Chief Education Specialist/Deputy Directors, Deputy Chief Education Specialist/Circuit Managers, Principals/Deputy Principals and Senior Education Specialists/Departmental Heads. A random quota convenience sample was drawn from people identified from middle management in the 12 districts in KZNDoE. A random sampling frame was used to

minimise sampling bias. A hard copy of the CEAI questionnaire was sent to a convenient sample of managers.14 participats were selected for each group from each district. Out of the total population of 22 865 that was identified for the study, the sample size calculator came up with the sample size of 647 participants. Of the 647 participants that were purposively identified from each of the 12 districts, 54 questionnaires were distributed by the researcher to the Chief Education Specialist for the Further Education and Training Band (FET) in all districts, so that the identified participants could receive, fill in and return them to the Chief Education Specialist (CES). The reason for choosing the CES-FET was that the researcher is familiar with all FET- CESs in the province as he works with them.

4.8 MEASURES AND DATA COLLECTION INSTRUMENT

In the current study, perceptual measures were selected because they are widely used in research assessing motivation of employees making entrepreneurial decisions and because management and employee perceptions are preferred measures of CE (Urban, 2017:9). In this study, perceptual measures were formulated based on prior studies documented in the literature review. The research instrument consisted of three sub-instruments in three sections and two of them (**Secion B and C**) were measured on a 1 to 5 Likert scale, ranging from 1= strongly disagree to 5 = strongly agree.

The first section (**Section A**) of the instrument collected general biographical information, gender, age, ethnic group and present job title in the Department of Education. This was recorded in nominal data.

The second section **(Section B)** of the instrument measured the organisational antecedents of CE and entrepreneurial orientation (EO) of the organisation under study,using the CEAI. The instrument was originally designed by Kuratko et al., (1990) and refined by Hornsby et al., (2002). The CEAI has been used extensively and is recognised as a valid and reliable scale (Kuratko et al., 2014). The instrument measured six key areas in accordance with the hypotheses: (1) Management support for CE with 8 items; organisational tolerance with 8 items; work discretion with 5 items; rewards/reinforcement with 9 items; discretionary time with 6 items, and organisational boundaries with 9 items. The entrepreneurial orientation factors

(innovativeness with ? items; proactiveness with10 itemsand risk taking with 4 items; and entrepreneurial culture with 8 items).

The third section (**Section C**) collected information on respondents' perceptions of the performance of the organisation in the two identified performance measures (university entrance performance, and output performance) consisting of 6 items. Although the CEAI has been approved as a reliable and valid instrument in the USA it has also been proved reliable and valid in a South African context (Groenewald, 2010; van Wyk and Adonisi, 2011).

The instrument consisted of 81 five point-likert style items ranging from strongly disagree to strongly agree. The desired outcome of the CEAI was to assess a level of corporate entrepreneurship within the organisation, the level of entrepreneurial orientation of the organisation and to measure the performance of the organisation. Six distinct internal organisational factors, within the Department of Education were measured as independent variables. Different scholars have developed measure of CE (Kuratko et al., 1990; Hornsby et al., 2002), Lumpkin and Dess (2001) and Covin and Slevin (1989) developed measures of EO. Both the CE factors and EO factors were measured as independent variables in relation to organisational performance while CE factors were independent variables in measuring entrepreneurial intensity of the organisation.

Previous research suggests that performance is multidimensional in nature and it is beneficial to integrate dimensions of performance in empirical studies (Le Roux and Bengesi, 2014:6). As such, to capture performance of the Department of Education, this study used university entrance and output as dependent variables.

The first six constructs of the questionnaire, i.e. C1: management support for corporate entrepreneurship; C2: organisational tolerance; C3: work discretion; C4: rewards/reinforcement; C5: discretionary time; and C6: organisational boundaries, were sourced from the CEAI. The next four constructs, i.e. C7: innovation; C8: proactiveness; C9: risk taking; and C10: organisational culture, were adapted from a questionnaire developed by Covin and Slevin (1989). The last construct, i.e. C11: performance, was developed from performance research (Wiklund, 1999; Sapienza, Smith and Giannon, 1988). The development of this construct was guided by suggestions from previous studies that objective measurements of performance are

more appropriate than the subjective evaluation of performance (Mohmood and Hanafi, 2013:84). However, collecting objective data is very difficult, largely because respondents are generally not willing to release an organisation's information to other people. Sapienza, Smith and Gannon (1988:240) state that respondents may provide a biased evaluation of their organisation's performance. Therefore, the subjective approach was adopted in this study, where the performance of the Department of Education was measured through the perceptions of the respondents to the survey.

The questionnaire consisted of seventy eight (78) questions (items). The measurements of corporate entrepreneurship climate and entrepreneurial orientation, Sections B, were developed into a 5-point Likert scale ranging from 1 (strongly disagree); 2 (disagree); 3 not sure; 4 (agree); and 5 (strongly agree). The measurements of organisational performance, **Section C**, were developed into a 5-point Likert scale ranging from 1 (decreased significantly); 2 (decreased); 3 (remained the same); 4 (increased); and 5 (increased significantly). See Appendix 5, for the questionnaire.

4.9 DATA COLLECTION PROCEDURE

Sunders et al., (2011:210) define data collection as "the precise, systematic gathering of information relevant to the research sub-problems, using methods such as interviews, participant observations, focus group discussions, narratives and case histories. This study used questionnaires to obtain data for analysis". Yang (2008:97) states that the questions in a study are "directly related to the research questions. In the development of a survey questionnaire, the variables for which information needs to be collected have to be identified, followed by their operational definition". According to Newing (2011:304), questionnaires consist of a series of specific, usually short, questions that are either asked verbally by an interviewer, or answered by respondents on their own (self-administered). Primary data was collected through the administration of questionnaires to departmental heads, senior education specialists, principals, deputy principals, assistant directors, deputy chief education specialists, circuit managers, chief education specialists and deputy directors in the twelve education districts in the KwaZulu-Natal Department of Education. Newing (2011:304) describes primary data as that which is collected afresh and for the first

time, and thus happens to be original in character. Morrison et al., (2007:256) describe primary data as those items that are original to the problem under study.

The questionnaires were distributed by the researcher to twelve chief education specialists in the twelve education districts in KZN for filling in by the identified respondents, as discussed in the sampling procedure above. A total of 648 questionnaires were distributed by the researcher. The researcher collected the completed questionnaires four weeks after they had been distributed. A total of 426 questionnaires were collected. This represented an overall successful response rate of 65.7%. According Cooper and Schindler (2014:560), a response rate of 50% or more is adequate. Babbie (2004) also asserted that return rates of 50% are acceptable to analyse and publish; 60% is good and 70% is very good.

4.10 PILOT TEST

To check the validity and reliability of the questionnaire in gathering the data required for purposes of the study, a pilot test was carried out. The purpose of pilot testing is to establish the accuracy and appropriateness of the research design and instrumentation (Sunders et al., 2011:201). Newing (2011:65) states that “the importance of pilot testing cannot be overemphasised; you will almost always find that there are questions that people fail to understand or interpret in different ways, places in the questionnaire where they are not sure where to go next, and questions that turn out simply not to elicit useful information”. Cooper and Schindler (2014:260) concur that the purpose of a pilot test is to detect weaknesses in design and implementation and to provide proxy for data collection of a probability sample. Sekeran (2006:302) reinforces that a pilot test is necessary for testing the reliability of instruments and the validity of a study.

Cooper and Schindler (2014:603) state that the size of the sample to be used for pilot testing varies depending on time, cost and practicality: but a good size would be at least 10% of the main survey. According to Sunder et al., (2011:76), the respondents in a pilot test do not have to be statistically selected to test the validity and reliability of the instrument. In this study, the data collection instrument (a questionnaire) was tested on 15 respondents to ensure that it was relevant and effective. These 15 respondents were selected from one district. They were not included in the final study in order to control response bias.

4.10.1 Instrument Validity

Validity refers to whether a questionnaire is measuring what it purports to measure (Newing, 2011:122). Validity is the degree of congruence between the explanation of the phenomenon and the realities of the world. While absolute validity is difficult to establish, demonstrating the validity of a developing measurement is very important in research (Bowling, 2008:69). This study used both construct validity and content validity. For construct validity, the questionnaire was divided into several sections to ensure that each section assessed information for a specific objective, and also ensured that it was closely tied to the conceptual framework for this study. To ensure content validity, the questionnaire was subjected to examination by four randomly selected managers. They were asked to evaluate the statements in the questionnaire for relevance and whether they were meaningful, clear and impartial. On the basis of the comments and advice of participants during the pilot test, the instrument was adjusted appropriately before using it for the final data collection exercise. Their review comments were used to ensure that content validity was enhanced.

4.11 DATA PROCESSING AND ANALYSIS

The penultimate step in the research process is the processing and analysing of the gathered data.

Wegner (2007:33) defines statistical analysis as the procedure to make sense of raw data. Such data must be in an organised and sequential format. It must be accurate and available. Monette, Sullivan and De Jong (2008:364) show that statistical analysis is one of the last steps in the research process.

Data analysis can take many forms. In some cases, it is qualitative – a summary of the descriptions from an investigator's field notes from a particular observation study. The focus of this study, however, is on quantitative data analysis, in which observations are put into numerical form and manipulated in some way, based on their properties. The analysis of quantitative data involves the use of statistics, which are procedures for assembling, classifying, tabulating, and summarising numerical data to obtain some meaning from information (Monette et al., 2011:376).

According to Zikmand et al., (2010:230), data analysis refers to the application of reasoning to understand the data that has been gathered, with the aim of determining

consistent patterns and summarising the relevant details revealed in the investigation. To determine the patterns revealed in the data collected regarding the selected variable, data analysis was guided by the aims and objectives of the research and the measurement of data collected.

Information was sorted, coded and input into the statistical package for social sciences (SPSS) for the production of graphs, tables, descriptive statistics and inferential statistics. Regression analysis was used to test the significance of the influence of the independent variables on the dependent variable.

Factor analysis was used to establish the appropriateness of the questionnaire constructs. Specifically, factor loadings were used to establish the weight of the various statements on extracted factors. Before the factor analysis was conducted, the Kaiser-Meyer-Olkin (KMO) measurement of sampling adequacy was conducted to determine whether adequate correlation existed between the individual items contained within each of the sections of the questionnaire. A KMO statistic and associated Bartlett's p-values are determined when using this test.

This study used linear regression analysis to test the statistical significance of the various independent variables on the chosen dependent variable.

Quantitative data was analysed using various statistical methods for measuring central tendencies, including mean as well as measurements of dispersion, including standard deviation.

Using SPSS, the regression models were tested to ascertain how well they fit the data. The degree of fit to the model was estimated using the coefficient of determination which helps to explain how closely the predictor variables explain variations in dependent variables. The significance of each independent variable was also tested. The t-test was used to determine whether there is a significant difference in opinions between male and female respondents with regard to entrepreneurship and performance. The p-value for each t-test was used to draw conclusions on whether to reject or accept the null hypotheses. The level of significance was set at 95% for accepting or rejecting the null hypothesis. If the p-value was less than 5%, the null hypothesis was rejected and the alternate hypothesis was accepted. If the p-

value was greater than 5%, the null hypothesis was accepted and the alternate hypothesis was rejected.

The study also used Pearson's moment correlation analysis, and analysis of variance (ANOVA). ANOVA is the statistical method used for testing the null proposition, such that the means of several populations are equal.

Correlation is a technique for investigating the relationship between two quantities, continuous variables. Pearson's correlation coefficient (r) is a measure of the strength of the association between the two variables. The analysis of variance (ANOVA) is a statistical method used to test differences between two or more means.

4.12 ETHICAL CONSIDERATIONS

According to Welman et al., (2005:201), there are four ethical considerations that the researcher should pay attention to; namely, informed consent, right to privacy, protection from harm and involvement of the researcher. Denzin and Lincoln (1998:169) argue that "the preparation of a text in research must be done with care and responsibility to the research participants; and an awareness of how post-research publications can shape the lives of the participants. Ensuring anonymity and protecting the identity of participants are critical considerations in research studies" (Boeije, 2010:46). It was imperative that measures are taken to safeguard the rigour of the research, as well as the integrity, rights and dignity of the participants in the study. In this study the researcher ensured that:

- the research proposal and research questionnaire were submitted to the Ethics Committee of the Durban University of Technology for prior approval (See APPENDIX 2);
- permission was sought from the Head of Department of the KwaZulu-Natal Department of Education to conduct the research and consent was granted, (See APPENDIX 3).

Once the data had been gathered, interpretation and analysis of this data, using quantitative statistics, was conducted without compromising the confidentiality, dignity or integrity of the research participants (Boeijie, 2010:46).

Furthermore, cognisance was given to all research materials, which was duly acknowledged. The research study was also analysed through Turn-It In Software, as required by the university, to ensure that the work has not been plagiarised in any way. In this regard, all sources in this research study are fully acknowledged. Garbers (1996:342) states that:

> Ethical integrity in academic work is especially manifested when the candidate acknowledges all sources fully and, at all costs, avoids dissociating standpoints, theories, from the original context in which they appear in order to employ them for personal gain in the study.

In this regard, careful attention has been paid to acknowledging all sources, and recognising and recording the content in which statements were made (Walliman, 2008:336).

4.13 CONCLUSION

The chapter provided a description of the methodology applied in this study. It focused on the research questions posed about how corporate entrepreneurship influences organisational performance within the Department of Education in KZN. The data collection was based on personal responses and was collected through research questionnaires. In the next chapter, the processing and analysis of the data are explained and the research findings are used to answer the research questions.

CHAPTER 5

PRESENTATION AND INTERPRETATION OF RESULTS

5.1 INTRODUCTION

The literature study revealed the necessity for organisations to stimulate, foster and develop corporate entrepreneurship internally. Various methods and techniques were identified to facilitate this. The literature also indicated that, before the organisation can implement corporate entrepreneurship, it must first determine the current level of entrepreneurship. The Corporate Entrepreneurial Assessment Instrument (CEAI), developed by Hornsby, Kuratko and Zahra (2002), assists in this regard. The three steps involved in this study were: to determine the level of entrepreneurial orientation in the Department of Education; to diagnose the climate for corporate entrepreneurship in the organisation of the department; and to determine how the above two activities influence the performance of the Department of Education in KwaZulu-Natal. For this research, entrepreneurial orientation and the climate for corporate entrepreneurship were measured using the adapted Corporate Entrepreneurship Assessment Instrument (CEAI) (Hornsby et al., 2002).

This chapter presents the data analysis and interpretation of the results. Descriptive statistical analysis, factor analysis, correlation analysis, the t-test and analysis of variance (ANOVA) are briefly introduced before a detailed description and the application of each is given.

Descriptive statistics provide measurements of location tendency (mean, frequency), of spread (variance, standard deviation) and shape (skewness and kurtosis). Factor analysis is done to check validity and reliability of data. Correlation analysis is used to test the strength of the relationship between two variables when a linear difference between variables is assumed. The independent sample t-test is also used to compare the means of two independent groups in order to determine whether there is statistical evidence that the associated sample means are significantly different. Analysis of variance (ANOVA) is also used to measure the differences between variables. In order to find out the sources of differences within the different aspects of a factor, detailed tests are done using the Scheffe's multiple comparison procedure. The factorial, correlation and ANOVA analyses are carried out on eleven factors:

management support for CE; organisational tolerance; work discretion; rewards/reinforcement; time availability; organisational boundaries; innovativeness; proactiveness; risk taking; performance (learners achieving university entrance passes); and performance output.

5.2 DESCRIPTIVE STATISTICS

In order to describe the basic features of the data collected in a study, descriptive statistical techniques are used to describe the characteristics of the population or sample.

Descriptive statistics are the characteristics of the sample (Tree-Blanche, Durheim and Painter, 2006:105). The descriptive method was carried out first and, according to Wimmer and Dominick (1983:165), in order to reduce the data set and allow for easier interpretation, it is important to carry out this analysis because it provides a broad biography of the data under study. This enables the contextualisation of the results. This statistical method provides information that assists in deciding whether the central location value could be regarded as a reliable representative value of all the observations in the data. Calculating the standard deviation of the theoretical distribution of the sample means at, say 95% confidence, indicates how far the sample means can be derived from the population.

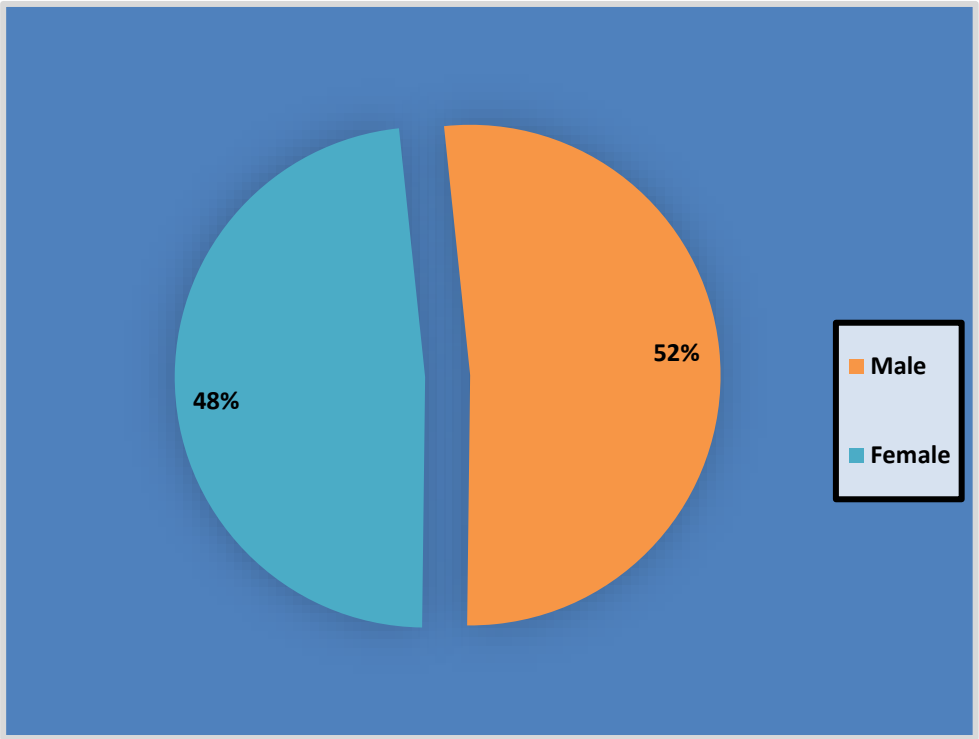
Numerical statistical summaries were created. The process provides for valuable insights into the effectiveness of the coding and entering (Cooper & Schindler, 2014:450). Data cleaning was done. Missing data, miscoded and out-of-range data and extreme values were rectified after a preliminary view of the data set.

These descriptive statistics, covering the gender of the respondents, their age, ethnicity and the current rank of the respondents in the Department of Education in KwaZulu-Natal are discussed in detail.

5.2.1 Gender Composition of the Respondents

The respondents were asked to indicate their gender. Figure 5.1 indicates that, although the sample was fairly evenly distributed in terms of gender, there are more males (51.89%) than females (48.11%). This is a fair indication of the gender balance in senior positions in the Department of Education in KwaZulu-Natal.

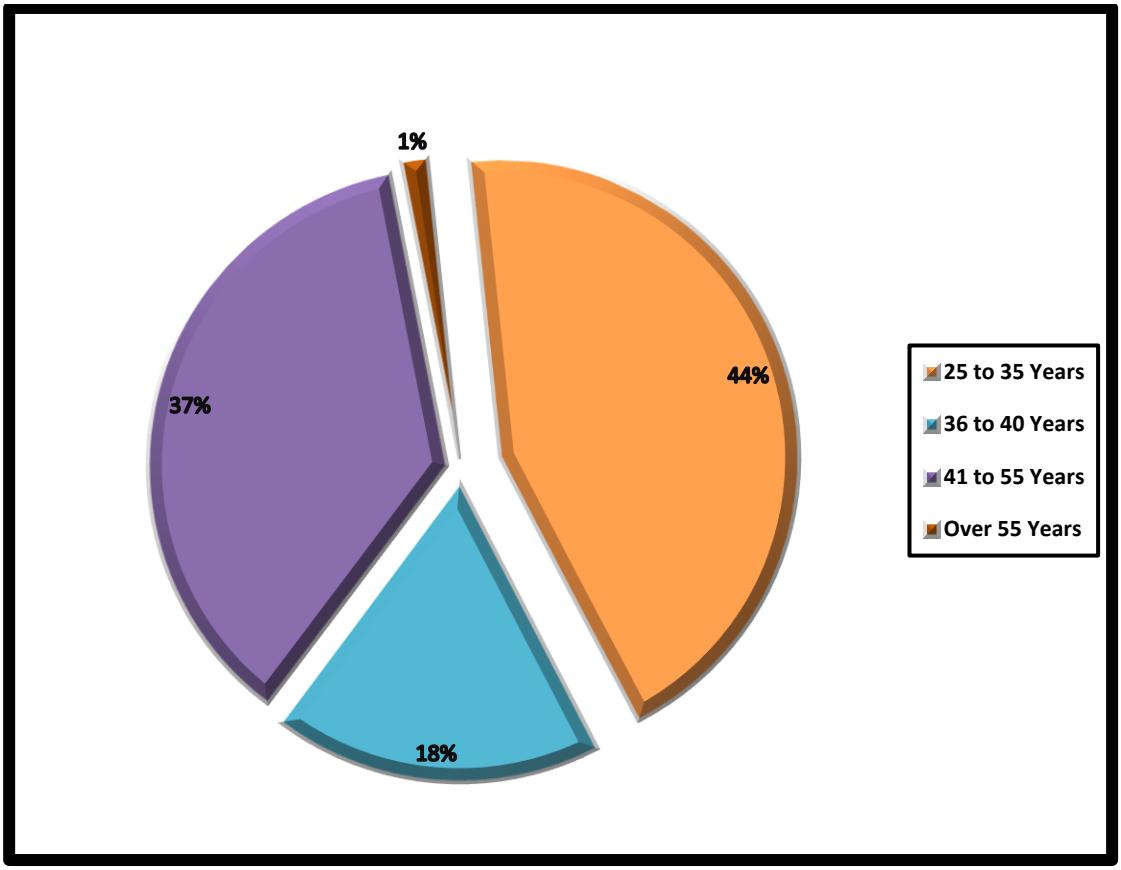
Figure: 5.1 Gender of respondents



5.2.2 The Age of the Respondents

The respondents were asked to indicate their age category. The age spread of the respondents in Figure 5.2 shows that just under half of the respondents (43.97%) were between the ages of 25 and 35 years, while a sizable group (36.64%) were between the ages of 41 and 55 years. The group older than 55 years was the smallest (1.42%). Only 17.97% of the respondents were between 36 and 40 years old. This indicates that the majority of the respondents (43.97%) can still spend at least 25 years at the Department of Education if they decide to stay.

Figure 5.2: Age groups of the respondents

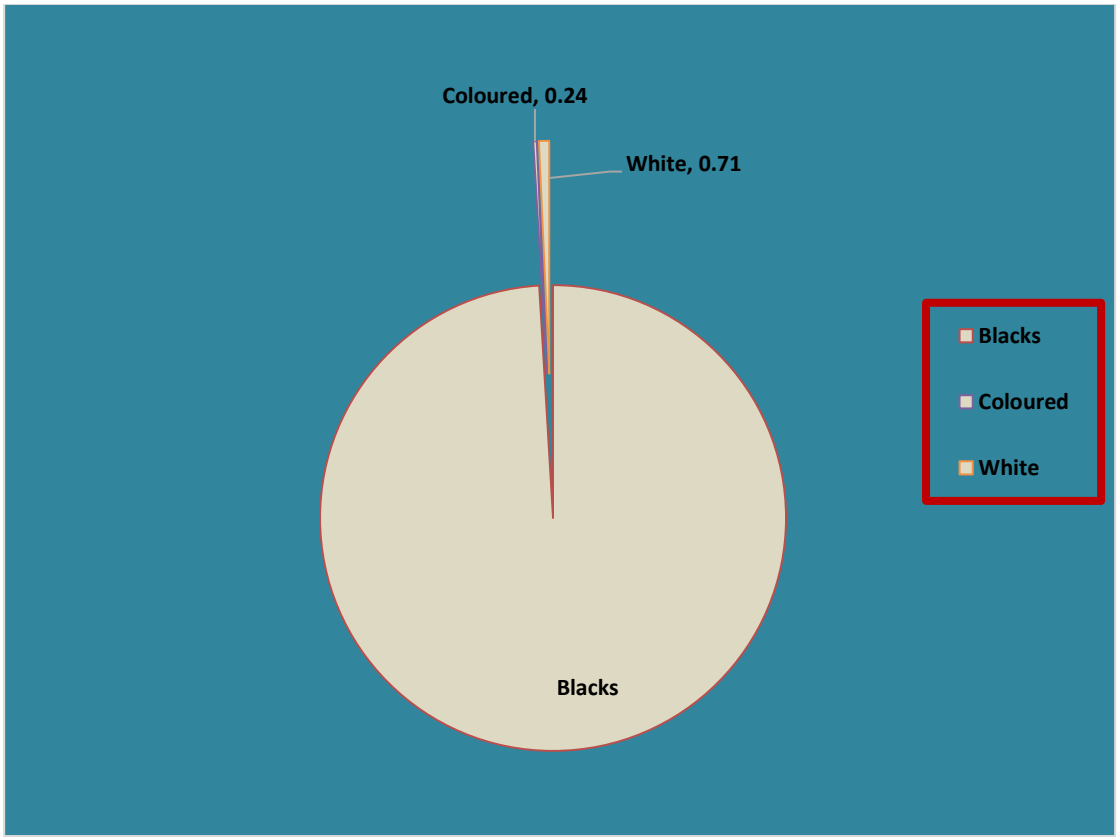


5.2.3 Ethnic Groups of the Respondents

Respondents were asked to indicate their ethnic groups. According to the Black Economic Empowerment Act No. 53 of 2003, 'black people' means African, Coloured and Indian persons (Department of Trade and Industry, 2005:3). In the context of this study, the term 'black' refers to Africans, excluding Coloureds and Indians unless otherwise stated. This classification has been used before by authors, e.g. Netshitenzhe and Chikane (2003:20).

Figure 5.3 show that 99.05% of the respondents were blacks. Only 0.71% of respondents were white, while 0.24% of the respondents were coloured. This shows that the vast majority of the respondents – employees in the KZN DoE who were sampled – were blacks. It should also be noted that none of the respondents were Indian, as expected in the questionnaire. It is disturbing to note that the study did not have Indian respondents as KZN is generally known as the 'home province' for Indians because of their large population presence (Stats SA, 2011:3). There is no statistical reason for their non-capture in this study.

Figure 5.3: Ethnic groups of respondents



5.2.4 Current job title in the Department of Education in KwaZulu-Natal

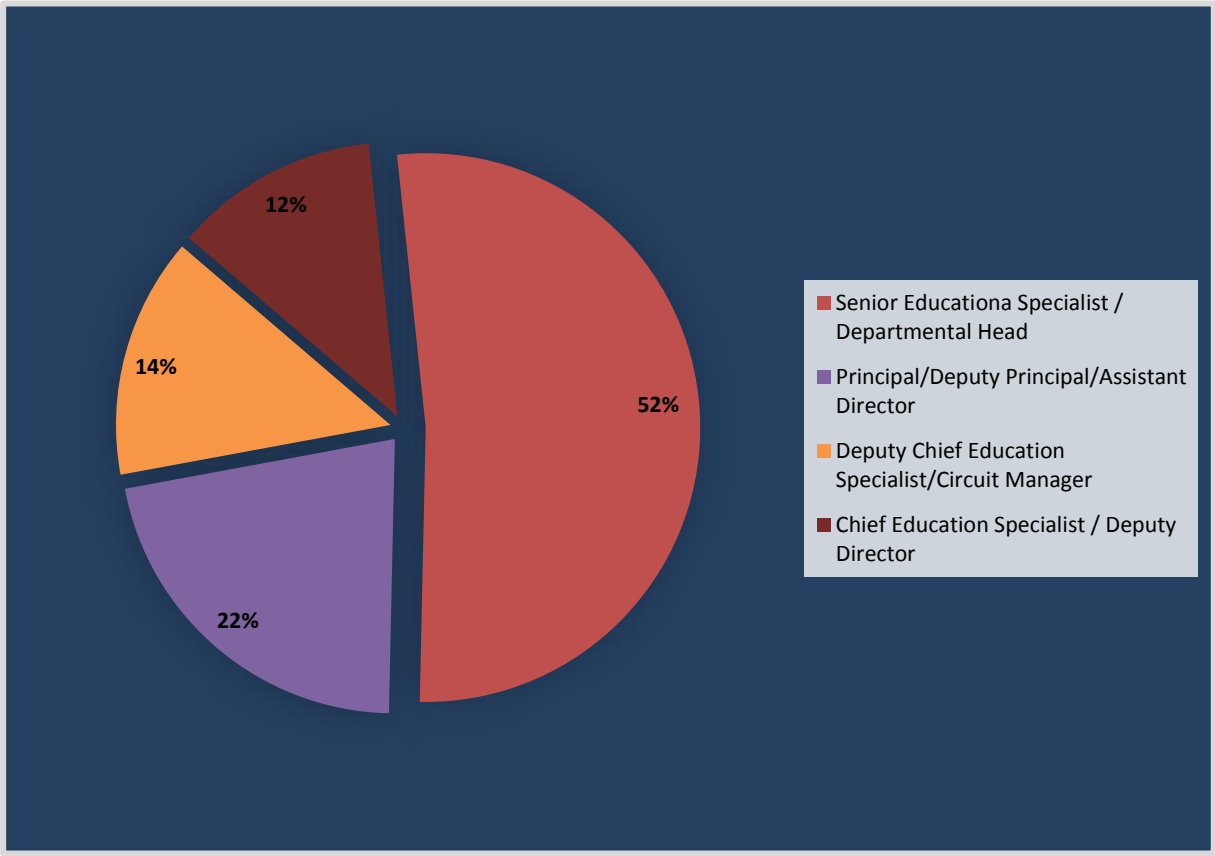
Respondents were asked to indicate their current job titles in the DoE. Initially, nine (9) job titles were envisaged. These were Chief Education Specialist; Deputy Director; Deputy Chief Education Specialist; Circuit Manager; Principal; Deputy Principal; Assistant Director; Senior Education Specialist and Departmental Heads. After the pilot study of the instrument, these categories were regrouped into four (based on seniority) to make the data easier to analyse. Figure 5.4 shows that more than half (52.01%) of respondents were senior education specialists and departmental heads. The principals, deputy principals and assistant directors constituted 21.75% of the respondents, while the deputy chief education specialists and circuit managers constituted 14.18% of the respondents. The smallest percentage of respondents (12.06%) was that of chief education specialists and deputy directors.

All the respondents occupy managerial positions in the Department of Education. The category of chief education specialists and deputy directors (12.06%) is the most

senior one in terms of the sample. This is followed by the category for deputy chief education specialists and circuit mangers (14.18%). The next level is that of principals, deputy principals and assistant managers (21.75%), while the senior education specialists and departmental heads (52.01%) are at the bottom of hierarchy.

Jago and Vroom (1997:131) argue that "large-scale formal organisations have multiple hierarchical levels and are pyramidal in shape. As one ascends the managerial hierarchy, the number of managers at each level progressively diminishes". This is also true with the Department of Education in KZN as indicated in Figure 5.4 below.

Figure 5.4: Current job title in the DoE



5.3 FACTOR ANALYSIS

According to Tabachnick and Fidell (2007:608), the main purpose of exploratory factor analysis (EFA) is to group a large item set into meaningful subsets that measure different factors. An EFA was conducted to determine the number of factors that underlie the set of items and to define the underlying dimensionality of the set of items (Tabachnick and Fidell, 2007:608). This would enable the researcher to identify those items that did not measure an anticipated factor or that simultaneously measured multiple factors. These items could be poor indicators of the preferred construct and could be eliminated from further research.

Before starting an EFA, it is important to determine the factorability of the correlation matrix. Two main tests were performed for that purpose: the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and Bartlett's Test of Sphericity. For a data set to be regarded as adequate and appropriate for statistical analysis, the KMO value should be greater than 0.5 (Field, 2000:446). As indicated in Table 5.1, the KMO statistic was 0.921 which was significantly high, and greater than the critical level of significance of the test which was set at 0.5 (Field, 2000:444). In addition to the KMO test, the result of Bartlett's Test of Sphericity was also highly significant (Chi-square = 11833.458 with 3003 degree of freedom, at $p < 0.05$). The results of the KMO and Bartlett's Test are summarised in Table 5.1. The results indicate that patterns and correlations are compact, and thus provide an excellent justification for further statistical analysis to be conducted.

Table 5.1: Kaiser-Meyer-Olkin and Bartlett's Sphericity Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.912
Bartlett's Test of Sphericity	Approx. Chi-Square	11833.458
	Df	3003
	Sig.	.000

The Corporate Entrepreneurship Assessment Instrument (CEAI) has been used in various research studies and it has proven to be both valid and reliable. Various

studies conducted in South Africa also confirm its validity and reliability (Groenewald, 2010; Kriel, 2010; Scheepers, 2007; Nyanjom, 2007; Chaka, 2006; Gantsho, 2006; Bauwmeester, 2005; Kamffer, 2004). To add further support to the validity and reliability of the instrument used in the study, an EFA was conducted.

5.3.1 Procedure for Determining Factor Structures

The components of the Corporate Entrepreneurship Assessment Instrument (CEAI) (Hornsby, Kuratko and Zahra, 2002) used in this study were all re-validated in order to determine structure and reliability using factor analysis.

- Eigenvalues > 1.00 were identified as an indication of differentiation of possible factors.
- Variables were subjected to exploratory data analysis and where variable loadings were found to be less than 0.30, they were removed and another round of exploratory analysis was carried out until 'clean' structures were found.

In the EFA the responses for the 78 items of the Corporate Entrepreneurship Instrument questionnaire (CEAI), were correlated and rotated using a principal component analysis on the items of Sections B and C to investigate the groupings of items and their correspondence to the original theoretical scales. Assessment of the total variance suggested that up to 17 factors might be extracted (with an eigenvalue larger than 1, explaining a total of 67.64% of the variance). This was deemed to be somewhat impractical given the number of items, and Horne's parallel analyses were conducted, using a Monte Carlo simulation. This technique suggested that 9 factors could be extracted. A number of factor solutions were subsequently investigated, using a principal axis factoring with direct Oblimin rotation, including the 11 factor structure which was theoretically calculated. The resultant pattern matrix showed that the 11 factor solution made the most theoretical and intuitive sense. Factors mostly overlapped with the theoretically calculated scales, which was encouraging. The pattern matrix of the remaining 40 items is provided in Table 5.2.

Table 5.2: Total variance explained for 40 items

Construct	Initial eigenvalues			Rotation sums of squared loadings[a]
	Total	% of Variance	Cumulative %	Total
1	24.511	31.424	31.424	13.686
2	4.002	5.13	36.554	8.127
3	2.842	3.643	40.198	6.583
4	2.437	3.124	43.322	6.143
5	2.2	2.821	46.143	7.541
6	1.99	2.551	48.694	5.871
7	1.767	2.266	50.960	6.122
8	1.63	2.09	53.050	11.877
9	1.556	1.994	55.044	10419
10	1.386	1.777	56.821	9.571
11	1.376	1.764	58.585	3.873
12	1.279	1.64	60.225	
13	1.252	1.605	61.830	
14	1.202	1.541	63.371	
15	1.136	1.457	64.827	
16	1.113	1.427	66.254	
17	1.081	1.386	67.641	
18	1.045	1.34	68.981	
19	1.011	1.296	70.277	
20	0.904	1.159	71.436	
21	0.887	1.137	72.572	
22	0.876	1.123	73.695	
23	0.845	1.084	74.779	
24	0.792	1.015	75.794	
25	0.756	0.969	76.763	
26	0.738	0.946	77.710	
27	0.72	0.923	78.632	
28	0.701	0.898	79.530	
29	0.689	0.884	80.414	
30	0.647	0.83	81.244	
31	0.635	0.635	82.057	
32	0.621	0.621	82.853	
33	0.617	0.617	83.644	
34	0.576	0.576	84.383	
35	0.551	0.551	85.089	
36	0.529	0.529	85.767	
37	0.516	0.516	86.429	
38	0.49	0.49	87.058	
39	0.487	0.487	87.682	
40	0.462	0.462	88.274	

Extraction Method: Principal Axis factoring

The results reported in Table 5.2 indicated that, after using Kaiser's criterion to retain factors with eigenvalues greater than one (Filed, 2009:647), a total of 19 factors were extracted, comprising a total of 40 items, explaining 58.585% of the total variance. This is in accordance with the recommendation of Hayton, Allen and Scarpello

(2004:192) that as many common factors as possible should be kept to explain at least 50% of the variance in the data set.

The rotated pattern matrix for the CEAI questionnaire is displayed in Table 5.3. All the items had factor loadings of 0.31 and higher, indicating the significance of these items for interpretative purposes. Nine items loaded on factor 1, two items loaded on factor 2, sixteen items loaded on factor 3, eight items loaded on factor 4, five items loaded on factor 5, three items loaded on factor 6, eight items loaded on factor 7, eight items loaded on factor 8, six items loaded 9, four items loaded on factor 10 and two items loaded on factor 11. The factors were labelled according to the general content of their significant related items.

Table 5.3: Rotated pattern matrix

	Pattern Matrix[2]												
Factor Name		Factor											Alpha
		1	2	3	4	5	6	7	8	9	10	11	
Innovativeness	B7.48 The Department of Education encourages development of new ideas that promotes improved learner performance.	0,689											0,916
	B7.57 The Department has strong focus on activities that improves teaching and learning.	0,650											
	B7.50 Innovation and creativity are part of the departmental strategy.	0.554											
	B7.46 The department always emphases the use of technology in teaching	0,553											
	B7.51 Employees are encouraged to come up with new ideas such as problems solving.	0,532											
	B7.52 Members of top management are involved in fostering new methods of teaching and learning.	0,507											
	B8.55 The department encourages the willingness to take responsibility among its employees.	0,501											
	B8.54 In the department we try to anticipate development in the public sector in general and specifically in the education in order to adjust to changes quickly.	0,442											
	B7.49 The Department is open to outside ideas that can lead to new learning opportunity.	0,397											
Risk Taking	B2.10 Employees are encouraged to take risks in doing their job, whether eventually successful or not.		0,606										0,672
	B2.11 The term “risk taker” is considered a positive attribute for people in my work area		0,561										
Proactiveness	B10.72 Senior Management always discusses the vision and the direction of the department to the employees.			0,653									0,946
	B10.71 Organisation embraces entrepreneurial behaviour			0,579									
	B10.67 In the Department of Education, the concerns and ideas of employees are heard.			0,567									
	B10.69 There is a free flow information in the department from the top to bottom and from the bottom to the top.			0,564									
	B10.70 Employees are provided opportunities for training and education for their own growth.			0,555									
	B9.62 The department commits significant resources to ensure there is no uncertainty in the success of projects conducted.			0,540									
	B10.68 Employees are encouraged to openly ask questions about how to make things better.			0,521									
	B8.60 The Department of Education has a very high level of commitment among its staff.			0,492									
	B9.63 The department would never allow for pursuit of any project that			0,482									
	B10.65 The department encourages employees to brainstorm new ideas			0,479									
	B10.66 In the Department of Education, employees feel free to take the lead and create positive charge.			0,468									
	B9.61 The department has a culture of introducing new method in delivering services			0,453									
	B8.59 The Department of Education always foresees on potential environmental changes and future demands ahead of the other department			0,426									
	B8.56 The pro-active individuals in the system are being rewarded			0,417									
	B8.57 The department always strives for improved services delivery through proactive activities/tasks			0,342									
	B9.64 The department has a culture of introducing new technology to be used in the classroom to improve teaching and learning.			0,314									

	Pattern Matrix[2]												
Factor Name		Factor											
		1	2	3	4	5	6	7	8	9	10	11	Alpha
Management Support	B1.1 Management provides a conducive environment for staff to communicate and understand each other.				0,700								
	B1.2 Senior management is aware of and receptive to employees' ideas and suggestions.				0,658								
	B1.6 An employee with good ideas is often given free time to develop that idea				0,597								
	B13 A promotion usually follows from the development of new and innovative ideas				0,590								
	B1.4 Those employees who come up with innovative ideas on their own often receive management encouragement for their activities.				0,574								0,837
	B1.8 There are several options within the organization to get financial support for the innovative projects and ideas.				0,439								
	B1.5 Senior managers encourage innovators to bend rules and rigid procedures in order to keep promising ideas on track.				0,408								
	B1.7 Money is often available to get new projects ideas off the ground				0,359								
Organizational Torrance	B2.12 The Department of Education supports many small and experimental projects, realising that some will undoubtedly fail.					0,512							
	B2.13 We would never pursue any projects that could potentially result in any kind of loss					0,470							
	B2.14 There is considerable desire among people in the department for generating new ideas without regard for crossing departmental or functional boundaries.					0,401							0,724
	B2.16 The department shows a great deal of tolerance for high risk projects and reward individuals for taking calculated risks.					0,376							
	B2.9 In the department we have a strong inclination/tendency to implement low risk projects, with normal and certain rates of learner improvement.					0,326							
Work Discretion	B3.19 The Department of Education provides the chance for me to be creative and try my own methods of doing the job.						0,710						
	B3.20 The Department of Education provides the chances to do something where one makes use of his/her abilities.						0,630						0,757
	B3.18 Mistakes made on the job do not receive harsh criticism and punishment.						0,342						
Rewards / Reinforcement	B4.30 Outstanding performance is always rewarded in the Department of Education.							0,558					
	B4.27 When an employee has come up with a new and efficient way of doing a job, he/she is given a prize in the Department of Education.							0,476					
	B4.22 The rewards I receive are dependent on my work on the job.							0,455					
	B4.28 There is consistency in treating employees for the same wrong or good action in my job.							0,451					0,856
	B4.23 Promotion is based on how successful you are doing your job in the Department of Education.							0,444					
	B4.25 My supervisor will give me special recognition if my work performance is especially good.							0,442					
	B4.24 My supervisor will increase my job responsibilities in recognition of performing my job well.							0,388					
	B4.26 My supervisor will tell his/her boss if my work is outstanding.							0,318					

	Pattern Matrix[2]												
		Factor											Alpha
		1	2	3	4	5	6	7	8	9	10	11	
Discretionary Time	B5.36 My co-workers and I always find time for long-term problem solving								0,633				
	B5.35 I have enough time for problem solving in my job.								0,631				
	B5.32 Resources are always made available for creative ideas in the Department of Education								0,589				
	B5.34 My job is structured such that I have a lot of time to think about wider organizational problems.								0,550				
	B6.40 In the Department of Education employees are free to take decisions within their scope of responsibilities.								0,441				**0,875**
	B6.37 In the Department of Education we have a flat organizational structure.								0,437				
	B4.29 Employees are always involved in decision-making in the department.								0,431				
	B5.33 There is always support from management for activities that are meant to accomplish short-term goals in the Department of Education.								0,419				
Organizational Boundaries	B6.44 Every employee knows his/her administrative duties and functions in the Department of Education.									-0,599			
	B6.45 There are clear reporting lines in the Department of Education.									-0,522			
	B6.43 I clearly know what level of work performance is expected of me in terms of amount, quality and time of output.									-0,407			
	B6.39 In the Department of Education we have open channels of communication									-0363			**0,816**
	B6.38 In the Department of Education we have many standard procedures that everyone must follow.									-0,323			
	B2.15 People are encouraged to talk to employees in other sections or units of the Department of Education about ideas for new projects.									-0,311			
Performance University Entrance	C77 In the past three years, the number of learners passing science in the NSC examination in the district has…..										0,719		
	C76 In the past three years, the number of learners passing mathematics in the NSC examination in the district has…..										0,710		**0,776**
	C78 In the past three years, the number of learners passing the NSC examination with bachelor pass in the district has…										0,590		
	C75 In the past three years, the overall percentage pass rate of Grade 12 learners in the district has…..										0,450		
Performance Output	C74 In the past five years, the repetition of learners in Grades 10 and 11 in the district has….											0,553	0,642
	C73 In the past five years, the drop-out rate of learners in Grades 9 to 11 in the district has…											0,525	

Table 5.3 shows the factor loadings for 11 factors. Field (2005:704) supports Steven's (2002:395) suggestion to regard a factor as reliable if it has four or more loadings of at least 0.6, regardless of the sample size. Steven (2002:395) suggests that a cut-off of 0.4 should be considered adequate for interpretative purposes. This is further supported by Hair, Tatham, Anderson and Black (2002:134), who assert that a factor loading of 0.4 has good factor stability and is deemed to lead to a desirable and acceptable solution. Field (2009:644) recommended that factor loadings greater than 0.35 be considered as significant. According to and Hair et al., (1998:112), the factor loadings of a sample of 300, greater than or equal to 0.30, are considered significant. Stevens (2002:398) and Hair et al., (1998:112) suggest that a factor loading of 0.30 is needed for significance if the sample size is 350 and above. Based on the above recommendations by Hair et al., (1998) and Steven (2002); in this study, the researcher decided to accept 0.3 as the cut-off point for all factor loadings.

Factor loadings lower than the absolute value of 0.30 were suppressed, as recommended by Tabachnick and Fidell (2014:620). Some items that did not have adequate loadings on any factors were subsequently omitted. Where an item was associated across more than one factor, the highest factor loading took precedence.

Once a factor is reduced to two or fewer items or variables, the factor is only considered significant if the correlation between these variables is above 0.7 or $r > 0.7$ (Yong and Pearce, 2013:80). As can be seen from Table 6.3, two factors have two items. These factors are factor number 2 (risk taking) and factor number 11 (performance output). The correlation of the items in these factors is not very far off from 0.7 (i.e. 0.672 and 0.642 respectively). Based on the above, the researcher decided to retain these factors.

After rotation, these eleven factors were identified as the theoretical dimensions: ***innovativeness; risk taking; proactiveness; management support; organisational tolerance; work discretion; rewards and reinforcement; discretionary time; organisational boundaries; performance university entrance; and performance output*.**

5.3.2 Internal Consistency Reliability

Hair et al., (2014:91) define reliability as the extent to which a variable, or set of variables, is consistent in what it is intended to measure. It differs from validity in that it does not relate to what should be measured, but instead to how it is measured. It is an assessment of the degree of consistency between multiple measurements of a variable (Hair et al., 2014:123). In this study, reliability was determined by means of Cronbach's alpha test. Hair et al., (2014:123) recommend that "items with an alpha correlation of 0.70 and higher are viewed as acceptable, although this may decrease to 0.60 in exploratory research". According to Cortina (1993:102), alpha is very sensitive to the number of items in a measurement, and alpha can be high in spite of low internal correlations and multidimensionality. In contrast to Hair et al., (2014), Cortina (1993) suggests that an alpha correlation of 0.70 should serve as an absolute minimum for newly developed measurements, and that through appropriate use of factor analysis, the internal consistency reliability could be considerably higher than 0.70. Juul, van Ransburg and Steyn (2012:83) stated that alpha values of 0.60 – 0.65 are still acceptable. In this study, an alpha value of 0.60 was used as the minimum acceptable value for reliability.

Each of the factors indicated above is now discussed in detail, starting with innovativeness.

5.3.2.1 Innovativeness Factor Analysis

Factor one, labelled innovativeness consist of nine items. The seven items (B7.46; B7.47; B7.48; B7:49; B7.50; B7.51; and B7.52) that were used to measure the latent variable innovativeness loaded to one factor. Only the item B7.53 could not load with the other items that were used to measure innovativeness. Two items (B8.54 and B8.55), relating to the latent variable proactiveness, were also included in this factor. This item was regarded by respondents as being related to the factor 'innovativeness'. For the purposes of this study, innovativeness refers to the regular introduction of new services/processes, the increase in the number of service offerings, as well as the extent to which these new services/processes lead to transformation in the organisation.

Loadings for rotated factors, explained variance and Cronbach's alpha coefficient for innovativeness factor are shown in Table 5.4.

Table 5.4: Factor loadings for innovativeness

Variable	Factor Loadings
B7.48.	0.689
B7.57	0.650
B7.50	0.554
B7.46	0.553
B7.51	0.532
B7.52.	0.507
B8.55	0.501
B8.54	0.442
B7.49.	0.397
Explained Variance	11.877
Cronbach's Alpha	0.916
Eigenvalue	1.630
Number of items	9

As shown in Table 5.4, Cronbach's alpha for innovativeness of 0.916 is greater 0.6 (Cronbach's Alpha > 0.6), which shows a good factor structure and reliability. The explained variance of 11.877 for innovativeness is favourable.

The eigenvalue of 1.630 for innovativeness is greater than 1.00, which shows that the factor is relevant. Eigenvalues are used to determine which factors are relevant and should therefore be analysed. The innovativeness factor should therefore be analysed.

The measure is therefore structurally sound and reliable.

5.3.2.2 Risk Taking Factor Analysis

Factor two, labelled risk taking, consisted of two items. Although four items (B9.61; B9.62; B9.63 and B9.64) were originally intended to measure risk taking, none of them loaded onto the risk taking factor. They could either not load on this factor and cross-loaded onto other factors, or they did not survive the 0.30 cut-off for significance for factor loading in the study. Risk taking refers to the inclination of the organisation to undertake high risk projects and when the organisation is confronted with uncertainty, a bold posture is normally adopted in exploring opportunities. Calculated risk taking is encouraged in the organisation. The two items that loaded to risk taking (B2.10 and B2.11) were originally intended to measure organisational tolerance. These two items were regarded by respondents as being related to the risk taking factor.

The risk taking factor comprised two items. According to Yong and Pearce (2013:80), a factor with two or fewer items is only considered significant if the correlation between the items is above 0.7 (r > 0.7) and they are relatively uncorrelated with other items. Although the correlation between these two items is less than 0.7, the two items are relatively uncorrelated with other factors. Their correlation, which is 0.672, is not far off from 0.7. The researcher therefore decided to retain this factor even though it has only two items. The factor loadings, explained variance and Cronbach's alpha coefficient for risk taking factor are shown in Table 5.5.

Table 5.5: Factor loading for risk taking

Variable	Factor Loadings
B2.10 B2.11	0.606 0.561
Explained Variance	5.870
Cronbach's Alpha	0.672
Eigenvalue	1.990
Number of items	2

As shown in Table 5.5, the Cronbach's alpha for risk taking of 0.672 is greater than 0.6 (Cronbach's Alpha > 0.6), which shows a good factor structure and reliability. The explained variance of 5.87 for risk raking is above 0.50 (Hair et al., 2014:130), which is favourable.

The eigenvalue of 1.990 for risk taking is greater than 1.00, which shows that the factor is relevant. Eigenvalues are used to determine which factors are relevant and should therefore be analysed. The risk taking factor should therefore be analysed.

The measure is therefore structurally sound and reliable.

5.3.2.3 Proactiveness Factor Analysis

Factor three, labelled proactiveness, consisted of sixteen items. Four of these items (B8.56; B8.57; B8.59 and B8.60) were originally intended to measure the latent variable, proactiveness. The other four items (B9.61; B9.62; B9.63 and B9.64) were originally intended to measure the latent variable, risk taking. The remaining eight items (B10.65; B10.66; B10.67; B10.68; B10.69; B10.70; B10.71 and B10.72) were originally intended to measure the latent variable, organisational culture. The

respondents regarded all these items as relating to the same factor. After careful consideration of these items and looking at their theoretical dimensions, it was decided that their factor loading be labelled proactiveness.

Proactiveness in this study refers to the ability of an organisation to take a proactive role in implementing entrepreneurial activities ahead of other organisations in the same industry. The proactiveness dimension is related to pioneering and taking the initiative in pursuing new opportunities. This dimension also refers to the extent to which an organisation attempts to lead, rather than follow others, in areas such the introduction of new services, operational technologies and administrative techniques. Proactiveness includes initiative taking that is reflected in the orientations and activities of top management (Dess and Lumpkin, 2005:151)

As shown in Table 5.6 below, Cronbach's alpha for proactiveness of 0.946 is greater than 0.6 (Cronbach's Alpha > 0.6), which shows a good factor structure and reliability. The explained variance of 13.686 for proactiveness, which is above 0.50 (Hair et al., 2014:130), is favourable.

Table 5.6: Factor loading for proactiveness

Variable	Factor Loadings
B10.72	0.653
B10.71	0.579
B10.67	0.567
B10.69	0.564
B10.70	0.555
B9.62	0.540
B10.68	0.521
B8.60	0.492
B9.63	0.482
B10.65	0.479
B10.66	0.468
B9.61	0.453
B8.59	0.426
B8.56	0.417
B857	0.342
B964	0.314
Explained Variance	13.686
Cronbach's Alpha	0.946
Eigenvalue	24.511
Number of items	16

The eigenvalue of 24.511 for proactiveness is greater than 1.00, which shows that the factor is stable and relevant (Kaiser, 1960). Eigenvalues are used to determine which factors are relevant and should therefore be analysed.

The proactiveness factor structure is therefore good and reliable

5.3.2.4 Management Support Factor Analysis

The fourth factor, management support, comprised all eight variables that were originally intended to measure the latent variable, management support (B1.1; B1.2; B1.3; B1.4; B1.5; B1.6; B1.7 and B1.8).

Management support is the desire by management (top management and middle management) to facilitate and promote entrepreneurial activities within the organisation, including championing innovative ideas and providing the necessary resources (Hornsby et al., 1993; Hisrich et al., 2008). This support is reflected in the quick adoption of employees' ideas, and the recognition of people who support small experimental projects and provide money to get the project off the ground (Kuratko and Hodgetts, 2004:63).

According to Kuratko and Hodgetts (2004:65), management must play a more people-orientated, or intangible, role. They must see the importance of valuing people to nurture talents and recognise efforts, where appropriate.

Table 5.7: Factor loadings for management support

Variable	**Factor Loadings**
B1.1	0.700
B1.2	0.658
B1.6	0.597
B1.3	0.590
B1.4	0.574
B1.8	0.439
B1.5	0.408
B1.7	0.359
Explained Variance	8.127
Cronbach's Alpha	0.837
Eigenvalue	4.002
Number of items	8

As shown in Table 5.7, Cronbach's alpha for management support of 0.837 is greater than 0.6 (Cronbach's Alpha > 0.6), which shows a good factor structure. The explained variance value of 8.127 for management support is favourable.

The eigenvalue of 4.002 for management support is greater than 1.00, which shows that the factor is relevant. The eigenvalue is used to determine which factors are relevant and should therefore be analysed. Management support as a factor should therefore be analysed.

The factor structure is therefore good and reliable.

5.3.2.5 Organisational Tolerance Factor Analysis

Factor five, labelled organisational tolerance, comprised five items. Five of the eight items that were originally intended to measure organisational tolerance (B2.12; B2.13; B2.14; B2.16 and B2.9) loaded onto the factor, organisational tolerance. Three of the eight items did not load onto organisational tolerance; they either loaded on other factors or they did not survive the 0.30 cut-off point for acceptable factor loading suggested by Steven (2002:395).

Rundh (2011:235) defines organisational tolerance as the ability of an organisation to respond to and introduce change; while Barrett et al., (2009:376) describe it as an organisation's ability to adapt administratively to situational knowledge. Organisational tolerance is reflected in the organisational practices and characteristics that demonstrate a willingness to accept, promote and enhance exploration within an organisation (McGrath, 2011:86).

Dawes (2007:20) views organisational tolerance for risks, mistakes and failure as inevitable and it should therefore be positively exploited. An organisation must learn from past mistakes and use this to improve future calculated risk taking. Hisrich and Peters (1992:50), as well as Kuratko and Hornsby (1998:30), concur with this view, as they state that a blaming-culture would be negative and would almost certainly ensure that the potential benefits of mistakes are not reaped. Turning mistakes into positive action is a reactive process and involves analysing the mistake for commonalities and then designing an appropriate future response or behaviour (Dawes, 2007:21).

For the purposes of this study, the construct of organisational tolerance refers to the ability of an organisation to adapt administratively to situational knowledge (Barrett et al., 2009:376) and practices that demonstrate a willingness to accept, promote and enhance exploration within the organisation (McGrath, 2011:96); where high-risk projects are fully supported, even with the possibility of failure, which is forgiven (Jordaan, 2008:54).

Factor loadings of organisational tolerance are shown in Table 5.8

Table 5.8: Factor Loadings for Organisational Tolerance

Variable	Factor Loadings
B2.12	0.512
B2.13	0.470
B2.14	0.401
B2.16	0.376
B2.9	0.326
Explained Variance	6.583
Cronbach's Alpha	0.724
Eigenvalue	2.842
Number of items	5

Organisational tolerance variables assessed how the organisation tolerates entrepreneurial activities in the organisation. The explained variance value of 6.583 is above 0.50 (Hair et al., 2014:130) and is favourable. Cronbach's Alpha of 0.724 is good and reliable since it is larger than 0.6 (Cronbach's Alpha > 0.6). The eigenvalue for organisational tolerance, 2.842, is greater than 1.00, which shows that the factor is relevant and should therefore be analysed.

The organisational tolerance measure is therefore structurally good and reliable.

5.3.2.6 Work Discretion Factor Analysis

Factor six, labelled work discretion, comprised three items (B3.18; B3.19 and B3.20). The other two items (B3.17 and B3.21) that were originally intended to measure work discretion were dropped because of insufficient factor loading (a factor loading less than 0.30).

Corporate entrepreneurs should be given autonomy to define their own work in a climate of freedom. They must be able to exercise discretion in their day-to-day activities (Bessant and Tidd, 2008:66). Kuratko et al. (2005:703) state that managers

should evaluate workloads to ensure that individuals and groups have the time needed to pursue innovations and that their jobs are structured in ways that support efforts to achieve short- and long- term organisational goals.

In this study, the construct 'work discretion' refers to whether time is provided to develop ideas; whether an individual generating an idea is allowed to see it through to completion; whether idea generation is forced; and whether growth and development opportunities are provided (Jordaan, 2008:57).

The construct of work discretion comprised three items. The larger the number of items in a factor, the more confidence the researcher will have that it will be a reliable factor. Tabachnick and Fidell (2007:520) counsel against retaining factors with fewer than three items. This view is supported by Hair et al. (2010:676) as they state that they prefer three or more items in a factor to provide minimum coverage of the construct's theoretical domain. Following this advice, the researcher chose to retain the construct of work discretion with three items.

Factor loadings for work discretion, its explained variance values and Cronbach's alpha are shown in Table 5.9, below.

Table 5.9: Factor loadings for work discretion

Variable	Factor Loadings
B3.19 B3.20 B3.18	0.710 0.630 0.432
Explained Variance	6.122
Cronbach's Alpha	0.757
Eigenvalue	1.767
Number of items	3

Table 5.9 showed that Cronbach's alpha for work discretion of 0.757 is greater that 0.6 (Cronbach's Alpha > 0.6), which shows good structure and reliability. The explained variance of 6.710 is favourable.

The eigenvalue of 1.767 for work discretion is greater 1.00, which shows that the factor is relevant. Eigenvalues are used to determine if the factor is relevant and should be analysed.

The structure is therefore good and reliable.

5.3.2.7 Rewards/Reinforcement Factor Analysis

Factor seven, labelled rewards/reinforcement, comprised eight items. Eight of the nine items (B4.30; B4.27; B4.22; B4.28; B4 23; B4.25; B4.24 and B4.26) that were originally intended to measure the construct of rewards/reinforcement loaded onto rewards/reinforcement. The other item cross-loaded onto other constructs, or it was dropped as it could not survive the cut-off factor loading point of 0.30, as recommended by Steven (2002:395).

A rewards and reinforcement system is used to motivate employees to engage in innovative behaviour that will support the realisation of corporate entrepreneurship activities. An effective reward system is one that drives entrepreneurial activity by considering the goals, giving feedback, emphasising responsibility and offering result-based incentives (Hornsby et al., 1993: 260; Hisrich et al., 2008: 403). McBeth and Rimac (2006:21) argue that one cannot expect creativity and innovation while measuring and rewarding the opposite. Organisations adopting an entrepreneurial orientation should place more emphasis on individual long-term performance, while rewarding group efforts to encourage collaboration. Although entrepreneurs are intrinsically highly motivated and desire freedom and access to corporate resources and learning experiences, they are also goal-oriented and seek rewards, feedback and recognition.

In this study, the construct of appropriate rewards and reinforcement refers to whether individuals receive additional rewards and compensation; whether recognition rather than criticism is emphasised; and whether supervisors give special recognition for outstanding performance (Jordaan, 2008:55). Table 5.6 shows that Cronbach's Alpha of 0.856 for rewards/reinforcement is greater 0.6 (Cronbach's Alpha > 0.6), which shows a good factor structure and reliability.

Table 5.10: Factor loadings for rewards/reinforcement

Variable	Factor Loadings
B4.30	0.558
B4.27	0.476
B4.22	0.455
B4.26	0.451
B4.23	0.444
B4.25	0.442
B4.24	0.388
B4.26	0.318

Explained Variance	9.571
Cronbach's Alpha	0.856
Eigenvalue	1.376
Number of items	8

The explained variance of 9.571 for rewards/reinforcement is favourable. The eigenvalue of 1.386 is greater than 1.00, which shows that the factor is relevant. The factor should therefore be analysed.

The factor structure is therefore good and reliable.

5.3.2.8 Discretionary Time Factor Analysis

The eighth factor, discretionary time, comprised eight items. Of the six items that were originally intended to measure the construct of discretionary time, only five items loaded onto this construct (B5.32; B5.33; B5.34; B5.35 and B5.36). The item, B5.31, did not load onto this construct, nor did it cross-load onto any other construct that was not theoretically intended to measure discretionary time. Two items (B6.40 and B6.37) that were originally intended to measure organisational boundaries loaded onto discretionary time and one item, B4.29, that was intended to measure rewards and reinforcement also loaded onto discretionary time.

The actual and perceived availability of discretionary time by employees is an important element in facilitating innovation and corporate entrepreneurship (Sykes and Block, 1989:160). The availability of time is a key element in entrepreneurial outcomes (Sleven and Covin, 1997: 107). Therefore, discretionary time is an essential organisational characteristic for the implementation of CE. In the present study, employee perceptions about discretionary time in the DoE environment are assessed with the aim of fostering a CE culture within the DoE in KZN.

The factor loadings of discretionary time, its explained variance values and Cronbach's alpha are shown in Table 5.11.

The explained variance of 10.419 is favourable. The Cronbach's alpha of 0.87 is good and reliable since it is larger than 0.6 (Cronbach's Alpha > 0.6). The eigenvalue for time availability, 1.556, is greater than 1.00, which shows that the factor is relevant and should therefore be analysed.

The measure is therefore structurally sound and reliable.

Table 5.11: Factor loadings for discretionary time

Variable	Factor Loadings
B5.36	0.633
B5.35	0.631
B5.32	0.589
B5.34	0.550
B6.40	0.441
B6.37	0.437
B4.29	0.431
B5.33	0.419
Explained Variance	10.419
Cronbach's alpha	0.870
Eigenvalue	1.556
Number of items	8

5.3.2.9 Organisational Boundaries Factor Analysis

The ninth factor, organisational boundaries, comprised six items. Five of the nine items that were originally intended to measure organisational boundaries loaded onto this factor (i.e. B6.38; B6.39; B6.43; B6.44 and B6.45). Two items (B6.37 and B6.40) loaded onto the construct for time and resource availability. The other two items that were originally intended to measure organisational boundaries did not load onto any other construct, or they did not survive the 0.30 cut off point for factor loading. One item, B2.15, that was originally intended to measure organisational tolerance loaded onto the organisational boundaries construct.

The organisational structure should be supportive of the innovation strategy and in turn acts as a foundation for the innovation process and systems (Gantsho, 2006:61). However, not all structures facilitate the implementation of innovation and entrepreneurial strategy.

Bureaucratic structures create barriers to entrepreneurial behaviour in organisations. The most familiar forms of bureaucracy include hierarchical control, centralised authority and inflexible or fixed functional boundaries. Burgelman (1998:460) argue that fixed and static bureaucratic organisational forms tend to stifle innovative behaviour.

In the present study, organisational boundaries refer to an alignment between departments and functions (Scheepers et al., 2013: 275). A flexible organisation allows for ease of transfer of information between the organisation and external

environment, and among the departments of the organisation. This flow of insight and information provides managers with the ability to take quicker decisions (Hornsby et al., 2009: 97). Organisations have to accommodate flatter structures to allow for sufficient flexibility to take decisions. The key to organisational boundaries is the creation of a context where managers are empowered to take decisions (Burgess, 2013:204).

Factor loadings for organisational boundaries, the explained variance and Cronbach's Alpha are shown in Table 5.12 below.

The explained variance is 7.541, which is favourable. Cronbach's Alpha of 0.810 is good and reliable since is larger than 0.6 (Cronbach's Alpha > 0.6). The eigenvalue for organisational boundaries, 2.200, is greater than 1.00, which shows that the factor is relevant and should therefore be analysed.

The measure is therefore structurally good and reliable.

Table 5.12: Factor loadings for Organisational Boundaries

Variable	Factor Loadings
B6.44	-0.599
B6.45	-0.522
B6.43	-0.407
B6.39	-0.363
B6.38	-0.323
B2.15	-0.311
Explained Variance	7.541
Cronbach's Alpha	0.810
Eigenvalue	2.200
Number of items	6

5.3.2.10 Organisational Performance Factor Analysis

Organisational performance relates to how successfully an organisation performs a function. It refers to the actual output or results of an organisation, measured against its intended outputs. According to Taiwo (2016:8), organisational performance refers to how successfully an organised group of people or individuals, with a purpose, perform a function. Taiwo (2016:8) defines organisational performance as the outcome of effective co-ordination of activities in an organisation.

In this study, organisational performance was measured using six items. These six items loaded into two groups of four items and two items. Although these items loaded into two different groups they all still measured the performance construct.

The first four items loaded onto what was labelled as 'university entrance performance' and the other two items loaded to what was labelled as 'output performance'. The first four items measured the number of learners who passed science and mathematics in the national senior certificate exam (Grade 12); the number of learners who passed with a bachelor's pass in the national senior certificate exam; and the overall pass rate percentage in the national senior certificate examination in each district for the past three years.

The last two items measured the repetition rate of learners in Grades 10 and 11 over the past three years, and the drop-out rate of learners in Grade 9 to 11 in the district for the past three years.

The two factors of organisational performance (i.e. university entrance and output) are discussed in detail below.

- **University Entrance Performance Factor Analysis**

This factor was the tenth factor in the factor analysis process. This factor comprised four items (i.e. C77; C76; C78 and C75) that were originally intended to measure organisational performance. These four items loaded onto one construct that was labelled university entrance performance.

The factor structure is therefore good and reliable.

Table 5.13 Factor loading for university entrance performance

Variable	Factor Loadings
C77 C76 C78 C79	0.719 0.710 0.590 0.450
Explained Variance	6.143
Cronbach's Alpha	0.776
Eigenvalue	2.842
Number of items	4

As shown in Table 5.13, Cronbach's Alpha for university entrance performance, 0.776, is greater than 0.6 (Cronbach's Alpha > 0.6), which shows a good factor structure and reliability. The explained variance of 6.143 for university entrance performance is 3.873 which show that the factor is favourable. The eigenvalue of 2.842 for university entrance performance is greater than 1.00, which shows that the factor is relevant. Eigenvalues are used to determine which factors are relevant and should therefore be analysed.

- **Performance output factor analysis the line spacing below does not seem to be the same with the one above. Please correct**

This factor was the eleventh factor in the factor analysis process. This factor comprised two items (i.e. C75 and C73) that were originally intended to measure organisational performance. These two items loaded onto one construct that was labelled performance output. According to Yong and Pearce (2013:80), a factor with two or fewer items is only considered significant if the correlation between the items is above 0.7 ($r > 0.7$) and they are relatively uncorrelated with other items. Although the correlation of these two items is less than 0.7, the two items are relatively uncorrelated with other factors. Their correlation, which is 0.642, is not far off 0.7. The researcher therefore decided to retain this factor, even though it has only two items.

Modisaotsile (2012:1) states that there is a high enrolment rate each year and an increasingly low output rate in the Department of Education in South Africa. As this study is dealing with the quality of education, it was important to have output rate as a performance measurement in the study. It is for that reason that the researcher decided to retain this performance measurement, even though it has only two items.

The factor loadings, explained variance and Cronbach's alpha coefficient for output performance factor are shown in Table 5.14.

Table 5.14 Factor loading for output performance

Variable	Factor Loadings
C74 C73	0.553 0.525
Explained Variance	3.873
Cronbach's Alpha	0.642
Eigenvalue	1.376
Number of items	2

As shown in Table 5.14, Cronbach's Alpha of 0.642 for output performance is greater than 0.6 (Cronbach's Alpha > 0.6), which shows a good factor structure and reliability. The explained variance of 3.873 for output performance is favourable. The eigenvalue of 1.376 for output performance is greater than 1.00, which shows that the factor is relevant. Eigenvalues are used to determine which factors are relevant and should therefore be analysed.

The factor structure is therefore good and reliable.

5.4 DATA RELIABILITY AND VALIDITY

Reliability and validity are distinctive features of a good measurement instrument (Zikmund, 2010:3 05). Reliability is when a test measures the same item a number of times, with the same outcome. Validity is when the property of a test measures what it purports to measure (Cooper and Schindler, 2014:257). The instrument was validated for reliability and consistency, as reflected by the respective factors, Cronbach's alpha values and explained variance values in Table 5.15.

Table 5.15: Cronbach's alpha values for the measuring instrument

Factor	Description	Abreviation	No. of items	Variance Explained	Cronbach alpha value
Factor 1	Innovativeness	INN	9	11.877	0.916
Factor 2	Proactiveness	PRO	16	5.870	0.672
Factor 3	Risk taking	RKT	2	13.686	0.946
Factor 4	Management support for CE	MNG	8	8.127	0.837
Factor 5	Organisational tolerance	OGT	5	6.583	0.724
Factor 6	Work discretion	WKD	3	6.122	0.757
Factor 7	Rewards and reinforcement	RWS	8	9.571	0.856
Factor 8	Discretionary time	DST	8	10.419	0.870
Factor 9	Organisational boundaries	OGB	6	7.541	0.810
Factor 10	University entrance performance	UEP	4	6.143	0.778
Factor 11	Output performance	OTP	2	3.873	0.642

It is therefore concluded that the questionnaire variables (questions) are reliable; and that the constructs are measuring what they are supposed to measure, indicating a good and reliable instrument.

The next section, Section 5.5, will revisit the study's aims and objectives and test the stated hypotheses.

5.5 EVALUATING THE RESEARCH OBJECTIVES AND HYPOTHESES

The primary objective of the study was to determine the extent the working environment is entrepreneurial and how this affects performance. This would be achieved through the five secondary objectives of the study which were:

- to assess the levels of corporate entrepreneurship practices in the Department of Education in KwaZulu-Natal;
- to explore the relationship between the entrepreneurial orientation elements and corporate entrepreneurship environmental elements within the Department of Education in KZN;
- to establish the relationship between entrepreneurial orientation elements and performance within the Department of Education in KZN;
- to establish the relationship between corporate entrepreneurship elements and organisational performance;
- to establish whether differences in perception existed among the departments' management regarding the entrepreneurial climate within the Department of Education.

The first secondary objectives will be dicussed below.

5.5.1 Assessment of Levels of Corporate Entrepreneurship Elements in the Department of Education.

As previously discussed, a Likert scale was used to evaluate the 65 statements that were used to assess corporate entrepreneurship elements in the Department of Education in KZN. In respect of each statement, participants had to indicate their degree of agreement (5) or disagreement (1) with the statement's content. Thus, a higher number agreeing with the statement suggests that the statement is perceived to be true. Likewise, a high number disagreeing suggests that the statement is perceived to be untrue.

The Likert scale results were analysed using descriptive statistics and it was assumed that a score of greater than three out of five is an indication of a positive inclination towards the statement. The outcome of the survey suggests that there is general agreement that CE elements are present in the Department of Education in KZN. All the elements have an average mean score that is above three out of five. The results of the means analysis of the CE constructs are represented in Table 5.16.

The average mean of all the constructs, as evaluated by the participants, was 3.4270; indicating that the prevalence of elements of corporate entrepreneurship

within the Department of Education was 3.4270 out of five on the Likert scale. It would seem that the elements for an entrepreneurial climate have a fairly strong presence, but there is still room for improvement.

Table 5.16: Entrepreneurial climate survey results

Factor	N	Min	Max	Mean	Std Dev.
Innovativeness	420	1.00	5.00	3.7980	0.69522
Proactiveness	419	1.00	5.00	3.6247	0.70272
Risk taking	417	1.00	5.00	3.3237	0.91829
Management support for CE	426	1.00	5.00	3.3698	0.68521
Organisational tolerance	420	1.00	5.00	3.2675	0.66170
Work discretion	419	1.00	5.00	3.3178	0.79478
Rewards/Reinforcement	422	1.00	5.00	3.3277	0.78502
Discretionary time	424	1.00	5.00	3.1787	0.81245
Organisational boundaries	425	1.00	5.00	3.6353	0.68019
Average	**421**	**1.00**	**5.00**	**3.4270**	0.74839

Six of the nine constructs evaluated, **management support for CE** (mean = 3.3698); **risk taking** (mean = 3.3237); **rewards/reinforcement** (mean = 3.3277); **work discretion** (mean = 3.3173); **organisational tolerance** (mean = 3.2675) and **discretionary time** (mean = 3.1787) each had a mean below the average mean (3.3975), but all the CE elements still had mean above three out of five.

The CE elements with highest mean scores were **innovativeness** (mean =3.7980), **organisational boundaries** (mean = 3.6353) and **proactiveness** (mean = 3.6247). Each had a mean higher than the average mean of 3.4270. The results indicate that these elements were perceived by participates to have a strong presence in the department.

The first study objective was to assess the level of corporate entrepreneurship practice in the Department of Education in KwaZulu-Natal.

The results above indicate that these elements of corporate entrepreneurship are present in the Department of Education in KZN, as perceived by the participants in the Department of Education in KZN.

In order to achieve the next three objectives and the stated hypotheses, a correlation analysis was carried out.

5.6 CORRELATION ANALYSIS

The correlation analysis was carried out to find out the nature of the relationships between groups of variables or factors. Factors were isolated through factor analysis, as discussed previously. The relationships between data groups are important since they provide better understanding of the data, such as the nature of the relationship. The study's hypotheses attempt to establish the nature and extent of the relationships between the different variables/factors. It is the nature of these correlations that results in the acceptance or rejection of the hypothesis. Owing to the fact that most of the study's hypotheses theorises on some relationships, the correlation outcomes are important findings of this study.

The Pearson product moment r correlation test was carried out on the eleven factors to assess the relationship between the factors. The Pearson r correlation is a bivariate measurement of the association (strength) of relationship between variables.

A Pearson's moment correlation is represented by the r, ranging from -1.0 to +1.0. A correlation can be positive or negative. A perfect negative correlation would be -1.0 while +1.0 would be a perfect positive correlation and 0.0 would be a sign of no correlation (Cohen et al., 2003:28).

In a positive relationship, there is a direct relationship; that is, as the variable increases, the other variable increases. A negative correlation is described as inverse; as the variable increases, the other variable decreases.

A correlation coefficient is a pure number, not expressed in any measurement. It is independent of the size and units of measurement (Copper and Schindler, 2014:469). Caldwell's (2007) convention to interpret the coefficient scores is detailed below:

- 0,10 – 0,29 = weak correlation
- 0,30 – 0,49 = moderate correlation
- 0,50 or larger = strong correlation (Caldwell, 2007:289).

The results of the correlation test carried out are shown in Table 5. 17below.

Table 5.17: Pearson's correlations between the various factors

N0	Factor		1	2	3	4	5	6	7	8	9	10	11
1	INN	Pearson Correlation Sig(2-tailed) N	1 420										
2	PRO	Pearson Correlation Sig(2-tailed) N	.825[xx] 0.000 419	1 419									
3	RKT	Pearson Correlation Sig(2-tailed) N	.337[xx] 0.000 411	.345[xx] 0.000 410	1 417								
4	MNG	Pearson Correlation Sig(2-tailed) N	.409[xx] 0.000 420	.288[xx] 0.000 396	.393[xx] 0.000 417	1 426							
5	OGT	Pearson Correlation Sig(2-tailed) N	.471[xx] 0.000 313	.485[xx] 0.000 413	.387[xx] 0.000 417	.567[xx] 0.000 420	1 420						
6	WKD	Pearson Correlation Sig(2-tailed) N	.418[xx] 0.000 414	.453[xx] 0.000 13	.293[xx] 0.000 416	.388[xx] 0.000 419	.455[xx] 0.000 416	1 419					
7	RWS	Pearson Correlation Sig(2-tailed) N	.572[xx] 0.000 418	.618[xx] 0.000 417	.398[xx] 0.000 413	.491[xx] 0.000 416	426[xx] 0.000 418	.455[xx] 0.000 416	1 422				
8	DST	Pearson Correlation Sig(2-tailed) N	.554[xx] 0.000 420	.609[xx] 0.000 419	.312[xx] 0.000 415	.467[xx] 0.000 418	.467[xx] 0.000 418	.426[xx] 0.000 418	.630[xx] 0.000 422	1 424			
9	OGB	Pearson Correlation Sig(2-tailed) N	.625[xx] 0.000 420	.653[xx] 0.000 319	.356[xx] 0.000 416	.519[xx] 0.000 419	.519[xx] 0.000 419	.461[xx] 0.000 418	.617[xx] 0.00 421	.584[xx] 0.000 423	1 425		
10	UEP	Pearson Correlation Sig(2-tailed) N	.301[xx] 0.000 394	.338[xx] 0.000 394	.195[xx] 0.000 386	.332[xx] 0.000 394	.519[xx] 0.000 419	.280[xx] 0.000 388	.236[xx] 0.000 392	.280[xx] 0.000 388	.332[xx] 0.000 394	1 394	
11	OTP	Pearson Correlation Sig(2-tailed) N	.301[xx] 0.000 394	.288[xx] 0.000 396	.197[xx] 0.000 387	.168[xx] 0.000 396	.188[xx] 0.000 390	.180[xx] 0.000 390	.252[xx] 0.000 394	.222[xx] 0.000 396	.168[xx] 0.000 396	.273[xx] 0.000 394	1 399

[xx] "Correlation is significant at α = 0.01 level (2-tailed)"

5.6.1 The Relationship Between EO and CE Elements

Objective number two of the study was to explore the relationship between the entrepreneurial orientation elements and corporate entrepreneurship environmental elements within the Department of Education in KZN. In order to achieve this objective, a number of hypotheses were postulated:

H_o1: There is no statistically significant correlation between innovativeness and each of the corporate entrepreneurship elements H_o1 (a-f) in the Department of Education in KZN.

H_o2: There is no statistically significant correlation between proactiveness and each of the corporate entrepreneurship elements H_o2 (a-f) in the Department of Education in KZN.

H_o3: There is no statistically significant correlation between risk taking and each of the corporate entrepreneurship elements H_o3 (a-f) in the Department of Education in KZN.

5.6.2 The Relationship Between EO Elements and Performance

Objective three was to establish the relationship between entrepreneurial orientation elements and performance within the Department of Education in KZN. In order to achieve these objectives, the following hypotheses were postulated:

H_04: There is no statistically significant correlation between innovativeness and each performance measurement H_04 (a-b) in the Department of Education in KZN.

H_o5: There is no statistically significant correlation between proactiveness and each performance measurement H_05 (a-b) in the Department of Education in KZN.

H_o6: There is no statistically significant correlation between risk taking and each performance measurement H_06 (a-b) in the Department of Education in KZN.

5.6.3 The Relationship Between CE Elements and Performance

The fourth objective of the study was to establish the relationship between corporate entrepreneurship elements and performance within the Department of Education in KZN. In order to achieve this objective, the following hypothesis was postulated:

H_o7: There is no statistically significant correlation between each of the corporate entrepreneurship elements H_o7 (a_{1-2}-f_{1-2}) and the two performance measurements in the Department of Education in KZN.

The above relationships were then measured using correlation analysis.

5.6.4 Results and Discussion

The Pearson's coefficients, in Table 5.17, show that there is a significant, positive correlation between each of the EO factors (innovativeness, proactiveness and risk taking) and all the CE and performance factors, tested at 0.01. All the p values are less than 0.01 ($p < 0.01$), therefore all hypotheses are rejected. These correlations are interpreted in terms of the conceptual significance due to the large number of participants (419)". Hair et al. (1998:682) warn that "correlations within large sample groups could be inflated and could therefore be significant by chance.

5.6.4.1 The Relationship Between EO and CE Elements

The decisions are as follows:

1. **$H_0$1(a-f) : Rejected**
2. **$H_0$2(a-f) : Rejected**
3. **$H_0$3(a-f) : Rejected**

Each of these correlations is discussed in detail, starting with the innovativeness factor.

- **Innovativeness and management support for CE correlation**

Hypothesis $H_0$1a stated that there is no statistically significant correlation between innovativeness and management support for CE in the Department of Education in KZN.

Table 5.17 shows that there is a positive and significant relationship between innovativeness and management support for CE. This is evidenced by the positive relationship ($r=0.409$) and the p-value of $\alpha = 0.001$, which is less than the critical value ($\alpha = 0.01$). **Therefore hypothesis $H_0$1a is rejected.**

Management support for CE refers to the willingness of management to promote entrepreneurial behaviour, including the championing of innovative ideas and providing the resources people require to take entrepreneurial action (Bhardwaj et al., 2007a:51). According to Scheepers et al., (2008:54), management support indicates the willingness of management to facilitate and promote entrepreneurship in the organisation.

The results of the study, as indicated in Section 5.4, reflect that respondents are of the view that management support in the Department of Education in KZN would lead to innovativeness. The results indicate that, in the Department of Education in KZN, management is willing to facilitate and promote innovation. This is evidenced by the respondents' mean score of 3.3698 out of 5, which is above 3. Respondents also perceived that the level of innovation in the Department of Education in KZN is above average, shown by its mean score of 3.7980.

The results are consistent with the assertion by Hornsby et al., (2009:86) and Kuratko et al., (2014:38) that management support for CE has a direct positive relationship with the organisation's entrepreneurial outcomes, such as innovativeness. Furthermore, research indicates that each level of management plays key roles in facilitating sustainable corporate entrepreneurship"(Kuratko et al., 2014:39).

Although the finding is that, there is positive and significant correlation between management support and innovativeness, it is important to understand how management in education support innovation. Public sector organisations are known to be bureauracratic with standard rules and procedures. According to Ernest and Young Global Limited (2016:1), public sector organisations struggle to define innovation and lack a strategic approach for generating, capturing and implementing innovative ideas. Innovationnes is expensive to implement, yet the Department of Education is only relying on the budget provided by treasury. Ernest and Young Global Limited (2016) warn us that the sole action of generating ideas is not innovation, an idea only becomes innovation when it has been implemented in a form that generate value. The Department of Education is known for good ideas that are rarely implemented. Finally on this point, radically improving the efficiency and quality of teaching and learning theories and practice, as well as the role of learners, teachers and society's culture on education should be the primary focus of educational change, and managers are key drivers thereof (Serdyukov (2017:12).

- **Innovativeness and organisational tolerance**

Hypothesis $H_0$1b stated that there is no statistically significant correlation between innovativeness and organisational tolerance in the Department of Education in KZN.

As can be seen from Table 5.17, there is a positive and significant correlation between innovativeness and organisational tolerance. This is evidenced by the positive relationship (r=0.471) and p = 0.001, which is less than (α = 0.01). **Therefore hypothesis $H_0$1b is rejected**

Organisational tolerance is an organisational practice and characteristic that demonstrates willingness by management to accept, promote and enhance exploration within an organisation. Kriegesman et al., (2005:250) argued that organisations whose culture displayed an intolerance of failure would develop innovative incompetence because creative and fearless behaviours would be avoided. Managers, as explained by McGrath (2011:98), should understand the need to reduce the fear of failure in employees. Employees should fail earlier on and learn as much as possible in the process (McGrath, 2011:99).

The results indicate that the respondents are of the view that organisational tolerance in the Department of Education in KZN would support innovativeness. Although the mean for organisational tolerance (3.2675) is below the average mean (3.427), it is still above 3 out of five on the measuring scale. The results indicate that the respondents are of the view that management in the Department of Education is tolerant of failure.

The results are consistent with the findings by Jaworski and Kohli (1993:57) that organisational tolerance encourages successful development of innovative corporate entrepreneurial actions. This is supported by van de Ven and Poole (1995:512) who stated that organisational tolerance is vital for any innovation that supports entrepreneurial actions of an organisation.

- **Innovativeness and work discretion**

Hypothesis $H_0$1c stated that there is no statistically significant correlation between innovativeness and work discretion in the Department of Education in KZN.

Table 5.17 shows that there is a positive and significant correlation between work discretion and innovativeness. This is evidenced by the positive relationship of r = 0.418 and the p-value 0.001 which is less than (α = 0.01). **Therefore hypothesis $H_0$1c is rejected**.

Work discretion is a construct that is affected by a number of factors: degree of formality and prescriptiveness; desire for conformity and compliance with set job descriptions; degree of rigidity in work formats; desire for consistency from time to time and between people doing the same task; desire for individual initiative in carrying out tasks; and level of freedom and discretion in one's own job (Morris and Kuratko, 2002:220). The facilitation of entrepreneurship is consistent with role flexibility and autonomy, which can be achieved if employees enjoy a high degree of autonomy and are empowered to exercise discretion and personal initiative in performing their jobs (Gantsho, 2006:59).

Kuratko (2005:702), in Seqhobane (2010:62), defines work discretion as a manager's commitment to provide decision-making latitude and freedom from excessive oversight, and to delegate authority and responsibility to employees.

The results indicate that respondents are of the view that work discretion as an element of CE is being practised in the Department of Education in KZN. Although the mean score for work discretion (3.3178) is below the average mean, it is above 3 out of five, which is an indication that respondents perceive work discretion as one of the management practices that are used to promote innovation in the Department of Education in KZN.

Organisations must manage people's workload and avoid putting limitations "on all aspects of a person's job; and people must be allowed to work with others in long-term problem solving" (Ireland et al., 2006:27).

The findings reinforce the "theory of corporate entrepreneurship that work discretion assists in the fostering of corporate entrepreneurship in an organisation" (Hornsby et al., 2002; Kuratko et al., 2005). The finding supports Ahmad et al., (2012:165), who noted that "work discretion has a significant, positive effect on corporate entrepreneurship"; and La Nifie et al., (2014:87), who stated that "work discretion is positively related to innovativeness as an entrepreneurial orientation factor".

- **Innovativeness and rewards/reinforcement**

Hypothesis $H_0$1d stated that there is no statistically significant correlation between innovativeness and rewards/reinforcement in the Department of Education in KZN.

As can be seen from Table 5.17, there is a positive and significant correlation between rewards/reinforcement and innovativeness. This is evidenced by the positive relationship r = 0.572 and p = 0.001 which is less than (α = 0.01). **Therefore hypothesis $H_0$1d is rejected**.

One of the variables that inspire an organisation's capability to act entrepreneurially is the organisation's ability to assess, promote and reward innovative activities (Bluedorn, 1999:423). As Barron and Shane (2005:332) put it, people work harder when they believe that they are fairly treated. Employees normally feel appreciated when an incentive equals their expectation, when they feel valuable, and when they are perceived as equal among their team members.

The results show that respondents perceived that the rewards/reinforcement system of the Department of Education in KZN encourages employees to be innovative.

The results are consistent with Diefenbach's (2011:71) findings that rewards/reinforcement are positively correlated with entrepreneurial orientation. La Nafie et al., (2014:87) also found that the rewards/reinforcement system of an organisation is positively related to corporate entrepreneurship. This finding reinforces Hough and Scheepers's (2008:19) assertion that the more reward given to employees, the more innovative the employees would be. In addition, the results support Ahmad et al.,(2012:168), who wrote that "the reward system has a significant, positive effect on entrepreneurial orientation in an organisation".

- **Innovativeness and discretionary time**

Hypothesis $H_0$1e stated that there is no statistically significant correlation between innovativeness and discretionary time in the Department of Education in KZN. This relationship is positive and significant, as reflected in Table 5.17.This is evidenced by the positive relationship (r=0.554) and p = 0.001 which is less than (α = 0.01). **Hence hypothesis $H_0$1e is rejected**.

Hornsby et al. (1992: 456), in Gatsho (2006:60), observe that "fostering corporate entrepreneurship requires that individuals be afforded time to incubate new and innovative ideas. Therefore, the workload of employees must be moderated to such an extent that they are allowed to work with others on time-consuming innovations".

The results reflect that respondents tended to have a neutral view towards this factor. This is evidenced by the mean score of 3.178 out of 5 for discretionary time. Although the respondents tended to have a neutral view on this factor, they were slightly positive, showing that there is an element of moderation of employee workload and they do, at times, work with others on time-consuming innovations.

- **Innovativeness and organisational boundaries**

Hypothesis $H_0$1f stated that there is no statistically significant correlation between innovativeness and organisational boundaries in the Department of Education in KZN. This correlation is positive and significant with r = 0.625 and p= 0.001, which is less than (α = 0.01) as reflected in Table 5.17. **Therefore hypothesis $H_0$1f is rejected.**

Miller et al., (2007:311) and Monte et al., (2004:170) described organisational boundaries as information sharing between internal and external stakeholders, a flexible boundary of sharing information and collaboration between different departments and divisions. Flexible boundaries are an enabler of CE.

The results of the study reflect that respondents are of the view that organisational boundaries in the Department of Education in KZN lead to innovativeness. This is evidenced by the mean score of 3.6353 for organisational boundaries. This mean score is above even the average mean score of 3.427.This suggests that employees in the Department of Education in KZN are able to share information and there is collaboration between different departments and divisions.

The results are consistent with Lekmat's (2014:185) findings that organisational boundaries relate positively to entrepreneurial orientation. La Nafie et al., (2014:87) also indicate that supportive organisational structures and flat boundaries are positively related to entrepreneurial orientation. The finding supports the assumption that a supportive organisational structure and boundaries may increase the implementation of corporate entrepreneurship (Chen and Cangahuala, 2010:1747).

Innovativeness has been regarded as an essential part of entrepreneurship since 1942, when Schumpeter argued that the competitive entry of innovative new combinations into a market place advanced society by disrupting the existing market (cited by Lumpkin and Dess, 1999:142). Lumpkin and Dess (1999:142) defined

innovativeness, as it pertains to entrepreneurial orientation, as an organisation's propensity to engage in and support new ideas, experimentation and creative processes that may result in new services or processes. Short, Payne, Brigham, Lumpkin and Broberg (2009:13) concurred with this definition. In agreeing with this view, Nybakk and Hansen (2008:474) added that these organisations departed from the established practices and technologies. Bhardwaj et al. (2007:49) added that the innovativeness dimension refers to service innovation, with emphasis on development and innovation in technology. Innovativeness and willingness to change are central aspects in examining entrepreneurial orientation (Weismeier-Sammer, 2011:131).

Research postulates that emerging markets and established organisations rely more on sustainable product and service innovativeness, innovative management systems, and international expansion as ways to enhance their strategic competitiveness (Yiu and Lau, 2008:50). Innovativeness has been an essential part of entrepreneurship for many years, and it has been proven that organisational returns and strategic competitiveness are enhanced by innovativeness. The relationship between innovativeness and organisational performance enjoys the greatest degree of consensus (Casillas and Moreno, 2010:269). Rauch et al. (2009:782) also found a positive relationship between innovativeness and organisational performance.

Wickham (2006:221) mentions that innovation goes beyond just invention: it means doing something in a way that is new, different and better. Innovation is a key ingredient in the entrepreneurial process, and putting into practice new ideas, is a central characteristic of entrepreneurial behaviour. The Department of Education in South Africa has improved the participation rate in the education sector. In 2007, 94% of youth aged 7 to 18 were involved in education programmes (Commonwealth Education Partnership, 2010:22). Progress in primary school completion is also positive. The Department of Education is using Information Communication Technology (ICT) in schools to improve the effectiveness of teaching and the availability of materials (Department of Education, 2012:67). Participation in intercontinental and international assessment programmes, such as the Southern and Eastern African Consortium for Monitoring Educational Outcomes (SACMEQ) and Trends in International Mathematics and Science (TIMMS), is used by the

Department of Education to improve learner and system performance in the intermediate and senior phases, as well as in the FET band, in partnership with business and civil society through the National Education Collaboration Trust (NECT), and through interaction with communities through the Quality Learning and Teaching Campaign (QLTC). The TIMSS results show that “South Africa has shown a relative improvement in learning outcomes between 2002 and 2015 in mathematics and science, from a low base, among all countries that were assessed in 2015” (Department of Basic Education, 2016:205).

The next section is going to discuss the relationship between proactiveness and CE elements, starting with management support for CE.

Proactiveness is explained by Lumpkin and Dess (1996:146) as taking the initiative by anticipating and pursuing new opportunities. It is associated with leadership, not following. A proactive enterprise has the will and foresight to seize new opportunities even if it is not the first to do so (1996:147). Proactiveness is the seizing of an initiative and acting opportunistically in order to shape the environment (Callaghan and Venter, 2011:31).

- **Proactiveness and management support for CE**

Hypothesis $H_0$2a stated that there is no statistically significant correlation between proactiveness and management support for CE in the Department of Education in KZN. Table 5.17 shows that there is a positive and significant correlation between management support for CE and proactiveness. This is evidenced by the positive relationship ($r=0.288$) and the $p<0.01$. **Therefore $H_0$2a is rejected**.

The result is consistent with van Zyl’s (2015:69) findings from his study on the middle manager’s “perception of the internal environment and its relationship to entrepreneurial orientation in the South African coal mining industry: that management support for CE is related to the level of entrepreneurial orientation of an organisation”. Another study by Scheerpers et al. (2008:186) found that management support for CE should be supportive of entrepreneurial actions in the organisation. As Popper and Mayseless (2003:42) suggest, managers, like parents, are figures whose role includes directing and taking care of others less powerful than they and whose fate is highly dependent on them. The findings substantiate the idea

that managers can serve as secure bases to enhance employees' competence and motivation for exploration and associated proactivity at work (Wu and Parker, 2017:27).

Managing the organisation by improving organisational structure through self evaluation, organisation and management of people and resources in order to build capacity across the work place and deploy cost effective resources is defined by Day and Sammons (2003:632) as proactiveness in the public sector.The study by the same autors in 43 school districts in North America focusing on 'Learning from Leadership' found no single case of a school which was improving its learner achievement in the absence of talented leadership.. This statement suggests that no institution can be successful without a proactive leardership. The findings of that study were echoed in another study by Robinson, Hohepa and Ltyod (2009) on school leadership which found that leaders have direct and indirect effects on student learning; - direct effects from the building of organisational learning through working with staff and a leadership with a clear focus on teaching and learning. The This had indirect effect on student motivation, behaviour engagement, and learner achievement. In short, it appears that it is the collective leadership effects that count in an organisation. Effective leardership is the one that is proactive and build the organisational structure through working together with all stakehoders.

- **Proactiveness and organisational tolerance**

Hypothesis $H_0$2b stated that there is no statistically significant correlation between proactiveness and organisational tolerance in the Department of Education in KZN. As can be seen from Table 5.17, there is a positive and significant correlation between organisational tolerance and proactiveness. This is evidenced by the positive relationship ($r=0.486$) and $p = 0.001$ which is less than ($\alpha = 0.01$). **Therefore $H_0$2b is rejected**.

The results are consistent with Frenkel-Bruswik's (1948) argument, cited in McLain, Kefallonitis and Armani (2015:2), that organisational tolerance is to be conceived as a general personality variable relevant to entrepreneurial orientation. Bearse (1982) further argued that entrepreneurial managers are believed to be more tolerant than conservative managers because entrepreneurial managers confront a less structured, more uncertain set of possibilities and bear the ultimate responsibility for

decisions that support entrepreneurial orientation in an organisation (McLain et al., 2015:5).

Proactiveness, as explained by Miller (1983), Covin and Slevin (1981), and Lumpkin and Dess (2001:6), is concerned with a forward-looking perspective, reflected in actions taken in anticipation of future demand. The Department of Education in KZN is collaborating with other better-performing provinces such as Free State, Gauteng and the Western Cape to improve learner performance.

- **Proactiveness and work discretion**

Hypothesis $H_0$2c stated that there is no statistically significant correlation between proactiveness and work discretion in the Department of Education in KZN. As can be seen from Table 5.17, the relationship between work discretion and proactiveness is positive and significant. This is evidenced by the positive relationship (r=0.453) and p = 0.001, which is less than (α = 0.01). **Therefore $H_0$2c is rejected.**

Work discretion refers to the extent that workers or employees in an organisation are able to make decisions about performing their own work in the way they believe is most effective (Malatjie and Rankhumise, 2017:203). Organisations should allow employees to make decisions about their work process, and should avoid criticising employees for making mistakes when being innovative. Employees who are encouraged to decide how to achieve goals will find more creative ways of doing so and they are more likely to experiment and innovate when fewer strict rules and procedures are in place (Meynhardt and Diefenbach, 20012:768).

The results indicate that there is a positive correlation between work discretion and proactiveness in the Department of Education. The results are consistent with Hornsby et al., (2013:942), who found a positive relationship between work discretion and entrepreneurial action at all management levels. Verachia (2017:29) also observed that successful innovation managers set goals and allow teams to decide how to achieve them within defined constrains.

- **Proactiveness and rewards/reinforcement**

Hypothesis $H_0$2d stated that there is no statistically significant correlation between proactiveness and rewards/reinforcement in the Department of Education in KZN.

Table 5.17 shows that there is a positive and significant correlation between rewards/reinforcement and proactiveness. This is evidenced by the positive relationship (r=0.618) and p < 0.01. **Therefore hypothesis $H_0$2d is rejected**.

The results are consistent with Lekmat and Chelliah's (2014:194) findings that rewards/reinforcement positively relate to entrepreneurial orientation. The finding supports Ahmad et al. (2012:169) who noted that a reward system has a significant, positive effect on the entrepreneurial posture of an organisation.

- **Proactiveness and discretionary time**

Hypothesis $H_0$2e stated that there is no statistically significant correlation between proactiveness and discretionary time in the Department of Education in KZN. As can be seen from Table 5.17, there is a positive and significant correlation between time availability and proactiveness. This is evidenced by the positive relationship (r=0.609) and p < 0.01. **Therefore $H_0$2e is rejected.**

The results indicate that time availability and other resources are positively related to proactiveness in the Department of Education. The results are consistent with the findings of La Nafie et al. (2014:195) that an organisation's time and resource availability has a significant, positive effect on proactiveness as an element of entrepreneurial orientation. The results are in contrast to the findings of the research by Hough and Scheepers (2008:21) that resource availability has no significant effect on corporate entrepreneurship. However, the findings support Ahmad et al., (2012:170) that resource and time availability in an organisation has a positive and significant effect on corporate entrepreneurship.

- **Proactiveness and organisational boundaries**

Hypothesis $H_0$2f stated that there is no statistically significant correlation between proactiveness and organisational boundaries in the Department of Education in KZN. As can be seen from Table 5.17, there is a positive and significant correlation between organisational boundaries and proactiveness. This is evidenced by the positive relationship (r=0.653) and p < 0.01. **Therefore the hypothesis $H_0$2f is rejected**.

The results are consistent with Lemkat's (2014:195) conclusion that organisational boundaries are significantly predictive of proactiveness as an element of entrepreneurial orientation. The finding supports the theory stating that supportive organisational structures and boundaries may increase the implementation of corporate entrepreneurship (Lemkat, 2014:196).

- **Risk taking and CE elements**

The hypotheses postulated and tested are as follows:

$H_0$3: There is no significant correlation between **risk taking** and the CE elements: management support for CE **($H_0$3a**); organisational tolerance **($H_0$3b)**; work discretion (**$H_0$3c)**; rewards/reinforcement **($H_0$3d)**; discretionary time **($H_0$3e)** and organisational boundaries **($H_0$3f).** The results in Table 5.17 show that there is a positive, significant correlation between risk taking and each of the CE elements. All the correlations between risk taking and CE elements are less than the critical value ($p < 0.01$). **Hypotheses $H_0$3 (a-f) are rejected.**

The positive and significant correlation between risk taking and management support for CE in this study is consistent with the assertion by Morrison et al. (2008:259) that managers are willing to support, facilitate and promote entrepreneurial behaviour, such as risk taking, in an organisation. Okhomina (2010:4) suggested that creativity and innovativeness require a certain degree of tolerance for risk taking in an organisation. The organisation's ability to be tolerant of ambiguous situations is positively related to the risk taking behaviour of the entrepreneur (Okhomina, 2010:4).

The results in Table 5.17 indicate that there is a positive and significant correlation between risk taking and work discretion in the Department of Education in KZN. The results are consistent with Diefenbach's (2011:144) findings that work discretion has a small, but positive, effect on entrepreneurial behaviour, such as risk taking in an organisation. The results show a positive and significant correlation between risk taking and rewards/reinforcement in the Department of Education in KZN.The results reinforce the theory of corporate entrepreneurship, that rewards/reinforcement assist in the fostering of entrepreneurial actions in an organisation (Rutherford and Holt, 2007:204). The results corroborate Nacinovic, Galetic and Cavlek's (2009:380)

finding in their study of Croatian firms, that the correlation coefficient showed that risk taking and rewards/reinforcement were statistically related, although the strength of the relationship was not high. The present study found the correlation coefficient between risk taking and reward/reinforcement to be 0.398, which, according to Caldwell (2007:289), is a moderate correlation. The results indicate that the relationship is not that simple to explain as there are numerous factors which influence it (Nacinovic et al., 2009:382).

As can be seen from Table 5.17, there is a positive and significant correlation between risk taking and rewards/reinforcement in the Department of Education in KZN. The results are consistent with Ahmad et al.,'s (2012:168) finding that time and other resource availability has a positive and significant effect on entrepreneurial behaviour, such as risk taking. The results are, however, in contrast with Diefenbach's (2011:145) findings that the dimension resource and time availability has no significant effect on entrepreneurial orientation factors such as risk taking. Diefenbach (2011) conducted a study of 250 middle-managers in Germany's Federal Labour Agency. The study is relevant to the present study as it also sought a better understanding of entrepreneurial orientation in the public sector.

The correlation between risk taking and organisational boundaries was also tested. The results show a positive and significant relationship between risk taking and organisational boundaries. The results are consistent with Miller, Fern and Cardinal's (2007:309) findings that a flexible organisation allows for ease of transfer of information between the organisation and the external environment, and among the organisation's units. This flow of insight and information, according to Hornsby et al. (2013:936), provides managers with the ability to take quicker decisions. The key to organisational boundaries is the creation of a context where managers are empowered to take decisions (Burgess, 2013:127).

The issue of risk is a central component in the study of entrepreneurship (Malatjie, Garg and Rankhumise, 2017:206). Public sector organisations, such as the Department of Education, are known to be bureaucratic and their risk taking propensity is very low, if not non-existent. Bureaucracy is the traditional organisation style of the Department of Education: these are formalised organisation structures that are characterised by explicitly articulated and written policies; job descriptions;

organisational charts; strategic/operational plans and objective-setting systems (Mabala, 2012:30; Kearney and Morris, 2015:435). Research has shown that risk aversion impedes entrepreneurial behaviour (Mabala, 2012:48; Kearney et al., 2007:289). Although risk taking decisions are not always desirable in the public sector, such as the Department of Education, public sector organisations need to take some kind of risk since their policy environment is never entirely predictable and stable (Kearney et al., 2007:283). In this study, the hypothesised relationship between risk and elements of CE was supported and risk taking was found to be a positive and significant element in CE.

5.6.4.2 The Relationship Between EO Elements and Performance

This section will answer the third objective of the study: to establish the relationship between EO elements and the two performance measurements. All the correlations between EO elements and each of the two performance measurements (university entrance and output performance) are positive and significant.

The decisions are as follows:

1. **$H_0$4(a-b) : Rejected**
2. **$H_0$5(a-b) : Rejected**
3. **$H_0$6(a-b) : Rejected**

- **Innovativeness and university entrance performance.**

Hypothesis $H_0$4a stated that there is no statistically significant correlation between innovativeness and university performance in the Department of Education in KZN. This correlation is positive and significant with r = 0.301 and p= 0.001, which is less than ($p < 0.01$) as reflected in Table 5.17. **Therefore hypothesis $H_0$4a is rejected.**

The results indicate that the strength of the relationship between innovativeness and university entrance performance is moderate (r=0301). Although there is a moderate relationship between innovativeness and university entrance performance, the results indicate that respondents find the Department of Education in KZN to be innovative. This is reflected in the mean score of 3.7980 for innovativeness. The results imply that the Department of Basic Education is innovative in its efforts to increase the number of learners who qualify for university entrance. The finding is

consistent with those of Zahra and Garvis (2000:469), who stated that innovation can lead to the development of key capabilities that can improve an organisation's performance. The results corroborate those of Jennings and Lumpkin (1989:791) who found that innovation is a crucial predictor of organisational-level entrepreneurship (Chen and Cangahuala, 2010:1749).

- **Innovativeness and output performance**

Hypothesis $H_0$4b stated that there is no statistically significant correlation between innovativeness and output performance in the Department of Education in KZN.

Table 5.17 shows the results, which indicate that there is a positive and significant correlation between innovativeness and output performance. This is evidenced by the positive relationship (0.301) and the p-value of 0.001, which is less than the critical value (0.01). **Therefore hypothesis $H_0$4b is rejected**

In his study, Schumpeter (1934) claims that innovative thinking within an organisation can result in the development of new processes, resulting in improved performance (Verachia, 2017:86). The findings of the empirical study by Zara and Garvis (2000:472) support the positive correlation between innovation and performance.

The findings of **$H_0$4a** and **$H_0$4b** show that the strength of the relationship between innovativeness and both university entrance and output performance is the same (r=0.301). These findings show that innovativeness has the same direct, positive impact on organisational performance as measured by university entrance and output variables in the study.

The results corroborate the findings of many studies that have demonstrated the positive effects of innovativeness and performance (Afcha, 2011; Damanpour and Gopalkrishman, 2001; De Clerq et al., 2010). Empirical research suggests a positive relationship between innovativeness and organisational performance (Verachia, 2017:100).

- **Proactiveness and university entrance performance**

Hypothesis $H_0$5a stated that there is no statistically significant correlation between proactiveness and university entrance performance in the Department of Education

in KZN. Table 5.17 shows the correlation results which indicate that there is a positive and significant correlation (0.338) between proactiveness and university entrance performance. This is evidenced by the p-value of 0.001 which is less than that of the critical value (0.01). **Therefore the hypothesis $H_0$5a is rejected.**

There is a positive and significant correlation between proactiveness and university entrance as a perceived performance in the Department of Basic Education. The results are consistent with the findings of Becherer and Maurer (1999), who found a positive and significant relationship between proactiveness and organisational performance in their survey of 215 organisations (Venter, 2014:44). The results are also consistent with the results of other studies that have found a strong positive and significant relationship between proactiveness and organisational performance (Lumpkin and Dess, 2001; Venter, 2014: 56).

- **Proactiveness and output performance**

Hypothesis $H_0$5b stated that there is no statistically significant correlation between proactiveness and output performance in the Department of Education in KZN. Table 5.17 shows the results which indicate that there is a positive and significant correlation between proactiveness and output performance. This is evidenced by the positive relationship (0.288) and the p-value of 0.001 which is less than the critical value (α = 0.01). **Therefore the hypothesis $H_0$5b is rejected.**

The study findings imply that, for the Department of Basic Education to decrease learner drop-out and repetition rates, thereby increasing its output level, it should be proactive in executing its tasks. The study findings corroborate those of Wilkund and Shepherd (2005:80) who found that proactiveness gives organisations the ability to present products or services ahead of competitors, which results in improved organisational performance. Although the Department has no competitors, the odds which it faces, which causes high drop-out rates can be considered the competition it faces.

The findings of **$H_0$5a** and **$H_0$5b** show that the strength of the correlation between proactiveness and university entrance performance (r=0.338) is stronger than the strength between proactiveness and output performance (r=0.288).

The study found that the proactiveness factor is positive and significantly correlated with all six CE elements (management support for CE; organisational tolerance; work discretion; rewards/reinforcement system of the organisation; discretionary time; and organisational boundaries) and the two performance measurements (university entrance performance and output performance) in the Department of Education in KZN. The study shows that respondents perceived proactiveness to have a positive and strong relationship with organisational boundaries, rewards/reinforcement and discretionary time in the Department of Education in KZN. Organisational tolerance and work discretion were perceived to be positive and moderately related to proactiveness, while management support for CE was perceived to have a low positive correlation with proactiveness.

Sharma and Dave (2011:47) agree with Lumpkin and Dess (1999:146) that proactiveness refers to taking the initiative by anticipating and pursuing new opportunities and add that taking the initiative and participating in emerging markets has become associated with entrepreneurship. The emerging markets in this context could be the emerging private schools, as a result of poor learner performance in the public schools. They further postulate that a proactive organisation is a leader rather than a follower. Proactiveness has to do with how an organisation relates to market opportunities in the process of new entry (Sharma and Dave, 2011:47).

Proactiveness is included as a construct of entrepreneurial orientation since entrepreneurs will", "rather than letting opportunities lay idle, aim at exploiting business opportunities (Kollmann et al., 2007:331). Rauch et al., (2009:778) found that proactiveness, together with innovativeness and risk taking, are of equal importance in explaining organisational performance. Furthermore, Casillas and Moreno (2010:270) found that proactive organisations achieved superior performance.

- **Risk taking and performance**

$H_0$6: There is no significant correlation between **risk taking** and the performance measurements: university entrance performance **(H_o6a)** and output performance **(H_o6b).**

The decision is that **$H_0$6a** and **$H_0$6b** are both **rejected**

The results are briefly discussed below:

The findings of **$H_0$6a and $H_0$6b** show that the relationship between risk taking and both university entrance performance and output performance are positive and significant at (r=0.195) and (r=197), respectively. Venter (2014:21), in his study of the influence of entrepreneurial orientation, such as risk taking, on business success in selected small and medium-sized enterprises, found that entrepreneurs are very eager to exploit opportunities but not that eager to take high risks. This finding is consistent with that of Jong, Barker, Wennekers and Wu (2011:520), who posit that entrepreneurs prefer moderate, rather than high, risks and try to manage and reduce risk as much as possible. Pinchot (1987:16) further stressed that once a challenging goal is chosen, entrepreneurs do everything they can to reduce risk.

Risk taking had a statistically significant relationship with CE elements and also had a positive significant relationship with perceived organisational performance. Hence, it is evident from this study that public sector organisations, such as the Department of Education, need to embrace an element of risk in their operations if they want to be entrepreneurial, which will assist them in delivering effective and efficient services that will in turn improve performance.

The next section will establish the relationship between corporate entrepreneurship elements and performance in the Department of Education.

5.6.4.3 The Relationship Between CE Elements and Performance in the Department of Education.

Covin and Slevin (1991) argue that the growing interest in the study of entrepreneurship is the response to the belief that corporate entrepreneurship activities can lead to improved performance in established organisations (Chen, 2016:1748). Similarly, Peters and Waterman (1982) suggest that understanding corporate entrepreneurship activities improves an organisation's performance.

With the respondents of this study indicating that the Department of Education in KZN is practising corporate entrepreneurship, it was important to test the relationship between the elements of CE and the performance of the Department of Education in KZN. The measurements of organisational performance were developed using a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The factor

analysis identified two factors measuring performance in the Department of Education in KZN.

This section will answer the fourth objective of the study: to establish the relationship between CE elements and each of the two organisation performance measurements (university entrance performance and output performance). In order to achieve this objective the following hypotheses were postulated and tested:

$H_0 7a_1$: There is no statistically significant relationship between management support for CE and university entrance performance in the Department of Education in KZN.

$H_0 7a_2$: There is no statistically significant relationship between management support for CE and output performance in the Department of Education in KZN.

$H_0 7b_1$: There is no statistically significant relationship between organisational tolerance and university entrance performance in the Department of Education in KZN.

$H_0 7b_2$: There is no statistically significant relationship between organisational tolerance and output performance in the Department of Education in KZN.

$H_0 7c_1$: There is no statistically significant relationship between work discretion and university entrance performance in the Department of Education in KZN.

$H_0 7c_2$: There is no statistically significant relationship between work discretion and output performance in the Department of Education in KZN.

$H_0 7d_1$: There is no statistically significant relationship between rewards/reinforcement and university entrance performance in the Department of Education in KZN.

$H_0 7d_2$: There is no statistically significant relationship between rewards/reinforcement and output performance in the Department of Education in KZN.

$H_0 7e_1$: There is no statistically significant relationship between discretionary time and university entrance performance in the Department of Education in KZN.

$H_0 7e_2$: There is no statistically significant relationship between discretionary time and output performance in the Department of Education in KZN.

$H_0 7f_1$: There is no statistically significant relationship between organisational boundaries and university entrance performance in the Department of Education in KZN.

$H_0 7f_2$: There is no statistically significant relationship between organisational boundaries and output performance in the Department of Education in KZN.

Pearson's coefficient, shown in Table 5.17, indicates that there is a significant positive correlation between each of the CE elements (management support for CE; organisational boundaries; work discretion; rewards/reinforcement; discretionary time and organisational boundaries) and the two performance factors (university entrance performance and output performance), tested at 0.01. All the p values are < 0.01 and therefore all hypotheses are rejected.

The decisions are as follows:

1. **$H_0 7(a_1 - _2)$: Rejected**
2. **$H_0 7(b_1 - _2)$: Rejected**
3. **$H_0 7(c_1 - _2)$: Rejected**
4. **$H_0 7(d_1 - _2)$: Rejected**
5. **$H_0 7(e_1 - _2)$: Rejected**
6. **$H_0 7(f_1 - _2)$: Rejected**

Each of these correlations is discussed in detail:

The study aimed at establishing and testing the relationship between the elements of CE and the organisational performance, which was measured in university entrance and output performance. In this relationship, CE elements are taken as antecedents of entrepreneurial orientation that influence managers and nourish entrepreneurial behaviour in organisations. Prior empirical studies have shown that CE elements that define the role of entrepreneurship in an organisation have a significant, positive effect on organisational performance (Bayarcelik and Ozsahin, 2014:831).The results of this study also show the positive relationship between CE elements and university entrance and output performance in the Department of Education in KZN. Covin and Sleven (1991:495) suggest that internal organisational factors, in particular, play a major role in encouraging corporate entrepreneurship. They "further point out that the factors outside and inside the organisation interact, challenging the

managers to respond creatively and act in innovative ways, thus improving performance in an organisation. It is then reasonable to expect that organisational factors are important antecedent variables that shape organisational culture and support an organisation's entrepreneurial behaviour. The results of this study are consistent with the above arguments. According to Pearson's results in Table 5.17, CE elements were found to be positive and significant for performance in the Department of Education in KZN. **Thus, hypothesis 7 was rejected.**

Hypothesis **$H_0$7a** was not supported, in that management support for CE is positively associated with university entrance and output performance, meaning that an organisation that has more management support for CE will then allow corporate entrepreneurs to be more innovative (Chen and Cangahulla, 2010:1753). The results of hypothesis (**$H_0$7b**) indicate that in the DoE, organisational tolerance is positive and significantly associated with organisational performance (university entrance and output performances), which means that managers and employees with a high tolerance for ambiguity find ambiguous situations challenging and endeavour to overcome unstable and unpredicted situations in order to perform well (Barnard, 2012:22), and hence improve organisational performance.

The results for hypothesis (**$H_0$7d**) indicated that rewards are positively associated with university entrance and output performances, meaning that an organisation that gives more rewards will then perform better (Chen and Cangahulla, 2010:1753). The results of hypotheses **$H_0$7c, H_o7e** and **H_o7f** accord with Burgelman's (1983:4) research and clearly show that internal organisational factors influence the type of corporate entrepreneurship activities an organisation pursues. There is a positive and significant relationship between work discretion, discretionary time and organisational boundaries, and university entrance and output performance.

Public sector organisations and education departments in particularly, have been significantly influenced by practices in the private sector (Malatjie et al., 2017:206). However, in many respects performance management in the public sector is relatively more complicated as a result of the many over-riding goals, compared to the private sector organisations, whose main goal is profit maximisation and the provision of satisfactory financial returns for shareholders (Boland and Fowler, 2000:440). CE is receiving increased attention among entrepreneurship scholars; but

studies linking CE to organisational performance in the public sector have been somewhat limited. Research by Arbaugh, Cox and Camp (2009:14) has raised concerns about a direct relationship between CE and organisational performance, suggesting that this relationship may be moderated by characteristics such as the nature of the environment or organisational factors.

This study found that CE has a statistically positive and significant relationship with organisational performance. These findings support what is indicated in the literature; that CE has a positive impact on the performance of an organisation. The findings of this study seem to suggest that, in order to achieve EO, organisations wishing to embrace CE should not think of establishing the climate for entrepreneurship on a partial basis, but should do so in totality, in order for organisational antecedents to have a positive impact on organisational performance (Malatjie et al., 2017:206).

5.7 MANAGEMENT PERCEPTION REGARDING ENTREPRENENEURIAL CLIMATE/CE ELEMENTS.

This section will address objective five of the research: to establish if differences in perception existed among the departments' management regarding the entrepreneurial climate within the Department of Education. The areas in which the potential differences were tested were gender, age and management level of the respondents.

An independent t-test was conducted to assess whether differences exist in opinions between male and female respondents with regard to entrepreneurship and performance. An independent sample t-test was considered an appropriate statistical method to test the differences in the means of the two groups of respondents. The t-test was conducted with gender as the variable and therefore only two categories, males and females. To apply the t-test for difference of means, it is assumed that the two samples are drawn from a normal distribution; the standard deviations of the dependent variables must be equal in both populations; and the observations are independent (Cooper et al., 2014:667).

The normality (distribution) test was done. The differences in standard deviations for male and female respondents were all negligible.

The p-level in this test stands for the probability of error when accepting the hypothesis. The test reveals if there is any significant difference in the opinions of participants, according to gender, about the main research variables. It clarifies whether males and females hold the same opinions, or significantly different opinions.

To interpret the t-test, when the p-value is less than or equal to 0.05 (**P <0.05**), then statistically there is a significant difference between the group's opinions. If the p-value is greater than 0.05 (**P > 0.05**), statistically there is **no** significant difference between the groups.

Levene's test was also used to assess the assumption of homogeneity, as a precondition for using the t-test. Should the level of significance for Levene's test be below the required 0.05 (**P < 0.05**), equal variance has not been assumed and the corresponding t-test result will therefore be used. Equal variance is assumed if the p-value is above 0.05 (**P > 0.05**).

5.7.1 Gender and EO Elements

Table 5.18: Group Statistics – Gender (EO)

Factor	Gender	N	Mean	Std. Deviation	Std. Error Mean
INN: Factor 1	Male	218	3,7375	0,73463	0,04976
	Female	200	3,8599	0,64752	0,04579
PRO: Factor 2	Male	217	3,5572	0,73968	0,05021
	Female	200	3,6953	0,65774	0,04796
RKT: Factor 3	Male	216	3,2431	1,03089	0,07014
	Female	199	3,4095	0,77483	0,05493

Table 5.18 gives the descriptive statistics for each EO factor, considering the gender of respondents. The table indicates the number of male and female respondents for each factor, the corresponding average mean scores and the standard deviations, respectively. The last column gives the standard error of the means for each of the two groups.

An independent sample t-test of equal means will be discussed next, starting with innovativeness.

5.7.1.1 Gender and Innovativeness

The t-test was run to compare whether there was a significant difference of opinion between male and female respondents with regard to the level of innovativeness in the Department of Education in KZN.

The hypothesis **$H_0$8a** stated that there is no statistically significant difference between the mean scores of male and female respondents with regard to how they perceive the level of innovativeness in the Department of Education in KZN.

Table 5.18 shows that the conditions for homogeneity were not violated because the Levene's p-value was 0.051, which is greater than 0.05. Therefore, the group variance can be tested as equal. The p-value of the t-test with equality of means was 0.072, which is greater than 0.05. There is therefore no statistically significant difference of opinion between the male and female participants with regard to the way they perceive the level of innovativeness in the Department of Education in KZN" **Hypothesis $H_0$8a is accepted.**

Table 5.19: Independent Sample Test – Gender (EO)

		Levene's Test for Equality of Variances		T-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
INN Males Females	E V assumed E V not assumed	3.831	0.051	-1.801 -.810	416 415.345	0.072 0.071	-0.12241 -0.12241	0.06798 0.06762	0.25605 -0.25533	0.01122 0.01050
PRO Males Females	E V assumed E V not assumed	4.712	0.031	-2.008 -2.018	415 414.477	0.045 0.044	-0.13809 -0.13809	0.06877 0.06844	-0.27327 -0.27263	-0.00291 -0.00355
RKT Males Females	E V assumed E V not assumed	22.122	0.000	-1.848 -1.869	413 397.299	0.065 0.062	-0.16649 -0.16649	0.09011 0.08909	-0.34363 -0.34164	0.01064 0.00865

Significance level α = 0.05

5.7.1.2 Gender and Proactiveness

The t-test was performed to compare whether there was a significant difference of opinion between male and female respondents with regard to how they perceive the level of proactiveness in the Department of Education in KZN.

Hypothesis **$H_0$8b** stated that there is no statistically significant difference between the mean scores of male and female respondents with regard to how they perceive the level of proactiveness in the Department of Education in KZN.

The results of Levene's test, shown in Table 5.19, indicate that the homogeneity assumption of equal variance is violated because the p-value is 0.031 < α = 0.05. Therefore, equal variance is not assumed. The p-value of the t-test is 0.044 < α = 0.05.

The t-test revealed that there is a statistically significant difference of opinion between male and female participants with regards to how they perceive the level of proactiveness in the Department of Education in KZN; t(415) = -2.008, p = 0.045 < α = 0.05. Therefore, **hypothesis $H_0$8b is rejected**.

5.7.1.3 Gender and Risk Taking

The t-test was carried out to compare whether there was a significant difference of opinion between male and female respondents with regard to how they perceive the level of risk taking in the Department of Education in KZN.

Hypothesis **$H_0$8c** stated that there is no statistically significant difference of opinion between the mean scores for male and female respondents with regard to how they perceive the level of risk taking in the Department of Education in KZN.

The analysis of scores for male and female participants gave a p-value from Levene's test of 0.001, which is less than 0.05. This suggested that the independent two sample t-test, with equal variance not assumed, should be used to compare the mean scores of male and female participants with regards to how they perceive the level of risk taking in the Department of Education in KZN. The p-value from the t-test with equal variance not assumed was 0.062 > α = 0.05.

This meant that a t-test failed to reveal a statistically reliable difference of opinion between the male and female participants with regard to how they perceive the levels of risk taking in the Department of Education in KZN. **Therefore, the hypothesis H_o8c is accepted.**

For only one construct, **proactiveness** (with a p-value of 0.045 < 0.05, i.e. **P <0.05**), was there was evidence of a statistically significant difference of opinion between

male and female respondents (reflected in mean scores) regarding their perception of the level of proactivity in the Department of Education in KZN. This finding concurs with Bindl and Parker (2016: 21), who found that men were more proactive than women in terms of their willingness to engage in proactive job searches. The study found that gender does not play a role in respondents' perceptions of the degree of EO, except for the presence of proactivity.

5.7.2 Gender and CE Elements

The t-test was used to analyse whether there were significant differences between the mean scores of male and female respondents with regard to how they perceived the presence of the different elements of CE in the Department of Education in KZN. Levene's test for variability was used; then the pooled t-tests were done as deemed appropriate (Refer to Tables 5.18 and 5.19).

The same procedure as in Section 5.7.1 was followed, i.e. the use of a distributive table and independent sample tables. The following hypotheses were postulated and tested:

Hypothesis **$H_0$9** stated that there is no significant difference of opinion between the mean scores for male and female respondents with regard to how they perceive the level of managment support for CE **($H_0$9a);** organisational tolerance **($H_0$9b);** work discretion **($H_0$9c);** rewards/reinforcement **($H_0$9d);** discretionary time **($H_0$9e);** and organisational boundaries **($H_0$9f)** in the Department of Education in KZN.

Table 5.20: Group Statistics – Gender (CE)

Factor	Gender	N	Mean	Std. Deviation	Std. Error Mean
MNG: Factor 4	Male Female	220 204	3.3368 3.4095	1.03089 0.77483	0.07014 0.05493
OGT: Factor 5	Male Female	217 201	3.2816 3.2541	0.65614 0.67114	0.04454 0.04734
WKD: Factor 6	Male Female	216 201	3,2816 3,3549	0,79535 0,79378	0,05412 0,05599
RWS: Factor 7	Male Female	219 203	3,2760 3,3799	0,78985 0,78088	0,05337 0,05508
DST: Factor 8	Male Female	220 203	3,1616 3,1946	0,82429 0,80459	0,05570 0,05647
OGB: Factor 9	Male Female	220 203	3,6142 3,6596	0,69814 0,66254	0,04707 0,04650

Table 5.20 gives the descriptive statistics for each EO factor and the gender of respondents. The table indicates the number of male and female participants for

each factor, the corresponding average mean scores and the standard deviations, respectively. The last column gives the standard error of the means for each of the two groups.

Table 5.21 shows that all the p-values of Levene's t-test are larger than 0.05 (p >0.05). The p-values are 0.123 for management support for CE; 0.621 for organisational tolerance; 0.647 for work discretion; 0.565 for rewards/reinforcement; 0.768 for discretionary time; and 0.621 for organisational boundaries. This suggested that the assumption of homogeneity variance was not violated (p > 0.05); hence the group variances can be treated as equal. The p-values are also greater than 0.05 (**P > 0.05**). Both groups considered the CE elements to be important for organisational success. Therefore, all the **hypotheses $H_0$9 (a-f) are accepted.**

As can be seen, the p-values are larger than 0.05 (**P > 0.05**), which indicate that there is insufficient evidence of a statistically significant difference of opinion, reflected in the mean scores of respondents, between males and females, regarding the EO and elements of CE in the Department of Education in KZN.

Table 5.21: Independent Sample Test – Gender (CE)

		Levene's Test for Equality of Variances		T-test for Equality of Means						
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
MNG Males Females	E V assumed	2.394	0.123	-1.019	422	0.309	-0.06791	0.06665	-0.19891	0.06309
	E V not assumed			-1.022	421.994	0.307	-0.06791	0.06645	-0.19852	0.06270
OGT Males Females	E V assumed	0.244	0.621	0.449	416	0.653	0.02919	0.06494	-0.09847	0.15685
	E V not assumed			0.449	411.934	0.654	0.02919	0.06500	-0.09858	0.15696
WKD Males Females	E V assumed	0.210	0.647	-0.941	415	0.347	-0.07326	0.07787	-0.22633	0.07982
	E V not assumed			-0.941	412.966	0.347	-0.7326	0.07787	-0.22632	0.07981
RWS Males Females	E V assumed	0.332	0.565	-1.354	418	0.177	-0.10388	0.07673	-0.25471	0.04696
	E V not assumed			-1.354	415.688	0.176	-0.10388	0.07670	-0.25464	0.04689
DST Males Females	E V assumed	0.087	0.768	-0.415	420	0.678	-0.03295	0.07939	-0.18900	0.12311
	E V not assumed			-0.415	418.873	0.678	-0.03295	0.07932	-0.18886	0.12297
OGB Males Females	E V assumed	0.244	0.621	0.449	416	0.653	0.02919	0.06494	-0.09847	0.15685
	E V not assumed			0.449	411.934	0.654	0.02919	0.06500	-0.09858	0.15696

Significance level α = 0.05

The findings collaborate Reddy's (2014:66) study of the perceptions of middle-managers regarding the elements of corporate entrepreneurship. Reddy (2014:66) found that gender does not play a significant role in middle-manager perception of

corporate entrepreneurship. Another study by Kuzubikiva, Vojtovic, Rahman and Smrcka (2016:178) also found that gender makes no difference in how the level of corporate entrepreneurship is perceived.

The study by Camelo-Ordaz, Dianez-Gonzalez and Ruiz- Navarro (2016:273) on the influence of gender on entrepreneurial intention also revealed that "perceptual factors do not explain gender differences in the entrepreneurial intention exhibited by male and female entrepreneurs". The perceptual factors do not mediate the relationship between gender and entrepreneurial intention.

Finally, t-tests were run on data for gender of respondents and perceived performance measurements in the Department of Education in KZN.

5.7.3 Gender and Organisational Performance

The t-test was conducted to assess the differences in the mean scores of all respondents in terms of perceived performance measurements in the Department of Education in KZN. When the t-test p-value is less than or equal to 0.05, (**P <0.05**), statistically, there is a significant difference between the opinions of both groups. If the p-value is greater than 0.05 (**P > 0.05**), statistically there is **no** significant difference between the groups. Levene's test was also used to assess the assumption of homogeneity, as a precondition for using a t-test. Should the level of significance from Levene's test be below the required 0.05, equal variance has not been assumed and the corresponding t-test result is therefore used. Equal variance is assumed if the p-value is above 0.05.

Table 5.22: Group Statistics-Gender (OP)

Factor	Gender	N	Mean	Std. Deviation	Std. Error Mean
UEP: Factor 10	Male Female	209 184	3,4581 3,3922	0,68481 0,77785	0,04737 0,05734
OTP: Factor 11	Male Female	209 186	3,0837 3,1237	0,84576 0,97025	0,05850 0,07114

Table 5.22 give the descriptive statistics for each EO factor and the gender of respondents. The table indicates the number of male and female participants for each factor, the corresponding average mean scores and the standard deviations,

respectively. The last column gives the standard error of the means for each of the two groups.

Table 5.23 shows that the p-value from Levene's test for university entrance performance (UEP) is greater than 0.05 (p > 0.05), at 0.154. The result suggested that the assumption of homogeneity variance was not violated (p > 0.05), hence the group variances can be treated as equal. The p-value of the t-test for equal variance assumed was 0.372, which is greater than 0.05 (P > 0.05). This is an indication that there was no statistically significant difference between gender perceptions of the university entrance performance factor. The t-test revealed that both male and female respondents in the Department of Education in KZN perceive the university entrance measurement in the same way. Therefore, the hypothesis **$H_0$10a** that there is no statistically significant difference between the mean scores of male and female respondents with regard to how they perceive the university entrance performance measurement in the Department of Education in KZN was **accepted**.

Table 5.23: Independent Sample Test – Gender (OP)

		Levene's Test for Equality of Variances		T-test for Equality of Means						
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
UEP Males Females	E V assumed	2.039	0.154	0.894	391	0.372	0.06592	0.07378	-0.07913	0.21098
	E V not assumed			0.886	367.433	0.376	0.06592	0.07438	-0.08034	0.21218
OTP Males Females	E V assumed	6.744	0.010	-0.437	393	0.662	-0.03992	0.09138	-0.21957	0.12972
	E V not assumed			-0.433	369.514	0.665	-0.03992	0.09211	-0.22104	0.14120

Significance level α = 0.05

Table 5.23 shows that the p-value of Levene's test for output performance is less than 0.05 (p < 0.05). The p-value is 0.010 for output performance measurement. The result suggested that the assumption of homogeneity variance was violated (p < 0.05); hence the group variances can be treated as not equal. The p-value of the t-test for equal variance assumed was 0.665, which is greater than 0.05 (P > 0.05). This is an indication that there was no statistically significant difference between gender perceptions of the output performance factor. The t-test revealed that both male and female respondents in the Department of Education in KZN perceive the output performance measurement in the same way. Therefore, the hypothesis **$H_0$10b**

that there is no statistically significant difference of opinion between the mean scores of male and female respondents with regard to how they perceive output performance measurement in the Department of Education in KZN was **accepted**.

The study found that gender does not play any role in how respondents perceive organisational performance in the Department of Education in KZN. The results concur with Reddy's (2014:56) finding that gender plays no significant role in middle-manager perception of organisational performance. The study findings are also in line with the findings by Neneh, van Zyl and Noordwyk (2016:408) who found that there is no statistically significant difference between gender perceptions of organisational performance. A difference in perception would have been a surprising result, bearing in mind that performance measures are numerical figures, which should be understood the same way by everybody. However, differences in opinions can still occur in such situations.

The next section is going to assess whether there is a difference in perception among the different age groups regarding CE in the Department of Education.

5.8 AGE, EO, CE AND PERFORMANCE

Objective five of the study was to establish if differences in perception existed among the department's management regarding the entrepreneurial climate within the Department of Education. This section intends to establish if differences exist between the age groups of managers with regards to the entrepreneurial orientation, corporate entrepreneurship and organisation performance variables. The age distribution is shown in Figure 5.2.

The one way analysis of variance (ANOVA) method was calculate the differences between the age groups with regards to the EO, CE and performance variables. ANOVA is a versatile statistic which tests for the significant difference between the means of two or more groups and additionally breaks down the variability of a set of data into its component sources of variation (Landau and Everitt, 2004:205). This statistical analysis method was used because the age variable had more than two categories.

Analysis of variance (ANOVA) was carried out to test for a statistically significant variance between the means of the various age groups and the levels of each of the EO, CE elements and the two performance measurements.

5.8.1 Age and CE Elements and Performance Measurements

Hypotheses **$H_0$11** stated that a statistically significant variance does not exist between the mean values of the various age groups and how they perceive the levels of EC factors (innovativeness **-$H_0$11a**; proactiveness **-$H_0$11b**; risk taking-**$H_0$11c**; management support for CE **-$H_0$11d**; organisational tolerance **-$H_0$11e**; work discretion-**$H_0$11f**; rewards/reinforcement**-$H_0$11g;** discretionarytime**-$H_0$11h**; organisational boundaries **-$H_0$11i;** university entrance performance **-$H_0$11j** and output performance **$H_0$11k**) in the Department of Education in KZN.

One way analysis of variance (ANOVA) was conducted to compare the variability in scores between the age categories with the variability of each of the factors.

The results, as shown in Table 5.24, indicate the existence of statistically significance differences between the age groups on **innovativeness, proactiveness and management support for CE**. These factors all have a p-value of less than 0.05 ($p < 0.05$). The p-values for innovativeness, proactiveness and management support for CE were 0.011, 0.013 and 0.042 respectively.

Applying the p-value acceptance rule that that one should not reject the hypothesis if, and only if, the p-value is bigger than $\alpha = 0.05$ ($P > 0.05$); then, to summarise:

The hypotheses **$H_0$11a; $H_0$11b; and $H_0$11d** were all **rejected**

Table 5.24 indicates that the p-values for risk taking; organisational tolerance; work discretion; rewards/reinforcement; discretionary time; organisational boundaries; university entrance performance; and output performance were all bigger than 0.05 ($p > 0.05$).

Applying the p-value acceptance rule that one should not reject the hypothesis if, and only if, the p-value is bigger than $\alpha = 0.05$ ($P > 0.05$); therefore the hypotheses **$H_0$11c; $H_0$11e; $H_0$11f; $H_0$11g; $H_0$11h; $H_0$11i, $H_0$11j and $H_0$11k** were all **accepted.**

According to Moodely (2014:39), individual age is associated with a person being a source of management innovation. The results lend support to earlier work by Kunze et al. (2011:274), where it was found that employee age is positively related to the ability to change.

Older workers do not find a stable and familiar workplace environment more appealing than their young counterparts (Moodely, 2014: 56). The older employees start comparing the present work environment with the old one. Changes which are introduced into the Department of Education, such as curriculum changes and new policies, are some of the possible issues that might affect the perceptions of the older employees. The way they are being supported by management could also be another factor, since the majority of top managers in the department are younger employees.

Table 5.24: Age and CE Elements: ANOVA

Factor	Source of Variation	Sum of Squares	df	Mean Square	F-Value	P-Value
Innovativeness	Between Groups	4.263	2	2.132	4.517	0.011[xxx]
	Within Groups	195.352	414	0.472		
	Total	199.615	416			
Proactiveness	Between Groups	4.217	2	2.109	4.381	0.013[xxx]
	Within Groups	198.769	413	0.481		
	Total	202.986	415			
Risk Taking	Between Groups	0.580	2	0.290	0.344	0.709
	Within Groups	347.435	412	0.843		
	Total	261.437	414			
Management Support for CE	Between Groups	2.936	2	1.468	3.188	0.042[xxx]
	Within Groups	193.398	420	0.460		
	Total	196.33	422			
Organisational Tolerance	Between Groups	0.428	2	0.214	0.493	0.611
	Within Groups	179.661	414	0.34		
	Total	180.089	416			
Work Discretion	Between Groups	2.943	2	1.472	2.351	0.097
	Within Groups	258.494	413	0.626		
	Total	261.437	415			
Rewards/Reinforcement	Between Groups	3.250	2	1.625	2.667	0.071
	Within Groups	253.484	416	0.609		
	Total	256.734	418			
Time Availability	Between Groups	1.886	2	0.943	1.441	0.238
	Within Groups	273.533	418	0.654		
	Total	275.419	420			
Organisational Boundaries	Between Groups	2.071	2	1.035	2.290	0.103
	Within Groups	189.485	419	0.452		
	Total	191.556	421			
Performance: University Entrance	Between Groups	0.537	2	0.269	0.505	0.604
	Within Groups	206.470	388	0.532		
	Total	207.008	390			
Performance: Output	Between Groups	0.500	2	0.250	0.305	0.737
	Within Groups	320.076	390	0.821		
	Total	320.576	392			

[xxx] Indicates a statistical significance at α = 0.05 level

Innovative behaviour includes being comfortable with change, as innovation brings with it new combinations (Cost et al., 2014:520). Researchers have found that older employees are perceived as less persistent than their younger counterparts in adopting, implementing and adapting to new technologies (Davis and Songer, 2009; Morris and Venkatesh, 2000). However, Timmersman's (2010: 256) study found that older people are more creative in the work place and are more likely to create management innovation. .

According to Mabala (2012:79), there is no significant difference in how respondents of different ages perceive risk taking; organisational tolerance; work discretion; rewards/reinforcement; discretionary time; and organisational boundaries in the Department of Correctional Services.

The study results are in line with Quazi and Talukder (2011:11) who found no significant relationship between a worker's age and his attitude towards accepting technological innovation; nor did these researchers find any significant relationship between workers' ages and their use of technological innovations.

Table 5.25: Variables that show significant difference from overall ANOVA

Factor	Age Category	N	Mean	Std Deviation
Innovativeness	25 to 35	184	3.7344	0.69904
	36 to 40	74	4.0150	0.52681
	41 and above	159	3.7818	0.73633
Proactiveness	25 to 35	184	3.5859	0.66163
	36 to 40	74	3.8467	0.60629
	41 and above	153	3.5806	0.76477
Management support for CE	25 to 35	186	3.3138	0.71130
	36 to 40	76	3.5461	0.60453
	41 and above	161	3.3652	0.67263

The age variables that had a p-value less than 0.05 ($P < 0.05$) are examined for differences between each pair of means. Table 5.25 (above) shows the significantly different group means.

An examination of the mean scores shows that the younger age group had a significantly lower score (3.7344) for innovativeness than the middle-age group (4.0150). For proactiveness, the younger age group had a significantly lower score (3.5859) than the middle-age group (3.8467); and the older group had the lowest

mean (3.5806). On management support for CE, the younger age group had a significantly lower score (3.3138) than the middle-age group (3.5461). Overally the middle-age group (36 40) scored higher means than other two age groups.

5.8.1.1 ANOVA and post hoc Scheffe's test – Age

To further investigate the differences between the three factors and the age of participants, a more detailed post hoc pairwise Scheffe's test was carried out in order to control Type I error where a true hypothesis is wrongly rejected. According Schindler and Cooper (2014:206), "Scheffe's test is a further test used after a hypothesis is rejected. It assists the researcher in finding the source of the differences within the different levels of a variable". In this case, Scheffe's test was carried out to find out which categories within the variable (age) differ with the factors innovativeness, proactiveness and management support for CE at $\alpha = 0.05$. Table 5.26 shows the results for the multiple comparisons.

Further hypotheses were postulated and tested to find out the sources of the differences:

Hypotheses $H_0$12 (a) stated that a statistically significant difference does not exist between the mean age categories of the participants: 1 and 2 (**$H_0$12a_1)**; 1 and 3 **($H_0$12a_2)**; 2 and 3 **($H_0$12a_3)** and their perception of the levels of innovativeness in the Department of Education in KZN.

Hypotheses $H_0$12 (b) stated that a statistically significant difference does not exist between the mean age categories of the participants: 1 and 2 (**$H_0$12b_1)**; 1 and 3 **($H_0$12b_2)**; 2 and 3 **($H_0$12b_3)** and their perception of the levels of proactiveness in the Department of Education in KZN.

Hypotheses $H_0$12 (c) stated that a statistically significant difference does not exist between the mean age categories of the participants: 1 and 2 (**$H_0$12c_1)**; 1 and 3 **($H_0$12c_2)**; 2 and 3 **($H_0$12c_3)** and their perception of the levels of management support for CE in the Department of Education in KZN.

The findings are that a statistically significant variation does not exist between the different mean age categories stated above, as shown by the following results, 1 < 3, 2 < 3 for innovativeness; 1 < 3 for proactiveness and 1 < 3 and 2 < 3 for

management support for CE in Table 5.26. As a result of this finding, hypotheses **$H_0$12a_1; $H_0$12b_1; $H_0$12b_3 and $H_0$12c_1 are accepted**.

There is a statistically significant difference between age groups 1 and 2 for innovativeness, proactiveness management support for CE. There is also a significant difference between mean age groups 2 and 3 for proactiveness. Therefore, the hypotheses, indicate the H_As **are rejected.**

Table 5.26: Scheffe's Test: relationship between age and innovativeness, proactiveness and management support for CE factors.

Dependent Variable	Age Categories	Mean Difference	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Innovativeness	1 < 2	-0.28059[x]	0.09456	0.013	-0.5129	-0.0483
	1 < 3	-0.4736	0.07438	0.817	-0.2301	0.1354
	2 < 1	0.28059[x]	0.09456	0.013	0.0483	0.5129
	2 < 3	0.23324	0.09667	0.056	-0.0042	0.4707
	3 < 1	0.04736	0.07438	0.817	-0.1354	0.2301
	3 < 2	-0.23324	0.09667	0.056	-0.4707	0.0042
Proactiveness	1 < 2	-0.26079[x]	0.09550	0.025	-0.4954	-0.0262
	1 < 3	0.00524	0.07524	0.998	-0.1796	0.1901
	2 < 1	0.26079[x]	0.09550	0.025	0.0262	0.4954
	2 < 3	0.26603[x]	0.09772	0.025	0.0260	0.5061
	3 < 1	0.00524	0.07524	0.998	-0.1901	0.1796
	3 < 2	0.26603	0.09772	0.025	-0.5061	-0.0260
Management support for CE	1 < 2	-0.23224[x]	0.09238	0.043	-0.4592	-0.0053
	1 < 3	-0.05139	0.07305	0.781	-0.2308	0.1280
	2 < 1	0.23224[x]	0.09238	0.043	0.0053	0.4592
	2 < 3	0.18085	0.09444	0.161	-0.0511	0.4128
	3 < 1	0.05139	0.07305	0.781	-0.1280	0.2308
	3 < 2	-0.18085	0.09444	0.161	-0.4128	0.9511

[x] Significant at α = 0.05

Key: Age: 1 = 25 to 35 years; 2 = 36 to 40 years; 3 = 41 + years)

The result indicates that hypotheses $H_0$9a; $H_0$9b; and $H_0$9d were not erroneously rejected.

Table 5.26, above, indicates that participants between the ages of 25 and 35 years perceive innovativeness, proactiveness and management support for CE to be at a low level in the Department of Education in KZN; while participants between the ages of 36 and 40 only perceive proactiveness to be at a low level.

The result indicates that the younger group of participants perceived innovativeness to be at a lower level than did the middle-age group in the Department of Education in KZN. Innovation is the process of translating an idea into a good or service that creates value for which customers will pay.

Innovation means that an idea is replicable at an economical cost and it satisfies a specific need. It involves deliberate application of information and initiative in deriving greater values from resources and includes all processes by which new ideas are generated and converted into useful products. It often results when ideas are applied by the organisation in order to further satisfy the needs and expectations of customers.

The result also indicates that the younger and older participants did not agree with the middle-age group on the levels of proactiveness in the Department of Education in KZN. The younger and older participants perceived that proactiveness in the Department of Education in KZN was at a lower level than did the middle-age group.

Proactiveness is an action and results in focused, pre-emptive behaviour; rather than waiting for things to happen and then to try to react to them. Proactive behaviour aims at the identification and exploitation of opportunities and in taking pre-emptory action against potential problems and threats.

Proactive behaviour involves acting in advance of a future situation. It means taking control and making things happen rather than adjusting to a situation or waiting for something to happen (Timmersman, 2010: 230). The younger age group is more likely to challenge the authorities to act proactively while the older age group understands the protocol of the department. The Department of Education changes policies but it takes too long for those changes to be implemented.

As part of management support for CE, the Department of Education should provide resources (such as computers, laptops and other technological tools of the trade) that the employees require to take entrepreneurial action. The department is very slow in providing such support to employees and this might cause the differences of opinion or perception between the different age groups, depending on their familiarity with the processes of the department.

The Department of Education could be perceived to be tolerant of failure as it provides decision-making latitude and freedom from excessive oversight by delegating authority and responsibility to lower managers (departmental heads in schools, school principals, education specialists, deputy chief education specialists and chief education specialists). Although this work discretion exists in the

department, the delegated functions are sometimes not very clearly defined and in some cases they are perceived to be non-existing. Employees in district offices, for example, are expected to follow the same work procedures repeatedly, year after year.

There are very limited extrinsic rewards in the Department of Education to support entrepreneurial behaviour. The IQMS for school-based, and PMDS for office-based, employees only allow a salary increase of 1% for basic achievement. Schools, and even district offices, are mainly dependent on government subsidies. Therefore, employees mainly rely on psychological rewards. According to Ryan and Deci (2000:710), a person who derives pleasure from the task itself, or experiences a sense of competence, is said to be intrinsically motivated. It is the responsibility of management in the Department of Education to create an environment where employees get the necessary recognition and experience a positive sense of belonging; and the department does not seem to be forthcoming in this area.

Research suggests that time availability among managers is an important resource for generating entrepreneurial initiatives (Malan, 2016:315). This is a real challenge in the Department of Education, particularly in KZN. Even though the department is successful, the workload for both school-based and office-based officials is a constraining factor. The department needs to ensure that people are employed and workload more evenly distributed.

Corporate entrepreneurship tends to be promoted in an environment where management support is active and consistent (Antoncic and Hisrich, 2004). Scheepers (2012:409) states that management support plays a key role in encouraging employees to believe that innovation is expected of all organisation members. According to the younger age group in this study, this is not the case with the Department of Education in KZN. The next section of this chapter will provide the results of the second one-way analysis of variance (ANOVA), based on the current managerial levels of the respondents.

5.9 MANAGEMENT PERCEPTION OF CE ELEMENTS AND PERFORMANCE

The study's fifth objective was to establish if differences in perception existed among the department's management regarding the entrepreneurial climate within the

Department of Education. This section intends to establish if differences exist in the various management levels with regards to their perception of the corporate entrepreneurship and organisation performance variables. The management job title distribution is shown in Figure 5.3.

The analysis of varience (ANOVA) was carried out to test if there was a statistically significant variance between the perceptions of various managerial levels, reflected by means, of the presence of each of the factors: innovativeness; proactiveness; risk taking; CE elements and the two performance measurements.

The managerial levels were: 1. Chief Education Specialist/ Deputy Director

2. Deputy Chief Education Specialist/ Circuit Manager
3. Principal/Deputy Principal/Assistant Director
4. Senior Education Specialist/ Departmental Head

The following hypotheses were postulated and tested:

Hypothesis **$H_0$13** stated that a statistically significant variance does not exist between the mean scores of various management levels of participants with regard to how they perceive the levels of CE elements (innovativeness-**$H_0$13a**; proactiveness-**$H_0$10b**; risk taking-**$H_0$13c**; management support for CE -**$H_0$13d**; organisationaltolerance-**$H_0$13e**; work discretion-**$H_0$13f**; rewards/reinforcement-**$H_0$13g**; discretionary time-**$H_0$13h**; organisational boundaries-**$H_0$13i**; university entrance performance-**$H_0$13j** and output performance-**$H_0$13k**) in the Department of Education in KZN.

The overall ANOVA results for all eleven factors are shown in Table 5.26 below. A discussion of the results follows.

Table 5.26 reveals that all the p-values for all the factors are bigger than 0.05 ($p > 0.05$).

Applying the p-value acceptance rule that one should accept the hypothesis if, and only if, the p-value is larger than 0.05 ($p > 0.05$); the results are summarised below:

Therefore Hypotheses $H_0$13 (a-k): were accepted

The ANOVA results revealed that there are no statistically significant differences in the perceptions of different respondent management groups on the research factors: innovativeness; proactiveness; risk taking; management support for CE; organisational tolerance; work discretion; rewards/reinforcement; discretionary time; organisational boundaries; university entrance performance; and output performance in the Department of Education; with p-values of 0.605; 0.862; 0.446; 0.085; 0.154; 0,579; 0.976; 0.885; and 0.923, respectively. These are all larger than 0.05 ($p > 0.05$). This means the different management groups have similar opinions about these factors and there are no big differences in the means. This result shows that management level does not play a significant role in the perception of entrepreneurial orientation, corporate entrepreneurship and organisational performance in the Department of Education in KZN.

The main purpose of the analysis of hypothesis **$H_0$13** was to 'establish if there were any significant differences in perception of corporate entrepreneurship elements, entrepreneurial orientation and organisational performance' within the Department of Education in KZN. The relevance of this related to the fact that management would typically drive CE, EO and organisational performance within an organisation; and consequently, one would expect the perception of EO, CE and organisational performance to be different across various managerial levels.

Table 5.27: The Management Levels, EO, CE and Performance Elements

Factor	Source of Variation	Sum of Squares	Df	Mean Square	F-Value	P-Value
Innovativeness	Between Groups	0.896	3	0.299	0.615	0.605
	Within Groups	200.533	413	0.486		
	Total	201.429	416			
Proactiveness	Between Groups	0.372	3	0.124	0.249	0.862
	Within Groups	205.332	412	0.498		
	Total	205.572	415			
Risk Taking	Between Groups	2.248	3	0.749	0.891	0.446
	Within Groups	344.596	410	0.840		
	Total	346.844	413			
Management Support	Between Groups	3.091	3	1.030	2.220	0.085
	Within Groups	194.480	419	0.464		
	Total	197.572	422			
Organisational Tolerance for CE	Between Groups	2.309	3	0.770	1.759	0.154
	Within Groups	180.694	413	0.438		
	Total	183.003	416			
Work Discretion	Between Groups	1.252	3	0.417	0.657	0.579
	Within Groups	261.775	412	0.635		
	Total	263.027	415			
Rewards/Reinforcement	Between Groups	0.130	3	0.043	0.070	0.976
	Within Groups	259.095	415	0.624		
	Total	259.225	418			
Time Availability	Between Groups	0.429	3	0.143	0.216	0.885
	Within Groups	275.924	417	0.662		
	Total	276.354	420			

Organisational Boundaries	Between Groups Within Groups Total	0.223 194.761 194.984	3 418 421	0.074 0466	0.160	0.923
Performance: University Entrance	Between Groups Within Groups Total	1.365 206.916 208.280	3 387 390	0.455 0.535	0.851	0.467
Performance: Output	Between Groups Within Groups Total	0.1426 317.296 318.723	3 389 392	0.475 0.816	0.583	0.627

[xxx] Indicates statistical significance at α = 0.05

5.10 CONSOLIDATION OF OBJECTIVES AND HYPOTHESES TESTED

The research objectives and hypotheses tested were grounded on sound CE theory, as elaborated earlier. Table 5.28 provides a summary of objectives, postulated and tested hypotheses, showing their rejection or non-rejection. Out of 78 hypotheses tested, 33 were accepted and 45 were rejected.

Table 5.28: Summary of results relating to tested hypotheses

Objectives and Hypothesis		**Rejected/Accepted**
OBJECTIVE 1: To assess the levels of corporate entrepreneurship practices in the Department of Education in KZN.		
OBJECTIVE 2: To explore the relationship between entrepreneurial orientation elements and corporate entrepreneurship environmental elements within the Department of Education in KZN.		
$H_0$1	**There is no statistically significant correlation between innovativeness and each of the CE elements.**	
$H_0$1a	Innovativeness and Management Support for CE	Rejected
$H_0$1b	Innovativeness and Organisational Tolerance	Rejected
$H_0$1c	Innovativeness and Work Discretion	Rejected
$H_0$1d	Innovativeness and Rewards/Reinforcement	Rejected
$H_0$1e	Innovativeness and Discretionary Time	Rejected
$H_0$1f	Innovativeness and Organisational Boundaries	Rejected
$H_0$2	**There is no statistically significant correlation between proactiveness and each of the CE elements.**	
$H_0$2a	Proactiveness and Management Support for CE	Rejected
$H_0$2b	Proactiveness and Organisation Tolerance	Rejected
$H_0$2c	Proactiveness and Work Discretion	Rejected
$H_0$2d	Proactiveness and Rewards/Reinforcement	Rejected
$H_0$2e	Proactiveness and Discretionary Time	Rejected
$H_0$2f	Proactiveness and Organisational Boundaries	Rejected
$H_0$3	**There is no statistically significant correlation between risk taking and each of the CE elements.**	
$H_0$3a	Risk taking and Management Support for CE	Rejected
$H_0$3b	Risk taking and Organisation Tolerance	Rejected

$H_0$3c	Risk taking and Work Discretion	Rejected
$H_0$3d	Risk taking and Rewards/Reinforcement	Rejected
$H_0$3e	Risk taking and Discretionary Time	Rejected
$H_0$3f	Risk taking and Organisational Boundaries	Rejected
OBJECTIVE 3: To establish the relationship between entrepreneurial orientation elements and performance within the Department of Education in KZN.		
H_0 (4-6)	**There is no statistically significant correlation between EO elements and performance within the Department of Education**.	
$H_0$4a	Innovativeness and University Entrance Performance	Rejected
$H_0$4b	Innovativeness and Output Performance	Rejected
$H_0$5a	Proactiveness and University Entrance Performance	Rejected
$H_0$5b	Proactiveness and Output Performance	Rejected
$H_0$6a	Risk taking and University Entrance Performance	Rejected
$H_0$6b	Risk taking and Output Performance	Rejected
OBJECTIVE 4: To establish the relationship between corporate entrepreneurship elements and performance within the Department of Education in KZN.		
$H_0$7	**There is no statistically significant correlation between each of the CE elements and the two performance measurements.**	
$H_0$7a_1	Management Support for CE and University Entrance Performance	Rejected
$H_0$7a_2	Management Support for CE and Output Performance	Rejected
$H_0$7b_1	Organisational Tolerance and University Entrance Performance	Rejected
$H_0$7b_2	Organisational Tolerance and Output Performance	Rejected
$H_0$7c_1	Work Discretion and University Entrance Performance	Rejected
$H_0$7c_2	Work Discretion and Output Performance	Rejected
$H_0$7d_1	Rewards/Reinforcement and University Entrance Performance	Rejected
$H_0$7d_2	Rewards/Reinforcement and Output Performance	Rejected
$H_0$7e_1	Discretionary Time and University Entrance Performance	Rejected
$H_0$7e_2	Discretionary Time and Output Performance	Rejected
$H_0$7f_1	Organisational Boundaries and University Entrance Performance	Rejected
$H_0$7f_2	Organisational Boundaries and Output performance	Rejected
OBJECTIVE 5: To establish if differences in perception exist among the department's management regarding the entrepreneurial climate within the Department of Education in KZN.		
$H_0$8	**There is no statistically significant difference of opinion between the mean scores of male and female respondents with regard to their perceived level of EO factors.**	
$H_0$8a	Gender and Innovativeness	Accepted
$H_0$8b	Gender and Proactiveness	Rejected
$H_0$8c	Gender and Risk taking	Accepted
$H_0$9	**There is no statistically significant difference of opinion between the mean scores of male and female respondents with regard to how they perceive the level of each of the CE elements.**	
$H_0$9a	Gender and Management Support for CE	Accepted
$H_0$9b	Gender and Organisational Tolerance	Accepted
$H_0$9c	Gender and Work Discretion	Accepted

$H_0$9d	Gender and Rewards/Reinforcement	Accepted
$H_0$9e	Gender and Discretionary Time	Accepted
$H_0$9f	Gender and Organisational Boundaries	Accepted
$H_0$10$_a$	There is no statistically significant difference of opinion between the mean scores of male and female respondents with regard to how they perceive the level of university entrance performance	Accepted
$H_0$10$_b$	There is no statistically significant difference of opinion between the mean scores of male and female respondents with regard to how they perceive the level of output performance	Accepted
$H_0$11	**A statistically significant variance does not exist between the various age groups and how they perceive the levels of the stated CE and performance variables.**	
$H_0$11$_a$	Age and Innovativeness	Rejected
$H_0$11$_b$	Age and Proactiveness	Rejected
$H_0$11$_c$	Age and Risk Taking	Accepted
$H_0$11$_d$	Age and Management Support for CE	Rejected
$H_0$11$_e$	Age and Organisational Tolerance	Accepted
$H_0$11$_f$	Age and Work Discretion	Accepted
$H_0$11$_g$	Age and Rewards/Reinforcement	Accepted
$H_0$11$_h$	Age and Discretionary Time	Accepted
$H_0$11$_i$	Age and Organisational Boundaries	Accepted
$H_0$11$_j$	Age and University Entrance Performance	Accepted
$H_0$11$_k$	Age and Output Performance	Accepted
$H_0$12a	**A statistically significant difference does not exist between the ages of participants and their perceived level of innovativeness.**	
$H_0$12a$_1$	(25 to 35) and (36 to 40) years and Innovativeness	Rejected
$H_0$12a$_2$	(25 to 35) and (41 and above) years and Innovativeness	Accepted
$H_0$12a$_3$	(36 to 40) and (41 and above) years and Innovativeness	Accepted
$H_0$12b	**A statistically significant difference does not exist between the age categories and their perceived level of proactiveness.**	
$H_0$12b$_1$	(25 to 35) and (36 to 40) years and Proactiveness	Rejected
$H_0$12b$_2$	(25 to 35) and (36 to 40) years and Proactiveness	Accepted
$H_0$12b$_3$	(25 to 35) and (36 to 40) years and Proactiveness	Rejected
$H_0$12c	**A statistically significant difference does not exist between the age categories and their perceived level of management support for CE.**	
$H_0$12c$_1$	(25 to 35) and (36 to 40) years and Management Support for CE	Rejected
$H_0$12c$_2$	(25 to 35) and (36 to 40) years and Management Support for CE	Accepted
$H_0$12c$_3$	(25 to 35) and (36 to 40) years and Management Support for CE	Accepted
$H_0$13	**A statistically significant variance does not exist between the various management levels of participants and how they perceive the levels of the stated variables.**	
$H_0$13a	Management Level and Innovativeness	Accepted
$H_0$13b	Management Level and Proactiveness	Accepted
$H_0$13c	Management Level and Risk Taking	Accepted

$H_0$13d	Management Level and Management Support for CE	Accepted
$H_0$13e	Management Level and Organisational Tolerance	Accepted
$H_0$13f	Management Level and Work Discretion	Accepted
$H_0$13g	Management Level and Rewards/Reinforcement	Accepted
$H_0$13h	Management Level and Discretionary time	Accepted
$H_0$13i	Management Level and Organisational Boundaries	Accepted
$H_0$13j	Management Level and University Entrance Performance	Accepted
$H_0$13k	Management Level and Output Performance	Accepted

5.11 MANAGERIAL IMPLICATIONS

The managerial implications of the findings are discussed in detail and recommendations to management are made.

5.11.1 The Practice of CE and the Resultant EO and Performance

The study analysed a number of correlations between factors that constitute three constructs: entrepreneurial orientation; corporate entrepreneurship; and organisational performance. These correlations are visited in order to emphasise the implications for management and organisations.

Overall, all the correlations were positive and significant.

The primary objective of the study was to assess the nature and the extent to which corporate entrepreneurship and entrepreneurial orientation were promoted and encouraged in the Department of Education in KZN.

The results show a positive and significant correlation between all the elements of CE and EO as well as the two performance measurements in the Department of Education in KZN.

If these components are not properly applied in the Department of Education, then the benefits of EO are lost.

- Innovativeness and proactiveness are the hallmarks of performance in setting standards, based on trends (successes and failure). If these are poorly executed (or not executed at all), then this is a direct indictment on the quality of management and the resultant competitiveness of the organisation.

From the literature review, this relationship was expected to be significant. A significant entrepreneurial orientation results in improved organisational performance. It is recommended that:

- Entrepreneurship should be promoted more in the Department of Education in KZN.
- Management should be entrepreneurial, and promote entrepreneurship in the Department of Education in KZN, taking everyone along.
- Managers should be seen to behave entrepreneurially (Kuratko, 2017).
- Entrepreneurial orientation has a direct influence on organisational performance (Groenewald, 2010:255).

The researcher notes that the fact that the correlations are positive and significant is a sign that the Department of Education in KZN is moving towards competitiveness and improved performance. Improved performance is the core outcome of the Department of Education. Since low linkages are a reflection of the levels of the exercise of entrepreneurial activities in an organisation, the result serves as a wake-up call to the Department of Education in KZN, given the fact that provision of quality education is critical in the economic development of the country. Aspects of entrepreneurship such as innovativeness (Lumpkin and Dess, 1996:142; Goosen, de Coning and Smit, 2002:22) and proactiveness (Sharma and Dave, 2011:47; Lumpkin and Dess, 1996:146), call for action and are not realised by piecemeal or token appreciation or application (Dhliwayo, 2007:226).

One other disturbing observation is that correlations between innovativeness and performance, and proactiveness and performance were weakest. Strong correlations “between entrepreneurial orientation and the performance of organisations have been proven in the literature” (Lumpkin and Dess, 1996; Antoncic and Hisrich, 2003; Zahra, 1993).

- Innovation and creativity should be robustly pursued.

Innovation means that an idea is replicable at an economic cost and it satisfies a public need (Azoulay, Jones, Kim and Miranda (2018:2). The Department of Education in South Africa is a public organisation and hence is known to be bureaucratic (Drobnic, 2015:7). In a bureaucratic organisation, top management is

answerable to a range of stakeholders (Currie et al., 2008:990), including politicians. It is possible, therefore, that even when the Department of Education is acting on innovative ideas, it takes too long to implement them because of the cost factor and the bureaucracy that must be navigated by top management, which might result in the younger respondents not seeing any innovation in the department; while the older group, because they are familiar with the work environment, see it differently, even if it takes long to implement. A case in point is the vision of the department to be paperless by introducing technology. Things are happening very slowly. The Department of Education, both nationally and in KZN, has engaged in a number of innovative initiatives aimed at improving learner performance and the performance of the schooling system.

The Department of Education, in partnership with other stakeholders such as universities, has provided management courses for school managers. In the province of KZN this is done in partnership with the University of KwaZulu-Natal. The school managers are equipped for their task to run successful schools. There is also active community support for school managers in HR matters, and parents are actively engaged in partnership with teachers. There are active, supportive school governing bodies and this leads to successful schooling.

Witten (2017:12) recognises educational leadership and management as creative factors in turning around an education system in crisis, such as South Africa's. The key differences between education institutions that succeed and those that fail are the vision, commitment and extent of community involvement in the schooling system and the education system at large (Witten, 2017: 88).

The Programme for Improvement of Learning Outcomes (PILO) is one of the programmes in the KZN Department of Education aimed at improving learner performance. PILO is a radical education transformation initiative and teacher development strategy focusing on developing strong curriculum management skills and learning in line with the aims and objectives of Schooling 2015 (KZN MEC for Education, 2014). The programme is aimed at developing a methodology for change in the schooling system in KZN, and ultimately throughout South Africa. The programme is being implemented through a campaign called Jika Imfundo (change education). The focus of the initiative is on the Curriculum and Assessment Policy

Statement (CAPS) in languages, particularly first additional English, and mathematics in Grades 1 – 12. The programme is an example of what can be done when business, labour and civil society work together with government across levels on the national priority of improving education.

Although the success of the programme will be weighed in the long-term using matric results and annual assessments, in the short-term the programme is successful. School managers are able to provide necessary support to educators through Jika Imfundo tools and trackers. This will improve the level of accountability of educators and all school management team members. As a result of improved accountability, teaching and learning will be improved.

This programme is an initiative of the KwaZulu-Natal Department of Education to improve the quality of results in the province ahead of other provinces in the country. The Department of Education in KZN is therefore proactive in putting programmes in place to improve results and the quality of education.

5.11.2 Perceptions of EO, CE and Performance

The results of the various tests revealed that there is no difference of opinion with regards to how male and female respondents perceived corporate entrepreneurship levels in the Department of Education in KZN. There were also no differences of perception when it comes to levels of management; however, differences were recorded among the different age groups.

According to Morris et al. (2008:330), management should be willing to facilitate and promote entrepreneurial behaviour in an organisation. Chen et al. (2005:530) also emphasise that cultivation of corporate entrepreneurship in an organisation is impossible unless it is supported by top management.

It is therefore important for management, particularly top management, in the Department of Education, to give input, get involved and encourage employees to take entrepreneurial action. Although corporate entrepreneurship is the responsibility of all managers and employees in the organisation, it should flow from the top management (Morris et al., 2008:303). Although the results of the study indicate that there is management support for CE in the Department of Education in KZN, what is obtaining on the ground might not be that all managers in all districts support

corporate entrepreneurship initiatives. Some of the employees cannot take any initiative without the approval of management, while in other areas employees are encouraged to be independent thinkers and take calculated risks, take the initiative and be proactive in their actions. However, having been allowed to take initiatives and be proactive, the issue of intolerance of failure is at times a very big issue, particularly if the employee did not get the prior approval of the manager.

- According to the results, management in the Department of Education in KZN supports corporate entrepreneurship. However, it is not clear if employees think the same way. It is therefore recommended that management promote entrepreneurship and support employees without, or with minimum, conditions; particularly when there is the possibility of an element of failure from the side of an employee.

Burgelman (1983:1362) states that top management needs flexibility and tolerance for ambiguity in its strategic vision in order to deal effectively with corporate entrepreneurship. Bulut and Alpkan (2006:66) state that conservative and risk-averse attitudes will diminish entrepreneurial drive and innovative potential of frustrated employees. If those innovative employees who have been unsuccessful in risky projects are not punished, but tolerated, by managers, they may develop a higher level of normative and effective commitment to the organisation. Bhardwaj et al., (2007:137) regard failure as opportunity for learning.

It is the researcher's view that the Department of Education in KZN should embrace a culture of tolerance towards risks, mistakes and failure by allowing employees the chance to take risks that will enable them to be creative. Management should allow employees to explore new ideas assertively; at the same time, employees should take calculated risks. It is therefore recommended that managers in the Department of Education in KZN should develop procedures and processes regarding tolerance for risk, mistakes and failure in order to:

- Identify areas where risks and mistakes are tolerated.
- Identify the level of tolerance.

Managers, particularly top level managers, in the Department of Education in KZN must therefore accept mistakes and failure as part of a learning process; and

learning necessitates mistakes. The issue of interventions, for example, is determined by top management. Employees get told what interventions are going to take place and when; without input from lower level employees who are expected to do the job. It is argued that the education system is poor, yet a lot of money is being allocated to education. The issue is who decides what is going to be done, and at what cost? It is for this reason that the researcher recommends that top management give employees an opportunity to voice their views on the reasons for poor performance and how can it be solved; even if this involves some element of failure, at least they will have learned in the exercise. They will also own the results of poor performance, unlike when everything has been imposed on them.

Kuratko (2008:68) and Scheepers et al., (2008:55) state that employees have discretion if they are able to make decisions about their job performance the way they believe is effective. Freedom and independence are crucial, and hence entrepreneurs should not have to get permission for every move (Viswanathan and Gowri, 2004:28).

The results indicate that employees have autonomy in doing their jobs. However, the issue is how much autonomy they are given: can they decide on their own what do, when and how, without being reprimanded by top management? The issue is, if the right people are employed for the job, there should be no need for management to supervise them. As much as employees have autonomy, in terms of policy, management has to always be around to ensure things happen; as they will be held to account if things go wrong. It is therefore recommended that, if proper work discretion is to be used to promote corporate entrepreneurship, the correct people for the job are employed; and there should be trust between employees and management. Management should not be seen taking the functions of the employees, unless an employee has demonstrated some level of negligence in doing his/her job as a result of work discretion.

Rewards/reinforcement refer to the “development and use of the systems that reinforce entrepreneurial behaviour and encourage the pursuit of challenging work” (Morris et al., 2008:330). Kearney et al., (2008:55) state that if good performance is not recognised and rewarded, managers will be reluctant to take risks associated with entrepreneurial activities. Like any public sector organisation, the Department of

Education seldom recognises innovation, offering little in the form of incentives for public sector employees (Holbrook, 2010:161). Fostering corporate entrepreneurship requires organisations to come up with competitive incentives that will assist in retaining entrepreneurial employees (Morris et al., 2008:172). If entrepreneurial orientation is measured and rewarded, the chances are that the general entrepreneurial orientation within the Department of Education in KZN will improve.

It is therefore important that employees are rewarded for their entrepreneurial behaviour in the Department of Education. It is recommended that:

- Better reward/reinforcement should be put in place to reinforce and encourage entrepreneurial behaviour in the Department of Education in KZN. The envisaged behaviour is where employees take an initiative which will give them satisfaction in what they have done. It is the researcher's view that the current reward policy is causing employees to comply just enough to receive a 1% increase in their salaries. This policy, for example, does not recognise an educator who gets more distinctions in his subject. Even if you can get a 100% pass rate in your subject for five consecutive years, you will still get the 1% increase, just like someone who has failed all learners for five years. As much as the policy allows for bonuses, it is very difficult to receive one; unlike top management who always get bonuses for improved performance, forgetting that the people who have done the actual work are the junior employees who will only get 1% through IQMS for school-based, or PMDS for office-based, staff.

Discretionary time, according to Hancer et al. (2009:527), refers to the evaluation of workloads to ensure that individuals and groups have ample time to pursue innovations. New ideas thrive if employees have time to incubate their ideas (Kuratko et al., 2009:68). The Department of Education in KZN should therefore be fair-minded in assigning employee workloads; to avoid putting time constraints on every aspect of employees' jobs and to allow employees to work with their co-workers to solve problems. At school, educators are faced with overcrowded classes. In some cases they perform administrative work that they are not paid for. At district level, employees are working long hours without compensation, travelling long distances, and no one seem to be interested in their welfare. According to

Schepeers et al. (2008:56), employees should be allowed to conduct creative entrepreneurial activities in a limited portion of their worktime.

It is therefore important that time is made available for corporate entrepreneurship in the Department of Education. As much as the results indicate that there is discretionary time in the Department of Education, it is recommended that:

- Discretionary time, in consultation with employees, should be made available to promote corporate entrepreneurship in the Department of Education in KZN. It is further proposed that a more flexible and differentiated approach be considered for time allocation for teachers.

The Department of Education is a public sector organisation and it operates in formalised structures that are characterised by rigid red tape that is in conflict with the development of an entrepreneurial culture (Kearney et al., 2009:36). Wirick (2009:2) states that, although there is increasing pressure on the public sector and government at all levels to be more innovative and find more cost-effective ways of serving the public, the challenge is that barriers and cultures rooted in the public sector make it difficult for public sector entrepreneurship to be realised.

It is therefore important that communication channels become flexible to promote corporate entrepreneurship in the Department of Education. As much as results indicate that organisational boundaries are positively related to corporate entrepreneurship elements, the Department of Education, as a public sector organisation, is known for standard operating procedures, narrow job descriptions and inflexible performance standards (Kuratko, 2008:68). Inflexible organisational boundaries within an organisation, according to Mabala (2012:98), can impede corporate entrepreneurship. Although results indicate the positive and significant relationship between organisational boundaries and corporate entrepreneurship, the inflexible policies of the education department can inhibit the employees' capacity to foster corporate entrepreneurship (Kearney et al., 2009:36). It is therefore recommended that:

- Organisational boundaries should be established that are not highly rigid, with less red tape, and that are not in conflict with the development of an entrepreneurial culture in the Department of Education in KZN.

The results show that there was a difference of perception between the different age groups on (1) innovativeness, (2) pro activeness, and (3) management support for CE.

Each of these results will be discussed briefly and recommendations suggested.

5.11.3 Age and Innovativeness

The ANOVA results show that age plays a role in how respondents perceived innovativeness in the Department of Education in KZN.

The younger (aged 25 to 35) respondents gave significantly lower scores for innovativeness, compared to their older (aged above 41) counterparts. They perceived innovativeness to be at a low level in the Department of Education in KZN. Innovativeness is the process of translating an idea into a good or service that creates value in the organisation (Morris and Sexton, 1996:6). The results show that a manager's age plays a role in how the manager perceives innovation and change in an organisation. The older managers have come to accept the prevailing organisational conditions and routines, and have a greater psychological commitment to the organisation. Hence they will be less willing to commit to change; while the younger employees are more receptive to innovation because they bring a fresh perspective to their jobs (Huber et al., 1993:45).

In public sector organisations, including the Department of Education, where managers with long service are assumed to be older, seniority is respected and more experienced public administrators have greater insight into the process of performance improvement, compared to younger managers (Damapour, 2008:499). The younger managers may not be sufficiently familiar with their jobs, and hence are less likely to be innovative in the workplace. However, the younger employees are presumed to be familiar with technology and, therefore, since the Department of Education is still lagging behind with technology, the younger age group are more likely to see that the department is not being innovative.

Public sector organisations are often unionised (Damapour, 2008:499). The younger managers are known to be active and even hold positions in unions. For that reason they are the ones who are more likely to challenge the way things are done in the department and demand radical innovations. Hence this may result in older and

younger managers not having the same perceptions with regard to innovativeness in the Department of Education. It is therefore recommended that:

- Innovative capacity should be built into public sector organisations. Find novel and context-appropriate solutions to new challenges and old persisting problems.
- Individual capabilities should be built by identifying the skills and leadership required at all levels of an organisation to innovate successfully.
- Promising innovative practices should be identified, with the potential for scaling up for government – with the attributes to have an impact on innovative capacity – and ways to build more innovative-friendly organisational environments should be considered.

5.11.4 Age and Proactiveness

The results show that age plays a role in how respondents perceived proactiveness in the Department of Education in KZN. They perceived proactiveness constructs to be at a low level in the Department of Education in KZN. The results also indicate that both young and old participants do not perceive the Department of Education in KZN to be proactive when it comes to performing its activities.

Proactiveness is an action and results in goal-oriented behaviour in the organisation (Morris and Sexton, 1996:10). These results indicate that both young and older participants do not see that the Department of Education in KZN is promoting action and results-oriented behaviour in its employees.

According to Anderson (2015:5), proactive behaviour implies taking the initiative and mastering unexpected situations. According to Bindl and Parker (2016:20), older individuals tend to show lower levels of motivation to attend training as they have been in the work environment for a very long time and hence believe they know what to do. The younger employees will still have ambitions to progress in their careers, and are therefore likely to engage in proactive career behaviour. Although employees of all ages could be equally concerned with improving the effect of work processes, the younger employees are most likely to be proactive because they still want to master the unexpected situations.

These are possible reasons why there is a difference of opinion between managers of different ages with regard to how they perceive the level of proactiveness in the Department of Education. The following recommendations are therefore made:

- Employees should be made to know and understand their core activities. The core activities should be fully communicated to all employees and be rewarded.
- Employees must know the boundaries. They should know the point beyond which no one should go. This should not be limited to legal and ethical boundaries, but also cultural norms, values and ideologies that should not be violated. Employees should know what disciplinary actions could be taken should one violate the boundaries.

5.11.5 Age and Management Support for CE

The study results indicate that the young respondents did not agree with the statement that there is management support for CE in the Department of Education in KZN.

Scheepers (2012:409) states that management support for CE plays a key role in encouraging employees to believe that innovation is expected from all organisation members. According to the younger participants in this study, this is not the case with the Department of Education in KZN.

According to Hornsby et al. (2002:96), top management support for corporate entrepreneurship depends on the disposition and intention of management to encourage entrepreneurial activity in organisations. It refers to their commitment to entrepreneurial activity and their ability to institutionalise entrepreneurial activity in the organisation's system and processes.

Schachtebeck and Nieuwenhuizen (2016:673-674) summarise these attributes of management support for CE as: supportive human relations management; financial incentives; management support for training and learning; trust instilled by management; and management style and actions.

The results of this study show that there is a difference of opinion between the young and older managers with regard to how they perceive the level of management support for CE in the Department of Education in KZN.

According to Konya, Matic and Pavlovic (2016:127), the age of respondents is one of the most important characteristics in understanding their views about a particular problem. By and large, age indicates the level of maturity of an individual. In that sense, it becomes important to consider age.

Age enables employees to better understand and adapt to the values of the organisation, as well as to harmonise those values with their own values and goals (Jackalas, Martins and Ungerer (2016:357). Konya et al., (2016:127) take the point further and state that older employees demonstrate high levels of commitment to the values of the organisation because they better understand and adapt to the values of the organisation, relating those values to their own values and goals. Younger employees often have expectations which are too high, and are holding onto their personal ideas that, in some situations, prevent them from realistically perceiving and evaluating the values and goals of the organisation (Konya et al., 2016:136).

Older employees show higher commitment to stay within the organisation. This is because they are well aware of the fact that they do not have much choice (Konya et al., 2016:136). The authors further state that older employees are well aware that, for them especially, it is difficult to find another job; while younger employees are satisfied that they managed to get a job at all, or to be promoted after a long period of job-seeking.

These could be possible reasons for the difference of opinion between young and older managers with regard to how they perceive levels of management support in the Education Department in KZN.

The study focused on the use of entrepreneurship to improve the performance of learners in the Department of Education in KZN, South Africa. The main focus was on the poor performance of learners in mathematics and science, particularly in matric (Grade 12). It is recommended that:

- The age profiles for all employees should be known so that all different groups have a better sense of how to interact with, and respond to, others.

- Management should focus on developing the confidence and pride of junior staff members, who are normally young. Their achievements should be reinforced and their successes celebrated by senior managers, who happen to be the older staff members in the organisation.
- Management needs to be mindful of the potential for lower work engagement and to increase work engagement, by providing additional job resources and support for junior staff members to capitalise on their strengths.

These findings from the study are discussed briefly in the next section.

5.12 OVERALL MATHEMATICS AND SCIENCE LEARNER PERFORMANCE

In addition to the performance measurements tested and analysed (university entrance and output rates), additional performance measurements were also carried out. These pertain to the performance of learners in mathematics and science. A discussion of the overall mathematics and science learner performance follows.

Despite efforts by the government to improve the education system in South Africa, there are still a number of fundamental complexities and constraints impeding the envisaged final outcome of the process, particularly in mathematics and science.

Various studies have investigated the complexities and constraints affecting learner performance in mathematics and science in South Africa. For example, Mafukutha (2016:68-79) and Mavungu (2004) investigated such complexities in physical science teaching and learning. Tshiredo (2013:1-174) investigated and studied complexities and constraints experienced by schools in science education as a result of curriculum changes in the teaching and learning of science. Sinyosi (2015) investigated and studied the factors affecting Grade 12 learners' performance in mathematics.

All of the above studies, in collaboration with international studies, such as TIMSS results, indicate a problem in the teaching and learning of mathematics and science in South Africa.

In the present study, the perceptions of managers with regard to the above challenges were tested through a questionnaire, and the results of the study are captured in the following frequency tables:

Table 5.29 shows that the overall pass percentage of Grade 12 learners in the districts in the Department of Education in KZN has increased over the past three years. As can be seen, 62.8% of the respondents (the majority) indicated an increase in the past three years. This suggests that there has been an improvement in the teaching and learning in the Department of Education in KZN.

Table 5.29: Overall pass percentage

In the past three years, the overall pass percentage of Grade 12 learners in the district has:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Decreased significantly	7	1.6	1.8	1.8
	Decreased	27	6.3	7.1	8.9
	Remained the same	108	25.4	28.3	37.2
	Increased	185	43.4	48.4	85.6
	Increased significantly	55	12.9	14.4	100.0
	Total	382	89.7	100.0	
Missing	System	44	10.3		
Total		426	100.0		

Table 5.30 records pass percentages in mathematics in the past three years in Grade 12. The pass percentage has been the same for the past three years in some of the districts. As can be seen, 39.6% of the respondents indicated that there has been no improvement in the pass percentage in mathematics; although 38.1% of respondents indicated an increase in the Grade 12 mathematics pass.

The largest group, 39.6% of respondents, indicated that the pass percentage in mathematics in Grade 12 has remained the same'

The study found no improvement in the pass percentage of mathematics in Grade 12 in the past three years. This suggests that the teaching and learning of mathematics in the Department of Education in KZN is still a challenge.

Table 5.30: Learner performance in mathematics

In the past three years, the number of learners passing mathematics in the NSC examination in the district has:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Decreased significantly	23	5.4	5.9	5.9
	Decreased	64	15.0	16.5	22.4
	Remained the same	154	36.2	39.6	62.0
	Increased	124	29.1	31.9	93.8
	Increased significantly	24	5.6	6.2	100.0
	Total	389	91.3	100.0	
Missing	System	37	8.7		
Total		426	100.0		

Table 5.31 shows the pass percentages of Grade 12 learners in physical science in the district. The majority of the respondents, 45.4%, indicated that there has been an increase in the number of learners passing Grade 12 physical science. This suggests an improvement in the teaching and learning of physical sciences the Department of Education in KZN.

Table 5.31: Learner performance in physical science

In the past three years, the number of learners passing science in the NSC examination in the district has:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Decreased significantly	17	4.0	4.3	4.3
	Decreased	50	11.7	12.8	17.1
	Remained the same	147	34.5	37.5	54.6
	Increased	153	35.9	39.0	93.6
	Increased significantly	25	5.9	6.4	100.0
	Total	392	92.0	100.0	
Missing	System	34	8.0		
Total		426	100.0		

Table 5.32 shows the percentages of Grade 12 learners who obtained bachelors passes in the past three years. Of the respondents, 59.4% reported an increase in the number of learners who obtained bachelor passes in their district in the Grade 12 National Senior Certificate examination in the past three years

The study found that there has been an increase in the percentage of learners passing the Grade 12 examination with bachelor passes in the past three years. This suggests an improvement in the education system because the bachelor pass is the best pass a learner can achieve, qualifying the learner to study at any institution in South Africa.

Table 5.32: Learners passing with bachelor passes

In the past three years, the number of learners passing the NSC examination with a Bachelors pass in the district has:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Decreased significantly	13	3.1	3.3	3.3
	Decreased	34	8.0	8.7	12.0
	Remained the same	112	26.3	28.6	40.6
	Increased	175	41.1	44.6	85.2
	Increased significantly	58	13.6	14.8	100.0
	Total	392	92.0	100.0	
Missing	System	34	8.0		
Total		426	100.0		

The study found that there were different perceptions from participants regarding the 'actual' performance indicators such as pass rates. It is important to note that all participants were from the same Department of Education and the same province (KwaZulu-Natal Department of Education); and yet they have different perceptions about performance indicators. A possible reason for the different perceptions could be that participants were from different districts, and districts perform differently. Unfortunately the study did not ask participants to identify their district of origin and therefore responses cannot be traced to a district. Identifiying the district of each respondent could have enabled a comparative analysis or cross-tabulation of responces.

It is therefore recommended:

- The districts which are lagging behind (where results remained the same or decreased significantly) should be identified and suitable interventions introduced.
- Districts where there was significant improvement could be identified, and it could be learned from them what they did to improve their results.

5.13 DROP-OUT AND REPETITION RATES

A multitude of research studies have been conducted on learner drop-out and repetition rates in South Africa (Mngoma, 2010; Kyei, 2012; Mnchunu and Tutshama, 2012; Ramulumo and Pitsoe, 2013; Mnguni, 2014).

All the above studies, including one from UNICEF (2008), reveal that there are high learner drop-out and repetition rates in South African schools. According to UNICEF (2008:21), South Africa has a 74% drop-out rate of girls between the ages of 14 and 19 years in secondary schools. Among the causes for learner drop-out are teenage pregnancy; lack of parental involvement; substance abuse; and peer pressure (Mnguni, 2014:11-20). This is too high by any standards.

The present study, conducted using a questionnaire, tested the perceptions of managers in the Department of Education in KwaZulu-Natal on the issue of learner drop-out and repetition rates. The study mainly focused on Grade 9 to 11 learners because, according to the literature, that is where bigger problem lies (Simkins, 2013:7).

The study findings on learner drop-out and repetition rates are presented in Tables 5.33 and 5.34.

The majority of the respondents, 34.9%, indicated that the drop-out rate for the past five years has remained the same in the Department of Education in KZN. However, 33.7% of the respondents reported that the drop-out rate had increased. This shows that, for the past five years, there has been no reduction in the drop-out rate (68.6%) in the Department of Education in KZN.

Dropping out of school presents learners and parents with various challenges. There are numerous factors which lead to learners dropping out of school. These include issues relating to organisation or administration, school climate, delivery of instruction, subject content/curriculum, and staff/teachers.

The issue of class size has been reported by Finn and Gerber (2005) as one of the reasons for high drop-out rates in big schools (Finn and Gerber, 2005:215). It has been established that classes of fewer that 20 learners have a positive effect on learner achievement (Finn and Gerber, 2005:215). A low teacher/student ratio can be beneficial in curbing drop-out of learners. The availability of school counsellors

who can identify potential drop-outs and work closely with learners at risk can assist in curbing drop-out rates in schools.

A school climate characterised by safety and orderliness, and that is accessible and non-threatening to learners, can contribute to drop-out prevention. Positive feedback and encouragement in the classroom, and involvement of parents in school activities such as school sports and other cultural activities can build a 'family' atmosphere where learners will have a sense of belonging. Woods (1995) reported on "a study by the Office of Educational Research and Improvement (OERI), in the U.S Department of Education, on drop-out rates. There were fewer drop-outs in environments where students were actively involved in the design of programmes and activities. In addition, this involvement increased their commitment to their academic work. No single structure or set of activities works for all learners. A variety of strategies in various combinations should be used to address the entire range of student needs and factors that alienate them from school".

Table 5.33: Learner drop-out rates

In the past five years, the drop-out rate of learners in Grades 9 to 11 in the district has:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Decreased significantly	21	4.9	5.4	5.4
	Decreased	102	23.9	26.0	31.4
	Remained the same	137	32.2	34.9	66.3
	Increased	87	20.4	22.2	88.5
	Increased significantly	45	10.6	11.5	100.0
	Total	392	92.0	100.0	
Missing	System	34	8.0		
Total		426	100.0		

Related to the issue of drop-out rates are learners repeating a grade. Repeating a grade is likely to contribute to an increased likelihood of dropping out.

Table 5.34 shows the learner repetition rates in the KZN Department of Education. Of the respondents, 35.5% indicated that the repetition rate for the past five years had remained the same. However, more respondents (36.8%) reported that the repetition rate had increased in the past five years. This suggests that the number of learners who could not finish matric with their age cohorts has increased in past five years.

Table 5.34: Learner repetition rates

In the past five years, the repetition rate of learners in Grade 10 and 11 in the district has…

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Decreased significantly	21	4.9	5.4	5.4
	Decreased	88	20.7	22.4	27.8
	Remained the same	139	32.6	35.5	63.3
	Increased	108	25.4	27.6	90.8
	Increased significantly	36	8.5	9.2	100.0
	Total	392	92.0	100.0	
Missing	System	34	8.0		
Total		426	100.0		

5.13.1 Discussion on Learner Performance, Drop-out and Repetition Rates.

The study has found that the overall pass rate of learners in KZN Department of Education is on an upward trajectory.

The KwaZulu-Natal Department of Education is the largest examination body of the nine provinces in the country. It should, therefore, be noted that any poor performance in KZN will negatively affect the overall pass rate of the country. All

twelve districts in the KZN Department of Education need to improve their results for the province to improve.

The improvement in results has come as a result of the province changing its strategy, with the intention of improving the overall pass percentage and the pass percentage of each district (KZN Department of Education, 2017:0). The implementation of the plan is producing better results. However, there is much more room for improvement because 28.3% of respondents reported that the results have been the same for the past three years and 8.9% reported that the overall pass rate has decreased. This is an indication that some of the respondents did not know about the plan, its implementation and the results ensuing from the plan. This suggests that the Department of Education has to define and communicate its innovation strategy for it to be embraced by all involved. It is for that reason that Ernest and Young (2017:1) say that “innovation in the public sector, such as the Department of Education, is less well defined; although it has benefits”. Ernest and Young (2017:1) further say that “many organisations struggle to define what innovation means and to effectively implement an operating model to enable it. Public sector leaders and managers need to clearly understand what operating model they intend to use to enable innovation, given their specific needs and circumstances, such as red tape and bureaucracy”.

Kearney and Hisrich (2007:302) state that a consequence of corporate entrepreneurship, and hence innovation, is an improvement in organisational performance. For corporate entrepreneurship to occur, the environment of a public sector organisation is critical (Kearney and Hisrich, 2007:302). This environment is made up of several dimensions, including structure/formalisation; communication; management support; risk taking and proactiveness. Kearney and Hisrich (2007: 302) suggest that hierarchy as a structure in public organisations should be minimal for entrepreneurship to flourish. Covin and Slevin (1991:10) are of the view that, “for corporate entrepreneurship to occur within the public sector, there is a need for greater flexibility and adaptability as high levels of rigidity and red tape are in conflict with the development of an entrepreneurial culture”. Slevin (1990) differentiate between “organic and mechanistic structures and claim that organic organisational structures foster entrepreneurial behaviour. Organic structures are more adaptable,

more communicating, more consensual and more loosely controlled than mechanistic structures" (Sadler, 200:30).

It is evident that structures and systems are necessary for the management and control of an organisation such as the Department of Education. However, as stated by Thompson (1999:210), these structures and systems must not destroy flexibility, flair and creativity. MacMillan et al. (1986) and Zahra (1991), in Kearney and Hisrich (2007:303), stressed the "inhibiting effect of the excessive use of formal controls. Potentially enterprising managers can find themselves constrained and frustrated in a non-entrepreneurial environment" (Thomson, 1999:210). It is therefore not surprising that public sector (Department of Education) employees appear to be less innovative than their private sector counterparts.

- "It is therefore recommended that the Department of Education become an organisation which is more flexible, with decentralised decision-making and fewer formal control systems; rather than being rigid, with centralised decision-making and highly formal control systems, if it is to improve its performance in terms of learner attainment".

Organisations with a high degree of red tape, weak links between promotion and performance, and a high involvement of elected officials, tend to have a less risky culture and in public sector organisations, including the Department of Education, this means that risk-taking behaviour of managers may be subjected to scrutiny (Kearney and Hisrich, 2007:304). Risk aversion impedes entrepreneurial behaviour. Although risk-taking decisions are not always desirable in the public sector (Malatjie and Rankhumise, 2017:205), public sector organisations need to encourage risk-taking behaviour because their policy environment is never predictable and stable (Ford Foundation, 1996:699). An understanding of risk behaviour in top management and decision-makers provides an understanding ofencom perceptions of acceptable behaviour encompassing risk (Kearney and Hisrich, 2007:304).

- It is therefore recommended that the Department of Education reduces the amount of red tape and promotes stronger lines of communication to improve the level of corporate entrepreneurship that will improve learner performance.

Proactiveness is concerned with implementation, which is doing what is required in order to bring the entrepreneurial behaviour to fruition (Kearney and Hisrich,

2007:304). It is the researcher's view that the Department of Education was proactive by putting in place the plan to improve learner performance. By putting the academic improvement plan in place, the Department of Education demonstrated that it doesn't suffer from a lack of ideas, but rather faces a challenge when it comes to implementing those good ideas. The issue at point is the culture where everybody knows what the plan is and becomes part of developing the plan, with the intention of owning that plan. As Ernest and Young (2017:12) put it, the reality is that the corporate culture to embrace and exploit innovation is not universally fostered in public sector organisations. The initial step in the corporate culture is communication of change, where employees will be looking for tangible examples of the new culture. The organisation should express a willingness to accept ideas from all sources and increase sharing of information with all levels. What is key, as Ernest and Young (2017:12) argue, is that innovation starts with people, it does not come from top management. Top management only needs to provide an environment where people will come up with innovative ideas, by fostering a culture of experimentation.

While a structured innovation process can help organisations focus and manage ideas from creation through incubation to activation (Ernest and Young, 2017:12), "the Department of Education doesn't seem to have a structured innovation process or framework in place. The challenge that public sector organisations face, and the Department of Education in particular, is that even the best intended efforts quickly become overtaken by processes and rigidity, due to the risk-averse nature of government". As a result, it is incumbent upon public sector managers and leaders to focus on finding a balance between implementing a structured process and ensuring that the structure does not become so rigid as to defeat its purpose.

- It is therefore recommended that the Department of Education develop a structured innovation process framework that is understood by everybody because they will be participating in the structure.

The study found that there had been an increase in the number of learners passing physical science in the Grade 12 examination. That suggests that learner performance in the physical sciences is improving satisfactorily.

According to the results, the teaching and learning of physical science is innovative, resulting in an improvement in performance.

- It is therefore recommended that the strategy, or plan, used in the teaching and learning of physical science be maintained and improved until all learners doing physical science pass Grade 12. It can be improved until the majority learners get distinctions in physical science.

According to the results, there has been no improvement in learner achievement in mathematics. The results are by no means a surprise, as all studies, including international studies, show that South Africa has poor educational outcomes in cross-national educational assessment, especially in mathematics (Centre for Development and Enterprise, 2013:3). Engelbrecht (2018), the director of the South African Mathematics Foundation (SAMF), said it is clear that the mathematics situation in the country needs to be addressed seriously and urgently (SAMF, 2018:4).

Mathematics plays an important role in developing human thought and systematic reasoning processes using problem analysis and solving. Mathematics is also a tool to study technological sciences and other related disciplines (Phonapichat, Wongwanich and Sujiva, 2014:3169). Thus, mathematics has value in improving the quality of human life.

The findings from the analysis of mathematical problem-solving difficulties among elementary school learners by Phonapichat et al. (2014) suggest that “learners do not like to read very long problems. When learners do not understand a problem, they are likely to make a guess without applying any mathematical thought processes”. In this regard, school readiness is crucial; and for that, early childhood skills are necessary. Therefore, enhanced numeracy and mathematical abilities in the lower grades are very important. Bernstein (2013) hypothesises that good sensory equipment, as developed in Montessori schools, be introduced in the lower grades (Centre for Development and Enterprise, 2013:12). Montessori methodologies, adapted to pre-schooling, are useful; and gains in mathematics persist beyond Grades 4 and 5. This is because children playing with, and using, concrete equipment develop a real understanding of numbers.

- It is therefore recommended that the Department of Education be proactive and introduce the above methodology for learning mathematics in the early grades.

However, public sector initiatives alone will probably not be a sufficient response, and assessing learners' aptitudes, and nurturing those with potential, are important strategies that have been developed in private sector initiatives. Private sector interventions, which focus on high quality mathematics teachers who could have an impact on various grades, are necessary and could have a systemic impact on how best to use local and global expertise in best-practice training for both leaners and teachers. This could be achieved through the National Collaborative Trust and Council where stakeholder structures and the private sector can bring forward ideas, and lobby for research and experimental programmes, to investigate additional areas for action, and for funding.

- In line with the above discussion, it is recommended that the Department of Education, through various forums such as National Education Collaborative Trust, use business and private sector organisations to develop more ideas to improve learner achievement in mathematics.

Mathematics education is one of the national priorities in South Africa. This fact is highlighted in the National Development Plan, which indicates the need for an increase in the number of learners achieving 50% in literacy and mathematics (National Planning Commission, Department of the Presidency, 2012).

Some of the critical challenges faced by teachers in South Africa, and other countries with emerging and developing economies, relate to their own lack of mathematical content knowledge and the skills required to apply what they know in the classroom (Stols, Ferreira, Pelser, Olivier, Van der Merwe, De Villiers and Venter, 2015:1). According to Rowland and Ruthven (2011:167), it is generally agreed that the quality of teaching depends on the knowledge the teacher brings to the classroom (Stols et al., 2015:1).

The Department of Education has introduced Information Communication Technology as a tool to improve results, particularly in subjects such as mathematics. As Meyer and Grant (2016) put it, teachers need to learn technology integration strategies and must learn to support their learners (National Education Collaboration Trust, 2016:10). However, despite technology becoming increasingly available to teachers, they often do not make optimal use of technology for teaching

and learning purposes. Teacher use of technology is related to administration and processes monitoring learners' feedback (Sime and Priestley, 2005:131).

According to Nyaumwe, Bappoo, Buzuzi and Kasiyandima (2004:33), teachers are using traditional approaches, which are teacher-centred and do not help learners develop a conceptual understanding of mathematics. These are instructional methods that are based mainly on teacher talk, and they do not involve much questioning, discussion and individual development of understanding. In contrast, a learner-centred teaching approach is one that supports learners in developing mathematical reasoning, while encouraging them to perceive the teacher as someone who is there to help them make sense of mathematics, while creating contexts which help them develop meaning in mathematics (Brodie, 2006:543; Yashua, Mji and Wessels, 2005:20). However, learner-centred teaching is much harder to achieve in practice than it appears to be in policy. Chisholm and Leyendecker (2008:197) note that learner-centred education is one of the most pervasive ideas; yet it is very hard for it to take root in the classroom.

- Based on the discussion with regards to teacher content and knowledge of methodology, it is recommended that the Department of Education explore possible classroom-based teacher support interventions that can encourage them to start increasing their repertoire of teaching and learning strategies by making use of technology so that they can move to more innovative methods.

The above section discussed learner performance. Learner performance in mathematics in particular, was perceived to be very poor. There are various factors that can lead to poor academic performance in schools. Some of these factors are not solely attributed to the school environment.

The next section will briefly discuss these factors, with special reference to learner drop-out and repetition (retention). The discussion will focus on what the Department of Education is doing in terms of policy and guidelines in relation to these factors.

The study found that the drop-out rate of learners had remained the same for the past five years.

Education is aimed at more than just knowledge, skills and independent thought; and is principally concerned with the positive formation of the moral character and

development of the entire personality of the maturing adult. As pointed out by Jukuja (2009:13-14), although learner drop-out affects all grades in South Africa, the highest drop-out rate of learners occurs in high school. Dropping out seems particularly prevalent at the primary and secondary school levels. Mgwangqa and Lawrence (2008:2) have established that the main reason for dropping out of school in rural areas is poverty. That is why the Department of Education has started a nutrition programme at schools which seeks to alleviate hunger among learners coming from poverty-stricken communities. Learners who cannot afford to pay school fees are allowed to attend school for free by the Department of Education.

Cunningham and Boult (1996:692) point out that the social consequences of teenage pregnancy are interrupted schooling, leading finally to dropping out of school. Chigona (2007:159) asserts that teenage mothers need support and encouragement to continue with their school careers. The educational effects of teenage pregnancy are that these teenage mothers run the risk of not obtaining the educational skills needed to become self-supporting. It is for this reason that the Department of Education has guided education institutions and managers not to exclude learners if they are pregnant.

Barriers to learning and development are defined as those factors which lead to the inability of the system to accommodate diversity, which leads to learning breakdown or prevents learners from accessing education (Department of Education, 2001:166). Barriers arising from developmental and learning impairments lead to drop-out of learners (Terhoeven, 2009:35). Learners experiencing the most severe forms of learning difficulties drop out of school. The department's policy, the National Policy Pertaining to the Programme and Promotion Requirements (NPPPR), has clear guidelines with regard to difficulties experienced by learners. For example, the policy states that learners who experience barriers to learning may apply for concessions: learners who have been diagnosed with the mathematical disorder of dyscalculia may be exempted from taking mathematics and mathematical literacy.

- It is therefore recommended that the Department of Education improves the policies and interventions relating to the dropping out of learners by designing policies and interventions that directly address drop-out of learners. These interventions should include the learners themselves, and parents.

The study also found that there has been an increase in the repetition (grade retention) rate in the Department of Education.

Learner grade retention is when a learner repeats a grade (being held back). According to Thompson and Cunningham (2000), empirical literature is divided into two camps about repetition of learners (Ikeda, Miyako and Garcia, 2014: 270). The first supports the contention that grade repetition is beneficial for the learner. The second suggests that it is detrimental for the learner. This study views repetition through the eyes of the second camp, as does the Department of Education in South Africa.

A consequence of repetition is that it discourages learners with low motivation, confidence and social skills, and forces the retained learner to repeat the same grade while the advancing peers go to the next grade. The norm for repetition in the National Policy Pertaining to the Programme and Promotion Requirements (NPPPR), stipulates that a learner can be retained once in each phase in order to prevent the learner from being retained in the phase for longer than four years (Department of Education, 2012:37-38). Another policy position of the department is what is called the 'progressed learner'. Progression of a learner means the advancement of a learner from one grade to the next, excluding Grade R, in spite of the learner not having complied with all the promotion requirements (Reddy, 2016:5). These are policies put in place by the Department of Education to ensure that learners are not dejected and drop-out, because of grade repetition.

5.14 SUMMARY

In conclusion, a positive and significant correlation was found between innovativeness, proactiveness, risk taking and the following factors: management support for CE; organisational tolerance; work discretion; rewards/reinforcement; discretionary time; organisational boundaries and organisational performance.

In the independent samples analysis, it was found that gender does not have a significant effect on entrepreneurial orientation; corporate entrepreneurship and organisational performance constructs.

In the variance analysis, it was found that age and management levels do not have a significant effect on perceptions of organisational tolerance; work discretion;

rewards/reinforcement; discretionary time; organisational boundaries and organisational performance. Age was found to significantly influence perceptions of innovativeness; proactiveness; and management support for CE.

The study found that, according to the younger respondents, there are no creative ideas in the Department of Education in KZN. It was also found that both young and older participants do not believe that the Department of Education in KZN is promoting action and results-oriented behaviour in its employees.

According to the younger participants, there is no management support for CE in the Department of Education in KZN. Age did not significantly affect perceptions of respondents regarding organisational performance.

Managers are counselled to practise corporate entrepreneurship to enable them to be competitive in today's dynamic world. Entrepreneurial orientation should be an organisation's dominant logic in order to keep the organisation competitive.

CHAPTER 6

CONCLUSIONS AND RECOMMENDATIONS

6.1 INTRODUCTION

In this chapter, implications of the findings of the research, as presented in the previous chapter, are discussed. Conclusions are then drawn from the evidence and recommendations made. There seems to be a gap in the CE literature about the public sector, where the relationship between CE and EO is determined, and their influence on the performance of a public sector organisation, particularly the Department of Education in South Africa, is empirically tested. Therefore, as explained in Chapter 1, the purpose of this study was to address the research gap in the CE field in South Africa by exploring the relationship between internal environmental antecedents to CE and the degree of entrepreneurship (EO) in the public sector. The influence of this relationship on the performance of the organisation is tested.

6.2 CONCLUSION

Although the literature reveals that CE scholars have tried to enhance our understanding of what makes an organisation entrepreneurial by investigating the CE environment and its impact on corporate venturing (Shepherd and Krueger, 2002:167), there is no known empirical work conducted specifically on the relationship between CE and EO and their influence on public sector organisational performance. This study sought to fill that gap by exploring the relationship between CE and EO and how they influence the performance of a public sector organisation, the Department of Education in South Africa.

This study was conducted in the field in twelve education districts in the KZN Department of Education.

The purpose of the study was to explore the relationship between CE elements (management support for CE, organisational tolerance, work discretion, rewards/reinforcement, discretionary time, organisational boundaries) and EO factors (innovativeness, proactiveness, risk taking) and their influence on

measurements of organisational performance (university entrance performance, output performance) in the Department of Education in KZN.

The main objectives of the study, as explained in Chapter 1, were:

- to assess the levels of corporate entrepreneurship practices in the Department of Education in KwaZulu-Natal;
- to explore the relationship between entrepreneurial orientation elements and corporate entrepreneurship environmental elements within the Department of Education in KZN;
- to establish the relationship between entrepreneurial orientation elements and organisational performance;
- to establish the relationship between corporate entrepreneurship elements and organisational performance;
- to establish whether differences in perception existed among the department's management regarding the entrepreneurial climate within the Department of Education.

This chapter will revisit the research objectives stated above, provide recommendations based on the findings and suggest directions for further research.

6.2.1 The levels of Corporate Entrepreneurhip Practices in the Departmnet of Education in KwaZulu-Natal.

For the purposes of this discussion, a score of 3.0 on the five-point Likert scale (as employed in this study), is regarded as an average score (the mean of a Likert scale from one to five). The average mean of all the CE elements, as evaluated by the participants, was found to be 3.427, which can be regarded as an above average score in terms of the Likert scale. The conclusion, therefore, is that CE is practised in the Department of Education in KZN. The study's objective of assessing the levels of CE practices in the Department of Education in KZN was realised.

6.2.2 The Relationship between EO, CE and Performance Variables.

The purpose of the study was to explore the relationship between EO factors (innovativeness, proactiveness, risk taking) and CE elements (management support for CE, organisational tolerance, work discretion, rewards/reinforcement,

discretionary time, organisational boundaries) and their influence on measurements of organisational performance (university entrance performance, and output performance) in the Department of Education in KwaZulu-Natal.

In considering the relationship between entrepreneurial orientation factors and corporate entrepreneurship elements, overall, the internal corporate entrepreneurship elements showed a statistically significant and positive correlation with entrepreneurial orientation factors. This finding is in line with literature findings (Goosen, 2002).

Hypotheses **$H_0$1** to **$H_0$3** tested the correlations between each of the EO factors (innovativeness, proactiveness, and risk taking) and each of the CE elements (management support for CE, organisational tolerance, work discretion, rewards/reinforcement, discretionary time, and organisational boundaries).

The conclusions indicate that supportive managerial practices are related to higher levels of entrepreneurial behaviour. Rewards/reinforcement; discretionary time; and organisational boundaries showed a strong, statistically significant, correlation with entrepreneurial orientation. The other three elements – management support for CE; organisational tolerance; and work discretion – did not show a strong correlation with entrepreneurial orientation. Amongst all the corporate entrepreneurship elements, management support for CE and work discretion exhibited a weak, though significant, correlation with EO factors.

Management support for CE may assume various forms, such as championing new ideas; the promotion of possibilities linked to entrepreneurial behaviour; the experience of managers with the innovation process and the encouragement to develop new ideas.

- Management support for CE showed a moderate, but significant, correlation with entrepreneurial orientation (**$H_0$1a, $H_0$2a,** and **$H_0$3a**). The Department of Education in KZN, therefore, does not have a strong relationship between management support and entrepreneurial behaviour.

Literature reveals (Ozcan and Reichstein, 2009:606) that public sector organisations, including the Department of Education, are bureaucratic and hierarchical in nature.

These hierarchical and strongly regulated structures, where employees' ability to implement what they see as necessary organisational change limit employees in being entrepreneurial. Although public sector employees might choose to continue in their employment, as a result of their perceived job security and other reasons, their constructive engagement in intiating and instituting change is limited by the existence of rules purporting to cover possible contingencies. Their potential to produce results is also limited and that results in the increase in their entrepreneurial exit. Public sector norms and modes of reasoning, emphasis on the systematic rules and proceduers limit development of entrepreneurial mindset of the employees over time (Ozcan and Reichetein, 2009:607). These procedures and norms result in employees feeling that deference of problem solving and responsibility for decisions to supervisors is accepted, and this promote a lackadaisical stance toward work place and limit entrepreneurship. The public sector culture suppresses the voices that challenge organisational norms and beliefs and as a result prohibit employees from being entrepreneurial.

Organisational tolerance did not have a strong or significantly positive relationship with EO factors. Organisational tolerance assumes that management are tolerant of risk taking and encourage the development of new idea by employees.

- The findings show that, although the correlation between organisational tolerance and EO factors (**$H_0$1b, $H_0$2b, and $H_0$3b**) is significant and positive, it is only moderate.

Organisational tolerance means that employees's are allowed a certain degree of taking risk without being punished. This suggest that employees approach their jobs with an open mind and there are not confined to one acceptable way of thinking. Lirerature reveals that in the public sector employees are expected to be identified with their work roles and be conformist rather than deviant (Wilson, 1989). This kind of attitude limit their potential of being entrepreneurial.

Autonomy had a significant and positive relationship with OE factors. In theory, autonomy refers to **work discretion** and entrepreneurial freedom of employees to the extent that they are able to make decisions about performing their own work in the way they believe is most effective (Goosen, 2002:106).

- The study found that the strength of the correlation between work discretion and EO was significant and positive. Although the correlation was significant, its strength was moderate. This suggests that something needs to be done to improve the strength of the correlation between work discretion and risk taking (**$H_0$3c**) factors in the Department of Education in KZN, so that entrepreneurial behaviour is improved.

Public sector organisations are characterised by specialisation and routine jobs. This specialisation when coupled with formalisation, leads to routinisation and limits personal discretion at work. Moreover. s[ecialisation of skills and the on-job training in public sector increase the transaction and opportunity cost of leaving the organisations while reducing the chances of finding a good employement march (Ozcan and Reistein, 2014:607).

'Rewards' showed a significant and positive relationship with the EO factors, innovativeness (**$H_0$1d**) and proactiveness (**$H_0$2d**). The literature on CE emphasises the role of rewards and reinforcement in developing the motivation of individuals to engage in innovative behaviour (Goosen, 2000).

- The findings in this study accord with the theory that the use of appropriate rewards increases the motivation level of employees to engage in entrepreneurial behaviour.

Although the study found a significant and positive relationship between the reward factor and the two EO factors (innovativeness and proactiveness), it should be acknowledged that public service bureaucracies focuses on standard and precedent operating procedures (Ozcan and Reichsten, 2009:616) and therefore it is difficult to measure the effectiveness and efficiencies of performance. Even more so individuals exhibiting good performance are rarely rewarded and those displaying poor performance are rarely punished in the public sector. While reward sytem pays to motivate those who are in the private sector, it is negatively correlated with work in the public sector. Strow and Strow (2018:3) suggest that the lack of entrepreneurship in the public sector is not due to a lack of incentives, but rather is due to the sorting of the risk averse into the public sector. To counteract such tendencies and for entrepreneurial activity to develop in the public sector there is a need for greater a greater understanding of the risk-rewrd relationship and how these influence

employee satisfaction levels and relate to different performance measures. Research also shows that many public sector employees are dissatisfied with the intrinsic aspect of their work, their relations at work, and the low level of recognition for their contributions and they believe that continuing to work in the public sector constitue a sacrifies on their part (Ozcan and Reichstein, 2014:606). Employees feel that there is a diminished sense of impact in their job. Public sector relies on seniority for rewarding and promoting employees. These practices foster high employee dependence. Ozcan and Reichstein (2014:608) are of the view that many public jobs are frequently reallocated to higher levels of seniority on the grounds that the way they are performed is sufficiently different in responsibility or skill from the job description. Likewise, public bureaucracies often create idiosyncratic job titles to retain employees when positions discontinues (Miner, 1990).

'Discretionary time' showed a significant and positive relationship with EO factors. The literature reviewed in Chapter 2 emphasised the importance of time availability if employees are to believe that an organisation is serious about innovative projects (Chandler et al., 2002: 205).

- The study supports this assertion, although the relationship between discretionary time and risk taking needs to be strengthened in the Department of Education in KZN.

'Organisational boundaries' showed a significant and positive relationship with EO factors. The theory discussed in Chapter 2 showed that a supportive organisational structure and flexible boundaries encourage entrepreneurial behaviour (Goosen 2002).

- The study also finds support for this assertion.

The study findings showed that all the elements of CE had a significant and positive relationship with risk taking (**$H_0$1f, $H_0$2f, and $H_0$3f**). According to Bourchard (2017:2), corporate entrepreneurs can only operate in an organisation that is open to a certain level of risk taking. Risk taking as a factor of EO was found, in this study, to have a positive and significant, but weak, relationship with the elements of CE. In order to promote a culture of risk taking, the organisation should identify role models, mainly

managers, who embody a spirit of entrepreneurial thinking and promote this idea (Bourchard, 2017:3). Managers should discuss the successes and failures of role models to let employees know that risk taking in pursuit of entrepreneurial ideas is encouraged.

Literature reveals (Borojas, 2003) that public employees tend to be more mobile within than across sectors. The sticky structural constrains contain expose to varied problems and processes and heterogeneous learning. They undermine the development of personal initiative, problem solvingskills and combinatory capabilities (Ozcan and Reichstein, 2014:608).

6.2.3. The Relationship between Entrepreneurial Orientation Factors and Measurements of Organisational Performance.

The study showed a positive, significant relationship between EO factors and performance measurements (**$H_0$4**, **$H_0$5**, and **$H_0$6**). The strength of the relationship between EO factors and performance measurements was weak. This finding partially confirms that entrepreneurial orientation is a partial predictor of organisational performance. The findings show that the propensity of an organisation to be innovative, proactive and willing to take risks has a positive relationship with the performance of an organisation (Lumpkin and Dess, 1996:105). The influence of entrepreneurial orientation has been studied on numerous occasions and the results vary from a highly positive relationship, to no significant relationship (Rauch et al., 2009:97). Some empirical studies show that the relationship between entrepreneurial orientation and organisational performance differs depending on the type of industry and characteristics of the environment in which the organisation operates.

One of the most intriguing findings relates to the dimensionality of the entrepreneurial orientation construct. Even though there is a significant positive correlation between entrepreneurial orientation and organisational performance, the significance of the correlation between each entrepreneurial orientation variable and performance varies. For instance, the correlation between innovativeness and organisational performance (**$H_0$4a and $H_0$4b**), and proactiveness and organisational performance (**$H_0$5a and $H_0$5b**), was found to be stronger than that between risk taking and organisational performance (**$H_0$6a and $H_0$6b**). This provides clear

evidence in support of Lumpkin's and Dess's (1996) argument that the variables can, and do, vary independently.

Public sector organisations have been significantly influenced by practices in the private sector. However, in many respects performance management in the public sector is more complicated as a result of the absence of the single overriding goal which ultimately dominates private sector organisations; that is, the motivation to make profits and satisfactory returns for shareholders (Boland and Fowler, 2000:440). Research has raised concerns about a direct relationship between EO and organisational performance, suggesting that this relationship may be moderated by characteristics such as the nature of the environment or other organisational factors (Arbaug, Cox and Camp, 2009:14).

In this study, the results indicated that EO is related to organisational performance, and the relationship is statistically significant and positive. These findings support what is indicated in the literature, that EO has a positive impact on the performance of an organisation. The findings of this study seem to suggest that, to create an EO, organisations should not only think of establishing the climate for entrepreneurship on a partial basis, but should do it in totality in order for the organisational antecedents to have a positive impact on organisational performance (Malatjie et al., 2017:206).

Literature reveals (Alegre and Chiva, 2013; Pan Wang, Yu, Nguyen and Chen, 2016) that despite the significant impact of EO on organisational performance, there is an argument the individual role of EO in affecting organisational performance is may provide an incomplete understanding (Hussain, Abbas and Khan, 217:9). They argue that the benefit derived from implemention of EO results may not be for long term. Besides, researchers have developed a consensus that adoption of EO results in improved performance. Considering the importance of EO for greater performance in the Department of Education it is important to remember Luamkin and Dess (1996) definition of EO, that it is a multidimensional construct with dimensions that can act on organisational performance independently. The findings of this sudy shows that innovativeness and proactiveness were significantly and positively

related to organisational performance compared to risk taking. This clearly shows that the EO dimensions vary independently.

The results of this study further indicate that CE within the Department of Education has a statistically significant and positive relationship with organisational performance **($H_0$7).** However, the challenge that managers might be faced with is to identify entrepreneurial processes that lead to various forms of CE and to verify the forms that produce the best performance results in the organisation.

This study found that CE has a statistically positive and significant relationship with organisational performance. These findings support what is indicated in the literature; that CE has a positive impact on the performance of an organisation. The findings of this study seem to suggest that to achieve EO, organisations wishing to embrace CE should not think of establishing the climate for entrepreneurship on a partial basis, but should do so in totality, in order for organisational antecedents to have a positive impact on organisational performance (Malatjie et al., 2017:206). For organisation level entrepreneurship, literature reveals that EO and CE idicators should be integrated to get a full picture of the organisation level entrpreneurship.

In summary, the results of the study agree with empirical studies that innovativeness and proactiveness are important vehicles for the survival of an organisation and for improved performance (Knight, 1997:95). The study's objectives of finding out the relationship between EO, CE and organisational performance were realised.

The study also established whether differences in perception existed among the department's management regarding the entrepreneurial climate in the Department of Education in KZN. As Ucbasaran, Westhead, Wright and Flores (2010:541) posit, the demographic factors of participants are some of the determinants of their perceptions of how corporate entrepreneurship is being practised in an organisation.

In this regard, the next section provides a summary of the influence of the demographic characteristics of participants on their perceptions of entrepreneurship levels in the Department of Education in KZN.

6.2.4. The Influence of Demographic Characteristics of Participants on their Perceptions of Entrepreneurship Levels in the Department of Education

The study also analysed the demographic characteristics of the respondents. It was important to make an assessment regarding the demographics of the respondents to determine their perceptions regarding the levels of CE elements, EO factors and organisational measurements of performance in the organisation.

The objective of the study was to establish if differences in perception existed among the department's management regarding the entrepreneurial climate in the Department of Education in KZN. The following hypotheses were postulated and tested:

- Hypothesis **$H_0$8** stated that there is no statistically significant difference of opinion between the mean scores of male and female respondents with regard to how they perceive the level of innovativeness (**$H_0$8a**); proactiveness (**$H_0$8b**); and risk taking (**$H_0$8c**) in the Department of Education in KZN.
- Hypothesis **$H_0$9** stated that there is no significant difference of opinion between male and female respondents with regard to how they perceive the level of management support for CE **($H_0$9a);** organisational tolerance **($H_0$9b);** work discretion **($H_0$9c);** rewards/reinforcement **($H_0$6d);** discretionary time **($H_0$9e);** and organisational boundaries **($H_0$9f)** in the Department of Education in KZN.
- Hypothesis **$H_0$10a** stated that there is no statistically significant difference of opinion between male and female respondents, reflected in the mean scores, with regard to how they perceive the university entrance performance measurement in the Department of Education in KZN.
- Hypothesis **$H_0$10b** stated that there is no statistically significant difference of opinion between male and female respondents, reflected in the mean scores, with regard to how they perceive the output performance measurement in the Department of Education in KZN.
- Hypotheses **$H_0$11** stated that a statistically significant variance does not exist between the mean values of the various age groups and how they perceive the levels of EC factors (innovativeness **-$H_0$11a**; proactiveness **-$H_0$11b**; risk taking **-$H_0$11c**; management support for CE **-$H_0$11d**; organisational tolerance **-**

$H_0$11e; work discretion **-$H_0$11f**; rewards/reinforcement **-$H_0$11g;** discretionary time **-$H_0$11h**; organisational boundaries **-$H_0$11i;** university entrance performance **-$H_0$11j** and output performance **$H_0$811**) in the Department of Education in KZN.

- **Hypotheses $H_0$12 (a)** stated that a statistically significant difference does not exist between the mean age categories of the participants: 1 and 2 (**$H_0$12a_1)**; 1 and 3 **($H_0$12a_2)**; 2 and 3 **($H_0$12a_3)** and their perception of the levels of innovativeness in the Department of Education in KZN.
- **Hypotheses $H_0$12 (b)** stated that a statistically significant difference does not exist between the mean age categories of the participants: 1 and 2 (**$H_0$12b_1)**; 1 and 3 **($H_0$12b_2)**; 2 and 3 **($H_0$12b_3)** and their perception of the levels of proactiveness in the Department of Education in KZN.
- **Hypotheses $H_0$12 (c)** stated that a statistically significant difference does not exist between the mean age categories of the participants: 1 and 2 (**$H_0$12c_1)**; 1 and 3 **($H_0$12c_2)**; 2 and 3 **($H_0$12c_3)** and their perception of the levels of management support for CE in the Department of Education in KZN.
- Hypotheses **$H_0$13** stated that a statistically significant variance does not exist between the mean scores of various management levels of participants with regard to how they perceive the levels of CE elements (innovativeness-**$H_0$13a**; proactiveness-**$H_0$13b**; risk taking-**$H_0$13c**; management support for CE **$H_0$13d**; organisational tolerance-**$H_0$13e**; work discretion-**$H_0$13f**; rewards/ reinforcement-**$H_0$13g**; discretionary time-**$H_0$13h**; organisational boundaries-**$H_0$13i**; university entrance performance-**$H_0$13j** and output performance-**$H_0$13k**) in the Department of Education in KZN.

The study found that there was no statistically significant difference between the mean scores for male and female respondents with regard to how they perceived the levels of stated variables (innovativeness; proactiveness; risk taking; management support for CE; organisational tolerance; work discretion; rewards/reinforcement; discretionary time; organisational boundaries; university entrance performance and output performance) in the Department of Education in KZN.

The literature on the influence of gender on the levels of entrepreneurship is ambiguous. Some studies support the viewpoint that gender has no influence on

participants' perceptions with regard to an organisation's entrepreneurship (Reddy, 2014; Kuzubikiva et al., 2016); while another group of studies has found that gender does influence the participants' perceptions with regard to organisations' levels of entrepreneurship (Neneh et al., 2016; Camelo – Ordaz et al., 2016).

- The gender of participants did not influence their perceptions with regard to entrepreneurship levels of the Department of Education in KZN

The study findings show that a statistically significant relationship exists between the mean ages of participants and how they perceive the levels of innovativeness, proactiveness and management support for CE in the Department of Education in KZN.

The younger participants perceived the Department of Education to have a low level of innovativeness, proactiveness and management support for CE.

- Participants' ages were found to have no influence on their perceptions with regard to the performance of the Department of Education in KZN.

No statistically significant variance existed between the means of management levels of participants and how they perceive the levels of the stated variables (innovativeness; proactiveness; management support for CE; organisational tolerance; work discretion; rewards/reinforcement; discretionary time; organisational boundaries; university entrance performance; and output performance).

- The study found that management level (ranks) of participants has no influence on their perceptions with regard to the levels of entrepreneurship in the Department of Education in KZN.

In conclusion, the objective to establish whether differences in perception existed among the department's management regarding the entrepreneurial climate in the Department of Education in KZN was achieved.

Managerial implications and recommendations to management are discussed next.

6.3. MANAGERIAL IMPLICATIONS AND RECOMMENDATIONS

Managerial implications on the findings are discussed in detail and recommendations to management are made.

The study analysed a number of correlations between factors that constituted the three constructs: corporate entrepreneurship; entrepreneurial orientation; and organisational performance. These correlations are revisited in order to emphasise the implications for management in the public sector in general, and the Department of Education in particular. Overall, the correlations were positive and statistically significant. The following recommendations are made to increase the entrepreneurial orientation in the public sector, particularly the Department of Education.

Kuratko et al., (2014:1) highlight that continual innovation, in terms of services, processes, and administration routines and structures, is needed to compete effectively in the current highly competitive business environment. Senior managers agree that innovation is the most important starting point for organisations to initiate change. The study by Govindarajan and Trimble (2005) indicates that corporate entrepreneurship is seen as a process that can smooth an organisation's efforts to innovate constantly and cope effectively with the reality of the competition organisations encounter globally.

While the need to innovate in the private sector seems obvious, the case for innovation in the public sector has not always been clear. It is important for governemnts to think differently about how regulations and policies are developed and services provided. Governments need to reinvent themselves to meet high expectations with scarce public funding. The current state of the budget and growing populace, means the traditional approaches alone are no longer adequate for governments that are seeking to determine the optimal allocation of resources in the face of competing needs and increased demand for services (Ernest and Young Global Limited, 2017:3). Specifically, innovation in internal processes, policy design and implementation, service delivery approaches are critical if government is to successfully and simultaneously deliver services and meet budgets. Strategic

thinkers are moving beyond traditional service and product innovation, towards pioneering innovation in processes and all functions of management.

Currently, in South Africa, the education system is not leading to positive perceptions of personal feasibility and desirability as far as entrepreneurship is concerned, which has a negative impact on the size of the country's pool of entrepreneurs. Such low levels of entrepreneurial intentions are disconcerning.

The following measures are recommended to improve entrepreneurial intentions in the Department of Education, and the public sector in general:

- In order to stay relevant within the market, it is imperative for managers to foster and cultivate innovation. The organisation must serve the immediate community by constantly promoting and improving services and processes.
- Employees must be energised to develop new ideas and consideration should be given to all ideas. To be an innovative department or organisation, there must be a positive relationship between ideas generated and ideas implemented. It is imperative to take note that innovative ideas do not necessarily involve money.
- All employees, as much as possible, must be involved in development programmes, and all contributions must be valued. Involve all staff, enhance the self-esteem and self-worth of employees, particularly when they see that their contributions are given consideration for possible implementation.

The study by Shamsuddin, Othman, Shahandan and Zakaria (2012:127) found that proactiveness has a positive and significant impact on the performance of an organisation. This is consistent with the finding of Aktan and Bulut (2008). The researcher proposes the following recommendations to improve proactiveness in the public sector organisations and the Department of Education:

- The Department of Education must be proactive when changing policies, in order to be the first to initiate new services and processes.

- The department, or departmental officials, must work with higher education institutions to determine the relevance of what they are offering. This will help establish a standard quality of student entering entering tertiary institutions.
- The manager with a strong entrepreneurial propensity will have the prescience to circumvent problems in the organisation. Managers should be highly knowledgeable about education and be able to apply what is known skilfully. Knowledge about the latest educational practices provides the background information to envisage what should be done.
- Proactiveness begins with organisational self-evaluation. After the different categories have been worked out, employees and management should work together in studying and evaluating the necessary improvements. Comprehensive knowledge is essential for realistic vision; only then is pro-action possible. Managers should avoid hindrances and negative results by moving forward to the new and unique. The new and unique are based on clear educational thinking and quality procedures. This is dependent on proper training of managers and the appointment of knowledgeable candidates (Ediger, 1996:274).

Risk taking includes taking bold actions, such as committing large amounts of resources to projects with uncertain outcomes (Lumpkin and Dess, 2001:431). According to Brochman et al., (2012:433), organisations often take more risks in their quest to exploit opportunities and develop a new technology. Organisations are not risk takers, per se (Dafel, 2012:30). They clearly define risks that they are willing to take by putting managing systems, such as researching and assessing risk factors to minimise uncertainty, in place; and using tried-and-tested practices that have worked in other domains (Dess and Lumpkin, 2005:152).

Organisations exploit opportunities and thereby demonstrate a high inclination toward risk taking (Brochman et al., 2012:433). Risk is also high when an organisation does not innovate. The crux of the matter is, the more frequently an organisation undertakes innovative initiatives, the more experienced and resourceful it is in managing the risk involved (Dafel, 2012:30). Organisations that do not innovate face very little risk in the short-run, but increase their risk in the long-term;

because innovation is a necessity for organisations to grow and develop. The researcher proposes the following recommendations to improve organisational growth and development in the Department of Education:

- Risk aversion behaviour impedes organisational growth and development; hence management in the Department of Education needs to encourage risk-taking behaviour in all employees.
- Managers should be encouraged to promote a culture of calculated risk in pursuit of opportunities that may lead to organisational growth and development.

Kuratko et al., (2014:3) posit that as research on corporate entrepreneurial activity has evolved, various researchers have acknowledged the importance of the internal CE elements in promoting and supporting an environment for innovation (Hornsby, Kuratko, and Bolt, 2009; Kuratko et al., 1990). This study identified six specific elements that are important determinants of an environment conducive to entrepreneurial behaviour: management support for CE; organisational tolerance; work discretion; rewards/reinforcement; discretionary time; and organisational boundaries. These dimensions are necessary if individuals are to perceive an environment as innovation-friendly. The researcher proposes the following recommendations to implement the six CE elements in public sector organisations, particularly in the Department of Education in South Africa.

- **Top management support for CE** is important. It refers to the level at which employees perceive that “management supports, facilitates, and promotes entrepreneurial behaviour, including the championing of innovative ideas, and providing the resources required for taking entrepreneurial action. Management should support employees in any entrepreneurial, innovative and creative undertaking, as management support has been found to have a significant, positive relationship with innovative outcomes in an organisation. Support is important as entrepreneurship may be a new field for individual employees, and without it they can lose interest and fall back into non-entrepreneurial behaviour.

- **Organisational tolerance** is the extent to which employees perceive that the Department of Education tolerates failure. Decisions are taken without clarity on which alternative will be successful. An organisation with a high tolerance for failure finds ambiguous situations challenging and endeavours to overcome unstable and unpredictable situations to perform well" (Bernard, 2012:22).

  A distinction between entrepreneurial and non-entrepreneurial organisations is that an entrepreneurial organisation engages in product-market innovation, undertakes somewhat risky projects and is first to come up with proactive innovations; whereas a non-entrepreneurial organisation innovates less, is highly risk averse and follows the moves of competitors instead of leading the way (Miller, 1998:771).

- **Work discretion** provides decision-making latitude and freedom from excessive oversight, and delegates authority and responsibility to lower-level managers. This is linked to autonomy, where management ensures that employees have enough autonomy to do their work without continual supervision. Employees must be encouraged to manage their own work and have flexibility to resolve their own problems. Employees must be given the opportunity to change or alternate methods of work and not have to follow the same work methods or steps repeatedly every day and year after year.

- **Rewards/reinforcement** systems that encourage innovation have been shown to have a strong effect on individual entrepreneurial behaviour. There are no extrinsic rewards for employees in the Department of Education. The IQMS and PMDS systems only allow a salary increase of 1% for the basic achievement of job goals. Employees who excel in their jobs should be recognised and rewarded. According to Ryan and Deci (2000:110), a person who derives pleasure from the task itself is said to be intrinsically motived. It is the task of management to create an environment where employees get the necessary recognition and experience a positive sense of belonging.

- **Discretionary time** refers to the perception that workload schedules ensure extra time for individuals and groups to pursue innovation, with jobs structured in ways to support such efforts, and achieve short- and long-term organisational goals. Research suggests that discretionary time among managers is an important resource for generating entrepreneurial initiatives. This is a challenge for the districts participating in the study. They are successful, even though the workload of employees is a constraining factor. The proactive manager must ensure that there is an even distribution in the workload of employees; and in addition allow for discretionary time to study how current systems can be improved.

- The flexibility of **organisational boundaries** is useful in promoting educational entrepreneurial activity, because it enhances the flow of information with the external environment, as well as between departments within the Department of Education". Covin and Slevin (1991:18) note that an appropriate structure for an organisation with an entrepreneurial posture often includes decentralisation for decision-making authority, minimal hierarchical levels or structural layers, free-flowing communication channels, and closely integrated research and development.

  Management should practise the decentralisation of power, which helps in the reduction of decision-making levels. The organisational structure should allow for a free-flow of ideas and participation from all employees, thus facilitating the process of employee empowerment.

The researcher proposes the following recommendations to the Department of Education top management:

- The value and benefits of public sector entrepreneurship should be highlighted and marketed to all employees and managers.
- Top management of the Department of Education should take the lead in creating an environment conducive to public sector entrepreneurship in the department and should be involved and provide support to employees who want to try something new.

- Management should allow employees to conduct creative entrepreneurial experiments in a limited portion of their work time.
- Management needs to come up with flexible policies which will reduce bureaucracy and place less reliance on rules and procedures.
- Organisational strategy that supports corporate entrepreneurship should be developed in the Department of Education.
- Management should make time available for corporate entrepreneurship activities within the Department of Education.
- Management needs to avoid harsh criticism and punishment if there is failure or a mistake is made.

More specifically, it is recommended that education managers drive a campaign to create a sense to all stakeholders that entrepreneurship is the route caurse towards improving the quality of the education system in South Africa. This could help to increase the learner attainment levels of perceived feasibility and desirability, and hence their entrepreneurial intentions and improve the economy of then country. Collaterally, to help increase levels of perceverance among education managers to develop entrepreneurial strategies aiming to improve the quality of education for all learners, especially those who were previously disadvantaged in the country. This can be achieved with top management in the Department of Eduucation cascading the notion of entrepreneurial management at all levels.

The following recommendations are proposed to all public sector organisations in South Africa and beyond:

- Citizens and communities should be involved in ownership and control of services so that they can feel that they also own public asserts.
- All public sector departments should be made boundary-free organisations so as to eliminate barriers that slow things down and create resistance to change.
- Focus on participatory management, flatten organisational structures, empower and reward champions.

- Consider working with the private sector and other non-profit organisations to come up with solutions to social problems and to share resources.
- Consider relaxing protocols and amend service delivery models in order to deliver, better and faster, quality services that will meet the needs of the public.
- Find more creative ways to introduce competition and corresponding incentives for greater efficiency and responsiveness to public needs.

6.4 CONTRIBUTION OF THE STUDY

This study contributes to the body of knowledge regarding the importance of education in any country. Specifically, it highlights the challenges in the South African education system, which persist, in spite of various interventions. Despite the large budget for education in South Africa, the quality of education remains poor, and the output rate has not improved (Modisaotsile, 2012:2).

The study provides various implications for research into corporate entrepreneurship in the public sector organisations in South Africa. Comparatively, what the positive and significant set of results means is that the study findings can be generalised to the public sector context in South Africa, where organisational antecedents and entrepreneurial orientation have demonstrated their applicability to CE. Public sector organisations face rapid institutional changes reflecting their rapidly changing economic climate and changes in levels of government involvement (Bloom et al., 2012).These changes reflect important differences in how public sector organisations leverage their organisational antecedents and forster entrepreneurial intentions among employees to boost organistaional performance. Constant scanning for opportunities, experimentation and flexible organisational design allows managers to keep organisations open to multiple possibilities and allows exploration to forster innovation (Urban, 2017:16).

The study results also have policy and practitioner implications. In the broder context, the study may help shape policy because evidence is persistent that CE activity in the form of employees developing new business activities at an organisational level is related to performance. At the micro-level a positive correlation between CE and countries' Gross Domestic Product (GDP) per capita is

possible. Entrepreneurial activities are very important to move a country toward more advanced phases of economic development (Bosma, et al., 2010). Additionally by conducting research on CE in an African context it is argued that the relevance of organisation-based entrepreneurial behaviour as opposed to only focusing on independent startups is required. Although much effort and resources are devoted toward developing individual entrepreneurs in African context, with mixed results, a gap exists in policy and incentives that addresses entrepreneurial activities by employees at the organisational level.

The study provides guidance to public sector managers interested in ensuring organisational antecedents and employee entrepreneurial orientation increase overall levels of organisational performance. Conducting CE is contingent upon individual members undertaking innovative activities (Hornsby et al., 2009), and management must design rewards and reinforcements, provde time and resources and develop flexible organisational bounderies to obtain desired outcomes. Senior management need to encourage entrepreneurial behaviour through raising levels of entrepreneurial intentions because CE activities hinges on the entrepreneurial actions of employees (Urban, 2017:16).

Fostering CE through employee entrepreneurial intentions may be achieved by developing reward incentives and performance appraisals that signal for desired entrepreneurial intentions. Managers could screen for potential employee's levels of entrepreneurial intentions through detailed testing, based on the instruments validated in this study. Managers must also recognise that entrepreneurial orientation levels may be influenced by prior experience (Urban and Wood, 2005:996). Failures and false starts are a normal part of the opportunity recognition process, and the knowledge gained from such experiences often lead to more future gains (Urban, 2017:16). Consequently, orgnaisational antecedents must be in place to support such learning experiences.

6.5 LIMITATIONS OF THE STUDY

Similar to other studies of this nature, the study is limited in terms of its corss-sectional design, which does not allow for causality influences to be formulated.

Another limitation is the ability to generalise the study findings across the public sector organisation in South African and Africa because the focus of the current study was on the Department of Education in KwaZulu-Natal, as the segment example of the puvli sector organisation.

Notwithstanding these limitaions, the study provides fresh insights into the relevance of organisational antecedents and entrepreneurial orientation as they explain organisational performance in South African public sector organisations. refore be considered with this in mind.

6.6 SUGGESTIONS FOR FURTHER RESEARCH

It is evident that the public sector is faced with structures, rules, regulations and procedures that may act as barriers to entrepreneurship, including disincentives to risk taking and rigid personal practices (Kearney et al., 2007:292). However, the public sector could significantly benefit from entrepreneurship if it is to meet the ever changing needs and expectations of the society and adapt to the rapidly changing environment. Adapting and encouraging entrepreneurship in the public sector could bring benefits which include improved service delivery, more appropriate reward systems, better internal processes, improved communication and better management-employee relationship. Therefore, for entrepreneurship to be induced within the public sector there is a need for greater flexibility, adaptability and decentralised decision making, as high levels of rigidity and red tape are in conflict with the development of entrepreneurial culture. While this study reveals that CE is practised in the public sector organisation under investigation, there are still limitations in the study. The public sector is still very bureaucratic and governed by a lot of policies, rules and regulations and these impede entrepereneurship. Therefore, management must create, to the extent possible, an organisational climate and context that supports and helps promote effective entrepreneurship that will eventually enhance performance.

The study examined one organisation, Department of Education in KZN. While the results presented reflections on the organisation, they do not provide substantive empirical data which enables an examination of organisational change. Therefore longitudinal studies between organisations, rather than within an organisation would provide significant data to further test the outcomes of the study.

This research did not examine causal relationships between factors. It only tested correlations between factors. A significant implication of the study is the suggestion that corporate entrepreneurship is practised in the organisation. A quantitative causal research would enable a more indepth and better understanding of the relationships.

This research draws conclusions about the extent of influence of factors on corporate entrepreneurship. The observations are based on the respondents' perceptions of influence, not the actual influence. This presents an opportunity for further research which examines the extent of actual influence of the factors if this can be measured.

This research uses the Department of Education in KZN as a segment example of the public sector. It posits that the conclusions drawn from the examination of the Department of Education in KZN can be transposed into public sector generally. The generalizability of these findings could be enhanced by further research in other Departments of Education other than KZNDoE, and the public sector in general.

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APPENDIX 1

CORPORATE ENTREPRENEURSHIP AND ORGANISATIONAL PERFORMANCE WITHIN THE DEPARTMENT OF BASIC EDUCATION; KWAZULU-NATAL, SOUTH AFRICA.

CONFIDENTIAL

LETTER OF INFORMATION

Dear Participant

Thank you very much for your participation in this research study, and your contribution is highly appreciated.

The title of my research is '**Corporate Entrepreneurship Climate and Organisational Performance within the Department of Basic Education in KwaZulu-Natal, South Africa.'**

My name is Michael Msawenkosi Thabethe and I am the **principal investigator/researcher** for this research study. I am a Chief Education Specialist, Curriculum Grade 10 – 12 in UMkhanyakude District.

My **supervisor** is Professor Shepherd Dhliwayo (PhD: Entrepreneurship), who is the Campus Coordinator (DFC), Department of Business Management, College of Business and Economics, Johannesburg Business School at the University of Johannesburg, Bunting Road Campus.

Brief Introduction and Purpose of the Study: The performance of learners in the Department of Education in South Africa is very poor (Spaull, 2013:9). The Department of Education needs to improve learner performance, and this may be achieved through innovation, proactiveness, risk taking and entrepreneurially oriented behaviour. Lumpkin and Dess (1996:125) argue that entrepreneurial behaviours and attitudes are key determinants of the ability of an organisation to survive and prosper.

The benefits of entrepreneurship have been widely documented and accepted (Hughes and Morgan, 2007:626). The Department of Education is struggling with the challenge of improving the quality of education in the country (Gina, 2012:22). The Department of Education can therefore benefit by inducing an entrepreneurial orientation.

The research study aims to explore the relationship between the corporate entrepreneurship environmental elements and entrepreneurial orientation factors and

how they influence organisational performance, from the managers' perspective, in the Department of Education in KwaZulu-Natal, South Africa.

Outline of the Procedures: Participants are requested to fill in the questionnaire to the best of their understanding of the Department of Education in relation to the questions. The questionnaire survey will take approximately 20 to 25 minutes and will be submitted to the circuit manager for school based participants and to the CES, FET for office based participants. The researcher will collect the completed survey forms from circuit managers and CESs.

Risks to the Participants: No risk is anticipated for participating in the study.77

Reason/s why the Participant May Withdraw from the Study: As your participation is voluntary, you may withdraw at any time from participating and your withdrawal will not held against you or be prejudiced in any way and you may not provide any reason for your withdrawal.

Remuneration and Cost of the Study: You will not be remunerated for your participation in the study as you have volunteered to participate willingly. You are not going to be requested to bear any cost toward the study.

Confidentiality: All data and information collected will be kept confidential. Your name and your institution will not be revealed in the study report. In addition, a statement of confidentiality will be signed by me (the researcher).

Persons to Contact in the Event of any Problems or Queries:

Please contact me, Mr Musa M Thabethe at (074 6997245/035-5739607), my supervisor, Professor S Dhliwayo at (011-559 1689 or sdhliwayo@uj.ac.za)

APPENDIX 2

MANAGEMENT SCIENCES: FACULTY RESEARCH ETHICS COMMITTEE (FREC)

3 April 2018
Student No: 21752077
FREC REF: 127/16FREC

Dear Mr M Thabethe

PhD: MANAGEMENT SCIENCES (BUSINESS ADMINISTRATION)

TITLE: CORPORATE ENTREPRENEURSHIP CLIMATE AND ORGANISATIONAL PERFORMANCE WITHIN THE DEPARTMENT OF BASIC EDUCATION IN KWAZULU -NATAL, SOUTH AFRICA

Please be advised that the FREC Committee has reviewed your proposal and the following decision was made: **Ethical Level 1**

Date of FRC Approval: 13 October 2016

Approval has been granted for a period of two years from the above FRC date, after which you are required to apply for safety monitoring and annual recertification. Please use the form located at the Faculty. This form must be submitted to the FREC at least 3 months before the ethics approval for the study expires.

Any adverse events [serious or minor] which occur in connection with this study and/or which may alter its ethical consideration must be reported to the FREC according to the FREC SOP's.
Please note that ANY amendments in the approved proposal require the approval of the FREC as outlined in the FREC SOP's.

Yours Sincerely

[redacted]

Prof JP Govender
Chairperson: Faculty Research Ethics Committee

APPENDIX 3

education

Department:
Education
PROVINCE OF KWAZULU-NATAL

Enquiries: Phindile Duma | Tel: 033 392 1041 | Ref.:2/4/8/929

Mr MM Thabethe
22 Glamis Gardens
6 Rabe St
New Germany
3610

Dear Mr Thabethe

PERMISSION TO CONDUCT RESEARCH IN THE KZN DoE INSTITUTIONS

Your application to conduct research entitled: **"CORPORATE ENTREPRENEURSHIP CLIMATE AND ORGANISATIONAL PERFORMANCE WITTHIN THE DEPARTMENT OF BASIC EDUCATION IN KWAZULU-NATAL, SOUTH AFRICA"**, in the KwaZulu-Natal Department of Education Institutions has been approved. The conditions of the approval are as follows:

1. The researcher will make all the arrangements concerning the research and interviews.
2. The researcher must ensure that Educator and learning programmes are not interrupted.
3. Interviews are not conducted during the time of writing examinations in schools.
4. Learners, Educators, Schools and Institutions are not identifiable in any way from the results of the research.
5. A copy of this letter is submitted to District Managers, Principals and Heads of Institutions where the Intended research and interviews are to be conducted.
6. The period of investigation is limited to the period from 31 October 2016 to 26 April 2018.
7. Your research and interviews will be limited to the schools you have proposed and approved by the Head of Department. Please note that Principals, Educators, Departmental Officials and Learners are under no obligation to participate or assist you in your investigation.
8. Should you wish to extend the period of your survey at the school(s), please contact Miss Connie Kehologile at the contact numbers below
9. Upon completion of the research, a brief summary of the findings, recommendations or a full report/dissertation/thesis must be submitted to the research office of the Department. Please address it to The Office of the HOD, Private Bag X9137, Pietermaritzburg, 3200.
10. Please note that your research and interviews will be limited to schools and institutions in KwaZulu-Natal Department of Education.

(Please see list of Institutes attached)

[redacted]

Dr. EV Nzama
Head of Department: Education
Date: 01 November 2016

APPENDIX 4

12 The Hill
185 Sherwell Ave
Boskruin
2188
28 June 2018

To whomever it may concern:

This letter serves to confirm that I worked as the language editor on Musa Thabethe's thesis.

While I proofread the text and edited the grammar, in no way did I alter the content.

Yours faithfully

Ethel Ross (BA Hons; H Dip Ed)

clanross@icon.co.za

083 954 5412

APPENDIX 5

For office use only

Section A: Demographic Data
Instruction:
Please mark the appropriate block with an X

1. What is your gender?

Male	1
Female	2

V1 [ ] A1

2. What is your age group?

Between 25 and 35 years	1
Between 36 and 40 years	2
Between 41 and 55 year	3
Over 55 years	4

V2 [ ] A2

3. What is your ethnic group?

Black	1
Coloured	2
Indian	3
White	4

V3 [ ] A3

4. What is your current rank in your job?

Chief Education Specialist/Deputy Manager	1
Deputy Chief Education Specialist/Circuit Manager	2
Principal/Deputy Principal	3
Senior Education Specialist/Departmental Heads	4

V4 [ ] A4

Section B: Assessment of Corporate Entrepreneurship in the Department of Basic Education
Instruction:
Please mark the appropriate block with an X

Section B.1 Management Support for Corporate Entrepreneurship

1= Strongly Disagree, 2= Disagree, 3 =Not Sure
4 =Agree , 5 Strongly Agree

1.	Management provides a conducive environment for staff to communicate and understand each other.	1	2	3	4	5	**V5 [ ] 1**
2.	Upper management is aware of and very receptive to employees' ideas and suggestions.	1	2	3	4	5	**V6 [ ] 2**
3.	A promotion usually follows from the development of new and innovative ideas.	1	2	3	4	5	**V7 [ ] 3**
4.	Those employees who come up with innovative ideas on their own often receive management encouragement for their activities.	1	2	3	4	5	**V8 [ ] 4**
5.	Senior managers encourage innovators to bend rules and rigid procedures in order to keep promising ideas on track.	1	2	3	4	5	**V9 [ ] 5**
6.	An employee with good ideas is often given free time to develop that idea.	1	2	3	4	5	**V10 [ ] 6**
7.	Money is often available to get new project ideas off the ground.	1	2	3	4	5	**V11 [ ] 7**
8.	There are several options within the organization to get financial support for the innovative projects and ideas.	1	2	3	4	5	**V12 [ ] 8**

Section B.2 Organisational Tolerance

9.	In the department we have a strong inclination/tendency to low risk projects, with normal and certain rates of learner improvement.	1	2	3	4	5	**V13 [ ] 9**
10.	Employees are encouraged to take risks in doing their job, whether eventually successful or not.	1	2	3	4	5	**V14 [ ] 10**
11.	The term "risk taker" is considered a positive attribute for people in my work area.	1	2	3	4	5	**V15 [ ] 11**
12.	The department of education supports many small and experimental projects, realizing that some will undoubtedly fail.	1	2	3	4	5	**V16 [ ] 12**
13.	We would never pursue any projects that could potentially result in any kind of loss.	1	2	3	4	5	**V17 [ ] 13**
14.	There is considerable desire among people in the department for generating new ideas without regard for crossing departmental or functional boundaries.	1	2	3	4	5	**V18 [ ] 14**
15.	People are encouraged to talk to employees in other sections or units of the department of education about ideas for new projects.	1	2	3	4	5	**V19 [ ] 15**
16	The department shows a great deal of tolerance for high risk projects and reward individuals for taking calculated risks.	1	2	3	4	5	**V20 [ ] 16**

Section B.3. Work Discretion

17.	I feel that I am my own boss and do not have to double-check all of my decisions with someone else	1	2	3	4	5	**V21 [ ] 17**
18.	Mistakes made on the job do not receive harsh criticism and punishment.	1	2	3	4	5	**V22 [ ] 18**
19.	The department of education provides the chance to be creative and try my own methods of doing the job.	1	2	3	4	5	**V23 [ ] 19**
20.	The department of education provides the chances to do something where one makes use of his/her abilities.	1	2	3	4	5	**V24 [ ] 20**
21.	It is basically my responsibilities to decide how my job gets done.	1	2	3	4	5	**V25 [ ] 21**

Section B.4. Rewards / Reinforcement

22.	The rewards I receive are dependent on my work on the job.	1	2	3	4	5	**V26 [ ] 22**
23.	Promotion is based on how successful are you in doing your job in the department of education.	1	2	3	4	5	**V27 [ ] 23**
24.	My supervisor will increase my job responsibilities in recognition of performing my job well.	1	2	3	4	5	**V28 [ ] 24**
25.	My supervisor will give me special recognition if my work performance is especially good.	1	2	3	4	5	**V29 [ ] 25**
26.	My supervisor would tell his/her boss if my work is outstanding.	1	2	3	4	5	**V30 [ ] 26**
27.	When an employee has come with a new and efficient way of doing a job, he/she is given a price in the department of education.	1	2	3	4	5	**V31 [ ] 27**
28.	There is consistency in treating employees for the same wrong or good action in my job.	1	2	3	4	5	**V32 [ ] 28**
29.	Employees are always involved in decision making in the department.	1	2	3	4	5	**V33 [ ] 29**
30.	Outstanding performance is always rewarded in the department of education.	1	2	3	4	5	**V34 [ ] 30**

Section B.5. Time availability

31.	During the past three months my work load kept me from spending time on developing new ideas.	1	2	3	4	5	**V35 [ ] 31**
32.	Resources are always made available for creative activities in the department of education.	1	2	3	4	5	**V36 [ ] 32**
33.	There is always support from management for activities that are meant to accomplish short and long term goals in the department of education.	1	2	3	4	5	**V37 [ ] 33**
34.	My job is structured such that I have a lot of time to think about wider organizational problems.	1	2	3	4	5	**V38 [ ] 34**
35.	I have enough time for problem solving in my job.	1	2	3	4	5	**V39 [ ] 35**
36.	My co-workers and I always find time for long-term problem solving	1	2	3	4	5	**V40 [ ] 36**

Section B.6. Organisational Boundaries

37.	In the department of education we have a flat organisational structure.	1	2	3	4	5	**V41 [ ] 37**
38.	In the department of education we have many standard procedures that everyone must follow.	1	2	3	4	5	**V42 [ ] 38**
39.	In the department of education we have open channels of communication.	1	2	3	4	5	**V43 [ ] 39**
40.	In the department of education employees are free to take decisions within their scope of responsibilities.	1	2	3	4	5	**V44 [ ] 40**
41.	During the past year, my immediate supervisor discussed my work performance with me frequently.	1	2	3	4	5	**V45 [ ] 41**
42.	My job description clearly specifies the standards of performance on which my job is evaluated.	1	2	3	4	5	**V46 [ ] 42**
43.	I clearly know what level of work performance is expected of me in terms of amount, quality and time of output.	1	2	3	4	5	**V47 [ ] 43**
44.	Every employee knows his/her administrative duties and functions in the department of education.	1	2	3	4	5	**V48 [ ] 44**
45.	There are clear reporting lines in the department of education.	1	2	3	4	5	**V49 [ ] 45**

Section B.7. Innovation

To what extent do you agree or disagree with the following statements?
(1 strongly disagree – 5 strongly agree)

46. The department always emphases the use of technology in teaching.

Strongly disagree	Disagree	Not sure	Agree	Strongly agree
1	2	3	4	5

V50 [ ] 46

47. The department has strong focus on activities that improves teaching and learning.

Strongly disagree	Disagree	Not sure	Agree	Strongly agree
1	2	3	4	5

V51 [ ] 47

48. The department of education encourages development of new ideas that promotes improved learner performance.

Strongly disagree	Disagree	Not sure	Agree	Strongly agree
1	2	3	4	5

V52 [ ] 48

49. The department is open to outside ideas that can lead to new learning opportunity.

Strongly disagree	Disagree	Not sure	Agree	Strongly agree
1	2	3	4	5

V53 [ ] 49

50. Innovation and creativity are part of the departmental strategy.

Strongly disagree	Disagree	Not sure	Agree	Strongly agree
1	2	3	4	5

V54 [ ] 50

51. Employees are encouraged to come up with new ideas such as problem solving.

Strongly disagree	Disagree	Not sure	Agree	Strongly agree
1	2	3	4	5

V55 [ ] 51

52. Members of top management are involved in fostering new methods of teaching and learning.

Strongly disagree	Disagree	Not sure	Agree	Strongly agree
1	2	3	4	5

V56 [ ] 52

53. There is a reward system for individuals who are creative and promote improved learner achievement.

Strongly disagree	Disagree	Not sure	Agree	Strongly agree
1	2	3	4	5

V57 [ ] 53

Section B.8. Proactiveness

To what extent do you agree or disagree with the following statements?
(1 strongly disagree – 5 strongly agree)

54. In the department we try to anticipate developments in the public sector in general and specifically in the education in order to adjust to changes quickly.

Strongly disagree	Disagree	Not sure	Agree	Strongly agree
1	2	3	4	5

V58 [ ] 54

55. The department encourages the willingness to take responsibility among its employees.

Strongly disagree	Disagree	Not sure	Agree	Strongly agree
1	2	3	4	5

V59 [ ] 55

56. The pro-active individuals in the system are being rewarded.

Strongly disagree	Disagree	Not sure	Agree	Strongly agree
1	2	3	4	5

V60 [ ] 56

57. The department always strives for improved services delivery through proactive activities/tasks.

Strongly disagree	Disagree	Not sure	Agree	Strongly agree
1	2	3	4	5

V61 [ ] 57

58. The district always strives to produce better learner results and services ahead of other districts.

Strongly disagree	Disagree	Not sure	Agree	Strongly agree
1	2	3	4	5

V62 [ ] 58

59. The department of education always foresees on potential environmental changes and future demands ahead of the other departments.

Strongly disagree	Disagree	Not sure	Agree	Strongly agree
1	2	3	4	5

V63 [ ] 59

60. The department of education has a very high level of commitment among its staff.

Strongly disagree	Disagree	Not sure	Agree	Strongly agree
1	2	3	4	5

V64 [ ] 60

61. The department commits significant resources to ensure there is no uncertainty in the success of projects conducted. E.g. Intervention projects to improve learner pass rate.

Strongly disagree	Disagree	Not sure	Agree	Strongly agree
1	2	3	4	5

V65 [ ] 61

62. The department would never allow for pursuit of any project that could potentially result in any kind of loss.

Strongly disagree	Disagree	Not sure	Agree	Strongly agree
1	2	3	4	5

V66 [ ] 62

63. The department has a culture of introducing new technology to be used in the classroom to improve teaching and learning.

Strongly disagree	Disagree	Not sure	Agree	Strongly agree
1	2	3	4	5

V67 [ ] 63

Section B.9. Risk taking

To what extent do you agree or disagree with the following statements?
(1 strongly disagree – 5 strongly agree)

64. The department has a culture of introducing new method in delivering services.

Strongly disagree	Disagree	Not sure	Agree	Strongly agree
1	2	3	4	5

V68 [ ] 64

65. The department commits significant resources to ensure there is no uncertainty in the success of projects conducted. E.g. Intervention projects to improve learner pass rate.

Strongly disagree	Disagree	Not sure	Agree	Strongly agree
1	2	3	4	5

V69 [ ] 65

66. The department would never allow for pursuit of any project that could potentially result in any kind of loss.

Strongly disagree	Disagree	Not sure	Agree	Strongly agree
1	2	3	4	5

V70 [ ] 66

67**.** The department has a culture of introducing new technology to be used in the classroom to improve teaching and learning.

Strongly disagree	Disagree	Not sure	Agree	Strongly agree
1	2	3	4	5

V71 [ ] 67

Section B.10. Entrepreneurial Culture
To what extent do you agree or disagree with the following statements?
(1 strongly disagree – 5 strongly agree)

68. The department encourages employees to brainstorm new ideas.

Strongly disagree	Disagree	Not sure	Agree	Strongly agree
1	2	3	4	5

V72 [ ] 68

69. In the department of education, employees feel free to take the lead and create positive change.

Strongly disagree	Disagree	Not sure	Agree	Strongly agree
1	2	3	4	5

V73 [ ] 69

70. In the department of education, the concerns and ideas of employees are heard.

Strongly disagree	Disagree	Note sure	Agree	Strongly agree
1	2	3	4	5

V74 [ ] 70

71. Employees are encouraged to openly ask questions about how to make things better.

Strongly disagree	Disagree	Not sure	Agree	Strongly agree
1	2	3	4	5

V75 [ ] 71

72. There is a free flow of information in the department, from the top to bottom and from the bottom to the top.

Strongly disagree	Disagree	Not sure	Agree	Strongly agree
1	2	3	4	5

V76 [ ] 72

73. Employees are provided opportunities for training and education for their own growth.

Strongly disagree	Disagree	Not sure	Agree	Strongly agree
1	2	3	4	5

V77 [ ] 73

74. Organisation embraces entrepreneurial behaviour.

Strongly disagree	Disagree	Not sure	Agree	Strongly agree
1	2	3	4	5

V78 [ ] 74

75. Senior Management always discusses the vision and the direction of the department to the employees.

Strongly disagree	Disagree	Not sure	Agree	Strongly agree
1	2	3	4	5

V79 [ ] 75

Section C: Performance of the Department of Education District

Please indicate in what way you agree with the following statements. On a scale of 1 to 5, where 1 = decreased significantly, 2 = decreased, 3 = remained the same, 4 = increased, 5 = increased significantly.

Please note that for the following 6 questions, we are asking about your perceptions.

Decreased Significantly **Increased Significantly**

|-----|-----|-----|-----|-----|

(1) (2) (3) (4) (5)

76	In the past five years, the drop-out rate of learners in grades 9 to 11 in the district has.....	1	2	3	4	5	**V80 [ ] 76**
77	In the past five years, the repetition rate of learners in grade 10 and 11 in the district has…	1	2	3	4	5	**V81 [ ] 77**
78	In the past three years, the overall pass percentage of grade 12 learners in the district has....	1	2	3	4	5	**V82 [ ] 78**
79	In the past three years, the number of learners passing mathematics in the NSC examination in the district has….	1	2	3	4	5	**V83 [ ] 79**
80	In the past three years, the number of learners passing science in the NSC examination in the district has…..	1	2	3	4	5	**V84 [ ] 80**
81	In the past three years, the number of learners passing the NSC examination with Bachelor pass in the district has….	1	2	3	4	5	**V85 [ ] 81**

Thank You For Your Participation