An assessment of corporate entrepreneurship in the primary production units in a steel manufacturer

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ABSTRACT

The primary objective of the study was to examine corporate entrepreneurship with specific reference to the primary production units of ArcelorMittal South Africa, Vanderbijlpark Works. A historic overview of ArcelorMittal South Africa, Vanderbijlpark Works was given in chapter 2. Factors which highlight the need for and the benefits for an entrepreneurial climate were discussed; these factors included the evolution of the organisation, fierce competition and the global economic crisis.

A comprehensive literature review was conducted. In the literature review entrepreneurship, corporate entrepreneurship and an entrepreneurial climate were defined. The dimensions of corporate entrepreneurship, being new business venturing, innovativeness, self-renewal, pro-activeness, risk-taking and competitive aggressiveness were also discussed in the literature review. After the 13 constructs measuring the entrepreneurial climate were discussed, the constructs measuring the perceived success of the organisation were discussed. Chapter 3 concluded by examining practical manners in which an entrepreneurial climate can be established in an organisation.

After the literature review, empirical research was conducted. The empirical research focused on discussing the results obtained from the corporate entrepreneurship questionnaire. Basic demographic information of the respondents were dealt with first, after which the perceptions of the respondents with regard to the 13 constructs measuring the entrepreneurial climate and the constructs measuring the perceived success of the organisation were discussed. Furthermore, relationships were determined between demographic variables and the constructs measured in the questionnaire.

Following the detailed analysis of chapter 4, it was concluded that managers participating in the survey regarded the entrepreneurial climate in the primary production units of ArcelorMittal South Africa, Vanderbijlpark Works as being average. During the study no practical significant difference could be found between the mean values of any of the demographical categories and the constructs measured in the questionnaire.

Based on the findings of the empirical research and the insight gained in the literature review, recommendations were made on how to foster an entrepreneurial climate within the primary production units of ArcelorMittal South Africa, Vanderbijlpark Works.

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CHAPTER 1

NATURE AND SCOPE OF THE STUDY

1.1 INTRODUCTION

According to Greek philosopher Heraclitus, the only constant in life is change (HeartQuotes Center: 2009), therefore change in any organisation today is inevitable. Globalisation, changes in the external environment and competitiveness are only some of the problems organisations have to overcome for survival and to stay ahead of their competitors.

Through the creation of new corporate ventures, organisations can enhance the innovative ability of its employees and increase corporate success (Hornsby, Naffzinger, Kuratko & Montagno, 1993:29). Goosen, De Coning and Smit (2002b:21) believe that corporate entrepreneurship gives some strength to corporate organisations, while they also believe that an entrepreneurial climate will assist the company to become more dynamic and competitive.

In this study, the entrepreneurial climate in the primary production units of ArcelorMittal South Africa, Vanderbijlpark Works will be studied. ArcelorMittal South Africa, Vanderbijlpark Works is a globally competitive organisation where innovation and creativity is much needed to become the leader in the industry and not a follower. ArcelorMittal South Africa, Vanderbijlpark Works currently employs 4 570 people. In large organisations like these, the possibility exists that great ideas easily go unnoticed, therefore employees are discouraged to apply innovative ideas and actions that could be beneficial to the organisation. According to Seatre (2001:13), the venture capitalist industry is realising a 35% return on investment by using ideas which were rejected by large organisations. By creating a corporate climate, considerable potential could be unlocked within the organisation (Seatre, 2001:12) while organisations could benefit substantially by using the ideas generated by its employees.

In this chapter, the specific problems ArcelorMittal South Africa, Vanderbijlpark Works are facing will be discussed as background with the relevance of corporate entrepreneurship. This will however, be discussed in more detail in chapter two. Thereafter, the primary and secondary objectives will be discussed, followed by the scope of the study. After the

objectives of the study are laid down, the research methodology, including the limitations of the study, will be discussed. Finally, the chapter will conclude with a layout of the study.

1.2 PROBLEM STATEMENT

It is believed that corporate entrepreneurship will give organisations some strength. This view is based on the belief that entrepreneurial elements will assist organisations to become more dynamic and competitive (Goosen *et al.*, 2002b:21).

ArcelorMittal South Africa was established in 1928 as a parastatal company under the name ISCOR. The company was privatised in 1989 and in 2004 ArcelorMittal took over the major share in the company. From the newly established company in 1928 through privatisation to where the company is today, there has been a big drive for production and cost cutting. ArcelorMittal South Africa was named the top performing company on the Johannesburg Security Exchange for the period September 2001 to September 2006 (Smith, 2006). This prestigious award should be seen against the problems the organisation experienced in 2007 and the global economic crisis of 2008.

During 2007 a major shut down was planned for the Iron Making department of ArcelorMittal South Africa, Vanderbijlpark Works. The major shut down had to be completed by October 2007 according to plan. Problems were however experienced during the shut down, leading to a two month delay in production. Due to the fact that ArcelorMittal South Africa, Vanderbijlpark Works is an integrated process, production targets were not met, therefore orders could not be delivered to customers on time.

Towards the end of 2008, the global economic crisis hit the world and ArcelorMittal South Africa was not spared. The demand for steel dropped dramatically, causing steel prices to plummet as well. ArcelorMittal South Africa share price dropped from R265 in June 2008 to R59 at the beginning of 2009. ArcelorMittal South Africa, Vanderbijlpark Works had been experiencing problems since 2007 and since the global economic crisis towards the end of 2008, therefore new ideas and out-of-the-box thinking is urgently needed to reduce cost and change production strategies. Great innovative ideas are desperately needed to ensure that

ArcelorMittal South Africa will be successful, despite the problems it encountered during 2007 and the economic crisis in 2008.

McFadzean, O'Loughlin and Shaw (2005:350) believe that corporate entrepreneurship is the foundation of innovation. With the problems ArcelorMittal South Africa, Vanderbijlpark Works experienced in 2007 and the global economic crisis of 2008, the question is if ArcelorMittal South Africa will be able to think and act innovatively to be named the top performing company on the Johannesburg Security Exchange once again. Facing the problems and new challenges, it can be seen that fostering an entrepreneurial climate can be beneficial to the organisation. Measuring the existing entrepreneurial climate and giving recommendations for improvement while encouraging such a climate, will be beneficial to ArcelorMittal South Africa, Vanderbijlpark Works.

1.3 OBJECTIVES OF THE STUDY

The goal of this study can be summarised in the primary and secondary objectives as set out below.

1.3.1 Primary objective

The primary objective of this study is to determine the level of corporate entrepreneurship within higher level employees of ArcelorMittal South Africa, Vanderbijlpark Works with specific focus on the primary production units. In conclusion recommendations will be made on how to foster an entrepreneurial climate in the organisation.

1.3.2 Secondary objective

The secondary objectives, which will support the primary objective, are:

- To define corporate entrepreneurship and entrepreneurial climate;
- To obtain insight into corporate entrepreneurship and entrepreneurial climate by means of a literature review;

- To gain insight into the business environment of ArcelorMittal South Africa as a company and ArcelorMittal South Africa, Vanderbijlpark Works as part of the ArcelorMittal South Africa group;

- To assess the entrepreneurial climate within ArcelorMittal South Africa, Vanderbijlpark Works by means of a questionnaire with specific focus on the primary production units;

- To validate the reliability of the questionnaire by means of statistical analysis;

- To determine if there is any relationship between the demographic variables, i.e. race, highest academic qualification, management level and functional department with regard to the constructs measuring the entrepreneurial climate and the perceived success of the organisation; and

- To suggest recommendations to foster an entrepreneurial climate in the organisation.

1.4 SCOPE OF STUDY

The field of study and the geographical demarcation are discussed below.

1.4.1 Field of study

The field of study falls within the subject discipline of entrepreneurship with special reference to corporate entrepreneurship.

1.4.2 Geographical demarcation

ArcelorMittal South Africa has four steel works situated respectively in Vanderbijlpark, Vereeniging, New Castle and Saldanha. The study will be limited to the Iron Making and Steel Making departments of the Vanderbijlpark Works. ArcelorMittal South Africa, Vanderbijlpark Works, ArcelorMittal South Africa's largest operation, is located just South of Johannesburg; refer to chapter 2 for a map of where the different sites are located.

1.5 RESEARCH METHODOLOGY

This research, focussing on the specific study objectives, consists of two phases, namely a literature review and an empirical study.

1.5.1 Literature review

A detailed overview of ArcelorMittal South Africa, Vanderbijlpark Works is given in chapter 2. The vision and mission were discussed, followed by the history of ArcelorMittal South Africa. The study focussed on the primary production units of ArcelorMittal South Africa, Vanderbijlpark Works, therefore the Vanderbijlpark Works was discussed in more detail.

A literature review was done to gather information and provide some perspective on the topic of the study. A literature review was done with the following in mind: definition of entrepreneurship; definition of corporate entrepreneurship; dimensions of corporate entrepreneurship; definition of an entrepreneurial climate; constructs measuring entrepreneurial climate; constructs measuring the perceived success of the organisation and establishing of an entrepreneurial climate.

The literature review will comprise of journal articles, text books, internet articles, internet websites, dissertations and government publications. Some of the search engines that were used included Emerald and Google scholar.

1.5.2 Empirical study

To measure the existing level of corporate entrepreneurship within the organisation, a measuring instrument was developed. The measuring instrument consisted of a questionnaire, determining the study population, gathering of data and statistical analysis.

1.5.2.1 Constructing the questionnaire

Questionnaires are an adequate method for an empirical study, because it can be distributed to a large number of people in a short time and be analysed quickly (Cumming & Worley,

2005:117). A questionnaire should be based on the information gathered in the literature study and with the respondents in mind.

According to Tustin, Lighthelm, Martins and Van Wyk (2005:387-388), the purpose of a questionnaire is to collect relevant data and to compare it within the sample group. The researcher can either use an existing questionnaire or a new questionnaire can be developed. In deciding which route to follow, the following should be kept in mind:

- Using an existing questionnaire: Advantages of using an existing questionnaire are saving time and money, the questionnaire will already be tested for validity and reliability and different industries can be compared. One should just keep in mind the aspect of copyright.

- Developing a new questionnaire: Questions of a newly developed questionnaire should be well researched and well designed. How one states a question will have a direct influence on the results (Mouton, 2001:100). Extra time will have to be spent to test for validity and reliability of the questionnaire.

For the purpose of this study, a questionnaire developed by Oosthuizen (2006) and adapted by Jordaan (2008) will be used. The questionnaire was furthermore adapted to gather relevant demographical information on the study population and also to measure the perceived success of the organisation.

1.5.2.2 Study population

According to Nel, Rädel and Loubser (1992:89), a survey population consists of a group of people from whom data is required. In this study, gathering information from all ArcelorMittal South Africa, Vanderbijlpark Works employees would be too time consuming, therefore it was decided to select a smaller sample.

The study population of this study included all lower managers, middle managers and senior managers of the Iron- and Steel Making departments of ArcelorMittal South Africa,

Vanderbijlpark Works. The Human Resources department provided a list which was used to identify the study population.

1.5.2.3 Data collection

Although Top management was not included in the study, permission to conduct the study and disclose the results was obtained from the General Manager and the Works Managers for the Iron- and Steel Making departments.

A total number of 271 questionnaires were sent out. The questionnaires were distributed and collected by the Human Resources department. A log was kept of completed questionnaires received from the Human Resources department. There was continuous correspondence between the Human Resource consultants and the Human Resources manager to follow up on the number of completed questionnaires received. Follow-up e-mails were sent to the different managers of the departments where the response rate was low.

1.5.2.4 Statistical Analysis

The completed questionnaires were analysed by the Statistical Consultation Services of the North-West University (Potchefstroom campus). Descriptive statistics were used to measure the perception of the respondents with regard to the constructs which measure the entrepreneurial climate and the contracts which measure the perceived success of the organisation. Means were used to measure the central tendency while the standard deviation was used to measure the scatter of the data around the mean.

Independent t-tests were performed to determine if there was any statistical significant relationship between the demographic variables and one of the constructs measuring the entrepreneurial climate. To measure if differences between any of the demographic variables and the constructs of the questionnaire are of practical significance effect size values (d-value) as discussed by Ellis and Steyn (2003:51-53) were used.

The Cronbach's Alpha coefficient was used to determine the internal consistency or average correlation of the different items in the questionnaire. This was done to determine the

reliability of the questionnaire. Cronbach's Alpha coefficients of 0.7 or higher were regarded as acceptable levels of reliability.

1.6 LIMITATIONS OF THE STUDY

The objective of the study is to determine the existing level of corporate entrepreneurship within the primary production units of ArcelorMittal South Africa, Vanderbijlpark Works. However, the limitations of this study are:

- Since only the primary production units of ArcelorMittal South Africa, Vanderbijlpark Works are included in this study, the extent to which the finding may be generalised for ArcelorMittal South Africa may be limited.

- Only lower managers, middle managers and senior managers are included in the study, therefore plant personnel and support staff are excluded. Interpretation of the finding should therefore be done carefully and may not be representative of the entire work force.

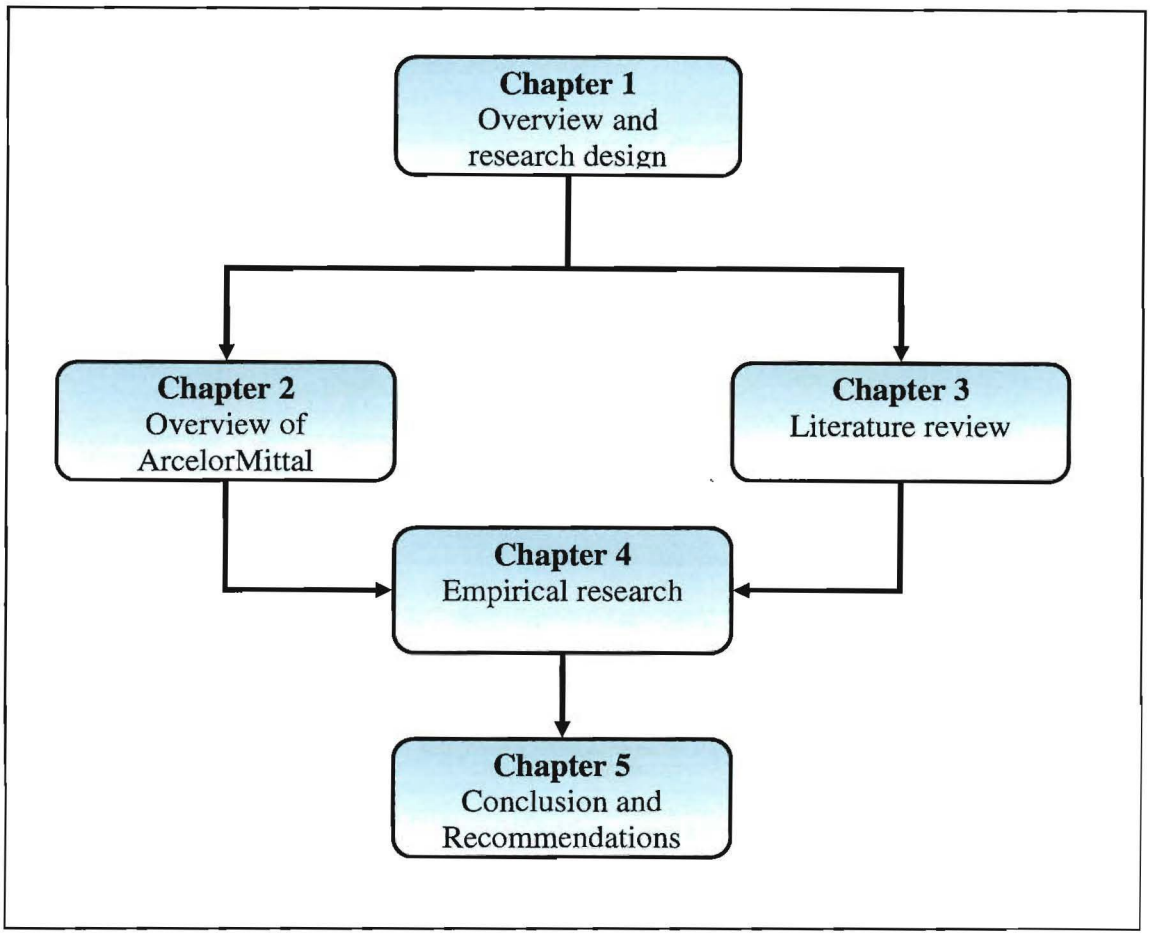
- As the completion of the questionnaire is voluntary, it may result in not all questionnaires being completed, thus it will mean that the sample may not be representative of the study population chosen.

- The study measures the perception that managers have of the entrepreneurial climate of the organisation as measured by the 13 constructs of entrepreneurship. Other factors common to the industry may influence the entrepreneurial behaviour of the organisation, for example: the bureaucracy that exists within the organisation and the economic state the organisation finds itself in.

1.7 LAYOUT OF THE STUDY

The layout of the study can be represented graphically as follows:

Figure 1.1: Graphical representation of the study



In chapter 2 an overview of ArcelorMittal South Africa will be given in order to understand the specific environment and the culture of the organisation. The history of the organisation will be discussed as well as the current situation of the organisation in the world market. The organisational structure of ArcelorMittal South Africa will also be discussed to explain the role of lower managers, middle managers, senior managers, Iron Making and Steel Making in the organisation. Lastly, causal factors that address the need to foster a corporate climate in ArcelorMittal South Africa will be discussed.

Chapter 3 comprises of a literature review. The literature review will be conducted to gain insight into entrepreneurship, specifically focussing on corporate entrepreneurship. The literature review will consist of the following main subsections to support the secondary objectives:

- Definition of entrepreneurship, corporate entrepreneurship and entrepreneurial climate;
- What can a organisation gain by fostering and entrepreneurial climate;
- Defining and discussion of the constructs of the entrepreneurial climate;
- Defining and discussion of the variables that measure the success of the organisation; and
- Which constructs of entrepreneurship are necessary to foster an entrepreneurial climate.

After the literature study, an empirical study will be conducted. The questionnaire used and how data was collected will be discussed in more detail in this chapter. The findings from the study will also be tabulated and descriptive statistics conducted. Correlations will be drawn between the demographic variables, i.e. race, highest academic qualification, management level and functional department, with respect to the constructs measuring the entrepreneurial climate and the perceived success of the organisation.

The final chapter will conclude the study and give recommendations based on the literature- and empirical study. Chapter 5 will conclude on the demographic variables, the relationship between the demographic variables and the constructs measured in the questionnaire and finally the level of corporate entrepreneurship in the primary production units of ArcelorMittal South Africa, Vanderbijlpark Works.

In chapter 5, recommendations will be made on how ArcelorMittal South Africa, Vanderbijlpark Works can improve or sustain the current corporate entrepreneurship level.

CHAPTER 2

OVERVIEW OF ARCELORMITTAL SOUTH AFRICA

2.1 INTRODUCTION

ArcelorMittal South Africa is part of the world's largest steel producer namely ArcelorMittal. ArcelorMittal is seen as the world's number one steel producer, with 310 000 employees worldwide, while being the leader in all major global markets. ArcelorMittal has an industrial presence in 27 countries across Europe, the Americas, Asia and Africa. With ArcelorMittal South Africa being part of ArcelorMittal, access to world-class research and development and best practices are available.

ArcelorMittal South Africa evolved from a state-held company, namely ISCOR in 1928, to a private, global competitive organisation. Privatisation and listing on the Johannesburg Security Exchange in 1989, restructuring in 1997, unbundling of ISCOR into ISCOR and Kumba in 2001, entering into a partnership with LMN in 2002 and finally, the merging with Arcelor in 2006, make up the timeline of the organisation.

This evolution brought on many challenges for the company. The company founded as ISCOR in 1928 was a parastatal company. It was a strategic decision for a country to have its own steel producing company with job creation kept in mind. Today, ArcelorMittal South Africa is a public company.

In this chapter, the vision and mission of ArcelorMittal South Africa will be discussed in detail. Furthermore, the history of the organisation will be addressed. The workings and organisational structure of the Vanderbijlpark site of ArcelorMittal South Africa, with specific focus on the primary production units, will be discussed as to understand the culture of the business.

Finally, the causal factors of this study will be identified and discussed.

2.2 VISION AND MISSION OF ARCELORMITTAL SOUTH AFRICA

The vision of ArcelorMittal South Africa is to become the preferred supplier of steel solutions for the development of Sub-Saharan Africa.

ArcelorMittal South Africa, aim to achieve this vision by:

- Producing safe, sustainable steel;
- Pursuing operational excellence in all business processes;
- Producing innovate steel solutions for its customers;
- Caring for the environment and the communities in which it operates;
- Striving to become the employer of choice; and
- Living the brand values of sustainability, quality and leadership.

Leadership as part of the brand values states that: ArcelorMittal South Africa is a visionary thinker, creating new opportunities every day. Top management and the Board of Directors believe that this entrepreneurial spirit brought the company to the forefront of the steel industry and therefore the company will grow beyond what expectations.

The strategic goals of ArcelorMittal South Africa, are:

- Industry leading value-creation for our shareholders:
  - Positive economic value added (EVA) over the steel price cycle;
- Improve operating capabilities:
  - Value-creating throughput increases;
  - Substantial reduction in hot rolled coil/billet cash cost in real terms;
- Build on our existing performance culture:
  - Create an environment that generates true employee pride and attracts, develops and retains top-performing people;
- Being a responsible corporate citizen.

From the vision and mission statement and the three brand values of ArcelorMittal South Africa, it is clear that top management wants the company to excel to greater heights through

innovations, operation excellence and entrepreneurial spirit. According to research done, innovation remains little or more than aspirational and not a tangible destination without the presence of some entrepreneurial activity to exploit opportunities (McFadzean *et al.*, 2005:353).

2.3 HISTORY OF ARCELORMITTAL SOUTH AFRICA

ArcelorMittal South Africa, is the largest steel producer on the African continent, producing 6.4 million tons of liquid steel per year. ArcelorMittal South Africa has been in existence for almost 80 years and currently employs around 9 100 people. ArcelorMittal South Africa was first founded as ISCOR (the Iron and Steel Corporation of South Africa) in 1928 as a parastatal company. It was a strategic move for a country to have its own steel producing company with job creation in mind. The first site was erected in Pretoria and steel production started in 1934 (SAISI, 2007:1). Through ongoing alignment with international best practices, ArcelorMittal South Africa has become a highly competitive supplier of steel products to domestic as well as global markets.

During the late 1930s, demand for ISCOR's steel grew strongly and the company was prompted to begin construction of a heavy plate mill in Vanderbijlpark. Construction in Vanderbijlpark started in 1943 and by 1947 the Vanderbijlpark site had developed into an integrated steelworks. The higher demand for steel in turn brought on a higher demand for raw material and during 1953, ISCOR started its first mining operation in Sishen.

During the 1960s, production increased even more and construction of a new integrated steelworks started in Newcastle. Construction was finished and production started in 1976.

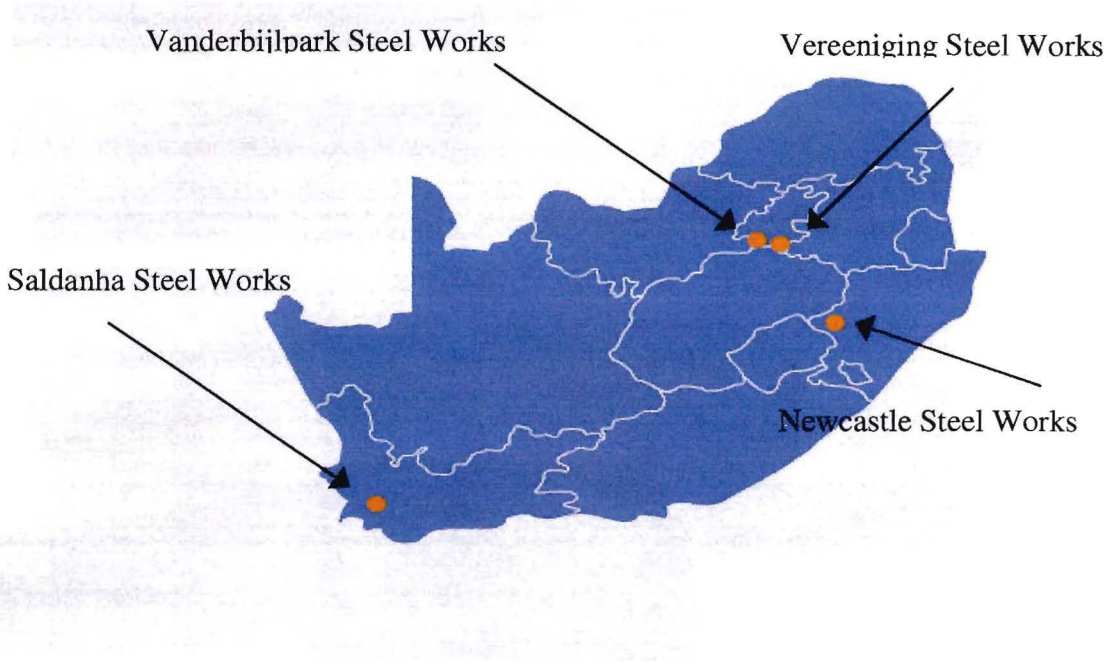
With the entry of Anglo-American, the British mining giant, into the South African steel market, ISCOR was faced with increasing competition. Management was forced to start managing the company more like a private company than a state held company. During the late 1980s, the South African government embarked on a large-scale privatisation program of state held companies. As ISCOR was already managed as a private company, it was one of the first companies to be offered publicly (Funding Universe, 2009:1).

ISCOR was privatised in 1989. Soon after this, trade barriers against South Africa were lifted and ISCOR was listed on the Johannesburg Security Exchange on 8 November 1989. This did not only open up more markets for ISCOR, but it forced the company to become more competitive because of international competitiveness. International competition forced ISCOR to embark on a number of re-engineering and cost-cutting exercises to maintain profitability and survival. The first retrenchments started in 1994. Primarily, 2 000 administrative jobs were reduced and in 1995 a further 30 000 people were retrenched. The first site, Pretoria Works, was decommissioned in 1998. The Pretoria site was very outdated, therefore a newly developed steel plant was commissioned in Saldanha during 1999. Saldanha steel is the world's most technologically advanced and environmentally friendly steel mill (SAISI, 2008).

The world steel demand fell sharply in 1999 and two if ISCOR's major shareholders wanted the board to unbundled the company's mining and steel producing units. In 2001, ISCOR was unbundled into ISCOR steel and Kumba mining (Funding Universe, 2009:1). The world's second largest steel producer, the LNM group started to increase its equity and in 2004 the LNM group equity was over 51%, causing the name of ISCOR to change to Ispat Iscor. The company's name was again changed in 2005 to Mittal Steel South Africa to be in accordance with the mother company's name. A third renaming occurred in 2006 to ArcelorMittal South Africa when the Mittal parent company merged with the Arcelor group (SAISI, 2006:1).

ArcelorMittal South Africa currently has four major steel operations; Vanderbijlpark Works, Saldanha, Newcaslte Works and Vereeniging Works. Figure 2.1 shows the location of the four major operations. ArcelorMittal South Africa also owns a bar and rebar mill in Maputo, Mozambique.

Figure 2.1: Map of the four major steel operations of ArcelorMittal South Africa



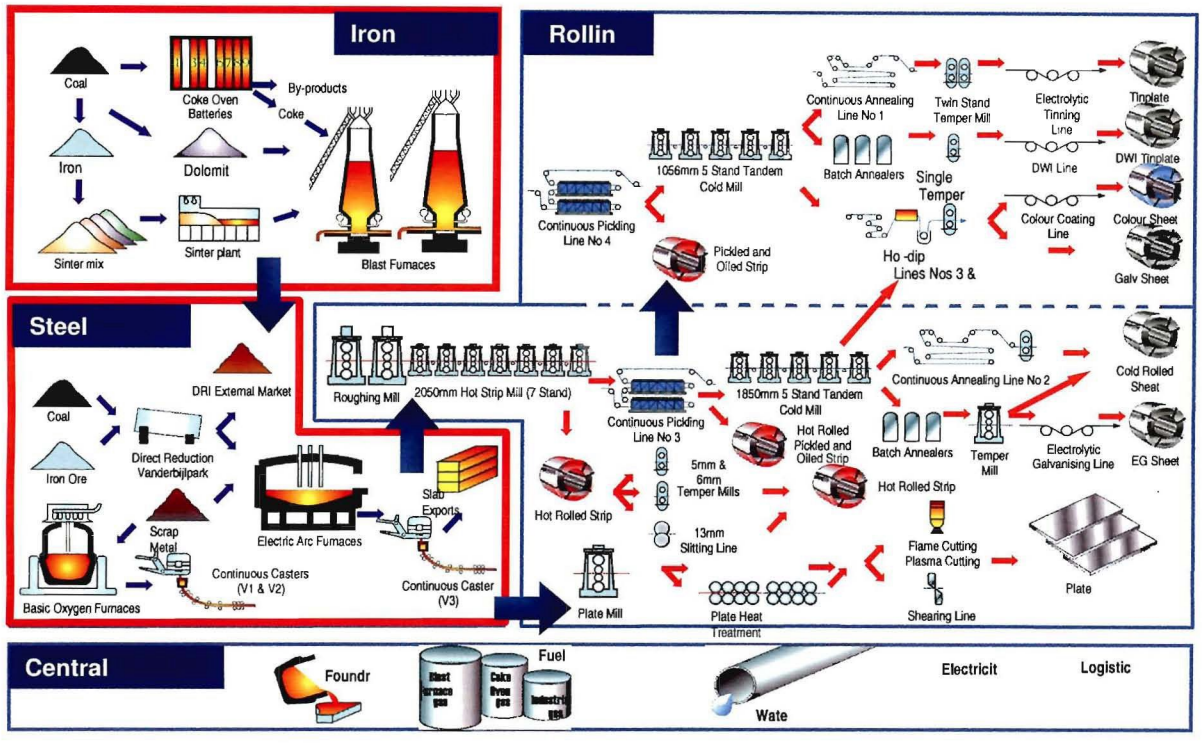
Source: http://www.iscor.co.za/Locations.aspx?mid=14

2.4 ARCELORMITTAL SOUTH AFRICA VANDERBIJLPARK WORKS

ArcelorMittal South Africa, Vanderbijlpark Works, ArcelorMittal South Africa's largest operation, is located just South of Johannesburg. ArcelorMittal South Africa, Vanderbijlpark Works produces 3.6 million tons of liquid steel per annum. This constitutes 80% of South Africa's flat steel requirements. The Vanderbijlpark site is ranked amongst the world's lowest cash-cost producers of steel. For the Vanderbijlpark site to keep this ranking, re-engineering and streamlining of its operation is constantly needed.

The products of ArcelorMittal South Africa, Vanderbijlpark Works are manufactured in an integrated process. A detailed process flow diagram of ArcelorMittal South Africa, Vanderbijlpark Works can be seen in figure 2.2.

Figure 2.2: Process flow diagram of ArcelorMittal South Africa, Vanderbijlpark Works



Raw materials such as iron ore and coke are charged into to blast furnaces where they are converted to liquid iron. The liquid iron is refined in the basic oxygen furnaces and electric arc furnaces to produce liquid steel. The liquid steel is cast into slabs, which are hot rolled into plates in a plate mill, or into coils in a strip mill. The coils can be sold as hot rolled coils, or processed further into cold rolled and coated products. The study will focus on the primary production units. The primary production units consist of the Iron Making and Steel Making departments. Figure 2.2 shows where the two departments fit into the organisation.

ArcelorMittal South Africa, Vanderbijlpark Works currently employs 4 570 employees. The high level organisational structure can be seen in figure 2.3.

Figure 2.3: Organisational structure of ArcelorMittal South Africa, Vanderbijlpark Works

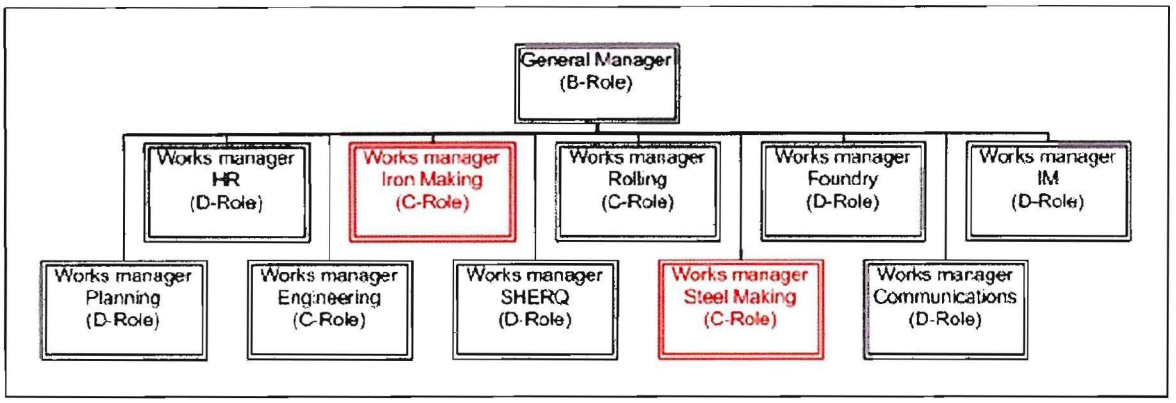


Figure 2.3 indicates the ten Works Managers reporting to the General Manager. The Works Managers for Iron Making, Rolling, Steel Making and Foundry are responsible for the conversion of raw materials into the final product. The other Works Managers are responsible for supporting the production line. This study will focus only on the primary production units of ArcelorMittal South Africa, Vanderbijlpark Works. The Works Managers of these units are indicated in red in figure 2.3.

2.4.1 Iron Making department

The Iron Making department currently employs a total of 727 employees. The organisational structure of Iron Making can be seen in figure 2.4.

Figure 2.4: Organisational structure of Iron Making

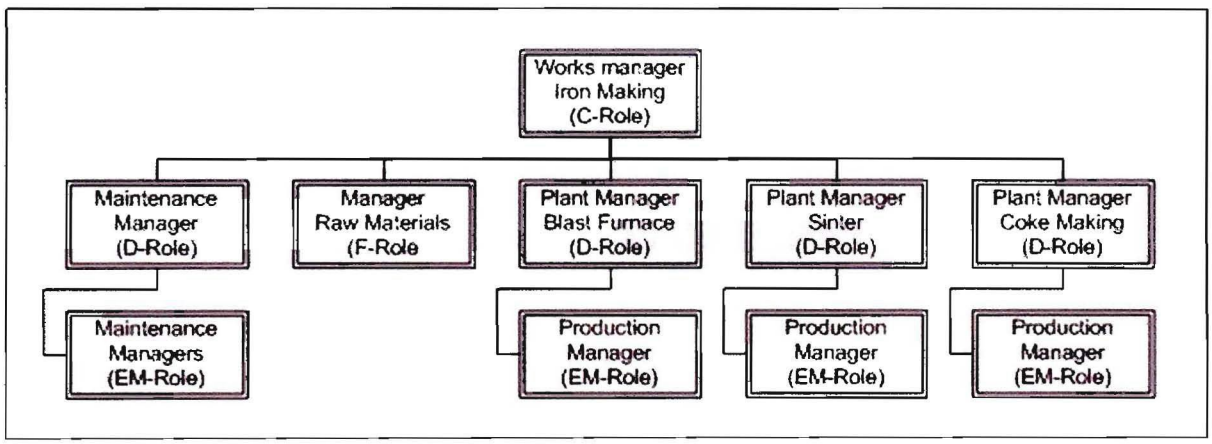


Figure 2.4 shows Iron Making mainly consists of four operation plants. The four plants are;

- Coke Making:

  Coal is fed into a coke oven which is sealed and heated to very high temperatures for 14 to 36 hours. Coke is produced in batch processes, with multiple coke ovens operating simultaneously. After the coke is finished, it is moved to a quenching tower where it is cooled with water spray. ArcelorMittal South Africa, Vanderbijlpark Works produces coke for the market as well as for internal use in the blast furnaces. The gas produced by this process, is a very important by-product since it is used as a very inexpensive heating gas in the other production units of the Vanderbijlpark site.

- Sinter Production:

  At ArcelorMittal South Africa, Vanderbijlpark Works there are two sinter belts. Sintering is a process in which solid wastes are combined into a porous mass, which are added as a raw material into the blast furnace. These wastes include iron ore fines, pollution control dust, coke breeze, water treatment plant sludge and fluxes. Sintering plants help reduce solid waste by combusting waste products and capturing trace iron present in the mixture.

- Blast Furnace production:

  There are currently two Blast Furnaces in operation. The Blast Furnace works like a hot stove, where raw materials like iron ore, coke and sinter is converted into liquid iron. The smaller furnace of the two can produce 1.3 million tons of liquid iron per annum, where the bigger furnace can produce 1.6 million tons of liquid iron per annum. The output of the Blast Furnaces is the input into the Basic Oxygen Furnace in the Steel Making department.

- Raw Materials:

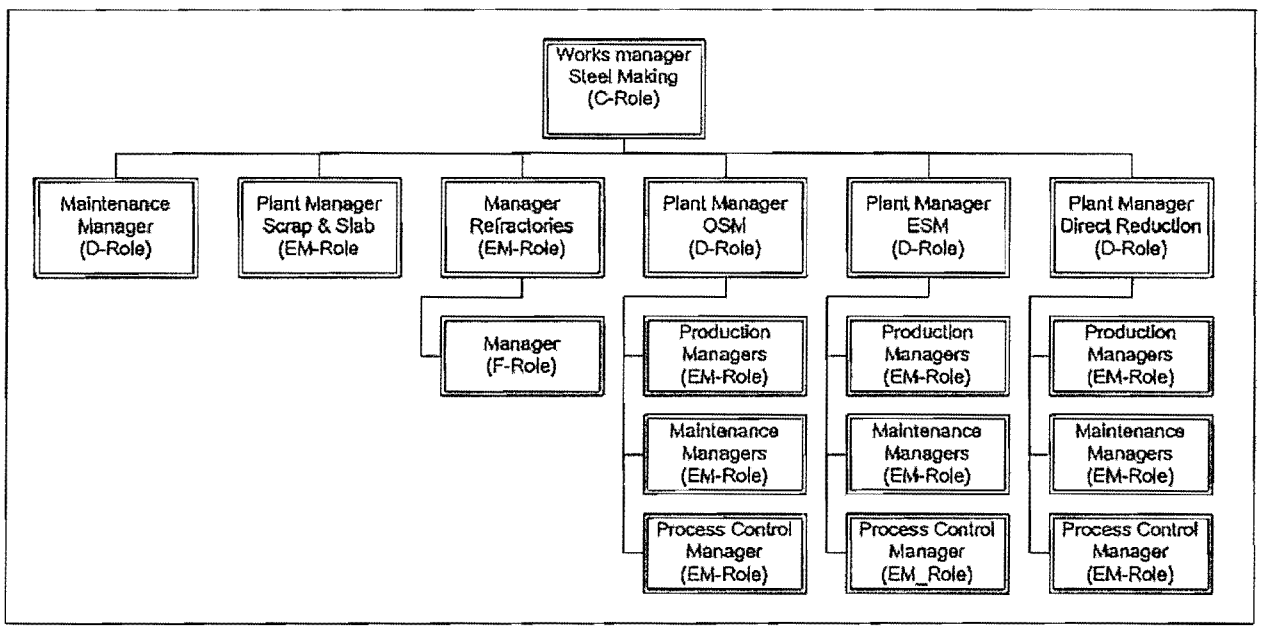
  The Raw materials section of Iron Making is responsible for the planning, logistics and on-time delivery of all raw materials to the rest of the Iron Making department. Although this section only executes a supporting function, the Blast Furnaces, Sinter production and Coke Making sections will be brought to a stand still, if any deviations occur. Slab production is an integrated process. If the Blast Furnace cannot produce liquid iron due to raw material shortage, the Vanderbijlpark site will come to a stand still.

Due to the fact that ArcelorMittal South Africa, Vanderbijlpark Works is an intergraded process and Iron Making is the starting point in the process, 100% availability is needed. It is a costly exercise to start and stop the Blast Furnace, therefore continuous improvement projects to improve maintenance availability and improved metallurgical processes are needed to reduce cost and improve tonnages. As the environmental impact of the Iron Making department is high and one of the strategic goals of ArcelorMittal South Africa is to be a responsible corporate citizen, creation of new ideas and improvement of existing processes should be a reality.

2.4.2 Steel Making department

There are currently 1 096 employees in the Steel Making department, therefore it makes Steel Making one of the largest departments in ArcelorMittal South Africa, Vanderbijlpark Works. The organisational structure of the Steel Making department can be seen in figure 2.5.

Figure 2.5: Organisational structure of Steel Making



In the Steel Making department there are five plants responsible for operations. The five plants are:

- Direct Reduction (DR):

  There are four kilns in operation at Direct Reduction. Construction of two new kilns is underway to increase the production of direct reduced iron. Raw materials are changed into the kiln, gas is used to heat the kiln to produce direct reduced iron. Direct reduced iron is a higher iron content ore and is one of the main inputs into the electrical arc furnace.

- Electrical Arc Furnace (EAF):

  The Electrical Arc Furnace consists of three electrical furnaces, three secondary stations and one continuous caster. Raw materials like scrap and direct reduced iron are charged into the furnace. Electrical energy is used to melt all the raw materials to produce liquid steel. The liquid steel is refined at the three secondary stations from where it is casted into solid slabs in the continuous caster. The product of the Electrical Arc Furnace is mainly used as input into the plate mill (refer figure 2.2). The Electrical Arc Furnace produces 1.2 million tons of liquid steel per annum; this is 33% of the total liquid steel production of ArcelorMittal South Africa, Vanderbijlpark Works. The rest is produced by the Oxygen Steel Making department.

- Oxygen Steel Making (OSM):

  The Oxygen Steel Making department consists of three Basic Oxygen Furnaces, three secondary stations and two continuous casters. Liquid iron from the Blast Furnaces and other raw materials are charged into the Basic Oxygen Furnace where oxygen is used to convert the liquid iron into liquid steel. This liquid steel is refined at the three secondary stations from where it is casted into solid slabs in the continuous caster. The slabs are transferred to rolling departments for further processing. The main products of Oxygen Steel Making are sold as hot rolled coils for the automotive market and hot rolled coils for the food and beverage can market. Oxygen Steel Making produces 2.4 million tons of liquid steel per annum.

- Refractories:

  The Refractory department is a support function for the other Steel Making departments. They are responsible for planning, installation, maintaining, continuous improvement and the logistics of all the refractory materials.

- Scrap and Slab supply:

  Scrap and Slab supply is also a supporting function in the Steel Making department. On the scrap supply side, they are responsible for planning and logistics of all raw materials of the Steel Making department. On the Slab supply side, they are responsible for the inspection of the casted slabs for quality deviations. They are also responsible for the on-time delivery of the slabs to the mills for the three casters.

Since Steel Making is responsible for the production of slabs for the mills, it is the most important department in any steel shop. The output of the Blast Furnace, which is a continuous process, is the input into Oxygen Steel Making and the output of the Electrical Arc Furnace and Oxygen Steel Making departments is the input into the mills, 100% availability is the focus point. Management and technical personnel are challenged everyday with new problems and scenarios, therefore new solutions and improvement on exciting processes are inevitable.

2.5 CAUSAL FACTORS

Causal factors are based on understanding the business and all the factors contributing to the success or possible failure of the business. Casual factors highlight the need for and the benefits of an entrepreneurial climate.

2.5.1 Evolution of the organisation

The company has always been evolving. From a state-held company founded as ISCOR in 1928, to a highly competitive private organisation, today known as ArcelorMittal South Africa. Today still the company is going through constant evolution and corporate entrepreneurship is vital for the organisation to survive.

2.5.2 Fierce competition

The state-held organisation ISCOR already started experiencing competition before 1989 when Anglo-American, the British mining giant, entered the South African steel market and the competition never stopped. Today, ArcelorMittal South Africa is an international competitive organisation and Goosen *et al.* (2002:21) believe that an entrepreneurial climate will assist the company to become more dynamic and competitive.

2.5.3 Global economic crisis

During 2006, ArcelorMittal South Africa was named the top performing company on the Johannesburg Security Exchange for the period September 2001 to September 2006 (Smith,2006). The share price kept on increasing, but towards the end of 2008, the share price dropped from R265 in June 2008 to R59 at the beginning of 2009. This fall in share price was due to the global economic crisis that hit the world. Steel demand decreased dramatically and at the time of this study, demand for steel has still not increased. The question is what ArcelorMittal South Africa is going to do to survive this global crisis and if they will be rewarded the prestigious award they received in 2006 again.

2.6 SUMMARY

A brief overview of ArcelorMittal South Africa was presented, starting with the establishment of the organisation (ISCOR) in 1928 as a state held company, privatisation in 1989, to ArcelorMittal South Africa today. Currently ArcelorMittal South Africa has four major plants in Vanderbijlpark, Vereeniging, Newcastle and Saldanha respectively. This study was conducted at the primary production units of the Vanderbijlpark site.

A brief overview was given of ArcelorMittal South Africa, Vanderbijlpark Works. A detailed process layout was presented together with the high level organisational structure to understand how the Iron Making and Steel Making departments; the departments on which the study were done, fits into the organisation.

The organisational structure with the workings of each plant within the Iron Making and Steel Making departments were discussed. As the Iron Making department is the first process in the integrated Vanderbijlpark site process, the importance of innovative thinking was discussed. The Steel Making department's input is the Iron Making department's output, therefore 100% availability and out-of-the-box thinking are important at the end of the day.

Lastly, the causal factors of the study were discussed. The causal factors identified are: the evolution of the organisation, fierce competition and the global economic crisis.

CHAPTER 3

LITERATURE REVIEW ON CORPORATE ENTREPRENEURSHIP

3.1 INTRODUCTION

Johnson (2001:136) believes that for an organisation to survive in an increasingly aggressive, competitive and dynamic market place, the organisation should adopt a proactive attitude towards innovation and the creation of internally generated new ventures. This view is also supported by Morris and Kuratko (2002:vii). Johnson (2001:135) also believes that entrepreneurship, innovation and intrapreneurship are the buzzwords today to make innovation and the creation of internally generated new ventures possible.

Corporate entrepreneurship is a specialised form of entrepreneurship, where entrepreneurship is used within an existing organisation by identifying and pursuing new opportunities (Fattal, 2003:14). Hornsby, Kuratko and Zahra (2002:254) feel that the main reason why organisations would foster an entrepreneurial climate, is to increase their profitability, but also to gain other advantages, like strategic renewal, innovation, gaining knowledge of the future and finally, international success.

The Global Entrepreneurship Monitor (GEM) is used to determine the entrepreneurial activity within a country. The primary measure of entrepreneurship used by the GEM is the Total Early Stage Entrepreneurial Activity (TEA). The TEA index measures the percentage of individuals between the ages of 18 and 64 years that are involved in starting a new business. There has been a small but significant increase in the Total Early Stage Entrepreneurial Activity (TEA) for South Africa from 2006 to 2008. The Total Early Stage Entrepreneurial Activity (TEA) for South Africa in 2008 was 7.8%; this was the 23rd highest ranking out of 43 countries that participated in the study (Herrington, Kew & Kew, 2008:14). This concerns, however, the new firm activity (ranked 38th) and established business activity (ranked 41st) (Herrington *et al.*, 2008:4). Overall, entrepreneurial activity in South Africa is ranked 35th of the 43 countries (Herrington *et al.*, 2008:14). In general, South Africa does not rate very high in terms of its entrepreneurial activities.

"Entrepreneurship is at the heart of national advantage" (Porter, 1990:125). Entrepreneurial activity is generally regarded as essential to economic growth and development of any country or organisation. According to Timmons and Spinelli (2007:51), 75% of all jobs in the United States of America are created by small businesses, while at least 20% of employment growth can be contributed by entrepreneurial firms. Maas and Herrington (2007:7) believe that entrepreneurship can help in the creation of employment and economic growth. According to Van Stel, Carree and Thurik (2004:7), the most important factor for achieving long term economic growth is technological innovation.

In Chapter 3, the relevant terminology will therefore be discussed; namely entrepreneurship, corporate entrepreneurship and entrepreneurial climate. After the terminology has been discussed the dimensions of corporate entrepreneurship will be identified and discussed in more detail.

Thereafter, the entrepreneurial climate will be defined. The ways of fostering an entrepreneurial climate within an existing organisation will be discussed. This will be done based on the 13 constructs identified by Oosthuizen (2006), which will also be discussed in detail. It will also serve as a basis for Chapter 4, where the results of the questionnaire will be discussed.

3.2 DEFINING ENTREPRENEURSHIP

To determine if there is a linkage between entrepreneurship and corporate entrepreneurship, the term entrepreneurship and corporate entrepreneurship will be discussed in detail in the section below.

3.2.1 Entrepreneurship defined

Timmons and Spinelli (2007:79) define entrepreneurship as a way of thinking, reasoning and acting that is obsessed with opportunities, and it also takes into account a holistic approach with balanced leadership style. Entrepreneurship requires entrepreneurs that are willing to take both financial and personal risks.

Johnson (2001:138) mentions six characteristics of entrepreneurship:

- It is a creative act where something is built or created that did not previously exist;
- Creation is based on exposing and developing a new opportunity that was previously suppressed under the "noise" of the organisation;
- Creation is opportunity rather than resources driven. This means that if the opportunity is viable, resources will be found;
- Risk is inevitable, since the value is not always easy to calculate;
- It involves the creation of value for the individual, community or organisation; and
- It often involves creative destruction.

In summary, Johnson (2001:138) defines entrepreneurship as capturing new ideas, converting them into products or services and building it into a venture that can be taken to the market. Entrepreneurship can also be seen as leveraging existing resources to obtain additional resources (Teng, 2007:120).

According to Churchill (1992:586), there has been an increased consensus that entrepreneurship is the process of exposing and developing opportunities to create value through innovation, taking the opportunity without regard to resources or the location of the entrepreneur – in a new or existing company, this is also supported by work done by Johnson (2001:138). Entrepreneurship, at individual as well as organisational level, is seen as an outcome-based behaviour through which value is created by carrying out new combinations that causes discontinuity (Antoncic & Hisrich, 2003:9). From the views of Antoncic and Hisrich (2003:9) and Bull and Willard (1993), entrepreneurship only exists when new opportunities are actually carried out and ceases when this process is completed.

Hisrich, Peters and Sheperd (2005) define entrepreneurship as a process of creating something new with value by donating time and effort, accompanied by financial, psychic and social risk. The results of this creation process are results, personal satisfaction and independence.

3.2.2 Corporate entrepreneurship defined

According to Seshadri and Tripanthy (2006:17), every company requires new ideas to survive and to grow profitable; it therefore has to find ways to encourage its employees to behave entrepreneurial in nature.

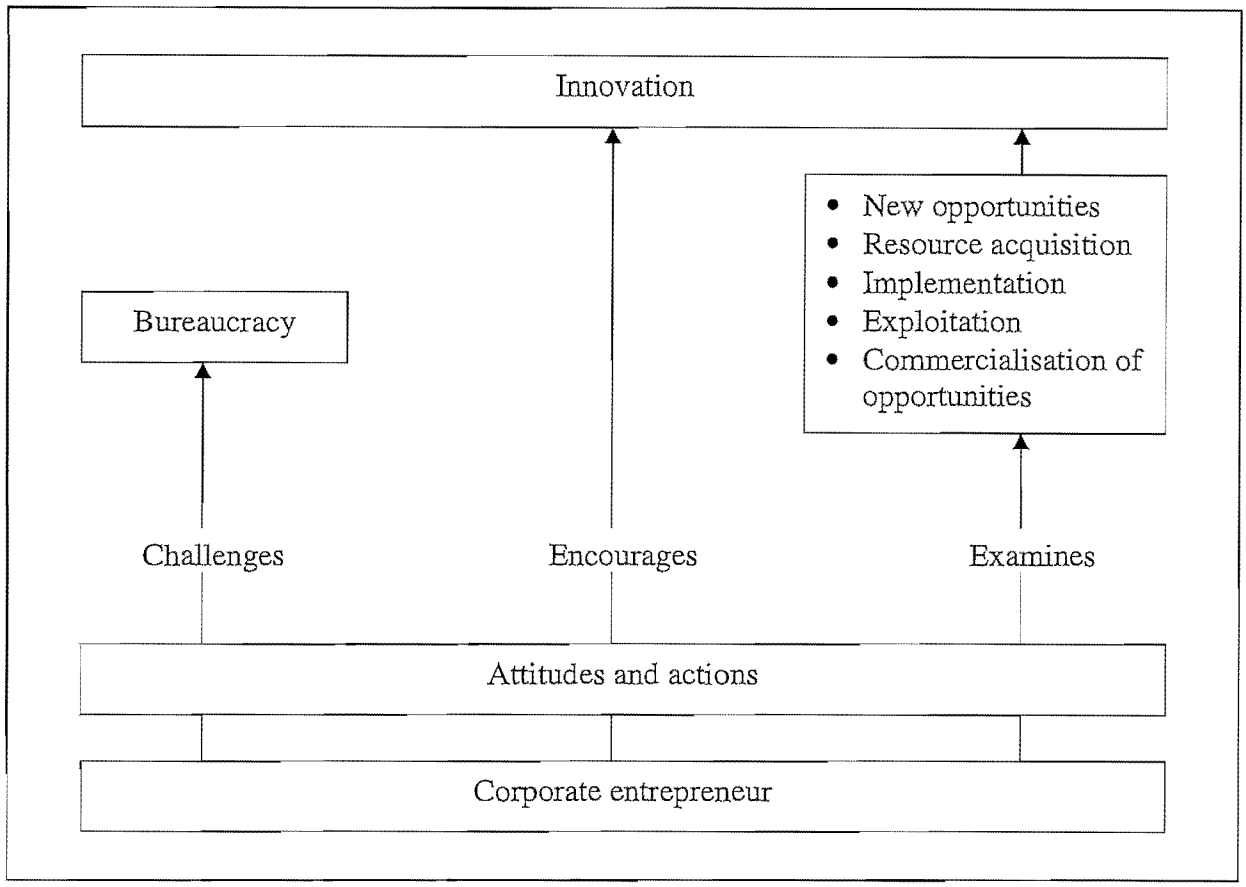
Corporate entrepreneurship is defined by Antoncic and Hisrich (2004:518) as entrepreneurship within an existing organisation, this definition is also used by Pinchot (1985:vii). Related terms include organisational entrepreneurship, intrapreneurship and corporate venturing (Antoncic & Hisrich, 2001:497; Morris & Kuratko, 2002:31).

Coven and Miles (1999:50) on the other hand, feel that corporate entrepreneurship is the presence of innovation and the presence of an objective to rejuvenate existing organisations, markets or industries in order to sustain a competitive advantage.

According to Rutherford and Holt (2007:430), corporate entrepreneurship can be defined as a firm's ability to acquire and to use the innovative skills and abilities of the firm's employees. This is similar to other definitions, but Rutherford and Holt feel that the innovative ability of the organisation's members, is the base for corporate entrepreneurship.

Corporate entrepreneurship is defined by McFadzean *et al.* (2005:352) as the effort of promoting innovation from an internal perspective. This can be done through assessment of potential new opportunities, alignment of resources exploitation and commercialising of these opportunities. The definition given by McFadzean *et al.* (2005:352) is graphically illustrated below in figure 3.1.

Figure 3.1: Definition of corporate entrepreneurship



Source: McFadzean *et al.* (2005:352)

The corporate entrepreneur is the foundation of innovation. Through his actions and attitudes, he will challenge existing barriers, he will encourage innovation and examine and exploit new opportunities. Through all this, an innovative culture can be created.

The concept of innovation and corporate entrepreneurship has been investigated by a number of authors. Ireland, Kuratko and Morris (2006:10) define corporate entrepreneurship as a process through which individuals within an established firm, pursue entrepreneurial opportunities to innovate, without regard to the level and nature of currently available resources. Uittenbogaard, Broens and Groen (2005:256) also believe that innovation and corporate entrepreneurship goes hand in hand. They define corporate entrepreneurship as the way the organisation is shaped around the innovation process in order to create, maintain or improve innovativeness and business development.

Combining all definitions, corporate entrepreneurship can be defined as entrepreneurship within an established organisation through innovation by creating something new or improvement of current processes that will add value to the organisation.

3.3 DIMENSIONS OF CORPORATE ENTREPRENEURSHIP

Morris *et al.* (2002:39) identified three dimensions of corporate entrepreneurship, i.e: innovation, risk-taking and pro-activeness. This argument is supported by Miller (as quoted by Jogaratnam & Tse, 2006:456) and Zahra, Lennings and Kuratko (1999:50).

Antoncic and Hisrich (2001:498) indicate four corporate entrepreneurship dimensions, i.e: new business venturing, innovativeness, self-renewal and pro-activeness. Two additional dimensions, competitive aggressiveness and autonomy are proposed by Dess and Lumpkin (2005:147).

After examining the literature and the different arguments on the dimensions of corporate entrepreneurship, the following six dimensions has been identified and will be discussed in more detail, i.e: new business venturing, innovativeness, self-renewal, pro-activeness, risk-taking and competitive aggressiveness.

3.3.1 New business venturing

New business venturing is the pursuit of entering into new business ventures that are related to the current products or markets. This activity can lead to the creation of new autonomous or semi-autonomous units or firms. Antoncic and Hisrich (2001:498) define new business venturing as the creation of new businesses within an organisation regardless of the level of autonomy.

Although new business creation is usually associated with individual entrepreneurship, it is also an important factor in corporate entrepreneurship (Stopford & Baden-Fuller, 1994:522). When an individual or small teams form entrepreneurial groups within the organisation, they will be able to pursue others to act entrepreneurial and create new corporate resources.

3.3.2 Innovativeness

Innovativeness can be seen as the creation of new products or services, or it can be seen as innovations in existing production procedures and techniques. McFadzean *et al.* (2005:353) describe innovation of a process that provides added value to the organisation and the stakeholders through the development of new procedures and solutions.

According to Johnson (2001:139), the various forms of innovation are:

- Changes in the products or services an organisation is already taking into the market. This is the most clearly understood form of innovation and is done via the research and development departments;
- Usage of established products or services for a new product or service;
- Changes in the market to which a product or service is applied away from the original market it was designed for;
- Operational and logistical innovation. This can be seen as changing the way products or services are developed and delivered away from its original operational and logistical design. An example is on-line training, a significant move away from the traditional approach to learning; and
- The highest level of innovation focus on development of an organisations core business model away from its original business model.

Heany (as quoted by McFadzean *et al.*, 2005:353) states that there are four levels of innovation. The lowest level is product line extension, followed by product improvements, then new products for the current markets and the highest level of innovation is new products for a market in which the organisation is not currently involved in. The first two levels of innovation will not have a great impact on the current market, where the two higher level of innovation will influence the market.

3.3.3 Self-renewal

Self-renewal can be seen as the organisations transformational changes. It is the reformulation of its strategy, reorganisation and organisational changes an organisation will

undergo. According to Zahra (1996:1715), strategic renewal is the transformation of the organisation or revitalizing an organisation's operation by changing its scope of business or its competitive approach.

The success of self-renewal will depend on obtaining new resources and capabilities. According to Guth and Ginsberg (1990:6), strategic renewal is the creation of wealth through new combinations of the organisation's current resources. This involves using existing resources in a new way, but it can also mean that one will have to introduce new resources.

Tangible resources will be needed to carry out new activities or to develop a new image, while intangible resources may be needed to formulate the transformation or the restructuring (Teng, 2007:135).

3.3.4 Pro-activeness

The pro-activeness of an organisation is measured with three items; the posture towards competitors, initiator of action and the first-to-market or follower strategy (Scheepers, Hough & Bloom, 2008:58). Kreiser, Marino and Weaver (as quoted by Scheepers *et al.*, 2008:53) define pro-activeness as the aggressive execution and follow up actions to drive an organisation towards achieving its objectives by whatever means are needed.

Various other authors believe that pro-active behaviour is beneficial to the creation of competitive advantages (Antoncic & Hisrich, 2003:18; Sarkar, Echambadi & Harrison, 2001:702; Barringer & Bluedorn, 1999:422).

Pro-active organisations constantly seek new opportunities by predicting future demand and developing new products in anticipating customer needs (Scheepers *et al.*, 2008:53). Cooper, Alvarez, Carrera, Mesquita and Vassolo (2006:89) support this statement and they believe that pro-activeness can be seen as seizing initiatives in the marketplace. Pro-active organisations also initiate new products and technologies.

3.3.5 Risk-taking

Antoncic and Hisrich (2003:19) define risk-taking as the possibility of loss due to taking bold actions and committing resources in the pursuit of new opportunities. Risk-taking can be seen as an organisations willingness to take risks and tolerate failure. This entails taking a new route in the place of a previous successful practice.

Organisations can make calculated risks. Risk can be minimised by the amount of knowledge the entrepreneur or the organisation has of the opportunity (Morris *et al.*, 2002:41). Risk can also be minimised by running experiments, testing of the market and trial runs (Scheepers *et al.*, 2008:53).

Combining all definitions; risk-taking means that an entrepreneur will take a calculated risk in order to maximise potential benefits of the identified opportunity. A calculated risk does not eliminate all risk, but the possibility of failure will be minimised.

3.3.6 Competitive aggressiveness

Competitive aggressiveness can be seen as the organisations response to competitive threats and the strategies it will put on the table to outperform its rivals. Dess *et al.* (2005:148) define competitive aggressiveness as an intense effort to outperform industry rivals. It is also characterised by a combative posture or an aggressive response aimed at improving or overcoming a threat in a competitive marketplace.

3.4 ENTREPRENEURIAL CLIMATE

In the section below, the nature of an entrepreneurial climate is discussed and the entrepreneurial climate will be defined. Emphasis is placed on the various constructs of an entrepreneurial climate and the importance of fostering an entrepreneurial climate within organisations.

3.4.1 Defining an entrepreneurial climate

The culture in an organisation is the means by which one organisation will be distinguished from another; it serves as a control mechanism that shapes and guides the attitudes and behaviours of employees. According to Coetsee (2002:200), an organisational culture includes the climate of an organisation and it is based on the shared values, norms, believes and traditions that have been established over time. Timmons and Spinelli (2007:540) believe that the expectations people bring to the organisation, as well as practices and attitudes of key managers, are the factors that will determine an organisation's climate. They also believe that the climate of an organisation will have an impact on the performance of the organisation.

There is a crucial link between entrepreneurship and business culture; the quality of entrepreneurship is highly dependable on the quality of the business culture (Casson, 1995:79). Casson (1995:79) furthers that different kinds of industries favours different business cultures, because different kinds of industries require different types of entrepreneurial skills.

Innovation and pro-activeness will exist in an entrepreneurial firm (Antoncic & Hisrich, 2001:496) and management of an entrepreneurial organisation will allow employees to take risks, make mistakes and allow failure at attempts of innovation (Nayager & van Vuuren, 2005:32).

Bulut and Alpkan (2006:67) propose that the following are factors of an entrepreneurial climate: idea development support, project support, participative decision making, autonomous behaviour, resource allocation (including time) and tolerance of risk.

Cornwall and Perlman (1990:18-19) has identified the difference between an entrepreneurial and non-entrepreneurial organisation. Table 3.1 illustrates the difference between an entrepreneurial and non-entrepreneurial organisation.

Table 3.1: Differences between an entrepreneurial and non-entrepreneurial organisation

Business characteristics	Entrepreneurial organisation	Non-entrepreneurial organisation
Strategy	Seeks out new ventures. Protect current processes and technologies worth saving through adaptation.	Defensive. Protects present processes and technologies, variation through acquisitions and mergers.
Risk	If approached intelligently, used as key to growth, adaptation and survival.	Only something to minimise.
Culture	Culture serves to nurture adaptation and innovation.	Culture serves to protect status quo. Is objective and analytical.
Structure and communication	Informal communication channels and structure. Horizontal communication.	Formal communication channels are of great importance.
Decision making	Top management establishes mission and vision statement, input and feedback from lower level is encouraged.	Top management sets fixed narrow parameters. Input from lower levels may or may not be encouraged.
People	Viewed as key resources. Are protected and fullest potential is used.	View as abundant resources that are easily replaceable.
Creativity	Foster, develop and encourages creativity.	Tolerates creativity

Source: Cornwall and Perlman (1990:18-19)

In an entrepreneurial firm, the six entrepreneurial dimensions identified in section 3.3 are; new business venturing, innovativeness, self-renewal, pro-activeness, risk-taking and competitive aggressiveness.

3.4.2 Constructs of an entrepreneurial climate

According to Bulut and Alpkan (2006:67), there are six factors of an entrepreneurial climate namely; (1) idea development support, (2) project support, (3) participative decision making, (4) autonomous behaviour, (5) resource allocation and (6) tolerance of risk.

According to Hisrich *et al.* (2005:45), certain factors should exist in organisations that foster an entrepreneurial climate. These factors include: encouragement of new ideas, making use of latest technology, tolerance of failure, experimentation allowed, no limitation of opportunities, accessible resources, teamwork, management taking a long term view, existence of a volunteer programme, rewards and recognition system, availability of champions and support by top management.

Oosthuizen (2006:337-341) identified 13 constructs after comprehensive research was conducted. These 13 constructs identified will be discussed in detail below. The 13 constructs will be used as the basis for the questionnaire which will be discussed in chapters four and five. The specific questions in the questionnaire to determine the level of each construct are set out in Appendix A.

3.4.2.1 Visionary leadership

Hisrich *et al.* (2005:50) argue that visionary leaders "dream great dreams". A visionary leader is also able to communicate and live his dreams in such a manner that he will create a shared dream, meaning that his team will follow, irrespective of the obstacles in their way. Hisrich *et al.* (2005:50) emphasise that it is really important for a leader to understand the environment he operates in. If the leader understands the environment, he will be able to gather and analyse information that would inform innovation strategies.

According to Coetsee (2002:61), a leader will consist of the following characteristics:

- Is pro-active;
- Focused on a vision and value system;
- Is opportunity orientated;
- Questions and challenges status quo;
- Seeks opportunities and new approaches and is prepared to takes risks; and
- He is an innovator.

Coetsee (2002:59) states that a leader does not achieve goals by controlling and inhibiting people, but rather by creating opportunities for them to be successful. Lowe and Marriott (2006:109) and Cohan (2004:16) support Coetsee's statement.

Lowe and Marriott (2006:109) describe an entrepreneurial leader as a lateral leader that inspires others, encourages people, rewards appropriate risk-taking and focuses on creativity and innovation of the team to reach their gaols. Cohan (2004:16) describes an entrepreneurial leader as a person that will challenge status quo and will incorporate ideas from any source. An entrepreneurial leader is someone that converts opportunities into marketable products or services (Karatko & Hodgetts, 2007:75; Howell & Higgens, 1990).

Visionary leaders strive to develop choices and fresh approaches to long standing problems (Rowe, 2001:85). Rowe (2001:85) adds that visionary leaders are more pro-active, forming ideas rather than reacting to them. They are also more willing to invest in innovation and human capital. A visionary leader wants to create and maintain an effective culture to ensure long term viability.

3.4.2.2 Management support

According to Goosen, De Coning and Smit (2002a:43), management should be the key driver of the entrepreneurial process in any organisation.

Management support can be seen as management support for a new idea or a project (Bulut & Alpkan, 2006:68). Management support can also be to create a shared vision, communication

of a new concept, approving a new idea or providing financial resources needed (Kuratko & Hodgetts, 2004:63; Wickham, 2004:560; Kuratko, Hornsby, Naffzinger & Montagno, 1993). According to Antoncic and Zorn (2004:7), top management should encourage and reward entrepreneurial activities. This view is supported by Burns (2005:34) and Zahra (2005:8) who maintains that top management should be involved and be supportive of corporate entrepreneurial efforts within the organisation.

Goosen, De Coning and Smit (2002b:21) developed three key factors that represent intrapreneurship. Two of the three key factors are outward focussing and are taken from the 'classical' model for intrapreneurship as represented by the ENTRESCALE. The two external focussing factors are innovativeness and pro-activeness. The third key factor has an internal focus; it examines the effect of management on entrepreneurship. From the study done by Goosen *et al.* (2002b:21) it is evident that there is a relationship between financial performance and intrapreneurship. The key factor, management contribution, that was studied, is a significant predictor of the financial success of the organisation.

According to Nayager and Van Vuuren (2005:31), top management is the starting point in any organisation to establish an entrepreneurial climate. Morris and Jones (1999:76) maintain that top management should foster the believe that the organisation value entrepreneurship. Top management should also re-assure the employee that failures will be tolerated.

Hough and Scheepers (2008:18) believe the strategy of the organisation can be the driving force for corporate entrepreneurship. It is therefore imperative that top management decide on strategies that will lead to improved performance in terms of growth and profitability (Antoncic and Hisrich, 2001:504). In a case study done by Law, Tse and Zhou (2003:257) it was found that a firm's performance will be influenced by its internal management.

3.4.2.3 Sponsors for projects

Sponsors or champions, play a very important role in ensuring the advancement of the venture at hand. According to Oosthuizen (2006:279) and Turner (2002:49), sponsors or champions are the important connection between top management and intrapreneurs within the organisation. Sponsors will also acts as mentors for innovators; champions will therefore ease the negation process and get the buy-in and support from top management.

Day (1994:148) argues that sponsors are one of the most crucial elements in determining the outcome of entrepreneurial efforts within organisations. Sponsors or champions can use their power to navigate ventures in organisations; their powers can be seen as using of their hierarchical position, access to resources and technical expertise (Day, 1994:150). Day (1994:150) also founded that:

- The lower the hierarchical level of the principle champion the more innovative the venture will be.
- In general, champions from corporate headquarters, specifically from staff positions will be negatively associated with innovativeness.
- Within corporate headquarters, the higher the hierarchical level of the principle champion, the greater the more innovative the venture will be.
- Dual-role champions, champions who play the role of principle champion and organisational sponsor, will be positively associated with innovativeness.

Morris and Kurtko (2002:93) believe that the basic role of a sponsor would be to overcome some of the barriers of the entrepreneurial activity. These barriers could be the lack of resources, lack of funding, political attacks and other obstacles that the team may encounter along the way.

3.4.2.4 Tolerance for risk, mistakes and failure

Dawes (2007:20) argues that mistakes are inevitable. Although mistakes can not be avoided it can be minimised. Scheepers *et al.* (2008:5) and Morris and Kuratko (2002:4) state that risks can be minimised by the knowledge an entrepreneur or organisation has of the opportunity.

Bouchard (2001:17) believes that failure acceptance will help the organisation reduce the liabilities tied to both uncontrolled divergence and individualisation. Bouchard (2001:17) states that if a company accepts failures the probability that errors will be hidden is decreased and these failures can then be discussed and transformed into learning.

Hisrich *et al.* (2005:48) propose that an entrepreneurial climate can only be sustained if the internal environment of the organisation allows for new mistakes to be made. Morris and

Jones (1999:76) support this view and are of the opinion that top management should emphasise that mistakes and failures will be tolerated within the organisation in search of creativity and innovation. Kuratko and Welsch (2004:42) also believe that innovation can be promoted if an environment where failure is allowed is established.

Cullum, Padmore and Ruddle (2002) state that to foster an entrepreneurial behavior, entrepreneurial contributions must be recognised and rewarded, or at least not penalised for intelligent failure. The organisation should also have an effective knowledge sharing system, where organisations can learn from their successes and failures.

Considering all of the above, it is known that mistakes and failures are inevitable. These mistakes can be minimised to a certain extent if the entrepreneur or organisation has some knowledge of the opportunity. For an organisation to foster an entrepreneurial spirit, top management must place emphasis on the fact that mistakes will be tolerated even if it costs the organisation some money. If top management accepts failures, errors will not be hidden and failures can be transformed into learning. If open communication about mistakes and failures are encouraged, opportunities that can lead to catastrophic failure and big financial implications on the organisation, can be stopped in time.

3.4.2.5 Innovation, creativity and encouragement of new ideas

McFadzean *et al.* (2005:353) define innovation as the process of adding value to the organisation, its suppliers and customers by development of new processes, procedures, solutions, products and services. The definition of innovation as given by Slevin and Covin (1990:45) is: the willingness to place emphasis on research, development, new products and services, improved product lines and technological improvements.

Continuous innovation and competitiveness is a skill organisations will have to establish to influence the performance of the organisation in the twenty-first century's global economy (Kuratko & Welsch, 2001:347). Kuratko and Welsch (2001:350) further state that for an organisation to establish a corporate entrepreneurial strategy, innovation must be encouraged.

Nicholson-Herbert, Mkhize and Schroder (2004:43) believe that for an organisation to foster a culture of corporate entrepreneurship, they should create space for individuals to create new

ideas. This implies that employees who want to, or are required to innovate, should not be tied down with day-to-day activities or tied down by bureaucracy.

Timmons and Spinelli (2007:55) believe that the heart of the entrepreneurial process is the innovative spirit. According to Oosthuizen (2006:246), the organisation should focus on the creativity of all employees and their familiarities with the customer's needs and the competitor's actions in order to boost innovation within the whole organisation. According to Morris and Kuratko (2002:104), creativity is the soul of entrepreneurship.

3.4.2.6 Appropriate rewards and reinforcement

Kanter (1989), Fry (1987) and Goosen (2002) (as stated by Hough and Scheepers, 2008:19) believe that rewards and reinforcement motivates individuals to engage in innovation, pro-active and moderate risk-taking behaviour. Innovative organisations are characterised by providing rewards based on performance, offering challenges, increasing responsibilities, and promoting the ideas of innovative people throughout the organisation (Kuratko & Hodgetts, 2004). Organisations must reward corporate entrepreneurs to prevent them from leaving the organisation and becoming an entrepreneur outside the organisation (Jones & George, 2003:665).

Bulut and Alpkan (2006:67) distinguish between two types of rewards systems:

- Extrinsic rewards: This is the type of rewards that an organisation can control, i.e. pay, promotion, status and security.
- Intrinsic rewards: These rewards are associated by the feeling of having accomplished something worthwhile.

Bulut and Alpkan (2006:67) believe that both of these above-mentioned reward systems will positively moderate the positive association between the factors of an entrepreneurial climate and organisational commitment. Appropriate rewards systems will encourage employees to take risks associated with an entrepreneurial activity (Bulut & Alpkan, 2006:66). Bouchard (2001:16) supports this view, he states that to retain corporate entrepreneurs, corporations

have to offer more that attractive financial rewards. Managers should propose customised rewards and incentives.

According to Timmons and Spinelli (2007:299), rewards are very important and need to be thought through over the whole of the venture. Cacioppe (1999:327-328) also believes that rewards can be used throughout the life of the project, it should be used in different stages as follows:

- Initially: Recognition and positive feedback can be used as the initial reward. If the chosen team is diverse, there will be a development phase for everyone and learning opportunities will increase.
- As the project progresses: Recognition and feedback throughout the project is important. Rewards can also be in the form of praise, study-assistance or a team building effort. As time progresses, individual rewards need to be given. Monetary rewards or career development are generally seen as good rewards.
- Conclusion of project: Bonuses for individuals or the team will now be in order. Recognition, a good performance appraisal and verbal communication to the rest of the organisation could be appropriate.

Timmons and Spinelli (2007:299-300) state that the following issues should be considered when a reward system is implemented:

- Differentiation: Rewards should be based on the value of the contributions by the different team members.
- Performance: Rewards need to be a function of individual's performance and not the effort.
- Flexibility: The contribution of the individual may change at any stage in the project and the reward system should be flexible towards this. Changes in the organisation during the venture should also be kept in mind.

In summary, for an organisation to foster an entrepreneurial climate, it has to make sure that its rewards, incentives and compensation should reward entrepreneurial spirit and not penalise it. Rewards are different for each individual and sponsor or champions will have to

keep this in mind when implementing a reward system. To keep the project team motivated, it is important to give rewards throughout the project. This includes positive feedback and recognition for good work.

3.4.2.7 Vision and strategic intent

Wolcott and Lippitz (2007:80) believe that corporate entrepreneurship typically begins with a mandate for growth and a broad, clearly communicated vision. It is also believed that a vision should not be too narrow or too broad. A too narrow vision will cause the company to get more of the same and too broad will create confusion and people won't know where to start. This statement is reinforced by other authors who believe that corporate entrepreneurship is most effective when it aligns with the strategic intent of the organisation (Hamel & Prahalad, 1989; Pinchot & Pellman, 1999:25).

The vision of the organisation should be clear, should have a common purpose and should be communicated to all employees, especially middle mangers. Van der Merwe and Oosthuizen (2008:17) believe that it is the responsibility of top management to ensure that this happens. According to Coetsee (2002:179), there are two factors needed to create a vision:

- Regular communication on the organisation's vision is needed to ensure that team members know the vision and that they understand and accept it.
- Top management must talk to employees about the role they play and the contribution they can make to ensure the vision and longer term goals of the organisation are achieved.

The first step in planning and entrepreneurship strategy is sharing the vision of innovation that corporate leaders wish to achieve (Kuratko & Welsch, 2001:349). Garcia-Morales, Llorens-Montes and Verdu-Jover (2006:25) argue that although it is a starting point if top management want to innovate the decision alone is not sufficient. It is important for employees to see and feel that top management support what they created. Employees need to feel part of and understand the entrepreneurial effort, or they will show less dedication to innovation.

Concluding this section, it can be stated that for an organisation to foster an entrepreneurial climate, employees must be well informed about the organisation's vision. The employees should have a clear understanding of the vision and they should accept it and make it their own. The organisation should communicate the vision to the employees on a regular basis to clarify any uncertainty.

3.4.2.8 Discretionary time and work

For an organisation to foster an entrepreneurial climate, resources are needed. Kurtko, Montagno and Hornsby (1990:51) state that resources can be either time or material. Hornsby *et al.* (2002:260) also believe that time is one of the resources needed, but that it is overlooked too often. Scheepers *et al.* (2008:56) state that time availability is one of the most important resources needed to foster and entrepreneurial climate. They add that for new innovative ideas to thrive, individuals should have enough time to incubate their ideas.

Scheepers *et al.* (2008:56) feel that organisations should be reasonable when they assign work to employees. Organisations should also allow employees to work with others on solving long term problems. Employees need to have some autonomy to decide how to perform their work the most efficiently (Antoncic & Hisrich, 2001:502; Mathisen, Einarsen, Jorstad & bronnick, 2004:383).

According to Scheepers *et al.* (2008:56), in entrepreneurial work environments, employees are allowed to conduct creative, entrepreneurial experiments in a limited portion of their work time. One such well known entrepreneurial organisation is 3M.

3M has an unwritten, but universally understood guideline that their researchers can spend 15% of their time working on an idea without the approval from management (Anon., 1995:184). This projects identified by employees are called "skunk works" projects. Although managers usually know what problems their employees are experiencing in their "skunk works" projects, they don't oversee these projects in the traditional sense (Anon., 1995:184).

3.4.2.9 Empowered teams, multi-disciplined teamwork and diversity

Observers of the corporate environment have argued that the team or group, and not the individual, is essential for accomplishing entrepreneurship (Morris, Davis & Allen, 1994:66).

This construct refers to the discretion and extent that employees are empowered to make decisions about performing their own work in the way they believe is most effective. In organisations where an entrepreneurial climate exists, employees are allowed to make decisions about their work processes and are seldom criticized for making mistakes when innovating (Hornsby, Kuratko & Zahra, 2002).

According to Pinchot and Pellman (1999:109), if teams are not empowered to make decisions in their unit, the whole process would be slowed down and employees will be discouraged to behave entrepreneurially. If teams are empowered, employees can give input, are trusted by management and they will feel part of the organisation. Goosen *et al.* (2002a:43) suggest that if employees feels empowered, it will unlock their personal knowledge and capability to its fullest.

According to Sadler (2000:31), diversity in various specialization fields promotes innovation due to cross-pollination of ideas. Chowdhury (2005:731) points out that team diversity enhances the effectiveness of a team's decision making ability, as there is a broader perspective and wider range of alternative solutions from which to make a final decision. Both of these arguments are supported and summarized by Wang and Rafiq (2009:93), who argues that diverse groups generate more creative ideas, alternatives and solutions than non-diverse groups.

Pinchot and Pellman (1999:109) believe that not only diversity in teams is important but also cross-disciplinary teams with different perspectives to enhance decision making. West and Meyer (1998:418) suggest that companies should hire a top management team with different industry and company background. This would encourage discussions and ensure that management does not agree on all issues, as this will not always ensure that the best solutions and ideas are taken further.

3.4.2.10 Resources availability and accessibility

To consider acting in an entrepreneurial way, employees need to believe that resources are available for them to go ahead with their ideas (Scheepers *et al.,* 2008:56). Timmons and Spinelli (2007:341) mention four types of resources; people, financial resources, assets such as plants and equipment and a business plan. All resources can be summarised according to Russel (1999:72), as money, time, people, equipment and competencies.

Teng (2007:135) classifies resources as tangible and intangible. He states that tangible resources are needed to carry out new activities or to develop a new corporate image. Intangible assets, such as knowledge, may be needed to formulate a turnaround or restructuring strategy. Christensen (2004:308) feels that one should focus on intangible (internal) resources. The reason for this is that many companies possess a bundle of unexploited resources.

Seatre (2001:40) indicates that firms that are willing to allocate resources in the pre-project phase of the innovation or product development process, places greater emphasis on fostering an entrepreneurial climate, as compared to those firms that only allocate money after an idea has become a project. The availability of resources for start-up ventures is also identified by Antoncic and Hisrich (2004:526) as an important driver of entrepreneurial activity. IBM, a successful entrepreneurial firm, follows this principle. IBM always makes resources available for start-up business units and their focus is strategic in nature and process driven, rather than number based.

According to Antoncic and Hisrich (2004:526), organisational support in terms of resources has been identified as a driver for corporate entrepreneurship. Other studies have shown that employees that are more open to new experiences; a typical entrepreneurial employee expects organisational support (Santora, 2007:83). Part of the support that employees expect of the organisation, is the availability of resources. If resources are not available, employees' commitment will decline and their full potential will not be reached.

In fostering an entrepreneurial climate, employees should perceive that resources are available and will be allocated to their ideas. One should note that resources mentioned above, are not only the traditional viewed financial, raw material and equipment resources,

but also include people in terms of knowledge and experience. If all types of resources are easily available from the start, employees will be encouraged to think innovatively and their full potential will be reached.

3.4.2.11 Continuous- and cross-functional learning

The competitive environment is dynamic and constantly changing. According to McBeth and Rimac (2004:21), learning within an organisation should be ongoing, experimental and focussed on the individual's growth, rather than acquiring task- or role specific skills that can become outdated. They also believe that entrepreneurial organisations will offer continuous training, which will in turn encourage creative and integrative thinking.

According to Robinson (2001:96), new knowledge lays the foundation on which an organisation can build a competitive advantage. Antoncic and Hisrich (2003:13) hypothesize that their may be a linkage between organisational learning and corporate entrepreneurship. Nicholson-Herbert *et al.* (2004:44) believe that the very nature of corporate entrepreneurship requires individuals who constantly improve and develop themselves. If organisations allow individuals the opportunity to grow, they will foster a climate where employees will challenge status quo. Innovative employees will now be retained.

Van der Merwe and Oosthuizen (2008:15) also believe that cross-functional knowledge sharing should be promoted within the organisation to promote corporate entrepreneurship.

3.4.2.12 Strong customer orientation

Deshphande, Farley and Webster (2000:354) define customer orientation as a set of believes that the customer's needs and satisfaction are the priority of the organisation. Hisrich *et al.* (2005:51) state that those organisations that want to establish corporate entrepreneurship should develop ways to get close to its customers. A customer basis should be in place to track changes in buying behaviour, customer needs and customer complaints. Andotra and Pooja (2006:181) believe that such knowledge of the customer can help an organisation to gain insight into the market causing a significant market advantage.

Farrell (1993:117-121) identified four basic behaviours that can help an organisation to foster a strong customer orientation:

- Knowing the product: An attribute of an entrepreneur is known to be his concern about the customer's reaction to his product. Good knowledge about his product will therefore ensure that he is able to give the best possible service.
- Responding immediately: As the customer is the one who pays the bills, the customer must be kept happy. Responding to the changing needs and problems the customer may experience, will keep the customer happy.
- Being courteous and competent: The entrepreneur knows that being polite and considerate towards the customer will build towards a good relationship. If the entrepreneur shows competency, the customer will also have more faith in the product or service.
- Keeping current customers forever: Although marketing in any organisation is important to retain new customers, one should not lose sight of the fact that the current customers are the ones that are currently paying the bills.

If internal politics is one of the obstacles for an organisation to foster an entrepreneurial climate, focussing on the customer can help redirect energy away from the politics and towards collaboration by creating a "win-win" situation for everybody (Pinchot & Pellman, 1999:133). A strong customer orientation will also foster innovation and growth, as demanding customers will ensure that products and services are the best (Sathe, 2003:52-53). At the end of the day all organisations exist to serve its customers (Cohen, 2004:19).

In conclusion, a strong customer orientation will help to foster an entrepreneurial environment, as it will be the goal of the organisation to keep the customer happy. To keep the customer happy, the organisation will want to please demanding customers and therefore ensure an innovative product or service to answer to the needs of the customer.

3.4.2.13 Flat organisational structure

The organisational structure of an organisation is the underlying framework which will determine how quickly and to what extent an organisation can change. The ideal organisational structure of an entrepreneurial firm is flat, people-centred and team based,

dominated by informal networks and a strong support for employee's desire for independence (McBeth & Rimac, 2004:20).

Morris and Kuratko (2002:173) believe that the following aspects will facilitate entrepreneurial behaviour:

- As few hierarchical levels as practically possible;
- A fairly broad span of control; to enable managers to make decisions;
- Responsibility should be enabled by the relevant levels of authority;
- Management systems should be informed from lowers levels;
- Communication channels should be open; and
- Employees should be held accountable.

Rue and Byars (2000:13) states that the absence of barriers to communicate is essential to foster an entrepreneurial climate, the breakdown of the traditional rigid and hierarchical structures brings about open communication within the whole organisation that will help to develop a shared vision within the organisation (Wang, 2008:640).

3.5 PERCEIVED SUCCESS OF ORGANISATION

According to Teo and King (1996:312), implementation of any system should ultimately have an impact on the financial and non-financial performance of the organisation.

Teo and King (1996:312-316) measure the financial performance of an organisation with the market share, sales revenue and return on investment (ROI). Cameron and Quinn (1999:4) also feel that highly successful organisations are characterised by a high market share. Byrd and Marshall (1997:44-45) state that traditionally the performance of the organisation is measured by the return on investment (ROI) and return on sales (ROS). According to Weill (1992:307), the performance of the organisation is measured by its growth in sales and return on assets. Kangis and Williams (2000:533) feel that corporate performance is measured by the organisation's average profit margin, average return on capital and sales growth.

Morgan (2006:138) states that for an organisation to be successful, they must replace their old bureaucratic way of life with new focus on "customer and quality driven" business logic. According to Jones and Sasser (1995:93) highly successful organisations listen to their customers. Jones and Sasser (1995:93) mention the five major categories successful organisations implement to listen to their customers. The categories are: surveying customers about their level of satisfaction, giving feedback to customers, the organisation should do market research on why the customer joined and left the organisation, employees with direct contact with the customer spend a significant amount of time with the customer and successful organisations involve customers in every aspect of their business. A non-financial metric of an organisation's performance is its increased customer satisfaction (Teo & King, 1996:312). An example of a highly successful organisation is Siebel Sytems, the leader in CRM software. It is believed that Siebel Systems keeps its focus on the customer by coupling 50% of the management's incentive and 25% of the sales people's incentive to customer satisfaction (Day, 2003:78).

Highly successful organisations pursue strategies of constant innovation and product breakthrough (Morgan, 2006:54). This statement is supported by (Cameron & Quinn, 1999:4) highly successful organisation is the leader in the industry. McDonalds is a successful organisation that feels that consistency and efficiency attracts customers and shock rivals (Sull, 1999:47). According to Teo and King (1996:312), improved internal efficiency of the organisation is a non-financial indication of the success of the organisation.

Cameron and Quinn (2009:4) state that the most successful organisations, e.g. Coca Cola, Disney, General Electric, McDonalds and Toyota have a distinct culture that is clearly identifiable by its employees. Another successful organisation is Firestone, sitting at the top of the U.S. tire industry. Firestone is a monument to its own success, reflecting its founder's vision who insisted on treating customers and employees as part of the "Firestone family" (Sull, 1999:44). In a study done by Arthur (1994:670) it was found that in organisations where employees were committed to the organisation, productivity was higher. Tannenbaum (1962:236) believes that if higher control in the organisation is exercised by all levels of hierarchy, the organisation will be more effective and employees will have more job satisfaction.

The perceived success of the organisation will be measured by the following constructs:

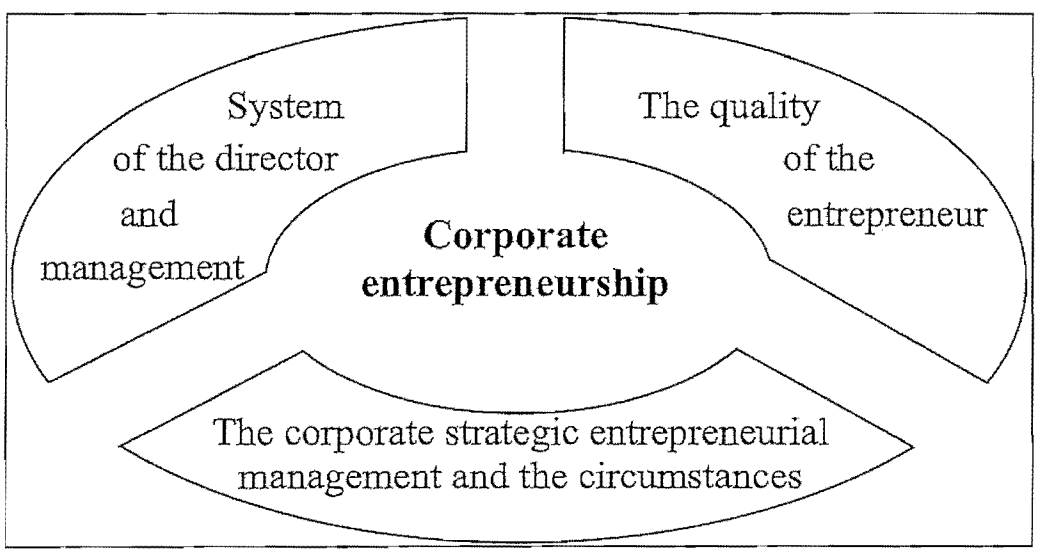
- Financial measures;
- Customer/Market measures;
- Process measures;
- People development; and
- Future (long-term success).

The specific questions in the questionnaire to determine the level of each construct is set out in Appendix B.

3.6 ESTABLISHING AN ENTREPRENEURIAL CLIMATE

Corporate entrepreneurship is essential in any competitive market nowadays. Jacobs and Kruger (2001:1) feel that it should be a strategic decision to adopt and entrepreneurial climate in any organisation. Chen, Zhu and Anquan (2005:530) identified three factors that will have an influence on the cultivation of corporate entrepreneurship and can be seen in figure 3.2.

Figure 3.2: System model for cultivating corporate entrepreneurship



Source: Chen *et al.* (2005:530)

The system of the director and management is the premier factor in cultivating corporate entrepreneurship (Chen *et al.*, 2005:530). The support of top management and shareholders

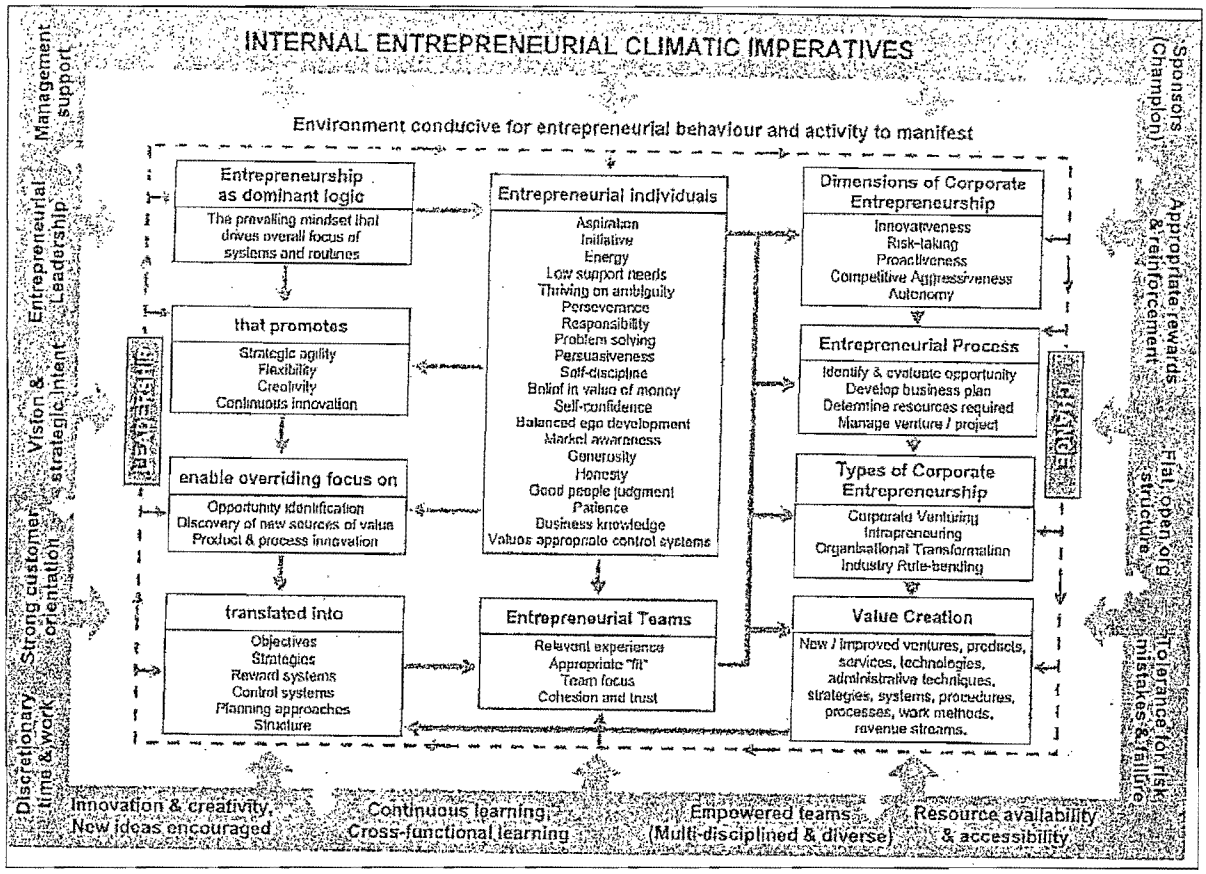
are needed to promote long term and potentially risky projects, which in term will help to foster and entrepreneurial climate in the organisation. Chen *et al.* (2005:531) feel that the entrepreneurial quality is the foundation to an entrepreneurial climate. The entrepreneurial quality involves two factors; ability and personality (Chen *et al.*, 2005:531). A good entrepreneur is born with an entrepreneurial personality where entrepreneurial ability can be taught. The last factor needed, according to Chen *et al.* (2005:530) is corporate strategic entrepreneurial management and circumstances. Even with top management's support, not all organisations are able to cultivate an entrepreneurial climate. Formulating proper strategies and protecting of entrepreneurs' enthusiasm and innovation are some favourable corporate circumstances and can help support the entrepreneurial climate.

However Marthisen, Einarsen, Jorstad and Bronnick (2004:383) identified ten major factors that are needed within an organisation to foster innovation and creativity. The ten factors include:

1. A supportive and challenging environment;
2. A shared commitment between employees towards goals that are specific, measurable, attainable and ambitious objectives;
3. Freedom and autonomy with regard to the task to be performed and how these tasks are performed;
4. Encouragement of ideas;
5. Enough time to create new ideas;
6. Appropriate feedback;
7. A good rewards and recognition system;
8. Tolerance towards errors and failures;
9. A non-threatening environment; and
10. A shared concern towards high excellence and a high level of performance.

Oosthuizen (2006:269) developed an integrated framework for the creation of an entrepreneurial climate within an organisation and can be seen in figure 3.3.

Figure 3.3: Integrated framework for creating an entrepreneurial climate



Source: Oosthuizen (2006:269)

The framework consists of the 13 constructs as discussed in section 3.4.2 that foster and entrepreneurial climate; entrepreneurial individuals and entrepreneurial teams with specific entrepreneurial characteristics and entrepreneurship as a strategic choice with value creation as the ultimate goal.

Wolcott and Lippitz (2007:80) give a guideline for organisations that want to embark on a new program for corporate entrepreneurship. The steps are as follows:

1. Point the way: Formulate a strategy and a vision for growth consistent with the capabilities that corporate entrepreneurship can leverage;
2. Define objectives: A small team should clearly define and communicate the company's objectives;
3. Neutralize the naysayers: Build corporate and divisional leadership through extensive communication;

4. Select and support a corporate entrepreneurship model: Organisations should select the correct model, identify a team and provide the necessary resources;
5. Start with the quick wins: As corporate entrepreneurship can be a new aspect, fast results with tangible performance will build credibility and ensure programs are not cancelled. Corporate entrepreneurship will be given a fair chance; and
6. Evolve: Successful corporate entrepreneurship requires continuous adaptation. Objectives and targets can change over time and therefore the programs for corporate entrepreneurship should also be able to change with time.

Hisrich *et al.* (2005:51-52) also give some guidelines on how to establish an entrepreneurial climate:

- Begin by ensuring that all levels of management in the organisation are committed to foster an entrepreneurial climate. Commitment from management will help to facilitate the culture change, establish a vision and strategy on how to embark on the journey.
- Areas where management should be involved should be identified. Resources needed and how the resources will be acquired should be identified.
- The organisation should ensure that the necessary flexibility and responsiveness needed are in place.
- As with all new projects, training will be needed for all employees. If organisations really want to establish an entrepreneurial climate, they should not stop at management level, but involve all the employees. Employees sharing their experiences with the rest of the group could also be a vital part of training.
- The fifth aspect is for employees to be close to its customer. A database with relevant information can be used to gather useful customer information.
- The saying: less is more, is an important aspect in an entrepreneurial firm. Corporate entrepreneurs should be able to be more productive with fewer resources, since resources will not always be available when needed.
- If employees feel that there is a support structure in place, the entrepreneurial spirit will continue. Support can be in many forms. Some examples are: resources, availability of a champion or mentor, time availability and also support if failure occurred.

- A rewards and recognition system should be in place. Rewards should be tied to the entrepreneurial spirit, which means that each team will have their own targets and systems in place.
- Nothing can be managed if it is not measured, therefore an evaluation system should be in place. This system should be used to support and reward successful units and to dismantle unsuccessful units.

3.7 SUMMARY

The main purpose of this chapter was to discuss findings of the literature review on corporate entrepreneurship. Relevant terminology like entrepreneurship, corporate entrepreneurship and the entrepreneurial climate was discussed.

Although there are overlaps in the concepts and definitions of entrepreneurship and corporate entrepreneurship, some distinct differences also exist. The main difference is the fact that only a few employees will be given the opportunity to create their own opportunities outside the organisation due to risk and resource where corporate entrepreneurship will have resources available and will carry some of this risks associated with new opportunities.

After discussing the relevant terminology related to corporate entrepreneurship, a study was done on the various dimensions of corporate entrepreneurship. Six dimensions were identified and discussed through which corporate entrepreneurship can occur. The six dimensions identified were: (1) new business venturing, (2) innovativeness, (3) self-renewal, (4) pro-activeness, (5) risk-taking and (6) competitive aggressiveness.

After the dimensions of corporate entrepreneurship were identified, the entrepreneurial climate was defined. The characteristics of the entrepreneurial climate were discussed. The characteristics of an entrepreneurial climate were discussed in terms of the 13 constructs identified by Oosthuizen (2006:337-341). These include:

1. Visionary or entrepreneurial leadership: A visionary leader wants to create and maintain an effective culture to ensure long term viability. This management view is important for the organisations to stay ahead of their competitors.

2. Management support: The support of management is important to foster entrepreneurship; it can be support in terms of resources, experience or even just moral support. Studies have shown that management will influence the performance of the organisation.
3. Presence of sponsors: In an entrepreneurial organisation, management should be the key driver of the entrepreneurial process. Managers should be mentors and help to establish a learning environment.
4. Tolerance for risk, mistakes and failure: Employees should not be afraid to take calculated risks, if they feel that there will be tolerance towards failure, they will bring fourth innovative ideas and they will learn from their mistakes.
5. Innovation, creativity and encouragement of new ideas: From the literature review done, innovation is seen as the starting block for entrepreneurship. Employees should be allowed to create new ideas and support should be given to these ideas.
6. Appropriate rewards and reinforcement: Rewards and recognition are a very important factor in corporate entrepreneurship. Rewards can be seen as tangible and intangible. Rewards should also be given throughout the project to keep the entrepreneurial team motivated.
7. Vision and strategic intent: The vision and mission of the organisations should be clear, understandable and also clearly communicated to the employees. Management should also get the buy-in from the employees on the vision in order for all to live by the vision.
8. Discretionary time and work: Time is usually one of the resources that are neglected. The amount of work given to employees should be looked at and there should be time allowed for them to work on identified opportunities.
9. Empowered teams, multi-disciplined teamwork and diversity: Diverse and multi-disciplined teams can help foster innovation as questions will be asked and new insights could be brought to the table.
10. Resource availability and accessibility: Employees will only consider acting entrepreneurial if the believe that resources will be available for them to pursue new opportunities exists. If resources are available, employees will also feel that management is committed to fostering an entrepreneurial climate.
11. Continuous- and cross-functional learning: Entrepreneurial organisations must offer continuous training, which will in turn encourage creative and integrative thinking.
12. Strong customer orientation: A strong customer orientation will help foster an entrepreneurial environment, as it will be the goal of the organisation to keep the customer happy, forcing employees to think innovatively.

13. Flat organisational structure: A flat, informal organisational structure will also help to foster an entrepreneurial climate. Communication lines should be open from top management to lower levels and also from lower levels to top management.

The chapter concluded on how to establish an entrepreneurial climate. To establish an entrepreneurial climate is not a decision made lightly. It starts with management making a conscious decision to the organisation to go the entrepreneurial route. Top management commitment to entrepreneurship is one of the most important factors to foster an entrepreneurial climate. The new strategy and vision of the organisation should be clearly communicated to the employees. Resources should be available for employees and rewards and recognitions systems should be in place.

Concluding, it can be seen that establishing and fostering an entrepreneurial climate is a long term strategic decision. There are many benefits involved, including giving the organisation the competitive edge.

CHAPTER 4

RESULTS AND DISCUSSION OF THE EMPIRICAL RESEARCH

4.1 INTRODUCTION

In this chapter, the results of the empirical study measuring the entrepreneurial climate and the perceived success within the primary production units of ArcelorMittal South Africa, Vanderbijlpark Works, will be discussed. The empirical study comprised of the completion of a questionnaire which was distributed to lower, middle and senior management of the primary production units of ArcelorMittal South Africa, Vanderbijlpark Works.

The questionnaire used in this study was originally developed by Oosthuizen (2006) and adapted by Jordaan (2008). It was adapted further to measure the perceived success of the organisation as well.

The completed questionnaires were analysed by the Statistical Consultation Services of the North-West University (Potchefstroom campus). In this study, frequency distributions will be presented in table format. The mean will be used as a measure of central tendency and the standard deviation will be used to indicate the scatter of data around the mean. The reliability of the questionnaire will be assessed by calculating Cronbach alpha coefficients. The *p*-values (obtained from independent t-tests), will be used to determine if there are any statistical significant differences between the means of selected demographical variables with regard to the constructs measuring entrepreneurial climate and the perceived success of the organisation. Furthermore, effect size values (*d*-values), as discussed by Ellis and Steyn (2003:51-53), will be used to indicate if there is a practical significant difference between any demographical variables regarding the constructs.

4.2 GATHERING OF DATA

An existing questionnaire, developed by Oosthuizen (2006) and adapted by Jordaan (2008) was used to assess the perception of the study population regarding the 13 constructs

measuring the entrepreneurial climate of the organisation. An additional section, measuring the perceived success of the organisation, was added to the existing questionnaire.

4.2.1 Study population

In this study, the survey population is made up of lower, middle and senior managers of the primary production units of ArcelorMittal South Africa, Vanderbijlpark Works. A name list was obtained from the Human Resources department to determine the number of employees within the chosen population. The levels of management of the primary production units of ArcelorMittal South Africa, Vanderbijlpark Works comprise of:

- Senior management: C and D roles.
- Middle management: E and F roles.
- Lower management: G roles.

At the time of the study, 271 managers were employed in the primary production units of ArcelorMittal South Africa, Vanderbijlpark Works. The total population of 271 managers was included in this study and the questionnaires were administered to all.

4.2.2 Data collection

Permission was obtained from the General Manager of ArcelorMittal South Africa, Vanderbijlpark Works to conduct the study and to disclose the results. The Human Resources department distributed and collected completed questionnaires from the different employees. A log was kept of completed questionnaires received from the Human Resources department and follow-up e-mails were sent to the Human Resource consultants to follow up on the departments which had low response rates.

4.2.3 Questionnaire used in study

The questionnaire used in this study (Oosthuizen, 2006; Jordaan, 2008) consisted of three sections, namely:

- Section A: Assessment of 13 constructs measuring the entrepreneurial climate in the participating departments.
- Section B: Assessment of five constructs measuring the perceived success of the organisation.
- Section C: Gathering demographical information of respondents.

A 5-point Likert scale was used to assess the entrepreneurial climate and perceived success of the organisation. Refer to Appendix C for an example of the questionnaire used.

4.2.4 Response to survey

Table 4.1 gives a summary of the responses to the questionnaire.

Table 4.1: Responses to survey

	Count	%
Number of questionnaires distributed	271	
Number of questionnaires received	142	52.40
Number of questionnaires discarded	5	1.85
Number of questionnaires analysed	137	50.55

A total number of 271 questionnaires were distributed among managers in the primary production units of ArcelorMittal South Africa, Vanderbijlpark Works 142 were received by the cut-off date. Five questionnaires had to be discarded as a result of missing data. A total number of 137 questionnaires were therefore analysed and used in the rest of the study. The response rate of the questionnaires was 50.55%.

The production units of ArcelorMittal South Africa, Vanderbijlpark Works consist of two departments, namely the Iron Making department and the Steel Making department. The

response rate for the different departments which participated in this study is summarised in table 4.2.

Table 4.2: Responses to survey per functional department

Functional department	Count distributed	Count received	%
Steel Making department	148	80	54.05
Iron Making department	123	57	46.34
Total	**271**	**137**	**50.55**

Table 4.2 shows that the distribution of the respondents per functional department is equally distributed. The response rate of the Steel Making department was 54.05%, while the response rate of the Iron Making department was 46.34%.

4.3 DEMOGRAPHICAL INFORMATION OF RESPONDENTS

Demographical information of respondents regarding age, gender, racial group, highest level of academic qualification, management level and the functional department they work in, measured by section C in the questionnaire, are discussed below.

4.3.1 Age of participants

The purpose of this question was to determine the age group classification of the respondents. The age group is included in the questionnaire, because different age groups could have different views. The distribution of the age group classification of the respondents in this study is tabulated in table 4.3.

Table 4.3: Age group of respondents

Age group	Count	%
Younger than 29 years old	21	15.33
30 - 39 years old	41	29.93
40 – 49 years old	46	33.58
50 - 59 years old	28	20.44
Missing	1	0.73
Total	**137**	**100**

Most of the respondents who participated in this study were between 40 and 49 (33.58 %) years old, while the second largest age interval is between 30 and 39 years old (29.93%). Although the most of the respondents fall between the age group of 40 to 49 years, 45.26% of all respondents were younger than 39 years of age and 63.50% were between the ages of 30 and 49 years. One respondent did not indicate his/her age group.

4.3.2 Gender of participants

As part of the demographic data, the respondents were divided into male and female. Table 4.4 summarises the results.

Table 4.4: Gender of respondents

Gender	Count	%
Male	131	95.62
Female	6	4.38
Total	**137**	**100**

The gender distribution of the respondents is not equal. Only six (4.38%) of the respondents were female, while 95.62% of the respondents were male.

4.3.3 Race of participants

The respondents were also requested to indicate their racial group classification according to the South African racial group description. The results are summarised in table 4.5.

Table 4.5: Racial group of respondents

Race	Count	%
Black	33	24.09
White	99	72.26
Coloured	1	0.73
Indian	3	2.19
Missing	1	0.73
Total	**137**	**100**

Most participants (72.26%) who participated in the study were White. The second largest racial group who completed the questionnaire was Black, comprising of 24.09% of the total number of participants. One Coloured and three Indians completed the questionnaire. One respondent did not indicate his/her racial group.

4.3.4 Highest level of academic qualification of participants

The purpose of this demographic variable was to determine the highest level of academic qualification obtained by the respondents. The results are tabulated in table 4.6.

Table 4.6: Highest academic qualification of respondents

Academic qualification	Count	%
Lower than Grade 12	3	2.19
Grade 12	38	27.74
National certificate	14	10.22
National diploma	36	26.28
3-year degree	14	10.22
Post graduate qualification	31	22.63
Missing	1	0.73
Total	**137**	**100**

Most of the respondents (66.42%) have a National diploma or less. From table 4.6 it can be derived that the three groups which make up the majority of the respondents, obtained a

Grade 12 (27.74%), a national diploma (26.28%) and a post graduate qualification (22.63%) respectively. One respondent did not indicate his/her highest academic qualification.

4.3.5 Management level of participants

The purpose of including the management level in the demographical data, was to determine if managers at different levels have different perceptions about the entrepreneurial activity within the organisation. Managers where divided into three categories which correspond with the management levels of the organisation, i.e. C and D roles – classified as senior management, E and F roles – classified as middle management, and G roles – classified as lower management. E and F roles were divided into middle management and technical personnel, while G roles were also divided into supervisors and technical. The results are summarised in table 4.7.

Table 4.7: Management level of respondents

Management level	Count	%
Senior Management (C&D Role)	8	5.84
Middle Management (E&F Role)	27	19.71
Technical (E&F Role)	16	11.68
Supervisor (G Role)	54	39.42
Technical (G Role)	32	23.36
Total	**137**	**100**

The highest number of respondents (39.42%) who participated in this study, fall within the supervisory level. Only 5.84% of the respondents were in the senior management level, while 31.39% were in the middle management level and 62.77% in the lower management level respectively. The technical personnel who are responsible for improvement and innovative ideas, made up 35.04% of the respondents.

4.3.6 Functional department in which participants work

The functional department in which the participating managers work, was included in this study to determine if there is a difference in the perceptions between managers about the existence of an entrepreneurial climate between the departments. Table 4.8 and 4.9 contain the results gathered from the questionnaire.

Table 4.8: Functional department of respondents for the Iron Making department

Iron Making department	Count	%
Coke Making	11	19.30
Sinter production	11	19.30
Blast Furnace	24	42.11
Iron Making	11	19.30
Total	**57**	**100**

Table 4.9: Functional department of respondents for the Steel Making department

Steel Making department	Count	%
Direct Reduction	2	2.50
Electrical Arc Furnace	25	31.25
Oxygen Steel Making	38	47.50
Refractories	7	8.75
Steel Making slab and scrap supply	8	10.00
Total	**80**	**100**

If the total number of respondents is taken into account, most of the respondents (27.74%) work in the Oxygen Steel Making department, while the second most respondents work in the Electrical Arc Furnace department with (18.25%). Blast Furnaces had the third most respondents with 17.52%.

Table 4.10 summarises the number of respondents in the Iron Making and Steel Making departments.

Table 4.10: Summary of functional department

Functional department	Count	%
Iron Making	57	41.61
Steel Making	80	58.39
Total	**137**	**100**

The respondents working in the Iron Making department accounts for 41.61%, while those in the Steel Making department accounts for 58.39% of the respondents who participated in this study.

4.4 ASSESSMENT OF THE ENTREPRENEURIAL CLIMATE

Section A of the questionnaire assessed the 13 constructs measuring the entrepreneurial climate in the organisation. The measuring questionnaire (used in this study) assessed the entrepreneurial climate constructs with 65 statements (items) on the basis of a 5-point Likert type scale, ranging from Strongly Disagree (1) to Strongly Agree (5).

Before the results of the questionnaire can be examined, it is important to ensure that the statements selected do indeed test the constructs and variables and that the statements relate to each other. In order to assess this, the internal consistency between the items of the measuring instrument (Reynaldo & Santos, 1999) was examined by calculating Cronbach alpha coefficients (Page & Meyer, 2000:292). The Cronbach alpha coefficient is based on the average correlation of variables within a test (SAS Institute 2005:295). The greater the Cronbach alpha coefficient is, the more reliable the scale. The Cronbach alpha coefficients for the constructs measuring the entrepreneurial climate in the organisation are presented in Table 4.11.

Table 4.11: Cronbach alpha coefficients

Variable	Cronbach's alpha	Number of statements
Entrepreneurial climate		
Visionary or entrepreneurial leadership	0.775	5
Management support	0.741	5
Presence of champions or sponsor	0.775	5
Tolerance for risk, mistakes and failure	0.619	5
Innovation and encouragement of new ideas	0.759	5
Appropriate rewards and reinforcement	0.779	5
Vision and mission intent	0.755	5
Discretionary time and work	0.583	5
Teamwork	0.806	5
Resource availability and accessibility	0.751	5
Continuous and cross-functional learning	0.776	5
Strong customer orientation	0.809	5
Flat organisational structure	0.723	5

Nunnally and Bernstein (1994:265) suggest that for acceptable reliability, the Cronbach alpha coefficient should be greater than 0.7. The following two constructs yielded alpa-values lower than 0.70, i.e.:

- Tolerance for risk, mistakes and failure – 0.619; and
- Discretionary time and work – 0.583.

According to Field (2008:668), it is however not necessary to ignore constructs if the coefficient is smaller than 0.7. Field (2008:668) states that if attitude is measured and not the ability, values lower than 0.7 are acceptable. As the variables measured in the questionnaire measures the attitude of the managers and both ***tolerance for risk, mistakes and failure*** (α = 0.619) and ***discretionary time and work*** (α = 0.583) yielded Cronbach alpha coefficients above 0.5, all the 13 constructs measuring the entrepreneurial climate can be regarded as reliable.

The arithmetic mean and standard deviation values obtained by the 13 constructs are presented in table 4.12, where the constructs will be arranged from the highest mean score obtained to the lowest.

Table 4.12: 13 corporate entrepreneurial climate constructs ranked in mean size

Variable	n	Mean	Standard Deviation
Strong customer orientation	137	3.449	0.705
Vision and strategic intent	137	3.392	0.737
Visionary leadership	137	3.345	0.801
Discretionary time and work	137	3.223	0.654
Teamwork	137	3.157	0.757
Flat organizational structure	137	3.116	0.746
Average mean and standard deviation		**3.074**	**0.602**
Management support	137	3.054	0.721
Tolerance for risk, mistakes and failure	137	3.048	0.623
Continuous and cross-functional learning	137	3.047	0.843
Innovation and encouragement of new ideas	137	3.015	0.776
Presence of sponsors	137	3.000	0.784
Appropriate rewards and reinforcement	137	2.638	0.837
Resource availability and accessibility	137	2.477	0.734

The average mean for all 13 constructs is 3.074. Six of the constructs were ranked higher than the average mean ($\bar{x}$ = 3.074) while seven constructs were ranked lower. Overall, the assessment of the 13 constructs of the primary production units of ArcelorMittal Vanderbijlpark could not be regarded as negative.

The construct, ***strong customer orientation*** ($\bar{x}$ = 3.449) yielded the highest mean value. The constructs, ***strong customer orientation*** ($\bar{x}$ = 3.449), ***vision and strategic intent*** ($\bar{x}$ = 3.92), ***visionary leadership*** ($\bar{x}$ = 3.345) and ***discretionary time and work*** ($\bar{x}$ = 3.223) also yielded relative high average means.

The constructs, ***innovation and encouragement of new ideas*** ($\bar{x}$ = 3.015), ***presence of sponsors*** ($\bar{x}$ = 3.000), ***appropriate rewards and reinforcement*** ($\bar{x}$ = 2.638) and ***resource availability and accessibility*** ($\bar{x}$ = 2.477) obtained the lowest mean scores.

4.5 ASSESSMENT OF THE SUCCESS OF THE ORGANISATION

Section B of the questionnaire assessed the five constructs measuring the perceived success of the organisation with 17 statements (items) also on the basis of a 5-point Likert type scale, ranging from Strongly Disagree (1) to Strongly Agree (5).

In table 4.13 the Cronbach's alpha coefficients and the number of statements for each construct and variable are shown.

Table 4.13: Cronbach's alpha coefficient

Variable	Cronbach's alpha	Number of statements
Perceived success of the organisation		
Financial measures	0.815	3
Customer and market measures	0.805	6
Process measures	0.826	3
People development	0.755	3
Future or long term success	0.012	2

The Cronbach alpha coefficient of the construct ***future or long term success of the organisation*** is very low (α = 0.012) and the construct will therefore be discarded from this study.

The results of the mean analysis of the constructs measuring the perceived success of the organisation are presented in table 4.14. The constructs will be arranged from the highest mean score obtained to the lowest mean score.

Table 4.14: Perceived success of organisation ranked in mean size

Variable	n	Mean	Standard Deviation
Financial measures	134	3.794	0.882
Process measures	134	3.603	0.796
Customer/market measures	134	3.421	0.634
Average mean and standard deviation		**3.373**	**0.632**
People development	134	2.674	0.945

The average mean for the perceived success of the organisation is 3.373. Three of the constructs measuring the perceived success of the organisation were ranked higher than the average mean ($\bar{x}$ = 3.373). The construct ***people development*** ($\bar{x}$ = 2.674) ranked below the average mean ($\bar{x}$ = 3.373). The construct, ***financial measures*** yielded the highest mean ($\bar{x}$ = 3.794). The standard deviation of the variables is relative high, showing a big variation between the perceptions of the managers.

4.6 RELATIONSHIP BETWEEN DEMOGRAPHIC VARIABLES AND THE CONSTRUCTS MEASURED IN QUESTIONNAIRE

The relationship between the demographical variables and the 13 constructs measuring the entrepreneurial climate of the organisation, as well as the relationship between the demographical variables and the perceived success of the organisation were tested with an independent t-test (statistical significance). Statistical significance tests, however, have the tendency to yield small *p*-values (indication of significance) as the size of the data set increases. The effect size, however, is independent of sample size and is a measure of practical significance (Ellis & Steyn 2003:51). In this study, effect sizes (*d*-values) were therefore calculated between the mean values to examine the relationship between the constructs and selected demographical variables.

To determine whether the effect of the relationship is important, the size of the effect is measured with *d*-values (Ellis & Steyn, 2003:51-53). The effect size (*d*-value) will indicate if there is a practical significant difference between the variable, while *p*-values from the independent t-test will be used to determine statistical significant differences.

The effect size will be interpreted according to Cohen's guidelines (1992:155-159), where:

- Small effect: effect size = 0.2;
- Medium effect: effect size = 0.5; and
- Large effect: effect size = 0.8.

According to Field (2005:32) and Ellis and Steyn (2005:51-53), results with a medium effect can be regarded as a visible difference, while results with a large effect can be regarded as practical significant.

The demographic data will be analysed as follows:

- Race: Black, Coloured and Indian (Non-White) and White.
- Highest level of academic qualification: Lower than national diploma (no degree) and higher than national diploma (with degree).
- Management level: Senior/middle management and lower management.
- Functional department: Iron Making and Steel Making.

4.6.1 Relationship between demographical variable race and the constructs measuring the entrepreneurial climate

A visual representation of the difference between the mean values of the different racial group for each construct is shown in figure 4.1. The *p*-values and *d*-values to test for statistical and practical significant differences are summarised in table 4.15.

Figure 4.1: Comparison between the demographic variable race and the constructs measuring the entrepreneurial climate

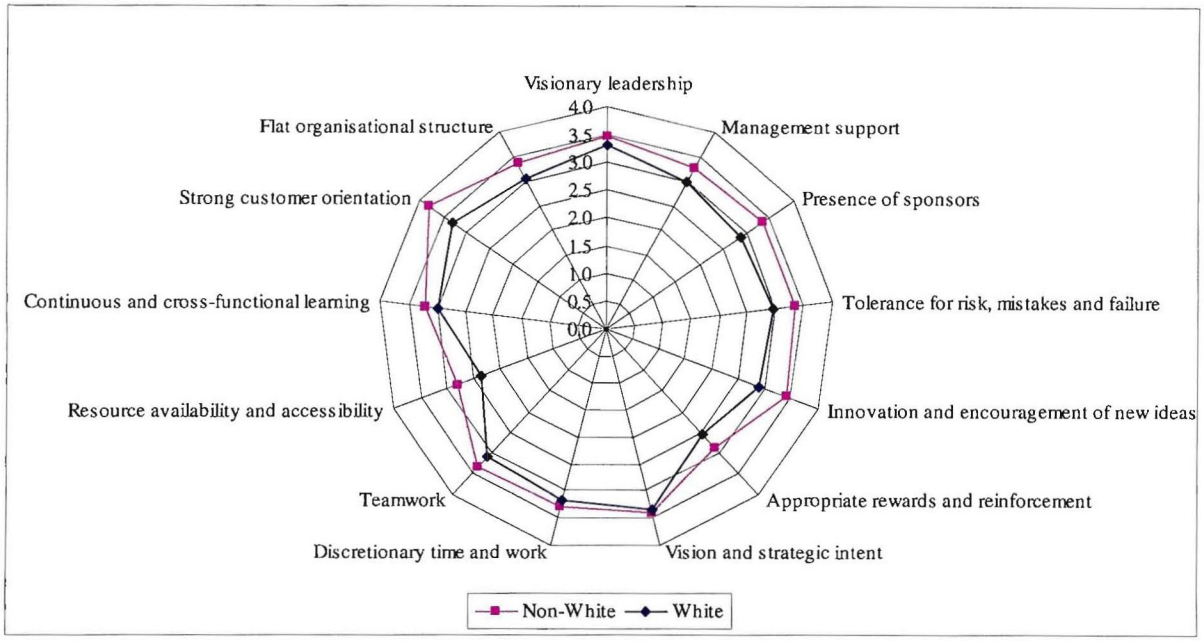


Table 4.15: Effect of the race of respondents on the constructs measuring the entrepreneurial climate

Construct	Non-White			White			Comparison	
	n	$\bar{x}$	*s*	*n*	$\bar{x}$	*s*	*p*	*d*
Visionary leadership	37	3.464	0.691	99	3.298	0.841	0.288	0.197
Management support	37	3.259	0.773	99	2.982	0.692	0.046	0.359
Presence of sponsors	37	3.346	0.707	99	2.873	0.780	0.002	0.607
Tolerance for risk, mistakes and failure	37	3.332	0.613	99	2.946	0.598	0.001	0.630
Innovation and encouragement of new ideas	37	3.389	0.757	99	2.875	0.744	0.000	0.679
Appropriate rewards and reinforcement	37	2.874	0.795	99	2.549	0.844	0.044	0.385
Vision and strategic intent	37	3.436	0.802	99	3.378	0.718	0.682	0.073
Discretionary time and work	37	3.324	0.774	99	3.190	0.606	0.289	0.174
Teamwork	37	3.335	0.785	99	3.094	0.743	0.100	0.307
Resource availability and accessibility	37	2.786	0.785	99	2.360	0.687	0.002	0.544
Continuous and cross-functional learning	37	3.211	0.950	99	2.990	0.800	0.176	0.233
Strong customer orientation	37	3.811	0.616	99	3.320	0.693	0.000	0.708
Flat organisational structure	37	3.345	0.652	99	3.034	0.768	0.030	0.405

When comparing p-values, all values smaller than 0.05 means that there is a statistical significant difference between the means of the different racial groups (Non-White and White), regarding the specific construct. The constructs with p-values showing a statistical significant difference between the means are: ***management support*** ($p = 0.046$), ***presence of sponsors*** ($p = 0.002$), ***tolerance for risk and failure*** ($p = 0.001$), ***innovation and encouragement of new ideas*** ($p = 0.000$), ***appropriate rewards*** (0.044), ***resource availability*** ($p = 0.002$), ***strong customer orientation*** ($p = 0.000$) and ***a flat organisational structure*** ($p = 0.03$).

When taking the d-values into account, the constructs ***presence of sponsors*** ($d = 0.607$), ***tolerance for risk and failure*** ($d = 0.630$), ***innovation and encouragement of new ideas*** ($d = 0.679$), ***resource availability*** ($d = 0.544$) and a ***strong customer orientation*** ($d = 0.708$) obtained a visible difference between the means. There is, however, no practical significant difference ($d < 0.8$) in the mean values between the perceptions of non-white and white managers with regard to the 13 constructs measuring the entrepreneurial climate.

4.6.2 Relationship between demographical variable highest academic qualification and the constructs measuring the entrepreneurial climate

Figure 4.2 represents the visual comparison of the difference between the means of the managers with a degree and managers without a degree and the constructs measuring the entrepreneurial climate. To determine if there are significant differences between the perception managers with and without a degree have with regard to the different constructs measuring the entrepreneurial climate, p-values and d-values are summarised in table 4.16.

Figure 4.2: Comparison between the demographic variable highest academic qualification and the constructs measuring the entrepreneurial climate

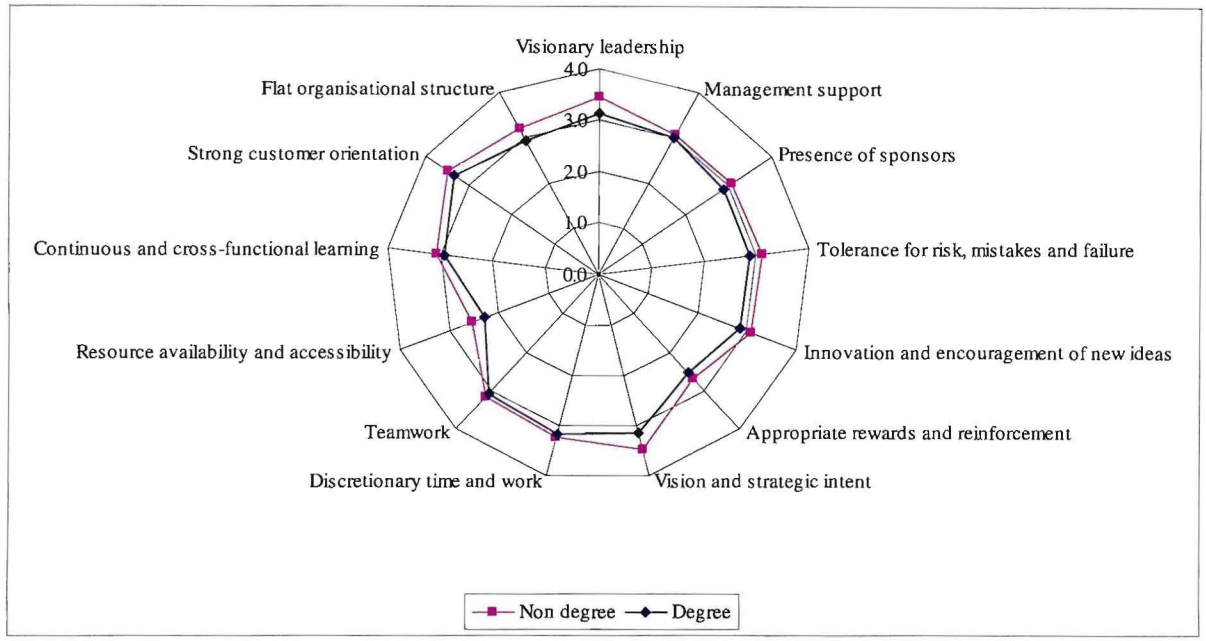


Table 4.16: Effect of the highest academic qualification of respondents on the entrepreneurial climate

Construct	Non degree			Degree			Comparison	
	n	$\bar{x}$	*s*	*n*	$\bar{x}$	*s*	*p*	*d*
Visionary leadership	91	3.444	0.809	45	3.124	0.747	0.280	0.395
Management support	91	3.068	0.706	45	3.000	0.745	0.604	0.091
Presence of sponsors	91	3.046	0.818	45	2.889	0.708	0.273	0.192
Tolerance for risk, mistakes and failure	91	3.110	0.588	45	2.897	0.658	0.058	0.324
Innovation and encouragement of new ideas	91	3.086	0.756	45	2.844	0.787	0.086	0.307
Appropriate rewards and reinforcement	91	2.682	0.849	45	2.536	0.820	0.341	0.172
Vision and strategic intent	91	3.514	0.736	45	3.141	0.686	0.005	0.507
Discretionary time and work	91	3.235	0.644	45	3.191	0.685	0.714	0.064
Teamwork	91	3.173	0.788	45	3.102	0.687	0.608	0.090
Resource availability and accessibility	91	2.547	0.723	45	2.304	0.719	0.067	0.336
Continuous and cross-functional learning	91	3.097	0.850	45	2.929	0.829	0.277	0.197
Strong customer orientation	91	3.489	0.733	45	3.356	0.647	0.301	0.182
Flat organisational structure	91	3.192	0.790	45	2.948	0.629	0.073	0.309

The construct, ***vision and strategic intent*** is the only construct with a statistical significant difference (p = 0.005) and a visible difference (medium effect; d = 0.507) between the mean values of managers with a degree and managers without a degree.

4.6.3 Relationship between demographical variable management level and the constructs measuring the entrepreneurial climate

The relationship between senior/middle management and lower management will be compared in relation to the 13 contracts measuring the entrepreneurial climate. Senior/middle management consist of senior management (C&D Role), middle management (E&F Role) and technical (E&F Role), while lower management consists of supervisor (G Role) and technical (G Role). The comparison is visually represented in figure 4.3. In table 4.17 the statistical analysis is summarised.

Figure 4.3: Comparison between the demographic variable management level and the constructs measuring the entrepreneurial climate

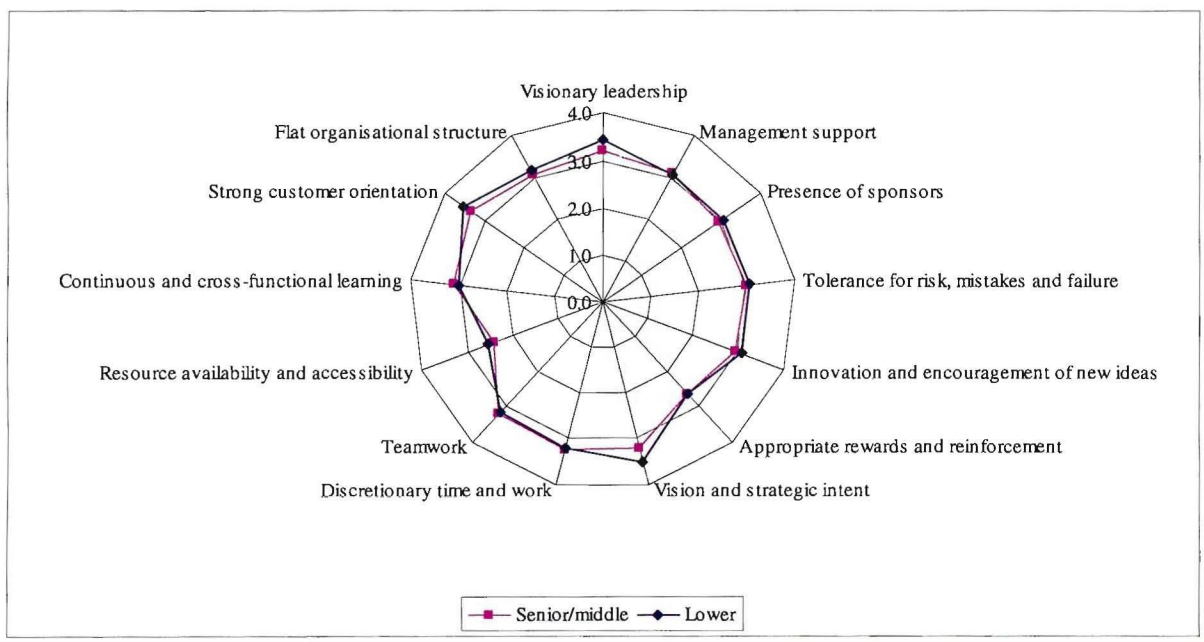


Table 4.17: Effect of management level of respondents on the entrepreneurial climate

Construct	Senior/middle			Lower			Comparison	
	n	$\bar{x}$	s	n	$\bar{x}$	s	p	d
Visionary leadership	51	3.211	0.666	86	3.424	0.866	0.132	0.247
Management support	51	3.075	0.682	86	3.042	0.747	0.799	0.044
Presence of sponsors	51	2.945	0.654	86	3.033	0.854	0.530	0.102
Tolerance for risk, mistakes and failure	51	3.013	0.647	86	3.069	0.611	0.614	0.086
Innovation and encouragement of new ideas	51	2.941	0.756	86	3.059	0.789	0.393	0.149
Appropriate rewards and reinforcement	51	2.637	0.845	86	2.638	0.838	0.997	0.001
Vision and strategic intent	51	3.212	0.649	86	3.499	0.767	0.027	0.375
Discretionary time and work	51	3.243	0.629	86	3.212	0.672	0.786	0.047
Teamwork	51	3.188	0.650	86	3.139	0.816	0.714	0.060
Resource availability and accessibility	51	2.404	0.712	86	2.520	0.748	0.374	0.155
Continuous and cross-functional learning	51	3.090	0.823	86	3.021	0.858	0.644	0.081
Strong customer orientation	51	3.343	0.661	86	3.512	0.726	0.177	0.232
Flat organisational structure	51	3.027	0.645	86	3.169	0.800	0.286	0.177

The difference in the perception between senior/middle management in direct comparison with lower management is statistical significant for the construct ***vision and strategic intent*** (p = 0.027). Although lower level managers rated this variable more positive in direct comparison with their counterparts, the difference was not practical significant and only a small effect size (d = 0.375) could be determined.

4.6.4 Relationship between demographical variable functional department and the constructs measuring the entrepreneurial climate

The two primary production units of ArcelorMittal South Africa, Vanderbijlpark Works are divided in Iron Making and Steel Making. The difference in mean values can be seen graphically in figure 4.4. Table 4.18 summarises the statistical analysis.

Figure 4.4: Comparison between the demographic variable functional department and the constructs measuring the entrepreneurial climate

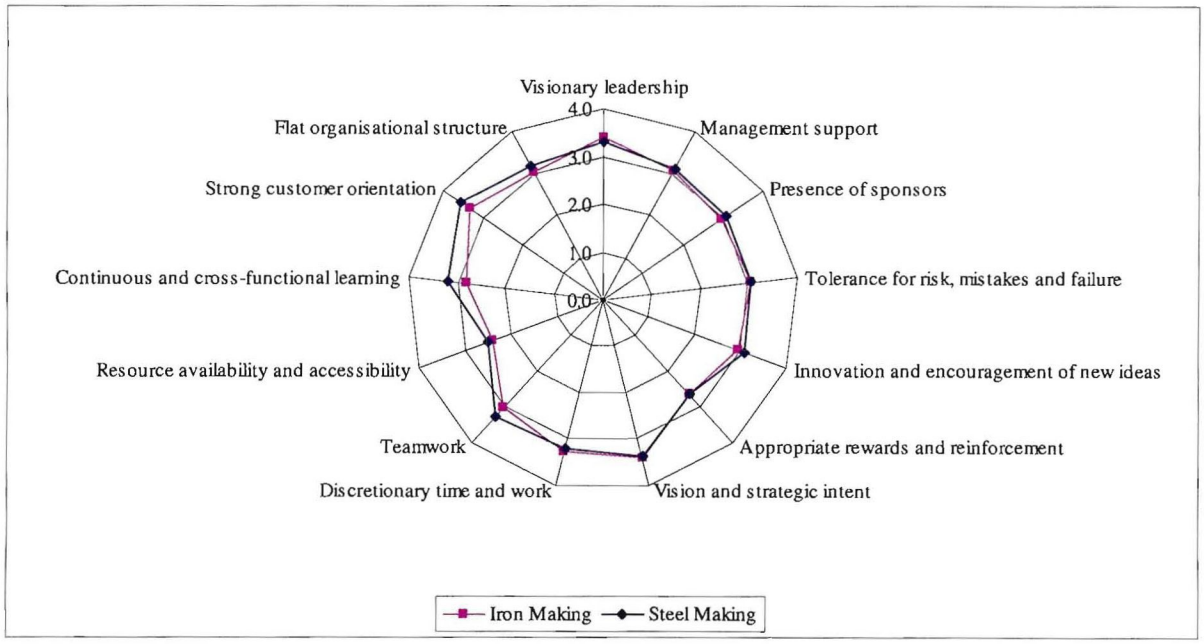


Table 4.18: Effect of functional department of respondents on the entrepreneurial climate

Construct	Iron Making			Steel Making			Comparison	
	n	$\bar{x}$	*s*	*n*	$\bar{x}$	*s*	*p*	*d*
Visionary leadership	57	3.386	0.854	80	3.316	0.765	0.614	0.082
Management support	57	3.035	0.692	80	3.068	0.746	0.797	0.043
Presence of sponsors	57	2.944	0.769	80	3.040	0.797	0.481	0.121
Tolerance for risk, mistakes and failure	57	3.032	0.613	80	3.059	0.634	0.809	0.041
Innovation and encouragement of new ideas	57	2.941	0.751	80	3.068	0.794	0.350	0.159
Appropriate rewards and reinforcement	57	2.654	0.827	80	2.626	0.850	0.844	0.034
Vision and strategic intent	57	3.411	0.785	80	3.379	0.705	0.808	0.040
Discretionary time and work	57	3.263	0.533	80	3.195	0.730	0.550	0.093
Teamwork	57	3.021	0.727	80	3.254	0.767	0.075	0.304
Resource availability and accessibility	57	2.414	0.748	80	2.521	0.726	0.402	0.143
Continuous and cross-functional learning	57	2.839	0.875	80	3.195	0.792	0.014	0.408
Strong customer orientation	57	3.318	0.742	80	3.543	0.666	0.065	0.303
Flat organisational structure	57	3.018	0.755	80	3.186	0.737	0.193	0.224

The difference in the mean for the construct ***continuous and cross-functional learning*** seems to be statistically significant (p = 0.014). There is no practical significant difference between the two groups (Iron Making and Steel Making) with regard to any of the constructs measuring the entrepreneurial climate of the organisation.

4.6.5 Relationship between demographical variable race and the perceived success of the organisation

To test for the statistical and practical significant differences between non-white and white managers with regard to the variable perceived success of the organisation, independent t-tests and effect sizes were calculated. The results are summarised in table 4.19. As the Cronbach alpha coefficient for the construct ***future and long term success*** (α = 0.012) was too low, it will be omitted in any further statistical calculations.

Table 4.19: Effect of race of respondents on the perceived success of the organisation

Construct	Non-White			White			Comparison	
	n	$\bar{x}$	s	n	$\bar{x}$	s	p	d
Financial measures	36	3.769	0.850	97	3.801	0.902	0.853	0.036
Customer/market measures	36	3.681	0.664	97	3.322	0.600	0.003	0.541
Process measures	36	3.653	0.758	97	3.581	0.815	0.646	0.088
People development	36	2.926	0.960	97	2.570	0.925	0.053	0.370

The construct, ***customer/market measures*** is the only construct that yielded a statistical difference (p = 0.003) in the mean values between the perceptions of Non-White and White managers with regard to the specific construct. Although the perceptions of Non-White managers were more positive with regard to this construct, the difference was not practical significant and only a medium effect size (d = 0.541) could be determined.

4.6.6 Relationship between demographical variable highest academic qualification and the perceived success of the organisation

Statistical analysis to determine statistical and practical significant differences between the mean values of managers with a degree and managers without a degree, with specific

reference to the constructs measuring the perceived success of the organisation, was performed. The results are tabulated in table 4.20.

Table 4.20: Effect of highest academic qualification on the perceived success of the organisation

Construct	Non degree			Degree			Comparison	
	n	$\bar{x}$	*s*	*n*	$\bar{x}$	*s*	*p*	*d*
Financial measures	90	3.856	0.926	44	3.667	0.781	0.246	0.204
Customer/market measures	90	3.473	0.627	44	3.314	0.642	0.176	0.246
Process measures	90	3.667	0.839	44	3.473	0.690	0.188	0.230
People development	90	2.837	0.940	44	2.341	0.873	0.004	0.528

The *p*-value for ***people development*** ($p = 0.004$) is lower than 0.05 and is therefore statistical different while the effect is only visible ($d = 0.528$). For the other three constructs there are no statistical or practical significant difference between the mean values for managers with a degree and managers without a degree.

4.6.7 Relationship between demographical variable management level and the perceived success of the organisation

The difference in means between the two groups (Senior/middle management and lower management) seems different for people development and will be tested in table 4.21.

Table 4.21: Effect of management level on the perceived success of the organisation

Construct	Senior/middle			Lower			Comparison	
	n	$\bar{x}$	s	n	$\bar{x}$	s	p	d
Financial measures	49	3.735	0.767	85	3.827	0.945	0.560	0.098
Customer/market measures	49	3.316	0.569	85	3.481	0.665	0.149	0.247
Process measures	49	3.497	0.667	85	3.665	0.859	0.240	0.196
People development	49	2.442	0.872	85	2.808	0.964	0.030	0.379

Lower management perception of the success of the organisation was on average more positive than their counterparts. Although the difference in the perception between

senior/middle management in direct comparison with lower management is statistical significant for the construct ***people development*** (p = 0.03), the difference is not practical significant and only a small effect size (d = 0.379) could be determined.

4.6.8 Relationship between demographical variable functional department and the perceived success of the organisation

Table 4.22 summarises the results from the t-test performed and effect sizes to test for statistical and practical significance between the mean values of the two different departments.

Table 4.22: Effect of functional department of respondents on the perceived success of the organisation

Construct	Iron Making			Steel Making			Comparison	
	n	$\bar{x}$	s	n	$\bar{x}$	s	p	d
Financial measures	55	3.697	0.919	79	3.861	0.855	0.292	0.178
Customer/market measures	55	3.348	0.565	79	3.471	0.677	0.273	0.181
Process measures	55	3.515	0.717	79	3.665	0.846	0.287	0.177
People development	55	2.642	0.979	79	2.696	0.926	0.747	0.055

All p-values are more than 0.05 and all d-values are less than 0.8, therefore the difference between the mean values for the two departments is not statistical or practical significant.

4.7 SUMMARY

The existing questionnaire originally developed by Oosthuizen (2006) and adapted by Jordaan (2008) for measuring the entrepreneurial climate was used. The questionnaire was further adapted to measure the perceived success of the organisation.

The analysis started with the demographic information of the respondents. The demographic information analysed was:

- Age of participants (younger than 29, 30 – 39, 40 – 49, 50 – 59 and 60 and older);
- Gender of participants (male and female);
- Race of participants (Black, White, Coloured and Indian);
- Highest academic qualification of participants (< grade 12, grade 12, national certificate, national diploma, 3-year degree and post graduate qualification);
- Management level of participants (senior management, middle management and lower management); and
- Functional department of participants (Iron Making and Steel Making).

Secondly, the reliability of the items selected to measure the existence of an entrepreneurial climate was examined using the Cronbach alpha coefficient. Two of the constructs coefficient was less than 0.7, indicating a relatively high reliability of the research instrument. After the reliability was determined, the current entrepreneurial climate was analysed. The average mean of the constructs measuring the entrepreneurial climate was 3.074 while seven constructs were ranked lower than the average mean and six were ranked higher.

Thereafter, the perception managers have toward the success of the company was assessed. The Cronbach alpha coefficient was used to determine if the selected items that were used to test the construct do indeed test the construct. The Cronbach alpha coefficient for ***future or long term success*** was very low ($\alpha = 0.012$) and was discarded from the study. The average mean of the five constructs measuring the perceived success of the organisation was 3.373, with three variables ranking and two variables ranking lower than the average mean.

The next section compared the demographic variables and the constructs tested in the questionnaire. The effect of race, highest academic qualification, management level and functional department of managers on the constructs measuring the entrepreneurial climate and the constructs measuring the perceived success of the organisation were analysed. During the study, no practical significant difference could be found between the mean values of any of the demographical categories and the constructs measured in the questionnaire.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

This chapter aims to recommend practical ways in which corporate entrepreneurship can be implemented in ArcelorMittal South Africa, Vanderbijlpark Works.

The chapter begins with conclusions drawn from the results obtained from the corporate entrepreneurship questionnaire. Firstly, the demographic information will be addressed. Secondly, the reliability of the questionnaire with regard to the 13 constructs measuring the entrepreneurial climate will be discussed. After the reliability is discussed, the entrepreneurial climate of the primary production units of ArcelorMittal South Africa, Vanderbijlpark Works will be addressed.

In the next section, the reliability of the questionnaire with regard to the constructs measuring the perceived success of the organisation will be discussed. The results obtained from the questionnaire will also be discussed. Finally, the relationship between some demographic information and the constructs tested in the questionnaire will be discussed.

After conclusions are drawn, recommendations will be made on fostering an entrepreneurial climate in the organisation. The success of the study will be evaluated in terms of the primary and secondary objectives put forward in chapter 1. The chapter will conclude with suggestions for future research.

5.2 CONCLUSIONS

Conclusions will follow the basic structure of chapter 4 and will firstly address the demographical information of the respondents, thereafter the current entrepreneurial climate will be discussed, followed by a discussion on the perceived success of the organisation. Finally, the relationship between some demographic variables and the constructs measured in the questionnaire will be discussed.

5.2.1 Demographical information of respondents

Demographic information of respondents was obtained regarding age group classification, gender, race group classification, highest academic qualification obtained, management level of the respondents and the functional department in which the respondents work.

The following general conclusions can be drawn:

- There is an almost equal distribution between the numbers of respondents regarding the age of managers at the primary production units of ArcelorMittal South Africa, Vanderbijlpark Works. It could be advantageous for the organisation, because younger managers are not always as set in their ways as older managers. On the other hand, older managers could have more experience.
- Almost all of the respondents were male (95.62%). The reason for this could be that the steel industry is male dominant, especially the primary production units. The primary production units are usually very dusty, noisy and hot. Due to this, it could explain the small number of female managers.
- Most managers who responded to the survey, are White (72.26%).
- The largest group of respondents (66.43%) do not have a degree. The reason for the large number of respondents without a degree, could be because of the old ISCOR way. In the old ISCOR, experience counted much more than a degree and one could be promoted without having a degree.
- The spread of the management level is what one would expect of any organisation, where the total of lower managers is more than middle and senior management.

Detailed conclusion on the relationships between the demographic variables and the constructs measured in the study will be presented in section5.2.2.

5.2.2 Assessment of the entrepreneurial climate

This section will first conclude on the reliability of the questionnaire with regard to the 13 constructs measuring the entrepreneurial climate. After the reliability has been established, conclusions will be drawn with regard to the current entrepreneurial climate as perceived by

the managers of the primary production units of ArcelorMittal South Africa, Vanderbijlpark Works.

For the measurement instrument to be reliable, one would expect the Cronbach Alpha coefficient to be above 0.7 (Nunnally & Bernstein, 1994:265). Field (2008:668) on the other hand states that if attitudes are measured and not ability, values less than 0.7 are also acceptable. The Cronbach alpha coefficient for the constructs ***mistakes and failure*** (α = 0.619) and ***discretionary time and work*** (α = 0.583) are above 0.5 and since the variables measured in the questionnaire measure the attitude of the managers, it can be concluded that the questionnaire with regards to the 13 constructs measuring the entrepreneurial climate is reliable.

The average mean of all the constructs as evaluated by managers was 3.074. This can be regarded as an average score in terms of the 5-point Likert scale, which was used in the study. For the purpose of this study, the average mean of 3.074 will be used as benchmark. It is concluded that mean values of $\bar{x} < 3.074$ are an indication that the managers perceptions are lower than the average and therefore reveal areas of development. Mean values of $\bar{x} >$ 3.074 are an indication that managers have a higher than average perception, illuminating areas that can be improved to improve the entrepreneurial climate even more.

The following general conclusions can be drawn regarding the 13 constructs measuring the entrepreneurial climate:

- Although all constructs measured do exist (lowest construct score = 2.477), the level of entrepreneurship of the primary production units of ArtcelorMittal South Africa, Vanderbijlpark Works is average.
- Lack of resources, especially financial resources, are barriers to fostering an entrepreneurial behaviour as perceived by the respondents of the questionnaire.
- The managers of the primary production units of the organisation felt that the reward system of the organisation is not encouraging to foster an entrepreneurial behaviour. There are no additional rewards or compensation for an individual implementing a new innovative project.

- From the study, it was found that although supervisors give recognition for good performance, there is not a real relationship between rewards and job performance.
- There is a lack of support for innovative ideas by influential people and it is difficult to built coalitions of sponsors to help projects succeed.
- In the organisation, the respondents felt that although they are inspired to push boundaries and think "out of the box", when they actually do generate new ideas the new work methods are not implemented soon enough.
- The respondents of the study felt that not all of them are involved in generating and implementing innovative ideas.
- Although employees are willing to share their knowledge, they are only willing to share their knowledge with people in their department.
- Managers of the primary production units felt that no sufficient risks are taken to keep ahead of the competitors. The perception of the managers is that the organisation is not willing to support small projects, even if they know the project will fail.
- There is not enough management support according to the managers of the primary production units. It is believed that senior management does not really allow innovators to bend rules to keep promising ideas on tract. Some procedures are also too rigid.
- Although the respondents of the study said that they do determine their key performing areas in co-operation with their supervisors, they still have to go through elaborate justification and approval procedures prior to implementation of works procedures.
- Top management do encourage cross-functional teams, although the team does not really have a choice in selection and recruitment of team members.
- According to the study, cross-functional teams are not used effectively to develop and implement new ideas. There is still room for improvement.
- Managers responded that the organisation could provide more opportunity for learning and growth.
- It is believed by the managers who participated in the study that even if an employee does come up with a good idea; he/she is not given enough time during work hours to develop the idea further.
- The leaders of ArcelorMittal South Africa, Vanderbijlpark Works do take a long term view of the organisation.

- Managers who completed the questionnaire believe that employees are not eager to follow top management voluntarily, because top management does not always lead by example. There are different standards in the organisation for different levels of management.
- Managers are well informed about the organisation's vision and strategies. The communication lines are open in the organisation and there are regular meeting where information is shared.
- Although management is informed about the corporate values, buy-in is below average.
- Although customers are treated as a very important stakeholder of the organisation, they are not always involved in product development.

5.2.3 Assessment of the perceived success of organisation

The Cronbach alpha coefficient for the construct ***Future or long term success***, measuring the perceived success of the organisation, was 0.012%. The other four constructs measuring the perceived success of the organisation Cronbach alpha coefficients was above 0.7. It was therefore decided to exclude the construct ***Future or long term success*** from the rest of the study.

The average mean for the constructs measuring the perceived success of the organisation was 3.373. This can be seen as slightly above average in terms of the 5-point Likert scale. The average mean of 3.373 will be used as benchmark where mean scores of $\bar{x} < 3.373$ will be seen as possible improvement areas and $\bar{x} > 3.373$ are an indication of strong points.

The following general conclusions can be drawn:

- Although the moral of the employees has not improved over the last years, employees are still fairly committed to the organisation. Due to the economic crisis, employees are forced to give more but they do not get something extra out of their jobs.
- It is believed by the managers who completed the questionnaire that customers of the organisation are committed to the organisation. They believe that this can be because the organisation develops products with customers in mind.

- At ArcelorMittal South Africa, Vanderbijlpark Works taking care of the customers is one of the business's top priorities. This is a good indication, because customer care is part of ArcelorMittal South Aftica's vision statement.
- The perception managers have is that the competitive position of the organisation has improved over the last few years. This could be due to the fact that the organisation has gone global and the organisation now has access to information which they never had before.
- Respondents felt that ArcelorMittal South Africa, Vanderbijlpark Works is performing well financially. Reviewing the financial statements from the past few years, the organisation has experienced growth in market turnover, profit and market share.

5.2.4 Relationship between demographical variables and the constructs tested in the questionnaire

Conclusions regarding the relationship between the demographic variables race, highest academic qualification obtained, management level, and functional department and the constructs measured in the study will be discussed below.

5.2.4.1 Relationship between race and entrepreneurial climate constructs

Overall, Non-White managers are more positive regarding the entrepreneurial climate of the organisation when compared to White managers. In fact, they have a more positive view regarding all 13 constructs measuring the entrepreneurial climate. The study indicated, however, that the difference between the mean values of the two racial groups is statistical and visible significant with regard to the following five constructs: ***presence of sponsor***, ***tolerance for risk, mistakes and failure***, ***innovation and encouragement of new ideas***, ***resource availability and accessibility*** and a ***strong customer orientation***. No practical significant difference could however be found for the mean values between the perceptions of Non-White and White managers.

5.2.4.2 Relationship between highest academic qualification and entrepreneurial climate constructs

Although the difference in perceptions between managers without a degree and managers with a degree is marginal, the perceptions of managers without a degree are more positive regarding the existence of an entrepreneurial climate within the organisation. Although respondents without a degree perceive the construct ***vision and strategic intent*** more positive than managers with a degree, the difference is only visible ($d = 0.507$). Practically this means that no differentiation can be made between the perceptions of managers without a degree and managers with a degree with regard to the entrepreneurial climate of the organisation.

5.2.4.3 Relationship between management level and entrepreneurial climate construct

No relationship could be found between the management level and entrepreneurial constructs. The perception of lower management was more positive with regard to nine of the constructs where Senior/middle management on the other hand had a more positive view on four of the constructs.

5.2.4.4 Relationship between functional department and entrepreneurial climate constructs

The difference between the perception of managers from the Iron Making department and managers from the Steel Making department were statistical significant for the construct ***continuous and cross-functional learning*** ($p = 0.014$). No practical significance could however be found. The reason for the difference in perceptions could be due to the fact that each department has there own training department with different training officers.

The Steel Making department's manager's view regarding ***continuous and cross-functional learning*** is more positive than the managers in the Iron Making department. The fact that the blast furnace makes up 42.11% of Iron Making, cross-functional learning is not that easy as there is no other department in Iron Making with the same processes as the blast furnace. On the other hand, the Electric Arc Furnace accounts for 31.25% and Oxygen Steel Making 47.5% of Steel Making. These two units do have some similarity and cross-functional learning is therefore easier.

5.2.4.5 Relationship between race and perceived success of organisation constructs

Overall, Non-White managers' perception regarding the success of the organisation is more positive than their counterparts. White managers are however more positive regarding the construct measuring the ***financial performance*** of the organisation. Although the difference in mean values for ***customer/market measures*** indicates a visible difference (d = 0.541), it could not be regarded as practical significant. Since there is only one of the constructs with a visible difference in mean values, an outsider without the statistical data in front of him/her, he/she will not observe a difference between the views of Non-White and White managers.

5.2.4.6 Relationship between highest academic qualification and perceived success of organisation constructs

Managers' perceptions without a degree are on average more positive regarding the success of the organisation than their counterpart with a degree. This could be because managers with a degree are taught how to measure success with values, where managers without a degree measure success differently.

Although the perception of managers without a degree is more positive, the only construct with a visible effect is ***people development*** (d = 0.528). Usually a person with a degree's mobility is higher than those without a degree. Their commitment to the organisation is not always high, because they know they would easily be able to find employment elsewhere.

5.2.4.7 Relationship between management level and perceived success of organisation constructs

On average, the perception of lower management with regard to the success of the organisation is more positive that the perception of senior/middle management. The difference in mean values for the construct ***people development*** is visible but not practical.

5.4.2.8 Relationship between functional department and perceived success of organisation constructs

From the study, no statistical or practical significant difference could be found between the perceptions of managers from the two departments with regard to the constructs measuring the perceived success of the organisation.

5.3 RECOMMENDATIONS

In chapter 2, the causal factors which highlight the need for and benefits of an entrepreneurial climate were identified. If the organisation is ready to incorporate corporate entrepreneurship as part of their strategy, guidelines as suggested by Hisrich *et al.* (2005:51-52) in section 3.6 can easily be adjusted for the use at the primary production units of ArcelorMittal South Africa, Vanderbijlpark Works as follows:

- The first and one of the most important steps would be to obtain commitment from the management team. As feedback sessions on the organisation's performance are already part of the culture, this feedback session could be used to introduce the concept.

  Although the construct visionary/entrepreneurial leadership has been identified as the third strongest construct, management do not lead by example and therefore employees do not voluntarily follow them. For the new adopted strategy to work, top management should be involved from the start and stay involved. The leaders in the organisation do take a long term view and it should remain as such.

- Some general areas where management need to be involved should be identified as well as the resources needed. While ArcelorMittal South Africa, Vanderbijlpark Works is not performing at full production currently, it may be a good time to start immediately. The only problem is that the resources needed usually involve money. The global economic crisis placed a damper on availability of money, therefore the timing of starting with the strategy should be considered very carefully.

- The third step in the process would be to ensure that the necessary flexibility and responsiveness is in place. The construct organisational structure was identified as positive compared to the benchmark (average $\bar{x} = 3.074$), but the degree of hierarchical control is still too high in the organisation. Employees still have to go through elaborate

justification and approval procedures prior to implementation of work procedures. These rigid procedures will have to be revised for the strategy to work.

- As with all new projects implemented, training is very important. Training should not end with management, but should be provided to all employees. Trust amongst employees should also be established for them to be willing to share their experiences and failures with everyone.

  A few years ago, ArcelorMittal South Africa, Vanderbijlpark Works used to have a training day for shop workers once a week. This training session needs to be introduced again. The starting point of the training should be for management to introduce the concept of entrepreneurship. After this concept is well understood, the concept of corporate entrepreneurship should be introduced.

- The fifth aspect would be to ensure employees are close to the customer. At the moment ArcelorMittal South Africa, Vanderbijlpark Works, measure customer satisfaction with a customer satisfaction survey more than once a year. A database is kept up to date with information such as price, quality, on time delivery and general perceptions. These results should be made available on the intranet for all employees to see and more frequent feedback should be given on the already existing feedback session.

- Because less is more in an entrepreneurial firm, the effectiveness and efficiency of the organisation should improve. When these two variables were measured in the questionnaire, the results were below average.

  ArcelorMittal South Africa, Vanderbijlpark Works is part of a global organisation and benchmarking and knowledge sharing should be very easy. For some sections in ArcelorMittal South Africa, Vanderbijlpark Works, there are Knowledge Management Programs (KMP) annually where knowledge is shared. The problem with this is that only one employee per section is allowed to attend this KMP session due to financial restrictions. The organisation can still send one employee to attend, but as ArcelorMittal South Africa, Vanderbijlpark Works already has access to a teleconference system, other

employees should be allowed to participate in the KMP session by means of a teleconference.

- A support structure needs to be in place for the entrepreneurial strategy to be successful. At the moment there is not enough management support. Managers do not support innovators enough by allowing them to bend rules and rigid procedures to keep promising ideas on tract.

  There already exists a mentor program for new graduates that join the organisation after graduation. A mentorship program should be implemented for other employees that need mentoring as well.

- An additional reward system should be in place for innovative ideas. This could mean that different teams have different reward systems. Individual employees should also be rewarded for implementing new innovative projects. Some organisations give a percentage of saving of a project back to the employee or team that implemented the project.

  ArcelorMittal South Africa, Vanderbijlpark Works is busy implementing a new balance score card system. Bonuses and annual increases will depend on this balance score card rating. Employees are involved in determining their key performing areas to ensure that there is a relationship between rewards and job performance.

- The last step is to implement a measuring system. By implementing a measuring system, successful units will be supported and unsuccessful units should be dismantled.

Now would be a good time to start the groundwork for development of a corporate entrepreneurial strategy. From the beginning, top management should ensure that the each step in the development of the strategy is clearly communicated to all employees and they should ensure buy-in from the employees.

A project team should be identified as well as a project leader. The team should evaluate which of the above mentioned recommendations can be implemented as suggested and which

need some time before implementation. The team should set target dates for each action step identified and also allocate a responsible person to that specific action. Continuous monitoring of progress should be done to identify the critical path and ensure all actions are up to date.

5.4 ACHIEVEMENT OF OBJECTIVES

Evaluating the success of this study based on the achievement of the primary and secondary objectives are indicated in section 1.3.

5.4.1 Primary objective

The primary objective of this study was to assess the level of corporate entrepreneurship present in ArcelorMittal South Africa, Vanderbijlpark Works, with specific reference to the primary production units. Recommendations will also be made on how to foster an entrepreneurial climate.

The achievement of the primary objective was dependant on the realising of the secondary objectives.

5.4.2 Secondary objectives

The secondary objectives were determined in section 1.3 of this study. These objectives were set out to help with the achievement of the primary objective. The secondary objectives were:

- To define corporate entrepreneurship and entrepreneurial climate;
- To obtain insight into corporate entrepreneurship and entrepreneurial climate by means of a literature review;
- To gain insight into the business environment of ArcelorMittal South Africa as a company and ArcelorMittal South Africa, Vanderbijlpark Works as part of the ArcelorMittal South Africa group;
- To assess the entrepreneurial climate within ArcelorMittal South Africa, Vanderbijlpark Works by means of a questionnaire with specific focus on the primary production units;

- To validate the reliability of the questionnaire by means of statistical analysis;
- To determine if there is any relationship between the demographic variables, i.e. race, highest academic qualification, management level and functional department with regard to the constructs measuring the entrepreneurial climate and the perceived success of the organisation; and
- To suggest recommendations to foster an entrepreneurial climate in the organisation.

The first and second objectives were achieved in chapter 3 by means of a comprehensive literature review. The third secondary objective was achieved in chapter 2 where a comprehensive study was done on ArcelorMittal South Africa, Vanderbijlpark Works with specific focus on the primary production units.

Objectives four, five and six were achieved by means of the empirical study. The findings of the study were discussed in detail in chapter 4.

Finally, practical recommendations to foster an entrepreneurial climate were presented in section 5.3.

As all the secondary objectives have been achieved, the status of the current entrepreneurial climate in the primary production units of ArcelorMittal South Africa, Vanderbijlpark Works was determined. Recommendations on how to foster an entrepreneurial climate were also made. The primary objective of the study has therefore also been met.

5.5 SUGGESTIONS FOR FURTHER RESEARCH

This study was limited to lower, middle and senior management. Employees working in the plant and support staff members were not included. This part of the work force plays a very important role in the success of the organisation and should be included in further studies.

Since the scope of the study was limited to the primary production units of ArcelorMittal South Africa, Vanderbijlpark Works and these units could not be considered to be representative of the whole Vanderbijlpark Works, it would be suggested that all units be included in further studies.

Although ArcelorMittal South Africa currently has four major steel operations, i.e. Vanderbijlpark Works, Saldanha, Newcaslte Works and Vereeniging Works, this study was only performed at the Vanderbijlpark Works and further studies could included the other three sites as well.

As an existing questionnaire was used, the opportunity therefore exists to compare different economic sectors with each other.

5.6 SUMMARY

The aim of this chapter was to conclude on the results obtained from the study and to give practical recommendations on how to foster an entrepreneurial climate within the organisation. The chapter started off by addressing the demographic information of the respondents.

After the basic demographic information age, gender, race, highest academic qualification, management level and functional department were addressed, the reliability of the questionnaire was discussed. Using the Cronbach Alpha coefficient, it was established that the questionnaire was reliable for all the constructs measured in the questionnaire expect for the construct ***Future or long term success*** measuring the perceived success of the organisation. The level of corporate entrepreneurship within the organisation was discussed based on the 13 constructs measuring the entrepreneurial climate. The perceived success of the organisation was addressed after which the relationship between the demographic information and the constructs measured in the questionnaire were addressed.

In section 5.3 practical recommendations were made on how to develop a strategy to incorporate corporate entrepreneurship in ArcelorMittal South Africa, Vanderbijlpark Works.

The chapter concluded by evaluating the success of the study based on the achievement of the primary and secondary objectives and by suggesting possible future research that could be done on corporate entrepreneurship.

BIBLIOGRAPHY

ANDOTRA, N. & POOJA. 2006. Optimising customer-orientation in small business through marketing-mix feedback results. *Journal of Services Research*, 6(2): 181-203.

ANON., 1995. How can big companies keep the entrepreneurial spirit alive? *Harvard Business Review*, 73(6): 183-192.

ANTONCIC, B. & HISRICH, R.D. 2001. Intrapreneurship: Construct refinement and cross-cultural validation. *Journal of Business Venturing*, 16(5): 495-527.

ANTONCIC, B. & HISRICH, R.D. 2003. Clarifying the intrapreneurship concept. *Journal of Small Business and Enterprise Development*, 10(1): 7-24.

ANTONCIC, B. & HISRICH, R.D. 2004. Corporate entrepreneurship contingencies and organizational wealth creation. *Journal of Management Development*, 23(6): 518-550.

ANTONCIC, B. & ZORN, O. 2004. The mediating role of corporate entrepreneurship in the organizational support-performance relationship: An empirical examination. *Managing Global Transitions*, 2(1): 5-14.

ARTHUR, J.B. 1994. Effects of human resources systems on manufacturing performance and turnover. *The Academy of Management Journal*, 37(3): 670-687.

BARRINGER, B.A.R. & BLUEDORN, A.C. 1999. The relationship between corporate entrepreneurship and strategic management. *Strategic Management Journal*, 20(5): 421-444.

BOUCHARD, V. 2001. Exploring corporate entrepreneurship: A corporate strategy perspective. *European Entrepreneurial Learning*, 2001(12): 1-23.

BULL, I. & WILLARD, G.E. 1993. Towards a theory of entrepreneurship. *Journal of Business Venturing*, 8(3): 183-195.

BULUT, C. & ALPKAN, L. 2006. Behavioural consequences of an entrepreneurial climate within large organisations: An integrative proposed model. *SEE Journal*, September: 64-70.

BURNS, P. 2005. Corporate entrepreneurship: Building an entrepreneurial organisation. Palgrave Macmillan.

BYRD, T.A. & MARSHALL, T.E. 1997. Relating information technology investment to organizational performance: A causal model analysis. *OMEGA - The International Journal of Management Science*, 25(1): 43-56.

CACIOPPE, R. 1999. Using team-individual reward and recognition strategies to drive organisational success. *Leadership & Organisational Development Journal*, 20(6): 322-331.

CAMERON, K.S. & QUINN, R.E. 1999. Diagnosing and changing organizational culture. Upper Saddle River, NJ: Prentice Hall.

CARCIA-MORALES, V.J., LLORENS-MONTES, F.J. & VERDU-JOVER, A.J. 2006. Antecedents and consequences of organizational innovation and organizational learning in entrepreneurship. *Industrial Management & Data systems*, 106(1): 21-42.

CASSON, M. 1995. The entrepreneur: An economic theory. 2nd ed. Bodmid, Cornwall: MPG Books.

CHEN, J., ZHU, Z. & ANQUAN, W. 2005. A system model for corporate entrepreneurship. *International Journal of Manpower*, 26(6): 529-543.

CHOWDHURY, S. 2005. Demographic diversity for building an effective entrepreneurial team: is it important? *Journal of Business Venturing*, 20(6): 727-799.

CHRISTENSEN, K.S. 2004. A classification of the corporate entrepreneurship umbrella: labels and perspectives. *International Journal Management Enterprise Development*, 1(4): 301-315.

CHURCHILL, N.C. 1992. Research issues in entrepreneurship. Boston, MA: PWS-KENT.

COETSEE, L.D. 2002. Peak performance and productivity: A practical guide for the creation of a motivating climate. Potchefstroom , South Africa: Ons Drukkers.

COHEN, A.R. 2004. Building a company of leaders. *Leader to Leader*, 34: 16 -20.

COHEN, J. 1992. A power primer. *Psychological Bulletin*, 112(1): 155-159.

COOPER, A.C., ALVAREZ, S.A., CARRERA, A.A., MESQUITA, L.F. & VASSOLO, R.S. *eds*. 2006. Entrepreneurial strategies: New technologies in emerging markets. Malden, MA: Blackwell Publishing.

CORNWALL, J.R. & PERLMAN, B. 1990. Organisational entrepreneurship. Boston, MA: Irwin.

COVIN, J.G. & MILES, M.P. 1999. Corporate entrepreneurship and the pursuit of competitive advantage. *Entrepreneurship Theory and Practice*, 23(3): 47-63.

CULLUM, P., PADMORE, L. & RUDDLE, K. 2002. Rethinking the role of the entrepreneurial leader. Accenture: Innovation delivered.

CUMMINGS, T.G. & WORLEY, C.G. 2005. Organisational development and change. 8th ed. United States of America: Thomson.

DAWES, G. 2007. Mistakes – how can we learn from them? *Development and Learning Organisations*, 21(2): 20-22.

DAY, D.L. 1994. Raising radicals: Different processes for championing innovative corporate ventures. *Organization Science*, 5(2): 148-172.

DAY, G.S. 2003. Creating a superior customer-relating capability. *MIT Sloan Management Review*, 44(3): 77-82.

DESHPANDE, R., FARLEY, J.U. & WEBSTER, F.E. 2000. Triad lessons: Generalizing results on high performance firms in five businesses-to-business markets. *International Journal of Research in Marketing*, 17(14): 353-363.

DESS, G.C. & LUMPKIN, G.T. 2005. The role of entrepreneurial orientation in stimulating effective corporate entrepreneurship. *Academy of Management Executive*, 19(1): 147-146.

ELLIS, S.M. & STEYN, H.S. 2003. Practical significance (effect size) versus or in combination with statistical significance (p-value). *Management Dynamic*, 12(4): 51-53.

FARRELL, T. 1993. Intrapreneurship at work. Championing projects to push innovation in your company. *CMA Magazine*, 14 Nov.

FATTAL, T. 2003. Intrapreneurship at word: Championing projects to push innovation in your company. *CMA Magazine*, 14 Nov.

FIELD, A. 2005. Discovering statistics using SPSS. London: SAGE Publications.

Funding Universe. 2009. Iscor Limited. http://wwwfundinguniverse.com/companyhistories/Iscor-Limited-Company-History.html. Date of access: 24 May 2009.

GOOSEN, C.J., DE CONING, T.J. & SMIT, E.v.d.M. 2002a. The development of a factor based instrument to measure corporate entrepreneurship: A South African perspective. *South African Journal of Business Management*, 33(3): 39-51.

GOOSEN, C.J., DE CONING, T.J. & SMIT, E.v.d.M. 2002b. Corporate entrepreneurship and financial performance: The role of management. *South African Journal of Business Management*, 33(4): 21-28.

GUTH, W.D. & GINSBERG, A. 1990. Guest editors introduction: corporate entrepreneurship. *Strategic Management Journal*, 11(4): 5-15.

HAMEL, G. & PRAHALAD, C.K. 1989. Strategic intent. *Harvard Business Review*, 67(3): 67-76.

HeartQuotes Center. 2009 http://www.heartquotes.net/Change.html Date of access: 24 February 2009.

HERRINGTON, M., KEW, J. & KEW, P. 2008. Global Entrepreneurship Monitor. 56p. http://www.gsb.uct.ac.za/gsbwebb/userfiles/GEM2008SouthAfricanReport_1.pdf Date of access: 22 July 2009.

HISRICH, R.D., PETERS, M.P. & SHEPHERD, D.A. 2005. Entrepreneurship. 6th ed. New York, NY: Irwin McGraw-Hill.

HORNSBY, J.S., KURATKO, D.F. & ZAHRA, S.A. 2002. Middle managers perception of the internal environment for corporate entrepreneurship: Assessing a measurement scale. *Journal of Business Venturing*, 17(3): 253-273.

HORNSBY, J.S., NAFFZIGER, D.W., KURATKO, D.F. & MONTAGNO, R.V. 1993. An interactive model of the corporate entrepreneurial process. *Entrepreneurship Theory and Practice*, 20(2): 29-37.

HOUGH, J. & SCHEEPERS, R. 2008. Creating corporate entrepreneurship through strategic leadership. *Journal of Global Strategic Management*, 3: 17-25. June.

HOWELL, J.M. & HIGGENS, C.A. 1990. Champions of change: Identifying, understanding and supporting champions of technological innovations. *Organisational Dynamics*, 18(1): 40-55.

IRELAND, R.D., KURATKO, D.F. & MORRIS, M.H. 2006. A health audit for corporate entrepreneurship: innovation at all levels, Part 1. *Journal of Business Strategy*, 27(1): 10-10.

JACOBS, H. & KRUGER, S. 2001. Establishing an intrapreneurial orientation as strategy: A framework for implementation. *RAU Acta Commercii*, 1: 1-11.

JOGARATNAM, G. & TSE. E.C. 2006. Entrepreneurial orientation and the structuring of organizations: Performance evidence from the Asian hotel industry. *International Journal of Contemporary Hospitality Management*, 18(6): 454-468.

JOHNSON, D. 2001. What is innovation and entrepreneurship? Lessons for larger organizations. *Industrial and Commercial Training*, 33(4): 135-140.

JONES, G.R. & GEORGE, J.M. 2003. Contemporary management. 3rd ed. New York, NY: McGraw-Hill.

JONES, T.O. & SASSER, W.E. 1995. Why satisfied customers defect. *Harvard Business Review*, 73(6): 88-99. http://faculty.bschool.washington.edu/ryalch/NSTU/Why%20Satisfied%20Customers%20Defect.pdf . Date of access: 17 October 2009.

JORDAAN, A.E. 2008. An assessment of intrapreneurship in Public Education and Training Colleges in the Free State Province. (Unpublished MBA-dissertation). North-West University, Potchefstroom.

KANGIS, P. & WILLIAMS, D.G.S. 2000. Organisational climate and corporate performance: an empirical investigation. *Management Decision*, 38(8): 531-540.

KURATKO, D.F. & HODGETTS, R.M. 2004. Entrepreneurship: Theory, Process and Practice. 6th ed. Mason, OH: Thompson South-Western.

KURATKO, D.F. & HODGETTS, R.M. 2007. Entrepreneurship: Theory, Process and Practice. 7th ed. Mason, OH: Thompson South-Western.

KURATKO, D.F., HORNSBY, J.S., NAFFZIGER, D.W. & MONTAGNO, R.V. 1993. Implement entrepreneurial thinking in established organisations. *SAM Advanced Management Journal*, 58(1): 29-39.

KURATKO, D.F., MONTAGNO, R.V. & HORNSBY, J.S. 1990. Developing an intrapreneurial assessment instrument for an effective corporate entrepreneurial Environment. *Strategic Management Journal*, 11(4): 49-58.

KURATKO, D.F. & WELSCH, H.P. 2001. Strategic entrepreneurial growth. Fort Worth, MO: Harcourt College Publishers.
KURATKO, D.F. & WELSCH, H.P. 2004. Strategic entrepreneurial growth. 2nd ed. Fort Worth, MO: Harcourt College Publishers.

LAW, K.S., TSE, D.K. & ZHOU, N. 2003. Does Human Resource management matter in a transitional economy? China as an Example. *Journal of International Business Studies*, 34(3): 225-265.

LOWE, R. & MARRIOTT, S. 2006. Enterprise: Entrepreneurship and innovation – Concepts, contexts and commercialization. Oxford: Butterworth-Heinemann.

MAAS, G. & HERRINGTON, M. 2007. Global Entrepreneurship Monitor. 48p. http://www.gsb.uct.ac.za/gsbwebb/userfiles/GEMSouthAfrica2007.pdf Date of access: 29 May 2009.

MATHISEN, G.E., EINARSEN, S., JOFSTAD, K. & BRONNICK, K.S. 2004. Climate for work group creativity and innovation: Norwegian validation of the team climate inventory (TCI). *Scandinavian Journal of Psychology*, 45(5): 383-392.

MCBETH, E.W. & RIMAC, T. 2004. The age of Entrepreneurial Turbulence: Creating Sustainable Advantage for Individuals, Organisations, and Societies in the New Century. *ESADE MBA Business review*, 2: 17-23.
http://www.esade.edu/portal/page/portal/bs/Recursos/Documentos/Reviews/vidaEst_Asoc_activ_2004.pdf Date of access: 12 July 2009.

McFADZEAN, E., O'LOUGHLIN, A. & SHAW, E. 2005. Corporate entrepreneurship and innovation part 1. The missing link. *European Journal of Innovation Management*, 8(3): 350-372.

MORGAN, G. 2006. Images of organization. London: Sage Publications http://books.google.co.za/books?id=h-f429ueNRYC&printsec=frontcover#v=onepage&q=&f=false. Date of access: 17 October 2009.

MORRIS, M.H. & JONES, F.F. 1999. Entrepreneurship in establishes organisations: the case of the pubic sector. *Entrepreneurship Theory and Practice*, 24(1): 71-91.

MORRIS, M.H. & KURATKO, D.F. 2002. Corporate entrepreneurship. Orlando, FL: Harcourt College Publishers.

MORRIS, M.H., DAVIS, D.L. & ALLEN, J.W. 1994. Fostering Corporate Entrepreneurship: Cross-cultural comparisons of the importance of individualism versus collectivism. *Journal of International Business Studies*, 25(1): 65-89.

MOUTON, J. 2001. How to succeed in your Master's & Doctoral studies – A South African guide and resource book. Pretoria, South Africa: Van Schaik.

NAYAGER, T. & VAN VUUREN, J.J. 2005. An analysis of an organisational strategy, structure and culture that supports corporate entrepreneurship in established organisation. *South African Journal of Economics and Management Sciences*, 8(1): 29-38.

NEL, P.A., RäDEL, F.E. & LOUBSER, M. 1992. Researching the South African market. University of South Africa, Pretoria.

NICHOLSON-HERBERT, S., MKHIZE, S. & SCHRODER, A. 2004. Turning managers into leaders: A South African perspective on corporate entrepreneurship. *ESADE MBA Business Review*, 2:41-45. http://www.esade.edu/portal/page/portal/bs/Recursos/Documentos/Reviews/vidaEst_Asoc_activ_2004.pdf Date of access: 12 July 2009.

OOSTHUIZEN, J.H. 2006. An integrated framework to improve the entrepreneurial climate in the South African Mining Industry. (Unpublished doctoral thesis). North-West University, Potchefstroom.

PAGE, C. & MEYER, D. 2000. Applied research design for business and management. Roseville: McGraw-Hill.

PINCHOT, G. 1985. Intrapreneuring: Why you don't have to leave the corporation to be an entrepreneur. New York, NY: Harper & Row.

PINCHOT, G. & PELLMAN, R. 1999. Intrapreneurship in action: A handbook for business innovation. San Francisco, CA: Berret-Koehler.

PORTER, M. E. 1990. The Competitive Advantage of Nations, New York, NY: Free Press.

REYNALDO, J. & SANTOS, A. 1999. Cronbach's alpha: A tool for assessing the reliability of scales. *Journal of Extension*, 37(2).
http://www.joe.org/joe/1999april/tt3.php. Date of access: 23 September 2009.

ROBINSON, M. 2001. The ten commandments of intrapreneurs. *New Zealand Management*, 48(11): 95-98.

ROWE,W.G. 2001. Creating wealth in organisations: The role of strategic leadership. *The Academy of Management Executive*, 15(1): 81-94.

RUE, L.W. & BYARS, L.L. 2000. Management – skills and application. 9th ed. Boston, MA: McGraw-Hill.

RUSSEL, R.D. 1999. Developing a process model of intrapreneurship systems: A cognitive mapping approach. *Entrepreneurship Theory and Practice*, 23(3): 65-84.

RUTHERFORD, M.W. & HOLT, D.T. 2007. Corporate entrepreneurship. An empirical look at the innovativeness dimension and its antecedents. *Journal of Organizational Change Management*, 22(3): 429-446.

SADLER, R.J. 2000. Corporate entrepreneurship in the public sector: the dance of the chameleon. *Australian Journal of Public Administration*, 59(2): 25-43.

SAISI. 2007. History of the South African primary steel industry. http://www.saisi.co.za/pdf/history.pdf. Date of access: 24 May 2009.

SAISI. 2009. South African iron & steel institute. http://www.saisi.co.za/mittal.php. Date of access: 14 May 2009.

SANTORA, J.C. 2007. Managing "open" employees: Do resources and leadership style matter? *Independent Review*, 21(3): 83-84.

SARKAR, M.B., ECHAMBADI, R.A,J. & HARRISON, J.S. 2001. Alliance entrepreneurship and firm market performance. *Strategic Management Journal: Special issue on strategic entrepreneurship and entrepreneurial strategies for wealth creation*, 22 (6/7): 701-711.

SAS INSTITUTE INC. 2005. SAS institude Inc., SAS OnlineDoc®, Version 9.1, Cary, NC: SAS Institute.

SATHE, V. 2003. Corporate entrepreneurship. Top managers and new business creation. Cambridge: Cambridge University Press.

SEATRE, A.S. 2001. Intrapreneurship: An exploratory study of select Norwegian industries. Department of industrial economics and technology management. http://www.nec.ntnu.no/documenter/Intrapreneurship.pdf Date of access: 1 March 2009.

SESHADRI, D.V.R. & TRIPATHY, A. 2006. Innovation thorough intrapreneurship: the road less travelled. *Vikalpa: The Journal for Decision Makers*, 31(1): 17-29.

SCHEEPERS, M.J., HOUGH, H. & BLOOM, J.Z. 2008. Nurturing the corporate entrepreneurship capability. *Southern African Business Review*, 12(3): 50-75.

SLEVIN, D.P. & COVIN, J.G. 1990. Juggling entrepreneurial style and organisational structure – How to get your act together. *Sloan Management Review*, 31(2): 43-53.

SMITH, J. 2006. Showing its mettle: The Top 100 Company 2006. http://www.thetimes.co,za/SpecialReports/Top100/Article.aspx?id=31446 Date of access 23 May 2009.

STOPFORD, J.M. & BADEN-FULLER, C.W. 1994. Creating corporate entrepreneurship. *Strategic Management Journal*, 15 (7): 521-536.

SULL, D.N. 1999. Why good companies go bad. *Harvard Business Review*, 77(4): 42-52.

TANNENBAUM, A.S. 1962. Control in organizations: Individual adjustment and organizational performance. *Administrative Science Quarterly*, 7(2): 236-257.

TENG, B. 2007. Corporate entrepreneurship activities through strategic alliances: A resource-based approach towards competitive advantage. *Journal of Management Studies*, 44(1): 119-142.

TEO, T.S.H. & KING, W.R. 1996. Assessing the impact of integrating business planning and IS planning. *Information & Management*, 30(6): 309-321.

TIMMONS, J.A. & SPINELLI, S. 2007. New venture creation: Entrepreneurship for the 21st century. 7th ed. New York, NY: McGraw-Hill.

TURNER, C. 2002. Lead to success: Creating entrep[reneurial organizations. London: Texere Publishing.

TUSTIN, A., LIGHTHELM, M.J., MARTINS, W. & VAN WYK, B.C. 2005. Marketing research in practice. Pretoria: Unisa Press.

UITTENBOGAARD, B., BROENS, L. & GROEN, A.J. 2005. Towards a guideline for design of a corporate entrepreneurship function for business development in medium-sized technology-based companies. *Creativity and Innovation Management*, 14(3): 258-271.

VAN DER MERWE, S.P. & ELLIS, S.M. 2007: An exploratory study of some of the determinants of harmonious family relationships in small and medium-sized family businesses. *Management Dynamics*, 16(4): 24-35.

VAN DER MERWE, S.P. & OOSTHUIZEN, J.H. 2008. An entrepreneurial climate in the South African mining industry: a middle management perspective. (Unpublished article). North-West University, Potchefstroom.

VAN STEL, A., CARREE, M. & THURIK, R. 2004. The effect of entrepreneurship on national economic growth: An analysis using the GEM database. http://www.ondernemerschap.nl/pdf-ez/N200320.pdf Date of access: 22 July 2009.

WANG, C.L. 2008. Entrepreneurial orientation, learning orientation and firm performance. *Entrepreneurship Theory and Practice*, 32(4): 635-657.

WANG, C.L. & RAFIQ, M. 2009. Organizational diversity and shared vision. *European Journal of Innovation Management*, 12(1): 86-101.

WEILL, P. 1992. The relationship between investment in information technology and firm performance: A study of the valve manufacturing sector. *Information Systems Research*, 3(4):307:333.

WEST, G.P. & MEYER, G.D. 1998. To agree or not to agree? Consensus and performance in new ventures. *Journal of Business Venturing*, 13(5): 395-422.

WICKHAM, P.A. 2004. Strategic entrepreneurship. London: Pearson Prentica Hall.

WOLCOTT, R.C. & LIPPITZ, M.J. 2007. The four models of corporate entrepreneurship. *MIT Sloan Management Review*, 49(1): 75-82.

ZAHRA, S.A. 1996. Governance, ownership and corporate entrepreneurship: the moderating impact of industry technological opportunities. *Academy of Management Journal*, 39(6): 1713-1735.

ZAHRA, S.A. 2005. Corporate entrepreneurship and growth. London: Edward Elgar.

ZAHRA, S.A., LENNINGS, D.F. & KURATKO, D.F. 1999. The antecedents and consequences of firm-level entrepreneurship: the state of the field. *Entrepreneurship Theory and Practice*, 24(2): 45-65.

APPENDIX A

QUESTIONNAIRE AS APPLICABLE TO EACH SUB-SECTION (CONSTRUCTS OF AN ENTREPRENEURIAL CLIMATE)

In chapter 3 section 3.4 the characteristics of an entrepreneurial climate is examined. Oosthuizen (2006) identified 13 constructs measuring the entrepreneurial climate. Each of the 13 constructs is discussed in detail in section 3.4.2.

The specific questions in the questionnaire to determine the level of each construct is set out below.

A1. VISIONARY OR ENTREPRENEURIAL LEADERSHIP

Table A23: Extract from corporate entrepreneurship climate questionnaire as applicable to visionary/entrepreneurial leadership.

Number	Question
1	Our leaders take a long-term view of our organisation.
14	Our leaders challenge the status quo and they inspire us to think and act in innovative way.
27	This organisation has a specific value system which we all know and live up to.
40	Our leaders lead by example and people are eager to voluntarily follow them.
53	Our leaders seek to maximise value from opportunities.

Source: Oosthuizen (2006:337-341)

A2. MANAGEMENT SUPPORT

Table A24: Extract from corporate entrepreneurship climate questionnaire as applicable to management support.

Number	Question
2	Management encourages us to develop ideas that would improve the organisation.
15	Top management is receptive to my ideas and suggestions.
28	Those employees who come up with innovative ideas on their own receive management's encouragement for their activities.
41	The creation of innovative ideas is a regular occurrence in our organisation.
54	Senior managers allow innovators to bend rules and rigid procedures in order to keep promising ideas on track.

Source: Oosthuizen (2006:337-341)

A3. PRESENCE OF SPONSORS

Table A25: Extract from corporate entrepreneurship climate questionnaire as applicable to the presence of sponsors.

Number	Question
3	My manager helps me to get my work done by removing obstacles in my way.
16	Originators of new ideas find it easy to implement because of the support rendered by influential people at the organisation.
29	Our organisation has people with influence that support, coach, protect, and find resources for an intrapreneurial project and its team.
42	Our organisation's managers have the skills, commitment and courage to be effective champions of intrapreneurial initiatives.
55	In this organisation it is easy to build coalitions of sponsors to help projects succeed.

Source: Oosthuizen (2006:337-341)

A4. TOLERANCE FOR RISK, MISTAKES AND FAILURE

Table A26: Extract from corporate entrepreneurship climate questionnaire as applicable to role of tolerance for risk, mistakes and failures.

Number	Question
4	Development at our organisation is based on taking calculated risks at the right time.
17	Projects involving calculated risk are highly valued, even when things do not always turn out according to plan.
30	We occasionally take big risks to keep ahead of our competitors.
43	This organisation supports many small and experimental projects realising that some will undoubtedly fail.
56	If you make a mistake in this organisation you will be forgiven.

Source: Oosthuizen (2006:337-341)

A5. INNOVATION, CREATIVITY AND ENCOURAGEMENT OF NEW IDEAS

Table A27: Extract from corporate entrepreneurship climate questionnaire as applicable to the measurement of innovation, creativity and encouragement of new ideas.

Number	Question
5	Our organisation quickly implements improved work methods that are developed by employees.
18	There is considerable number of employees at the organisation that are involved in generating and implementing innovative ideas.
31	This organisation provides me with the chance to be creative and try out new methods of doing my job.
44	Training is provided to ensure that innovative new processes are implemented effectively.
57	Employees are inspired to push their boundaries and to think "out-of-the-box."

Source: Oosthuizen (2006:337-341)

A6. APPROPRIATE REWARDS AND REINFORCEMENT

Table A28: Extract from corporate entrepreneurship climate questionnaire as applicable to the measurement of appropriate rewards and reinforcement.

Number	Question
6	Individuals implementing successful innovative projects receive additional rewards and compensation.
19	In this organisation recognition rather than criticism is emphasised.
32	My supervisor will give me special recognition if my work performance is outstanding.
45	In this organisation effective intrapreneurs are generally rewarded.
58	Employees are rewarded in relation to their job performance.

Source: Oosthuizen (2006:337-341)

A7. VISION AND STRATEGIC INTENT

Table A29: Extract from corporate entrepreneurship climate questionnaire as applicable to the measurement of the vision.

Number	Question
7	I am well informed about our organisational vision and strategies.
20	I have regular meetings with my manager where information is shared between us.
33	Great effort has been made to clarify what the vision and strategy of the organisation mean to us in our own department.
46	The vision and strategies of the organisation often help me in setting priorities in my work.
59	There is considerable buy-in from employees into the value system of the Organisation.

Source: Oosthuizen (2006:337-341)

A8. DISCRETIONARY TIME AND WORK

Table A30: Extract from corporate entrepreneurship climate questionnaire as applicable to the discretionary of time and work.

Number	Question
8	An employee with a good idea is often given time to develop that idea within working hours.
21	A staff member who has initiated a new project/process is allowed to carry it through to completion/implementation.
34	Nobody at the organisation is forced to develop new ideas.
47	I am allowed time at work to explore new ideas I believe have potential.
60	Our organisation provides ample opportunities for learning and growth.

Source: Oosthuizen (2006:337-341)

A9. EMPOWERED TEAMS, MULTI-DISCIPLINED TEAMWORK AND DIVERSITY

Table A31: Extract from corporate entrepreneurship climate questionnaire as applicable to the measurements of empowered teams, multi-disciplined teamwork and diversity.

Number	Question
9	Working together in project teams is encouraged at the organisation.
22	We use cross-functional teams effectively at the organisation to develop and implement new ideas.
35	Top management encourages the establishment of teams from various departments whenever needed for a project.
48	Project teams have choices in recruiting and selecting new team members.
61	Cross-functional teams are characterised by diversity based on the skills required by the project.

Source: Oosthuizen (2006:337-341)

A10. RESOURCE AVAILABILITY AND ACCESSIBILITY

Table A32: Extract from corporate entrepreneurship climate questionnaire as applicable to the availability and accessibility to resources.

Number	Question
10	There are several options within the organisation for individuals to get financial support for their innovative projects and ideas.
23	Money is often available to get new project ideas off the ground.
36	36. Resources are readily accessible in pursuance of new ideas and opportunities.
49	The process for accessing and acquiring resources to pursue new opportunities is streamlined so that approval is quickly granted.
62	Attracting resource commitment for entrepreneurial ventures in this organisation is relatively easy.

Source: Oosthuizen (2006:337-341)

A11. CONTINUOUS- AND CROSS-FUNCTIONAL LEARNING

Table A33: Extract from corporate entrepreneurship climate questionnaire as applicable to continuous- and cross-functional learning.

Number	Question
11	People are keen to share knowledge within the organisation, even over departmental or functional boundaries.
24	Employees are encouraged to talk to their colleagues in other departments of the organisation about ideas for new projects.
37	Our organisation has open communication channels in which all employees participate.
50	Employees are encouraged to stay abreast of developments in their functional fields and to share their knowledge with others.
63	Employees are willing to assist others and share knowledge and skills even if it is not required from them.

Source: Oosthuizen (2006:337-341)

A12. STRONG CUSTOMER ORIENTATION

Table A34: Extract from corporate entrepreneurship climate questionnaire as applicable to the measurement of customer orientation.

Number	Question
12	A great deal of resources is spent in determining customer needs and satisfaction.
25	Product and service innovation are driven by a strong customer orientation.
38	Our organisation involves customers in service and product development.
51	We regularly ask our customers to give their opinions of our service and product offerings.
64	Customers are treated as very important stakeholders.

Source: Oosthuizen (2006:337-341)

A13. FLAT ORGANISATIONAL STRUCTURE

Table A35: Extract from corporate entrepreneurship climate questionnaire as applicable to measurement of the organizational structure.

Number	Question
13	People are allowed to make decisions about their work processes without going through elaborate justification and approval procedures.
26	Employees are given ample opportunity for independence and freedom in how they do their work.
39	I have autonomy to decide how to do my work.
52	The degree of hierarchical control is relatively low in our organisation.
65	Employees determine their key performance areas in co-operation with their supervisors.

Source: Oosthuizen (2006:337-341

APPENDIX B

QUESTIONNAIRE AS APPLICABLE TO EACH SUB-SECTION (PERCEIVED SUCCESS OF ORGANISATION)

In chapter 3 section 3.5 the perceived success of the organisation were examined. After a literature review was conducted five constructs were identified to measure the perceived success of the organisation.

The specific questions in the questionnaire to determine the level of each construct is set out below.

B1. FINANCIAL MEASURES

Table B1: Extract from corporate entrepreneurship climate questionnaire financial measures

Number	Question
13	Our business has experienced growth in turnover over the past few years.
16	Our business has experienced growth in profits over the past few years.
3	Our business has experienced growth in market share over the past few years.

B2. CUSTOMER/MARKET MEASURES

Table B2: Extract from corporate entrepreneurship climate questionnaire as applicable to customer/market measures.

Number	Question
9	Taking care of customers is our business' top priority.
6	Our business has a high customer retention rate.
1	Our business develops product/services with customers' needs in mind.
11	Our customers are satisfied with our business's product/service offerings.
15	Employees in our business understand the needs of our customers.
7	Our customers are loyal to our business.

B3. PROCESS MEASURES

Table B3: Extract from corporate entrepreneurship climate questionnaire as applicable to the process measures.

Number	Question
2	The competitive position of our business has improved over the past few years.
14	The effectiveness (doing the right things) of our business has improved over the past few years.
17	The efficiency (doing things right) of our business has improved over the past few years.

B4. PEOPLE DEVELOPMENT

Table B4: Extract from corporate entrepreneurship climate questionnaire as applicable to people development.

Number	Question
8	In our business, employees are viewed as the most valuable asset of the business.
4	Our employees are highly committed to our business.
10	The morale (job satisfaction) of our employees has improved over the past few years.

B5. FUTURE (LONG-TERM) SUCCESS

Table B5: Extract from corporate entrepreneurship climate questionnaire as applicable to the future (long-term success).

Number	Question
12	The image (stature) of our business, relative to our competitors, has grown over the past few years.
5	During difficult economic periods, investments in research and development/ innovative projects continue and no significant financial cuts are made.

APPENDIX C

CORPORATE ENTREPRENEURSHIP QUESTIONNAIRE

CORPORATE ENTREPRENEURIAL CLIMATE QUESTIONNAIRE

CONFIDENTIAL

Note: All responses are confidential and neither the individual nor the organisation would be identified in any report or release.

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CORPORATE ENTREPRENEURIAL CLIMATE QUESTIONNAIRE

Dear Respondent

Corporate entrepreneurship is becoming increasingly important for the competitiveness of any organisation as organisation face dynamic competition unleashed by globalisation as well as local competitors. Internal environmental factors play a crucial role in translating entrepreneurship into performance. For organisation to survive in an increasingly aggressive, competitive and dynamic market place, the organisation should adopt a proactive attitude towards innovation and the creation of internally generated new ventures.

ArcelorMittal South Africa is the largest steel producer on the African continent. The role of middle management in fostering an entrepreneurial climate is crucial as the responsibility lies with them to move the bottom line.

With the 2007 Global Entrepreneurship Monitor (GEM) Report again indicating that South Africa performs poorly in comparison to other emerging economies in terms of entrepreneurial activity and development, attention should be focused on interventions which support and encourage business initiatives and development.

The focus of this research study is on middle and high level management in ArcelorMittal South Africa Vanderbijlpark Works.

This questionnaire attempts to measure the entrepreneurial climate in your department in order to determine whether it is conducive to foster an entrepreneurial spirit, as well as to indicate possible barriers or trigger factors. Your contribution is highly valued and appreciated.

Please complete every question / statement to ensure the validity and reliability of the study.

GENERAL INSTRUCTIONS

Virtually all questions may be answered by ticking (X) or highlighting the relevant block.

Use the following key to indicate your preference:

SCALE	TERM USED
5	Strongly agree
4	Slightly agree
3	Neither agree nor disagree
2	Slightly disagree
1	Strongly disagree

Please select the number which best describes your opinion about a specific question or statement. In the example beneath, the respondent slightly agreed to the statement listed.

		Strongly Disagree	Slightly Disagree	Neither agree nor disagree	Slightly agree	Strongly Agree
A03	My manager helps me to get my work done by removing obstacles in my way.	**1**	**2**	**3**	**4**	**5**

SECTION A: CORPORATE ENTREPRENEURIAL CLIMATE

This section consists of 65 statements. Please indicate to what extent you agree or disagree with each statement. Please mark the applicable block with a cross (X).

		Strongly Disagree	Slightly Disagree	Neither agree nor disagree	Slightly Agree	Strongly Agree
A01	Our leaders take a long-term view of our organisation.	1	2	3	4	5
A02	Management encourages us to develop ideas that would improve the organisation.	1	2	3	4	5
A03	My manager helps me to get my work done by removing obstacles in my way.	1	2	3	4	5
A04	Development at our organisation is based on taking calculated risks at the right time.	1	2	3	4	5
A05	Our organisation quickly implements improved work methods that are developed by employees.	1	2	3	4	5
A06	Individuals implementing successful innovative projects receive additional rewards and compensation.	1	2	3	4	5
A07	I am well informed about our organisational vision and strategies.	1	2	3	4	5
A08	An employee with a good idea is often given time to develop that idea within working hours.	1	2	3	4	5
A09	Working together in project teams is encouraged at the organisation.	1	2	3	4	5
A10	There are several options within the organisation for individuals to get financial support for their innovative projects and ideas.	1	2	3	4	5
A11	People are keen to share knowledge within the organisation, even over departmental or functional boundaries.	1	2	3	4	5
A12	A great deal of resources is spent in determining customer needs and satisfaction.	1	2	3	4	5
A13	People are allowed to make decisions about their work processes without going through elaborate justification and approval procedures.	1	2	3	4	5
A14	Our leaders challenge the status quo and they inspire us to think and act in innovative ways.	1	2	3	4	5
A15	Top management is receptive to my ideas and suggestions.	1	2	3	4	5
A16	Originators of new ideas find it easy to implement because of the support rendered by influential people at the organisation.	1	2	3	4	5
A17	Projects involving calculated risk are highly valued, even when things do not always turn out according to plan.	1	2	3	4	5
A18	There is considerable number of employees at the organisation that are involved in generating and implementing innovative ideas.	1	2	3	4	5
A19	In this organisation recognition rather than criticism is emphasised.	1	2	3	4	5
A20	I have regular meetings with my manager where information is shared between us.	1	2	3	4	5
A21	A staff member who has initiated a new project/process is allowed to carry it through to completion/implementation.	1	2	3	4	5
A22	We use cross-functional teams effectively at the organisation to develop and implement new ideas.	1	2	3	4	5
A23	Money is often available to get new project ideas off the ground.	1	2	3	4	5
A24	Employees are encouraged to talk to their colleagues in other departments of the organisation about ideas for new projects.	1	2	3	4	5
A25	Product and service innovation are driven by a strong customer orientation.	1	2	3	4	5

		Strongly Disagree	Slightly Disagree	Neither agree nor disagree	Slightly Agree	Strongly Agree
A26	Employees are given ample opportunity for independence and freedom in how they do their work.	1	2	3	4	5
A27	This organisation has a specific value system which we all know and live up to.	1	2	3	4	5
A28	Those employees who come up with innovative ideas on their own receive management's encouragement for their activities.	1	2	3	4	5
A29	Our organisation has people with influence that support, coach, protect, and find resources for an intrapreneurial project and its team.	1	2	3	4	5
A30	We occasionally take big risks to keep ahead of our competitors.	1	2	3	4	5
A31	This organisation provides me with the chance to be creative and try out new methods of doing my job.	1	2	3	4	5
A32	My supervisor will give me special recognition if my work performance is outstanding.	1	2	3	4	5
A33	Great effort has been made to clarify what the vision and strategy of the organisation mean to us in our own department.	1	2	3	4	5
A34	Nobody at the organisation is forced to develop new ideas.	1	2	3	4	5
A35	Top management encourages the establishment of teams from various departments whenever needed for a project.	1	2	3	4	5
A36	Resources are readily accessible in pursuance of new ideas and opportunities.	1	2	3	4	5
A37	Our organisation has open communication channels in which all employees participate.	1	2	3	4	5
A38	Our organisation involves customers in service and product development.	1	2	3	4	5
A39	I have autonomy to decide how to do my work.	1	2	3	4	5
A40	Our leaders lead by example and people are eager to voluntarily follow them.	1	2	3	4	5
A41	The creation of innovative ideas is a regular occurrence in our organisation.	1	2	3	4	5
A42	Our organisation's managers have the skills, commitment and courage to be effective champions of intrapreneurial initiatives.	1	2	3	4	5
A43	This organisation supports many small and experimental projects realising that some will undoubtedly fail.	1	2	3	4	5
A44	Training is provided to ensure that innovative new processes are implemented effectively.	1	2	3	4	5
A45	In this organisation effective intrapreneurs are generally rewarded.	1	2	3	4	5
A46	The vision and strategies of the organisation often help me in setting priorities in my work.	1	2	3	4	5
A47	I am allowed time at work to explore new ideas I believe have potential.	1	2	3	4	5
A48	Project teams have choices in recruiting and selecting new team members.	1	2	3	4	5
A49	The process for accessing and acquiring resources to pursue new opportunities is streamlined so that approval is quickly granted.	1	2	3	4	5
A50	Employees are encouraged to stay abreast of developments in their functional fields and to share their knowledge with others.	1	2	3	4	5
A51	We regularly ask our customers to give their opinions of our service and product offerings.	1	2	3	4	5
A52	The degree of hierarchical control is relatively low in our organisation.	1	2	3	4	5
A53	Our leaders seek to maximise value from opportunities.	1	2	3	4	5
A54	Senior managers allow innovators to bend rules and rigid procedures in order to keep promising ideas on track.	1	2	3	4	5
A55	In this organisation it is easy to build coalitions of sponsors to help projects succeed.	1	2	3	4	5

		Strongly Disagree	Slightly Disagree	Neither agree nor disagree	Slightly Agree	Strongly Agree
A56	If you make a mistake in this organisation you will be forgiven.	1	2	3	4	5
A57	Employees are inspired to push their boundaries and to think "out-of-the-box."	1	2	3	4	5
A58	Employees are rewarded in relation to their job performance.	1	2	3	4	5
A59	There is considerable buy-in from employees into the value system of the Organisation.	1	2	3	4	5
A60	Our organisation provides ample opportunities for learning and growth.	1	2	3	4	5
A61	Cross-functional teams are characterised by diversity based on the skills required by the project.	1	2	3	4	5
A62	Attracting resource commitment for entrepreneurial ventures in this organisation is relatively easy.	1	2	3	4	5
A63	Employees are willing to assist others and share knowledge and skills even if it is not required from them.	1	2	3	4	5
A64	Customers are treated as very important stakeholders.	1	2	3	4	5
A65	Employees determine their key performance areas in co-operation with their supervisors.	1	2	3	4	5

SECTION B: SUCCESS OF THE ORGANISATION

This section consists of 17 statements. Please indicate to what extent you agree or disagree with each statement. Please mark the applicable block with a cross (X).

		Strongly Disagree	Slightly Disagree	Neither agree nor disagree	Slightly Agree	Strongly Agree
B01	Our organisation develops product/services with customers' needs in mind.	1	2	3	4	5
B02	The competitive position of our organisation has improved over the past few years.	1	2	3	4	5
B03	Our organisation has experienced growth in market share over the past few years.	1	2	3	4	5
B04	Our employees are highly committed to our organisation.	1	2	3	4	5
B05	During difficult economic periods, investments in research and development/ innovative projects continue and no significant financial cuts are made.	1	2	3	4	5
B06	Our organisation has a high customer retention rate.	1	2	3	4	5
B07	Our customers are loyal to our organisation.	1	2	3	4	5
B08	In our organisation, employees are viewed as the most valuable asset of the organisation.	1	2	3	4	5
B09	Taking care of customers is our organisation' top priority.	1	2	3	4	5
B10	The morale (job satisfaction) of our employees has improved over the past few years.	1	2	3	4	5
B11	Our customers are satisfied with our organisation's product/service offerings.	1	2	3	4	5
B12	The image (stature) of our organisation, relative to our competitors, has grown over the past few years.	1	2	3	4	5
B13	Our organisation has experienced growth in turnover over the past few years.	1	2	3	4	5
B14	The effectiveness (doing the right things) of our organisation has improved over the past few years.	1	2	3	4	5
B15	Employees in our organisation understand the needs of our customers.	1	2	3	4	5
B16	Our organisation has experienced growth in profits over the past few years.	1	2	3	4	5
B17	The efficiency (doing things right) of our organisation has improved over the past few years.	1	2	3	4	5

SECTION C: BACKGROUND INFORMATION

The following information is needed to help with the statistical analysis of data for comparisons among different interest groups. All your responses will be treated confidentially. Your assistance in providing this important information is appreciated.

Please mark the applicable block with a cross (X).

C01	**Indicate your age group**	≤ 29	30 - 39	40 - 49	50 - 59	60+

C02	Indicate your gender	Male	Female

C03	Indicate your race	Black	White	Coloured	Indian

C04	**Indicate your highest academic qualification**	
	Lower than Grade 12	
	Grade 12	
	National certificate	
	National diploma	
	3-year degree	
	Post graduate qualification	

C05	Indicate your management level	**Top/Senior management** (C & D roles)	**Middle management** (F & E roles)	**Technical** (F & E roles)	**Supervisory level** (G role)	**Technical** (G roles)
	Other: (Specify):					

C06	**Indicate your functional department**				
	Coke Making	Sinter Production	Blast Furnace	Iron Making Raw Materials	
	Direct Reduction	Electrical Arc Furnace	Oxygen Steel Making	Refractories	Steelmaking Scrap and Slab Supply

THANK YOU VERY MUCH FOR YOUR VALUED INPUT.